Journal of Nutrition and Food Security
Shahid Sadoughi University of Medical Sciences
School of Public Health
Department of Nutrition
Shahid Sadoughi University of Medical Sciences
School of Public Health
Nutrition Department

eISSN: 2476-7425 pISSN: 2476-7417 JNFS 2026; 11(3): 351-358 Website: jnfs.ssu.ac.ir

Knowledge, Attitudes, and Practices Regarding Sport Supplement Consumption among Athletes in Sport Clubs

Amirreza Shahraki; MD [1], Seyed Reza Mousavi Gilani; PhD [2], Javid Dehghan Haghighi; PhD [3], Mahdieh Sheikhi; PhD [4] & Mansour Karajibani; PhD [*4]

[1] Student Research Committee, Department of Nutrition, School of Medicine. Zahedan University of Medical Sciences, Zahedan, Iran; [2] Department of Physical Education and Immunology Research Center, Zahedan University of Medical Sciences, Zahedan, Iran; [3] Department of Community Medicine, School of Medicine, Zahedan University of Medical Sciences, Zahedan, Iran; [4] Health Promotion Research Center, Department of Nutrition, School of Medicine, Zahedan University of Medical Sciences, Zahedan, Iran.

ARTICLE INFO

ORIGINAL ARTICLE

Article history:
Received:7 Oct 2025
Revised: 4 Jan 2026
Accepted: 21 Feb 2026

Corresponding author
mkarajibani@gmail.com
Department of Nutrition, School of Medicine, Zahedan University of Medical Sciences, Zahedan, Iran.

Postal code: 9816743181
Tel: +98 9153414358

Keywords
Knowledge; Attitude; Practice; Supplement; Athletes.

ABSTRACT

Background: The global use of sport supplements has risen, including in Iran, where misuse can pose health risks. Knowledge, attitudes, and practices (KAP) strongly influence supplement consumption behaviors, yet limited data exist among athletes in Zahedan. This study aimed to assess KAP related to sport supplement use among male athletes attending sports clubs in Zahedan, Iran**. Methods:** In this cross-sectional study, 121 male athletes aged 18–35 year were recruited from Zahedan sports clubs using cluster random sampling. Data were collected through a validated, researcher-designed questionnaire covering demographics, anthropometrics, supplement use, and KAP. Knowledge was categorized as poor (0–10), fair (11–15), or satisfactory (>15); attitude and practice were classified in the same way. Moreover, descriptive statistics and chi-square or Fisher's Exact Tests were used for analysis. **Results:** Participants had a mean age of 25.0±1.7 years. Bodybuilding was the most common sport (53.7%), and creatine was the most used supplement (26.5%), while 32.2% reported no use. Overall, 41.3% had poor knowledge, 38.8% had fair knowledge, and 19.8% had satisfactory knowledge. For attitudes, 47.1% were at a poor level, 51.2% at a fair level, and 1.7% at a satisfactory level; for practices, 47.1% had poor practice, 24.0% had fair practice, and 27.3% had satisfactory practice. Significant correlations were found between knowledge and attitude, knowledge and practice, and attitude and practice (P<0.001). **Conclusions:** Suboptimal KAP toward supplement use was evident, with nearly half of athletes scoring poorly across domains. Improved knowledge was linked to better attitudes and practices, highlighting the need for structured, ongoing nutrition education in sports clubs to promote safe supplement use.

Introduction

Nowadays, sport supplements are widely available in various forms, containing a broad range of nutrients and analogous products (Knapik *et al.*, 2016). The use of dietary supplements is not limited to elite athletes; it is also common among recreational athletes and individuals who engage in sports primarily for health purposes (Knapik *et al.*, 2016). Previous

This paper should be cited as: Shahraki AR, Mousavi Gilani SR, Dehghan Haghighi J, Sheikhi M, Karajibani M. ***Knowledge, Attitudes, and Practices Regarding Sport Supplement Consumption among Athletes in Sport Clubs.*** *Journal of Nutrition and Food Security (JNFS)*, 2026; 11(3): 351-358.

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i3.22151]

studies have shown that a considerable proportion of Iranian athletes across different disciplines consume dietary supplements (Halabchi *et al.*, 2021, Hozoori *et al.*, 2012, Hozoori *et al.*, 2016).

