

ORIGINAL ARTICLE

# KNOWLEDGE AND ATTITUDE OF YOUNG ATHLETES IN BAGHDAD CITY/IRAQ TOWARD THE USE OF SPORTS SUPPLEMENTS

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## ABSTRACT

*Dietary supplements are used as nutritional boosters. The types that are used for the enhancement of sport-and-athletic routines and to regain strength quickly are known as sports supplements. The main objective of this research is to assess the knowledge and attitude of young athletes in Baghdad city on the use of these sports supplements. A cross-sectional study was conducted among 304 young athletes in Baghdad city using self-administered questionnaires. The participants were selected using non-probability convenience sampling. The mean age of the participants was 26.89 years and the mean Body Mass Index (BMI) was 23.12 kg/m<sup>2</sup>. The most common supplements used were Mass protein (35.9%), followed by Whey protein (29.3%), and creatinine (15.1%). Around two-thirds (75%) of the athletes had previous information regarding sport supplements and the most common source of this information was their personal trainer at the gym (39.8%). Currently, 60.5% of the participants are taking sport supplements. There was a significant association between the knowledge variables (time for taking supplements, reasons for taking supplements, and taking the correct amount) and age (p-value 0.007, 0.005, 0.009), respectively. A majority of the participants, 78.9%, refused to take the forbidden supplements to improve their performance. Thus we can conclude that young athletes have an acceptable level of knowledge regarding sport supplements and a good attitude, especially toward the usage of forbidden supplements. More promotions are needed in Baghdad city, to get young people using gyms to focus on their health.*

**Keywords:** Knowledge, Attitude, Sport supplements, Young athletes, Baghdad

## INTRODUCTION

On account of expansion of the original exercise practices and the media's depiction of professional sports, athletes have been raising the scale of competition from an early age, by engaging in diverse plans. Sports nutrition is defined as the incorporation and assertion of the values of scientifically based nutrition and exercise routines, which support and improve physical movement, sport routines, and regaining of strength. Aside from sporting nutrition and exercise plans, athletes seek ergogenic aids, as outside effects, which could be primary motivators for victory. Dietary supplements are considered nutritional ergogenic stimulants, as they are felt to improve athletic performance with quick retrieval of energy<sup>1,2</sup>.

A sports supplement is a dietary supplement taken orally, with the aim of supplementing the diet and not as a substitute for it. Nutritional additions do not need endorsement by the U.S. Food and Drug Administration (FDA) before they are marketed. Corporations that brand supplements, theoretically follow the FDA's good manufacturing practices that exist at present, to guarantee value and protection of their produce. However, this does not always occur, and some supplements may comprise of

medications or additives not registered on the label. If there is a problem with a supplement, the FDA will inspect it<sup>3</sup>.

Caution should be exercised before consuming any dietary supplement. One should have proper knowledge about the duration and recommended dose, the appropriate timing, and the manner in which to take it. Moreover, one should not forget to read the nutritional information shown on the package, and check that it is from trusted sources. As for the athletes, it is known that they are constantly striving to raise the level of their performance to the extent that exceeds their individual capabilities, in order to achieve success in sporting events and reach advanced positions at all levels, as an increase in training loads and their doses no longer meet the aspirations of the athletes. Therefore, the sports community is witnessing a fierce race to obtain any means that secures the desired development, with the least possible side effects. Many personnel in the sports field are aware of the fatal damage caused by steroids and hormone drugs, as also the addiction caused to the users. Therefore, many athletes have turned towards

other alternatives, such as, nutritional supplements taken from natural or industrial food sources and worked upon to provide the player a nutritional program that will help to enhance the player's endurance levels <sup>4</sup>

Inaccurate information can lead to health complications and poor athletic performance<sup>5</sup>. The use of dietary supplements is also a risk factor, due to the use of illicit ingredients, which may result in so-called unintentional doping, on account of contamination of their components<sup>6</sup>. Another feature worth considering is their efficiency, which is debatable<sup>7</sup>. Each year, only a few studies are published on dietary supplementation in adolescents, resulting in insufficient resources and subsequent complications. The study's goal is to determine the level of knowledge and attitude among young athletes in Baghdad City, toward using sport supplements.

