

Investigating the Prevalence of Legal Dietary or Sports Supplements in Iranian Premier League Soccer Players

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Investigating the Prevalence of Legal Dietary or Sports Supplements in Iranian Premier League Soccer Players

Abstract

The purpose of this study was to investigate the prevalence of dietary supplement use among Iranian elite soccer players. The whole soccer players of premier league in Iran participated in this study.

The respondents Age (Ranged from 17 to 39 (years), (mean age: 25.49±4.62 years) were noted. A questionnaire was used with questions concerning the frequency and types of consumed supplements. Chi square analyses were used to determine any significant relationships between supplement consumption and their team positions. All hypothesis tests were performed at a significance level equal to or smaller than 0.05.

As reported there are 410 (92.3 %) out of 444 players that had been taken at least one supplement. The results showed that except Vit C, Whey and Glutamine there is no spread of the use of sport and nutritional supplements by the players of the Iranian Premier League in all supplements compared to the prevalence of supplement use. VitC was the most commonly used one(70.9%), in later positions Whey(64%) and Glutamine(57%) were placed. Carbohydrate(21.4%) and creatine(17.3%) intake was noted. Moreover, There was no relationship found between dietary supplement use and age. Whereas, There was a significant relationship between the source of information and the consumption of supplements for players.

The information provided by this study suggest that it may be necessary to ensure coaches have sufficient knowledge about dietary supplements so that athletes are receiving accurate information.

Keywords: Creatine, Nutrition, Performance Enhancer, Vitamins and Minerals, Whey Protein,

İran Premier Ligi Futbolcularında Yasal Diyet veya Spor Takviyelerinin Kullanım Yaygınlığının Araştırılması

Özet

Bu çalışmanın amacı, İranlı elit futbolcular arasında besin takviyesi kullanım yaygınlığını araştırmaktır. Bu çalışmaya İran birinci ligindeki tüm futbolcular katılmıştır.

Katılımcıların yaşları (17 ila 39 (yıl) arasında değişmektedir, (ortalama yaş: 25.49±4.62 yıl) kaydedilmiştir. Tüketilen takviyelerin sıklığı ve türleri ile ilgili sorular içeren bir anket kullanılmıştır. Takviye tüketimi ile takım pozisyonları arasında anlamlı bir ilişki olup olmadığını belirlemek için ki-kare analizleri kullanılmıştır. Tüm hipotez testleri 0.05'e eşit veya daha küçük bir anlamlılık düzeyinde gerçekleştirilmiştir.

Bulgulara göre, 444 oyuncudan 410'u (%92,3) en az bir takviye almıştır. Sonuçlar, Vit C, Whey ve Glutamin dışında, İran Premier Ligi oyuncularının spor ve besin takviyesi kullanımının, takviye kullanım yaygınlığına kıyasla tüm takviyelerde yaygın olmadığını göstermiştir. VitC en sık kullanılan takviyedir (%70,9), daha sonraki sıralarda Whey (%64) ve Glutamin (%57) yer almaktadır. Karbonhidrat (%21,4) ve kreatin (%17,3) alımı kaydedilmiştir. Ayrıca, besin takviyesi kullanımı ile yaş arasında herhangi bir ilişki bulunmamıştır. Öte yandan, bilgi kaynağı ile oyuncuların takviye tüketimi arasında anlamlı bir ilişki bulunmuştur.

Bu çalışmanın sağladığı bilgiler, sporcuların doğru bilgi alabilmeleri için antrenörlerin besin takviyeleri konusunda yeterli bilgiye sahip olmalarının gerekli olabileceğini düşündürmektedir.