Athletes often use nutritional supplements with the aim of increasing strength, muscle mass, and physical performance (Hozoori *et al.*, 2012). In recent years, the consumption of supplements - including vitamins, herbal products, and performance-enhancing compounds - has grown substantially. While supplements may help meet nutritional demands, their inappropriate or excessive use can pose significant health risks (Daher *et al.*, 2022).

The relationship between nutritional knowledge, attitudes, and practices (KAP) plays a central role in shaping athletes' well-being and performance. Adequate nutritional knowledge allows athletes to make evidence-based decisions about their diet, thereby meeting their physiological needs and supporting training demands (Scalvedi *et al.*, 2021). However, research has indicated that many athletes lack accurate nutritional information, which may negatively affect their attitudes and dietary practices (Vázquez-Espino *et al.*, 2022). In this regard, knowledge is the foundation that can promote favorable attitudes and healthier nutritional behaviors. Furthermore, adherence to traditional dietary values and practices can also influence the effectiveness of nutritional interventions and programs (Kontele and Vassilakou, 2021, Leske *et al.*, 2017). KAP studies are particularly useful in understanding how athletes select foods, adopt training regimens, and implement nutritional behaviors (Chen *et al.*, 2022, Saeidlou *et al.*, 2016).

Athletes with optimistic attitudes toward nutrition are more likely to maintain healthy dietary behaviors, while poor dietary practices or lack of awareness may result in complications such as nutritional deficiencies, reduced immune function, fatigue, and impaired performance (Bakhtiar *et al.*, 2021). Sound nutritional knowledge equips athletes with the ability to make informed and healthy food choices (Alaunyte *et al.*, 2015).

At the same time, eating behaviors can be shaped by body composition goals, aesthetic concerns, and personal beliefs regarding diet and performance (Sundgot-Borgen and Torstveit, 2004). Notably, several studies have highlighted that bodybuilders and other athletes often display inadequate nutritional literacy and misguided dietary approaches, underscoring the need for professional nutritional education and management to improve both strength and overall health (Ahmadi *et al.*, 2023, Lenzi *et al.*, 2021).

In recent years, the rapid growth of sports clubs in Iran has been paralleled by a sharp increase in the use of sport supplements. Alongside this trend, the misuse of drugs and supplements for performance enhancement has led to serious, sometimes irreversible, adverse health consequences (Pope Jr *et al.*, 2014). Proper nutrition is therefore essential, not only for enhancing physical performance but also for protecting mental health, particularly under the oxidative stress associated with intense training and competition (Gao *et al.*, 2024).

Despite the growing prevalence of supplement consumption, there is still a lack of sufficient knowledge and reliable information among athletes in many regions, including Zahedan. Addressing this gap is crucial for improving nutritional practices and safeguarding athletes' health. Accordingly, the present study aimed to investigate the knowledge, attitudes, and nutritional practices related to sport supplement use among athletes attending sport clubs in Zahedan, Iran.

Materials and Methods

Study design and participants

This cross-sectional, descriptive-analytic study was conducted in 2022 on 121 athletes attending sports clubs in Zahedan, Iran. To ensure an adequate sample size, the calculation was based on the study by Kargarfard *et al.* on athletes in Lorestan province, Iran (kargarfard *et al.*, 2009), using the following formula: $n = \frac{pqz^2}{d^2}$

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i3.22151]

CC BY-NC 3.0

p=44%; q=56%; Z=1.96 (for 95% confidence); d~9%

$$n = \frac{0.44 \times 0.56 \times 1.96^2}{0.09^2} = 116$$

Considering potential dropouts and non-responses, the sample size was increased slightly to 121 participants, and a cluster-random sampling approach was employed. Zahedan city was divided into socio-economic areas, and three sports clubs were randomly selected from each area. From each selected club, 15 athletes were recruited using simple random sampling. Only athletes who met the inclusion criteria - being Iranian citizens, aged 18–35, members of the selected sports clubs for at least six months, and willing to provide informed consent - were included. Participants were excluded if they were non-Iranian, failed to complete the questionnaire, withdrew consent, had chronic diseases affecting dietary practices or supplement use (e.g., diabetes or kidney disease), or were participating in other nutrition-related studies. Recruitment took place between July and December 2022.