## METHODS

A cross-sectional study design was carried out in Baghdad city at several sports centers (Gyms), after availing permission from the management of sports clubs to conduct research and distribute questionnaires to the athletes and coaches, according to the data mentioned in the research plan. Participation in this study was on a voluntary basis. Consent was taken from the respondents before they answered the questionnaire. For the sampling method, a convenient sampling (non-probability) method was chosen. Those from ages 18-65 years and regular visitors to the gym were among the target sample. A questionnaire from a previous research (Jovanov *et al.*, 2019)<sup>8</sup> was adopted, regarding knowledge of sport supplements and the attitude of people toward them. The first part of the questionnaire was related to the athlete's age, weight, and height (body mass index calculation).

The second part dealt with information on health, eating, and sport supplements, sources of information, sport supplement usage, and reasons for taking them or not taking them. The third part was regarding the most common supplements used by the participants, how to decide the right amount to use, and whether the supplements were safe or not. The last part touched upon the players' attitude toward sport supplements, if they felt there were any health risks with using supplements, and if they were

ready to use forbidden supplements to improve their performance. Questionnaires were translated back-to-back from English to Arabic language by two different translators.

Sample size calculation was done using the single population proportion formula, based on a previous study done by Jovanov *et al.*, 2019<sup>8</sup>. The required sample size was 267. The data collection period was from February till March 2022, and the data was collected from four different gyms in Baghdad city, two from the Karah side and two from the Risafah side.

An ethical approval was obtained from the College of Nursing, Al-Bayan University, prior to data collection, and also a consent form was signed by all participants. SPSS version 24 was used for statistical analysis. Means and standard deviations (SDs) were used to present numerical variables, whereas, frequency and percentage were used to present the categorical variables. The independent *t*-test was used to test the relationship between variables, with a *p*-value of 0.05 being considered significant.

## RESULTS

The average age was 26.89 years  $\pm$  6.12 years. Average weight was 78.54 kg  $\pm$  12.66 kg. Average height 175.94 cm  $\pm$  8.06 cm. Average body mass index (BMI) was 23.12  $\pm$  3.23 kg/m<sup>2</sup>. Around 78.6% said that nutrition was very important for athletes, around two-thirds (75%) had information about supplements, and 39.8% got information from their personal trainer as shown in Table 1. With regard to the right time for taking supplements, the responses recorded were as follows, 45.5% stated it should be after training, while 46.4% of them were taking it before training. The reason for taking this supplement – the most frequent response (27.6%) was to increase muscle size. Regarding, "How to decide the number of supplements to be used,": Most of them (26.8%) answered based of their body weight, followed by "follow product instruction," as shown in Table 2.

On the subject of the knowledge level among the respondents, it was seen that 53.9% were correct and 46.1% were wrong. With regard to the answers for reasons for taking the supplement 51.6% were correct and 48.4% were wrong; and as for the correct amount to be taken, 45.1% were correct and 54.9% were wrong, as shown in Table 3.

**Table 1: Importance of good nutrition for athletes, previous information about supplements, source of information and any current usage of health supplement**

Variables	N	%
<b>Importance of good nutrition for athletes</b>		
<i>Very important</i>	239	78.6
<i>Important</i>	51	16.8
<i>Little important</i>	10	3.3
<i>Not important</i>	4	1.3
<b>Any previous information about supplements</b>		
<i>No</i>	76	25.0
<i>Yes</i>	228	75.0
<b>Sources of information</b>		
<i>Doctor</i>	23	7.6
<i>Nutritionist</i>	59	19.4
<i>Academic journals</i>	22	7.2
<i>Personal trainer</i>	121	39.8
<i>Internet</i>	94	31.0
<i>Magazines</i>	18	5.9
<i>Friends</i>	47	15.7
<b>Taking any supplements</b>		
<i>No</i>	51	16.8
<i>Yes</i>	184	60.5
<i>Previously</i>	69	22.7