Keywords: Beslenme, Kreatin, Performans Arttırıcı, Vitaminler ve Mineraller, Whey Protein,

1. INTRODUCTION

Soccer is currently the world's most popular sport, and according to the 2006 FIFA survey, is played by over 265 million player worldwide, 10% of whom are female.¹ It is also an undeniable sociological and media phenomenon. Recent decades have seen major advances in the field of sport sciences, particularly in soccer.² Contemporary athletic training challenges the boundaries of human body capabilities. Athletic performance before, in or after training sessions can be substantially enhanced with supplements which are considered by scientists as efficient, safe and legal, such as protein, carbohydrate and protein carbohydrate supplements, isotonic sport drinks, carbohydrate protein bars, carbohydrate bars, creatine and caffeine.³ A dietary supplement is a commercially available product that is consumed as an addition to the usual diet and includes vitamins, minerals, herbs (botanicals), amino acids, and a variety of other products.⁴ The Dietary Supplement Health and Education Act (DSHEA) of 1994 established⁴⁰ the regulatory framework for dietary supplements in the US. Since this act became law, US sales of dietary supplements has increased from \$US 4 billion in 1994 to \$US 33 billion in 2012⁵ an eightfold increase over 18 years. Global sales of supplements were \$US 96 billion in 2012 and at \$US 104 billion in 2013.⁶ Competitive athletes also need to be concerned with excessive use and possible adverse interactions due to polypharmacy and inadvertent doping due to the inadequate quality control of some dietary supplements.⁷

The percentages of reported taking supplements ranged from 30.8% to 80% in female and 20% to 83% for male football high school players.⁸ The creatine use rate in the 12th grade student athlete population was 44% for football players.⁹ 93.3% of professional soccer players of Saudi Arabia have announced that they have used supplements like Proteins, CHO (carbohydrate), Vitamins and Minerals.¹⁰

Despite the increased rate of nutritional supplement use, there is no comprehensive information regarding nutritional supplement use among soccer players participants in premier league of Iran. Introducing wrong supplements by football players because they are famous people and usually their daily affairs are a model for others can cause irreparable damage to the society because the people of the society, especially the young generation, are looking for role models from these players. Regardless of the reasons for the use of supplements by these players, they follow them and face the harm of using them. For this reason, the present study has made a detailed examination of the supplements used by the players, so that the relevant experts and coaches, knowing them, can think of introducing these supplements as well as possible, and the reasons and methods of their use at the community level. In addition, in the present study, all supplements have been used with full self-declaration of the players without using their names and only referring to their posts, because if their names were mentioned, many of them might avoid telling the truth. The validity of the study was questioned. Based on the results of the present research, all sports coaches and people related to the field of sports can help to guide them as best as possible by following the correct example of the supplements consumed by the popular players of the society. Therefore, this article

aim is to demonstrate and report the amount and the type of nutritional and sport supplements used by players based on their position on the field.

2. Materials and Methods

2.1. Data Collection Tools and Participants

An anonymous questionnaire survey was conducted in a group of 444 soccer player of Iran premier league in 2020-2021 seasons. The questionnaire has been given to relevant specialists and sport nutrition experts and its face validity has been confirmed. As expected, a high heterogeneity was observed for most parameters and indexes, as are shown in table (2), height (1.80 ± 0.06 (m)), weight (74.70 ± 7.62 (kg)), BMI (23.00 ± 1.42 (kg /m²)) and the subjects Age (25.49 ± 4.62 (years)) were noted. The research tool was an anonymous questionnaire concerning the frequency of supporting according to the positional roles, the players were categorized as defenders (n=152), midfielders (n=171), strikers (n=67), and goalkeepers (n=54). Personal data of whole players based on their position are mentioned in Table 1.

All players were informed about the assessment procedures and signed the consent form. They were fully informed about the nature and demands of the study and were informed that they could withdraw from the study at any time. The inclusion criteria included regular participation in the training program and membership in the Premier League in the 2020-2021 seasons. The exclusion criterias were declaring unwillingness to cooperate in the implementation of research, Non-compliance with the correct implementation of the questionnaire and the possibility of any physical and mental problems. The assessment took place during the pre-competitive period of season 2020-2021 (summer) over a period of 20 days in the laboratory of the Iran Football Medical Assessment and Rehabilitation Center (IFMARC). All assessments were evaluated in same order for all the players. The evaluation of the anthropometric profile included measurements of variables tools are included: Height (cm) and weight (kg) were measured using a wall-mounted stadiometer (Fazzini) with a precision of 0.1 cm and for BMI (Body mass index) used a digital scale by bioelectrical impedance method (Jawon X-Contact 356, Japan) with a precision of 0.1 kg.