Data collection tool

Data were collected using a researcher-designed questionnaire, the reliability of which was confirmed by Cronbach's alpha in a pilot study. To ensure content validity, the questionnaire was reviewed and approved by three experts in Physical Education and Nutrition. The questions were developed according to the study objectives and divided into three domains: knowledge, attitude, and practice. To further ensure clarity and comprehension, the questionnaire was pre-tested among 30 male athletes from sports clubs who were not part of the final sample. Based on their feedback, ambiguous or biased items were revised or removed.

The final questionnaire consisted of two main parts. The first part collected demographic and anthropometric information, including body weight, height, waist circumference, subcutaneous fat, type of sport activity, and the type and frequency of sport supplement use. The second part assessed KAP regarding sport supplements. After coordination with club managers and obtaining written informed consent, participants completed the questionnaire under the supervision of the research team. All demographic and KAP data were coded and recorded confidentially.

The KAP section of the questionnaire included 10 knowledge items, 5 attitude items, and 5 practice items. Knowledge questions were scored as Yes (2 points), No (1 point), and I don't know (0 points), with total scores categorized as poor (0–10), fair (11–15), and satisfactory (>15). Attitude items were scored as Agree (3 points), Disagree (1 point), and No idea (0 points), and the total attitude score was classified as poor (0–5), fair (6–8), and good (>8). Practice questions were presented in Yes/No format, with total scores categorized as poor (0–2), fair (3), and satisfactory (4–5). Responses were scored quantitatively, and the number and percentage of answers in each KAP category were calculated for analysis.

Ethical considerations

This research was approved by the Ethics Committee of Zahedan University of Medical Sciences (IR.ZAUMS.REC.1401.193) in August 2022. All participants declared their informed consent to participate in the study

Data analysis

Data were analyzed using SPSS version 20 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including mean and standard deviation for continuous variables and frequency with percentage for categorical variables, were calculated. The chi-square test was then used to assess the association between categorical variables. When expected cell counts were <5, Fisher's Exact Test was applied. Statistical significance was set at P-value<0.05.

Results

A total of 121 male athletes participated in the study. The mean age of participants was 25.0±1.7 years (range: 18–32). Moreover, the mean body weight, height, waist circumference, and subcutaneous fat thickness were 82.1±12.2 kg, 177.0±6.3 cm, 93.6±13.2 cm, and 59.9±13.0 mm, respectively.

With regard to supplement use, the most frequently consumed supplement was creatine

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i3.22151]

(26.5%), followed by whey protein, multivitamins, and glutamine. Notably, 39 athletes (32.2%) reported not using any supplements. In terms of type of sport, the majority of participants were engaged in bodybuilding (53.7%), while the lowest proportion were wrestlers (8.3%).

Table 1 presents the distribution of KAP scores. Overall, 41.3% of athletes demonstrated poor knowledge, while 38.8% had fair knowledge, and only 19.8% showed satisfactory knowledge. Regarding attitude, 47.1% of athletes had poor attitudes, 51.2% had fair attitudes, and only 1.7% demonstrated a satisfactory attitude toward supplement use. In terms of practice, 47.1% of athletes exhibited poor practices, 24.0% fair practices, and 27.3% satisfactory practices. Collectively, these findings indicate that more than 40% of participants scored poorly across all three KAP domains.

Table 1. Frequency distribution of knowledge status in the studied population.

Category	Knowledge	Attitude	Practice
Poor	50 (41.3)[a]	57 (47.1)	59 (47.1)
Fair	47 (38.8)	62 (51.2)	29 (24)
Satisfactory	24 (19.8)	2 (1.7)	33 (27.3)
Total	121 (100)	121 (100)	121 (100)

[a]: *n (%).*

The associations between KAP components are shown in **Tables 2–4**. Among athletes with poor knowledge, the majority (74%) also demonstrated a poor attitude, while only 26% had a fair attitude, and none showed a satisfactory attitude (**Table 2**). In contrast, among those with fair knowledge, most (59.6%) exhibited a fair attitude, while 38.3% had a poor attitude, and only 2.1% had a satisfactory attitude. Strikingly, in the group with satisfactory knowledge, 87.5% showed a fair attitude, and only a small proportion (8.3%) had poor attitudes. The association between knowledge and attitude was statistically significant *(P*<0.001*)*.

Table 2. The association between knowledge and attitude in the studied population.

Knowledge / Attitude	Poor	Fair	Satisfactory
Poor	37 (74.0)[a]	18 (38.3)	2 (8.3)
Fair	13 (26.0)	28 (59.6)	21 (87.5)
Satisfactory	0 (0.0)	1 (2.1)	1 (4.2)
Total	50 (100)	47 (100)	24 (100)

[a]: *n (%); Fisher's Exact test: P<0.001.*

In the group with poor knowledge, the largest proportion (76%) also had poor practices, while 16% had fair practices, and only 8% reported satisfactory practices (**Table 3**). Among those with fair knowledge**,** 40.4% had poor practices, 29.8% fair practices, and another 29.8% satisfactory practices. In contrast, athletes with satisfactory knowledge showed much healthier behaviors. 62.5% demonstrated satisfactory practices, while only 8.3% had poor practices. The association between knowledge and practice was significant (*P<0.001*).

Table 3. The association between knowledge and practice in in the studied population.

Knowledge / Practice	Poor	Fair	Satisfactory
Poor	38 (76.0)[a]	19 (40.4)	2 (8.3)
Fair	16 (4.0)	14 (29.8)	7 (29.2)
Satisfactory	4 (8.0)	14 (29.8)	15 (62.5)
Total	50 (100)	47 (100)	24 (100)

[a]: *n (%); Chi-square test: P-value < 0.001.*

Among athletes with poor attitudes, most (73.7%) also had poor practices, while 15.8% had fair practices, and only 10.5% had satisfactory practices (**Table 4**). In the group with fair attitudes, 40.3% reported satisfactory practices, 32.3% had fair practices, and 27.4% poor practices. Interestingly, although only two athletes demonstrated satisfactory attitudes, both of them also reported satisfactory practices (100%). This association was statistically significant (*P<0.001*).

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i3.22151]

CC BY-NC 3.0

Table 4. The association between attitude and practice in in the studied population.

Attitude / Practice	Poor	Fair	Satisfactory
Poor	42(73.7)[a]	17 (27.4)	0 (0.0)
Fair	9 (15.8)	20 (32.3)	0 (0.0)
Satisfactory	6 (10.5)	25 (40.3)	2 (100)
Total	57 (100)	62 (100)	2 (100)

[a]: *n (%); Fisher's Exact test: P<0.001.*

Discussion

The present study demonstrated that athletes with higher levels of knowledge were more likely to exhibit favorable attitudes and healthier nutritional practices regarding sports supplements. This finding highlights the interrelated nature of KAP in shaping athletes' supplement consumption patterns. Notably, almost half of the studied athletes showed poor knowledge, attitude, and practice scores, underscoring a critical need for targeted educational interventions. Only a small proportion of athletes demonstrated good knowledge or attitudes, suggesting an overall lack of awareness regarding the proper use of supplements. These findings are consistent with previous studies, which have reported insufficient KAP toward sports nutrition among adolescent and collegiate athletes. For instance, it has been reported that adolescent athletes do not have adequate KAP about sport nutrition, and even when they acquire certain skills, they are often unable to apply them effectively in practice (Ahmadi *et al.*, 2022). Likewise, female adolescents have been shown to possess moderate nutritional knowledge and dietary awareness; however, their behaviors were not aligned with their attitudes, highlighting the urgent need for continuous nutritional interventions in this population (Delvarian *et al.*, 2011).

A recent multi-country study found that among over 250 athletes, higher education level, prior nutrition training, and reliable sources of information (e.g. nutritionists) were significantly associated with good KAP scores. Almost half of participants in that study also showed weak practice despite moderate to good knowledge. This mirrors this study's findings that practice lags behind knowledge and attitude (Thapa *et al.*, 2023).

Recent evidence from collegiate athletes indicates that sport nutrition knowledge is generally low, with participants answering less than half of the questions on a validated questionnaire correctly. Importantly, higher knowledge was associated with lower body fat percentage and fat mass, suggesting that nutritional awareness can influence both body composition and health outcomes. However, despite this relationship, athletes significantly underestimated their daily energy and carbohydrate needs, highlighting a gap between knowledge and actual dietary practice. These findings are consistent with the present study, where inadequate knowledge was linked with weaker attitudes and practices, reinforcing the need for targeted nutrition education to translate knowledge into healthier behaviors (Jagim *et al.*, 2021).