2.2. Dietary Supplement Questionnaire

The questionnaire was composed of two parts. The first part contained personal data (gender, age). The second part contained items concerning ingesting frequency for supplements regarded as effective, such as minerals and vitamins (Vit D, MVM (Multi vitamin & minerals), Mg (Magnesium), Vit E, Vit C, protein supplements Whey, Glutamine, BCAA (branched chain amino acids) and Amino acids, Carbo protein supplement (Gainer), Carbohydrate supplement (CHO) (Carbohydrate), performance Enhancer like creatine .The subjects were asked to if they used them or not.

2.3. Data Analysis

Descriptive statistics methods (frequency, frequency percentage, mean and standard deviation) are used to report the demographic characteristics of the statistical sample and the research variables. The Chi-square and Friedman test are used to analyze

research questions and hypotheses. The data were further analyzed by Cramer's correlation coefficient for any relation between supplement users and their grade level, and Agreement coefficient for relation between supplement users and source of information. Data analysis is done by SPSS software version 23 and all hypothesis tests are performed at a significance level equal to or smaller than 0.05.

3. Findings

Table 1. Personal Data of Subjects Based on Their Positions

Variable	Defender (n=152)	Midfield (n=171)	(n=152) Striker	Goalkeeper (n=54)
Age (year)	25.62 ± 4.48	25.30 ± 4.76	26.29 ± 4.75	24.72 ± 4.31
Weight (kg)	75.61 ± 6.91	71.32 ± 6.36	74.57 ± 7.45	82.96 ± 6.42
Height (m)	1.80 ± 0.06	1.76 ± 0.05	1.80 ± 0.05	1.88 ± 0.04
BMI (Body mass index) (kg/m ²)	23.05 ± 1.32	22.86 ± 1.36	22.96 ± 1.69	23.38 ± 1.48

In Table (1), the variables include: Age (year), Weight (kg), Height (m) and BMI (kg / m²). All subjects indicated that their overall health was excellent or good.

Table 2. Personal data of subjects

Variable	Mean (±Std. Deviation)
Age (year)	25.49(±4.62)
Body weight (kg)	74.70(±7.62)
Height (m)	1.80(±0.06)
BMI (kg / m ²)	23.00(±1.42)

The participants had an average age of 25.49 years (±4.62), a mean body weight of 74.70 kg (±7.62), an average height of 1.80 meters (±0.06), and a Body Mass Index (BMI) of 23.00 kg/m² (±1.42), reflecting their general physical characteristics.

Table 3. Users and nonusers of sport and nutritional supplements (n=444)

Name of supplements	Users		Non users	
	No	%	No	%
Vit D	137	30.9	307	69.1
MVM	207	46.6	237	53.4
Vit E	176	39.6	268	60.4
Vit C	315	70.9	129	29.1
Whey	284	64.0	160	36.0
Glutamine	253	57.0	191	43.0
Creatine	77	17.3	367	82.7
BCAA	220	49.5	224	50.5
Amino Acids	80	18.0	364	82.0
Gainer	27	6.1	417	93.9
CHO	95	21.4	349	78.6

The analysis of the results revealed in table (3). which shows the prevalence of the use of sport and nutritional supplements by the players of Iran's premier soccer league. The results of the Chi-square test in examining the prevalence of the use of sport and

nutritional supplements by the players of the Iranian premier soccer league showed that there is no spread of the use of sport and nutritional supplements by the players of the Iranian Premier League in all supplements which are mentioned in table (3), except Vit C, Whey and Glutamine. BCAA and MVM supplements have also been used by nearly 50% of players, but since they have not reached 50%, their use by players is not statistically significant. Proportion of the number of Iranian soccer players who used supplementation to nonusers was (92.3% vs 7.7%). Vit C (70.9%, $p < 0.001$), Whey (64%, $p < 0.001$) and Glutamine (57%, $p < 0.003$) were found most often used by the players among all the supplements. BCAA (49.5, $p < 0.849$) and MVM (46.6%, $p < 0.155$) are also ranked next. One of the highest, highly significant difference in the frequency of using was observed between Vit C and creatine, with the latter chosen almost forth more often than creatine (70.9% vs 17.3%). In addition, after indicated supplements Vit E (39.6%, $P < 0.001$), Vit D (30.9%, $P < 0.001$) and CHO (21.4%, $P < 0.001$) were the most frequent ones, other supplements were used under 20% by the players. There are just 34 (7.7%) players out of 444 that had not been used any supplements, even though there are about 410 (92.3 %) players that had been taken at least one supplement.

Table 4. Each player had used at least one supplement or not

Player's position	Used or didn't use	Abundance	Percent of abundance
Defenders	Didn't Use at least once	11	7.2
	Used at least once	141	92.8
Midfield	Didn't Use at least once	10	5.8
	Used at least once	161	94.2
Forward	Didn't Use at least once	9	13.4
	Used at least once	58	86.6
Goalkeeper	Didn't Use at least once	4	7.4
	Used at least once	50	92.6
All Positions	Didn't Use at least once	34	7.7
	Used at least once	410	92.3

As shown in (Table 4), players have used at least one supplement or never used any of them separately based on their each position. They preferred to use their favorite supplements According to their positions on the field.

Table 5. Users and Nonusers of supplements in the defender position

Name of supplements	Users		Non users	
	No	%	No	%
Vit D	48	31.6	104	68.4
MVM	68	44.7	84	55.3
Vit E	55	36.2	97	63.8
Vit C	109	71.7	43	28.3
Whey	92	60.5	60	39.5
Glutamine	94	61.8	58	38.2
Creatine	32	21.1	120	78.9
BCAA	80	52.6	72	47.4
Amino Acids	26	17.1	126	82.9
Gainer	13	8.6	139	91.4
CHO	28	18.4	124	81.6

The results of the chi-square test in the investigation of the prevalence of the use of sport and nutritional supplements by the players of the Iranian Premier League in the defender position showed that, from statistical point of view, no spread compared to spread of usage of all Supplements among defenders was significant except for BCAA

and MVM. BCAA and MVM supplements have been used by nearly 50% of players, therefore their usage by players are not statistically significant. But, In the community of statistically significant supplements among defenders, spread of Whey, Glutamine and Vit C are more frequent than no spread.

Table 6. Users and Nonusers of supplements in the midfield position

Name of supplements	Users		Non users	
	No	%	No	%
Vit D	48	28.1	123	71.9
MVM	79	46.2	92	58.8
Vit E	63	36.8	108	63.2
Vit C	118	69.0	53	31.0
Whey	114	66.7	57	33.3
Glutamine	102	59.6	69	40.4
Creatine	23	13.5	148	86.5
BCAA	79	46.2	92	53.8
Amino Acids	28	16.4	143	83.6
Gainer	10	5.8	161	94.2
CHO	45	26.3	126	73.7

The results of the chi-square test in the investigation of the prevalence of the use of sport and nutritional supplements by the players of the Iranian Premier League in the Midfield position showed that, from statistical point of view, no spread compared to spread of usage of all Supplements among midfielders was significant except for BCAA and MVM. BCAA and MVM supplements have been used by nearly 50% of players, therefore their usage by players are not statistically significant. But, In the community of statistically significant supplements among midfielders, spread of Whey, Glutamine and Vit C are more frequent than no spread.