From a socio-ecological perspective, athletes' dietary behaviors are influenced by individual factors - such as age, gender, and education - and environmental factors, including access to resources and information sources (Eriksson *et al.*, 2018). Studies in Malaysian university athletes showed moderate sports nutrition knowledge (average 58.6%), with gaps in general nutrition, such as fat intake and fruit and vegetable recommendations. Despite reasonable knowledge, dietary behaviors were often inconsistent with what athletes knew. These findings align with the present study, where limited knowledge among Zahedan athletes was associated with weaker attitudes and practices, highlighting the need for targeted, context-specific nutrition education programs (Nor Azizam *et al.*, 2022). Similarly, another study reported that although a large proportion of athletes were aware of the benefits of supplements, their attitudes did not consistently translate into practice, particularly regarding the frequency and types of supplements consumed (Finamore *et al.*, 2022).

It has been suggested that individuals' KAP related to a healthy diet and sustained physical activity improves with higher levels of education (Eskandarpour *et al.*, 2023, Oli *et al.*, 2018).

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i3.22151]

CC BY-NC 3.0

Consistent with this, the present study found a significant positive correlation between athletes' attitudes and their actual practices, indicating that more favorable attitudes are linked with healthier behaviors.

The current findings highlight a considerable lack of knowledge regarding sports supplement consumption among the studied athletes, reinforcing the need for comprehensive, context-specific educational programs to improve both awareness and practical application.

One key strength of this study is the use of a validated questionnaire with established reliability and content validity, which allowed for a rigorous measurement of the constructs of KAP. Additionally, the sampling approach - cluster-random sampling across socio-economic areas - enhanced the representativeness of the findings among male athletes in Zahedan.

Nevertheless, the study had several limitations. First, its cross-sectional design means we cannot infer causality; it is not possible to determine whether knowledge causes improved attitude or practice, or vice versa. Second, the sample was limited to male athletes in one city; findings may not generalize to female athletes, athletes in rural settings, or in other cultural contexts. Finally, external factors such as resource availability (access to quality supplements, economic constraints), the influence of peers/coaches, media misinformation, were not fully explored and may mediate the observed KAP relationships.

Conclusion

Suboptimal KAP toward supplement use was evident, with nearly half of athletes scoring poorly across domains. Improved knowledge was linked to better attitudes and practices, highlighting the need for structured, ongoing nutrition education in sports clubs to promote safe supplement use.

Acknowledgements

The authors would like to thank all participants for their cooperation.

Authors' contributions

Shahraki A, Mousavi Gilani SR, Dehghan Haghighi J and Karajibani M designed the research; Dehghan Haghighi J and Sheikhi M analyzed data. Shahraki A conducted the research and collected data. Mousavi Gilani SR and Karajibani M supervised the study; Sheikhi M and Karajibani M wrote the paper. Karajibani M had primary responsibility for the final content. All authors read and approved the final manuscript.

Conflict of interest

The authors declared no conflict of interest.

Funding

No funding was received for this research.

References

Ahmadi F, Ebrahimi M & Kashani V 2022. Sports nutritional knowledge, attitude, and practice of adolescent athletes in Tehran, Iran. *Asian journal of sports medicine.* **13 (4)**.

Ahmadi H, Eslami A, Honarvar MR & Sharifi A 2023. Assessment of Knowledge, Attitude, and Nutritional Performance of Male Bodybuilding Athletes. *Journal of Gorgan University of Medical Sciences.* **25 (2)**: 69-74.

Alaunyte I, Perry JL & Aubrey T 2015. Nutritional knowledge and eating habits of professional rugby league players: does knowledge translate into practice? *Journal of the international society of sports nutrition.* **12 (1)**: 18.

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

Chen Y, Sun Y, Liu Z & Hu D 2022. Study on nutritional knowledge, attitude and behavior of Chinese school football players. *Children.* **9 (12)**: 1910.

Daher J, Mallick M & El Khoury D 2022. Prevalence of dietary supplement use among athletes worldwide: a scoping review. *Nutrients.* **14 (19)**: 4109.

Delvarian ZM, et al. 2011. Nutritional knowledge, attitude and practice of female junior high school students in two regions of Iran. *Journal of knowledge & health.* **6 (1)**.

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i3.22151]

CC BY-NC 3.0

Eriksson M, Ghazinour M & Hammarström A 2018. Different uses of Bronfenbrenner's ecological theory in public mental health research: what is their value for guiding public mental health policy and practice? *Social theory & health.* **16 (4)**: 414-433.

Eskandarpour FZ, Younesiyan A & Delvarianzadeh M 2023. Relationship between physical activity, knowledge, attitude, and nutritional practice with body mass index (BMI) of Iranian teenage girls. *Shahroud journal of medical sciences.* **9 (3)**: 7-10.