Table 7. Users and Nonusers of supplements in the striker position

Name of supplements	Users		Non users	
	No	%	No	%
Vit D	23	43.3	44	65.7
MVM	34	50.7	33	49.3
Vit E	33	49.3	34	50.7
Vit C	50	74.6	17	25.4
Whey	44	65.7	23	43.3
Glutamine	35	52.2	32	47.8
Creatine	10	14.9	57	85.1
BCAA	35	52.2	32	47.8
Amino Acids	13	19.4	54	80.6
Gainer	2	3.0	65	97.0
CHO	10	14.9	57	85.1

The results of the chi-square test in the investigation of the prevalence of the use of sport and nutritional supplements by the players of the Iranian Premier League in the Striker position showed that, from statistical point of view, no spread compared to spread of usage of all Supplements among strikers was significant except for BCAA, MVM, Vit E, Vit D and Glutamine. BCAA, MVM, Vit E, Vit D and Glutamine supplements have been used by nearly 50% of players, therefore their usage by players are not statistically significant. But, In the community of statistically significant supplements among strikers, spread of Whey and Vit C are more frequent than no spread.

Table 8. Users and Nonusers of supplements in the goalkeeper position

Name of supplements	Users		Non users	
	No	%	No	%
Vit D	18	33.3	36	66.7
MVM	26	48.1	28	51.9
Vit E	25	46.3	29	53.7
Vit C	38	70.4	16	29.6
Whey	34	63.0	20	37.0
Glutamine	22	40.7	32	59.3
Creatine	12	22.2	42	77.8
BCAA	26	48.1	28	51.9
Amino Acids	13	24.1	41	75.9
Gainer	2	3.7	52	96.3
CHO	12	22.2	42	77.8

The results of the chi-square test the investigation of the prevalence of the use of sport and nutritional supplements by the players of the Iranian Premier League in the GoalKeeper position showed that, from statistical point of view, no spread compared to spread of usage of all Supplements among goalkeepers was significant except for BCAA, MVM, Vit E and Glutamine. BCAA, MVM, Vit E and Glutamine supplements have been used by nearly 50% of players, therefore their usage by players are not statistically significant. But, In the community of statistically significant supplements among goalkeepers, spread of Whey and Vit C are more frequent than no spread.

4. Discussion and Conclusion

The results of the study indicated that 410 (97.3%) of 444 players of Iranian premier soccer league use at least one supplement. Popularity of dietary supplementation has substantially increased over the last decade.¹¹ Alternatively, this study demonstrated that not substantial part of soccer players used ergogenic aids. We understand that except Whey, Glutamine and Vit C all the other supplements are not really using by Iranian elite soccer players. In a study which carried out in 2006, the percentage of athletes using ergogenic aids was 76%.¹² Another study showed that, around 88.0% of Australian athletes¹³, 60.5% of German master athletes¹⁴ and 61.0% of varsity athletes in Lincoln, USA, used nutritional supplements, energy drinks (73.0%), calorie replacement products (61.4%), multivitamins (47.3%), creatine (37.2%) and Vit C (32.4%) were the common nutritional supplements among these athletes.¹⁵ Although there are many studies at the international level about the supplements used by the players of popular sports such as football in Iran, there is no study that examines the supplements used by football players, which is one of the most popular sports among Iranians.

In the present study, subjects were given the opportunity to specify various sport nutrition supplements (excluding steroids) that they had used at least once, and the most used one was Vit C (n=315) out of 444.

Massad et al found 41.7% of high school athletes use vitamin or mineral supplements weekly to daily, and 21.7% use protein supplements weekly to daily.¹⁶ Douglas and Douglas found an even higher rate of vitamin or mineral supplement use (58%) in high school athletes. However, an analysis of vitamin or mineral use was not done.¹⁷ In

addition, the data in the present study confirms the high consumption rate of vitamin or mineral, which represents 70.9% (n=315) of the use of Vit C, 46.6% (n=207) of MVM, 39.6% (n=176) of Vit E, 30.9% (n=137) of Vit D and 27.7% (n=123) of Mg. this high usage rate of minerals and vitamins have also been reported by other investigations.¹⁸

Among the studied group of soccer players, one of the least frequently used supplements was creatine. Similar results were observed in a group of Olympians participating in the Olympic Games in 2002 (7%), 2004 (7%) and among 516 Italian athletes who regularly trained in a gym (14%).¹⁹ In some other studies which similarly reported 36% of freshman collegiate football players were using creatine.²⁰ Also, 28%²¹ and 37.2% of athletes were using creatine.²² The use of creatine as a dietary supplement was started in the nineties. Over years, and stimulated by more recent scientific research, the use of creatine has gained in popularity. Eventually, Kreider unequivocally demonstrated that creatine is one of the most effective and safe dietary supplements to improve strength and power of muscle and physical capacity of athletes.²³ Only one study, published by Kim et al, suggested an unfavorable effect of creatine on health of swimmers, simultaneously demonstrating the substantial popularity of this ergogenic aid in this group of athletes.²⁴ The type of supplement may be one reason why subjects are looking up to peers, teammates, friends, physicians, and coaches. Considering this fact, Creatine may be not really acceptable among these individuals, so that creatine isn't really the one that are using in this study.

According to the American College of Sports Medicine, adequate fluid replacement helps maintain body hydration. Consequently, health, safety and optimal physical fitness in people who are regularly involved in physical activity depend on hydration level.²⁵ The isotonic sport drinks have been developed to protect human body from dehydration, supply carbohydrates and replenish electrolyte deficiency which occurs during vigorous physical exercise.²⁶ This lack of sufficient consumption that is shown in table (4), should be discussed and monitored more. Our study also demonstrated that the use of isotonic sport drinks as (CHO) was one of the least frequently used supplements. Few reports have demonstrated a very small scale of the use of isotonic sport drinks. Tomlin et al,²⁷ Is one of them, According to their assessment, consumption of sport drinks among children (9.90 ± 0.58) years old, was low, this may be an ideal time to begin educating children and their parents about the appropriate consumption of sport drinks and the perils of consuming too many sugar-sweetened beverage. Alternatively, so many studies declare about advantages and benefits of sport isotonic drinks as well.²³

Intermittent sports (e.g., team sports) are characterized by intermittent bursts of high-intensity exercise and require the execution of complex sport-specific skills and cognitive tasks over a prolonged period of time (1-2 h), with longer breaks at scheduled intervals (e.g., quarters, half time) as well as unscheduled times (e.g., injury or restarting play after scoring in soccer or rugby). Performance of intermittent sports is dependent upon a combination of anaerobic and aerobic energy systems both of which rely on carbohydrate as an important fuel source.²⁸ The reported consumption values of Gainer and CHO that have asked about, are very low as shown in Table (4). alternatively, in some studies, Researchers also have concern about the accuracy of survey responses

about topics such as illegal substance use.²⁹ So that, It has been found that self-reported carbohydrate supplements use is likely to be distorted by socially desirable. Actually, respondents might choose an option in the questionnaire which is most socially desirable, whether the participants reported correctly or not, this low level of consumption raises questions.

Ascorbic acid was discovered in 17th century, the exact role of this vitamin/nutraceutical in human biology and health is still a mystery in view of many beneficial claims and controversies.³⁰ In the present study, 70.9 % of the players were using vitamin c at least once. One of the most important reasons for this high use of Vit C among players may be the emergence of the coronavirus pandemic. According to some researches, taking Vit C may strengthen the immune system; In addition, some claims declare that it may cause the disappearance of some symptoms of cold.³¹

Athletes often decide to increase protein intake in their diet using protein supplements and amino acid supplements.³ Popularization of the use of protein supplements among soccer players of our study was high. Protein supplements were the second, third and fourth most frequent choice of dietary supplementation. Only 9% of professional athletes in a group of 582 Canadian athletes took protein supplements.³² However, in a group of 209 basketball players and volleyball players³³ and In a group of 52 Norwegian Olympians 42% of them used protein supplementation.²³ As the statics shown, Protein supplements are a very popular aid used to enhance athletic performance among Iranian elite soccer players.

As shown in Fig 4 and 5, the players in the goalkeeper and striker position had used BCAA, Calcium, Glutamine, Whey, Vit E, Vit C and MVM supplements more than the others, Goalkeepers have used more protein supplements.