Finamore A, Benvenuti L, De Santis A, Cinti S & Rossi L 2022. Sportsmen's attitude towards dietary supplements and nutrition knowledge: an investigation in selected Roman area gyms. *Nutrients.* **14 (5)**: 945.

Gao S, et al. 2024. Folate supplementation as a beneficial add-on treatment in relieving depressive symptoms: A meta-analysis of meta-analyses. *Food science & nutrition.* **12 (6)**: 3806-3818.

Halabchi F, Shab-Bidar S & Selk-Ghaffari M 2021. Prevalence of supplement consumption in Iranian athletes: a systematic review and meta-analysis. *International journal of preventive medicine.* **12 (1)**: 32.

Hozoori M, Ehteshami M, Haghravan S & Azarpira A 2012. Prevalence, reasons and information about dietary supplement consumption in athletes in Tabriz. *Journal of sport biosciences.* **4 (12)**: 77-91.

Hozoori M, Safaei-Motlagh A & Marzban A 2016. The epidemiology of dietary supplements consumption in the athletes of Karaj Iran. *International journal of epidemiologic research.* **3 (3)**: 222-231.

Jagim AR, et al. 2021. The influence of sport nutrition knowledge on body composition and perceptions of dietary requirements in collegiate athletes. *Nutrients.* **13 (7)**: 2239.

kargarfard m, Kashi A & Sarlak Z 2009. Prevalence of ergogenic substances use and athletes' knowledge of effects and side effects of them in Lorestan province, western part of Iran. *Fundamentals of mental health.* **11 (42)**: 123-134.

Knapik JJ, et al. 2016. Prevalence of dietary supplement use by athletes: systematic review and meta-analysis. *Sports medicine.* **46 (1)**: 103-123.

Kontele I & Vassilakou T 2021. Nutritional risks among adolescent athletes with disordered eating. *Children.* **8 (8)**: 715.

Lenzi JL, Teixeira EL, de Jesus G, Schoenfeld BJ & de Salles Painelli V 2021. Dietary strategies of modern bodybuilders during different phases of the competitive cycle. *Journal of strength & conditioning research.* **35 (9)**: 2546-2551.

Leske S, Strodl E & Hou X-Y 2017. Predictors of dieting and non-dieting approaches among adults living in Australia. *BMC public health.* **17 (1)**: 214.

Nor Azizam NS, et al. 2022. Sports nutrition and food knowledge among Malaysian university athletes. *Nutrients.* **14 (3)**: 572.

Oli N, Vaidya A, Pahkala K, Eiben G & Krettek A 2018. Knowledge, attitude and practice on diet and physical activity among mothers with young children in the Jhaukhel-Duwakot Health Demographic Surveillance Site, Nepal. *PloS one.* **13 (7)**: e0200329.

Pope Jr HG, et al. 2014. Adverse health consequences of performance-enhancing drugs: an Endocrine Society scientific statement. *Endocrine reviews.* **35 (3)**: 341-375.

Saeidlou SN, Babaei F & Ayremlou P 2016. Nutritional knowledge, attitude and practice of north west households in Iran: is knowledge likely to become practice? *Maedica.* **11 (4)**: 286.

Scalvedi ML, Gennaro L, Saba A & Rossi L 2021. Relationship between nutrition knowledge and dietary intake: an assessment among a sample of Italian adults. *Frontiers in nutrition.* **8**: 714493.

Sundgot-Borgen J & Torstveit MK 2004. Prevalence of eating disorders in elite athletes is higher than in the general population. *Clinical journal of sport medicine.* **14 (1)**: 25-32.

Thapa M, et al. 2023. Factors affecting nutritional knowledge, attitude, practices and dietary intake

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i3.22151]

among national players in Kathmandu, Nepal: a cross-sectional study. *BMC sports science, medicine and rehabilitation.* **15 (1)**: 73.

Vázquez-Espino K, Rodas-Font G & Farran-Codina A 2022. Sport nutrition knowledge, attitudes, sources of information, and dietary habits of sport-team athletes. *Nutrients.* **14 (7)**: 1345.

[Downloaded from jnfs.ssu.ac.ir on 2026-11-08]

[DOI: 10.18502/jnfs.v11i3.22151]

CC BY-NC 3.0