The players in two remaining positions (midfield and defense) as shown in (Fig 2 and 3) had used BCAA, Whey, Glutamine, Vit C and MVM more than the other supplements.

Additional analyses were conducted to see if there was any significant relation between the amount of supplement consumption, grade and players information sources. There were no significant relations among supplement use and the player's grade except for MVM ($p=0.049$) and L-CARNITINE ($p=0.032$). However, there were more significant relations between supplement use and source of information. The relations between using Vit D ($p=0.002$), MVM ($p=0.010$), Vit E ($p=0.045$), Whey ($p=0.025$), Glutamine ($p=0.021$), Creatine ($p=0.019$), BCAA ($p=0.041$), Gainer ($p=0.039$), L-ARGININE ($p=0.012$), Beta-alanine ($p=0.040$) and Iron ($p=0.006$) and their grade level were noted and for the other supplements there were no significant relation. As shown there is congruency between supplement use and the player's source of information. Our data are contrary to the other studies identified the relations between sources of information and supplement use.³⁴ The most popular source of information regarding nutritional supplements was the doctor of each team (32%) and then the coach (26.8%). Other more frequently used sources, respectively were personal trainer and friends (24.1%) and registered dietitian (16.9%). In other study athlete's most frequently listed "self" (40.6%), then nutritionist/dietitian (32.1%), and then family member or friend (31.1%).⁸ Juhn et al

reported that baseball and football player's primary source of information was their strength and conditioning coach (94%).³⁵ Dietitians/nutritionists were most frequently consulted by the athletes in Krumbach et al (32.1%).⁸ but the current study (16.9%) followed by Jacobson et al (10%).³⁶ In this study the athletic department provided a dietitian specializing in sports nutrition at no charge to the athletes and athletic department staff specially for some of the teams only. So that the players could use their Consultations for choosing the supplements. There was no dietitian readily available to the athletes involved in the Kruskall and Johnson study, and the status of an athletic department dietitian is unknown in the other studies and unlikely at the high school level.²² It is quite evident The presence of nutritionists next to the teams, family and peers of the athletes themselves, play an important role in providing information to athletes regarding nutritional supplements, this fact also supported by other study.³⁷ This leads to the conclusion that if a qualified dietitian/nutritionist is available to athletes, they will consult them for information but, if not readily available, athletes will not seek them out.

The data revealed that Most of the participants reported using Vit C. It may because of corona virus pandemic and the advertisements on the influence of it.

Among the studied group of soccer players, one of the least frequently used one was creatine.

This small population that had used carbohydrate drinks may can be considered as a matter of concern that may proves a lack of knowledge about the importance of isotonic drinks in the regulation of fluid and electrolyte balance in conditions of physical exertion specially for sports like soccer which is highly dependent on glycogen stores of the players. Elite soccer players should intake 1 to 1.5 g/kg BW/h within the first 4 h after a soccer game to maximize glycogen resynthesis.³⁸

A spontaneous higher protein supplement intake was observed for all of the players, which may because of Advertising claims of protein supplement companies. Moreover, the low prevalence of dietary supplements usage emphasizes the importance and the need to provide better and clear information to elite male soccer players of Iranian premier league.

This study was unique in that it examined the use of any sport nutrition supplements, whereas other studies investigated primarily the use of vitamins and minerals or other supplements consumption separately. With the information available in this study, sports coaches can provide more accurate information about the use of football supplements for their target group, which is the young athlete of the society.

Therefore, data on the use of sport nutrition supplements in Iranian premier league soccer players are now available. Also, it would be beneficial to know if coaches are promoting the use of or dispensing any specific products. Wolf et al found that (35%) of the coaches recommend vitamin supplements to their athletes, and half of these coaches dispense the vitamins.³⁹ Further studies are needed on supplements that purport to enhance athletic performance, such as creatine and other supplements, In addition, Further research on players' behaviors and their motivations toward dietary

supplementation is needed. Also, the frequency, dose, and timing of dietary supplement usage need to be explored.

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