**Table 2: knowledge regarding supplements usage**

Supplement Mass protein	N	%
<b>Timing</b>		
<i>Before training</i>	167	46.4
<i>During training</i>	29	8.1
<i>After training*</i>	164	45.5
<b>Reasons for taking this supplement</b>		
<i>Energy</i>	98	17.2
<i>Power</i>	124	21.8
<i>Refreshment</i>	55	9.7
<i>Everyone takes it</i>	22	3.9
<i>I was told to do so</i>	21	3.7
<i>To withstand</i>	92	16.1
<i>Increase Muscle size*</i>	157	27.6
<b>How to decide the number of supplements you use</b>		
<i>I do not use supplements</i>	51	16.8
<i>Based on my body weight*</i>	81	26.6
<i>I was told by my trainer</i>	102	33.6
<i>I follow instructions on product*</i>	56	18.4
<i>Not sure</i>	14	4.6

\*Indicate correct answers

The key to safe supplement use is to be aware of the potential risks and to follow the World Anti-Doping Agency's guidelines (WADA). According to the findings of this study, only 25.6% of athletes had access to and were aware of these guidelines. Regarding the question, "How to decide if the supplements are safe to use," 28.5% would ask the nutritionist, 34.9% would ask the trainer, 24.6%

would check the product website on the internet, and 11.9% stated that there were no safe supplements. Around one quarter (25.6%) of the respondents' thought supplements were linked to health risks; 48.8% stated that some products had health risks, and 25.6% were of the view that supplements had no health risks.

Table 3: knowledge level among respondents

Knowledge	N	%
<b>Timing</b>		
Correct	164	53.9
Wrong	140	46.1
<b>Reasons for taking this supplement</b>		
Correct	157	51.6
Wrong	147	48.4
<b>The correct amount</b>		
Correct	137	45.1
Wrong	167	54.9

Table 4: Attitude level among respondent

Variables	N	%
<b>How to decide if the supplements safe to use</b>		
I asked nutritionist*	117	28.5
I asked my trainer	143	34.9
I checked the product site on internet	101	24.6
There are no safe supplements	49	11.9
<b>Do you think supplements linked to health risks</b>		
Yes, all products got health risks*	78	25.6
Some products got health risks	148	48.8
Supplements have no health risks	78	25.6
<b>Can get nutritionist advice</b>		
No	57	18.7
Yes	247	81.3
<b>Did you attend workshops or lectures on sport supplements before</b>		
No	233	76.6
Yes*	71	23.4
<b>Are ready to use banned products to improve your performance</b>		
No*	240	78.9
Yes	64	21.1

\*indicate correct answers

As regards those who asked for some advice from a nutritionist, 18.7% did not get any advice and 81.3% got some advice from the nutritionist. The majority, 76.6%, of the respondents did not attend workshops or lectures on sport supplements before taking them, while only 23.4% of them attended lectures and workshops. Surprisingly, 21.1% of the respondents were ready to use banned products to improve their performance, while 78.9% of them were not ready to use such products, as shown in Table 4.

The inferential statistics also showed a significant association between age and time for taking supplements, reasons for taking supplements, and the correct amount of supplements to be taken, with a  $p$ -value of 0.007, 0.005, and 0.009, respectively, as shown in Table 5; the greater the age, the more the level of knowledge. However, the BMI did not show any significant association with the level of knowledge about the health supplements, as shown in Table 5.

Table 5: Association between Age, BMI and knowledge

Variables	Wrong		Correct		P Value
	Mean	SD	Mean	SD	
Age	25.87	6.30	27.76	5.84	0.007*
	Reasons for taking this supplement				
	25.88	6.24	27.84	5.87	0.005*
BMI	Taking the correct amount				
	26.07	6.24	27.89	5.84	0.009*
	Timing				
Age	23.33	3.46	22.94	3.02	0.192
	Reasons for taking this supplement				
	23.35	3.48	22.90	2.96	0.130
BMI	Taking the correct amount				
	23.11	3.45	23.14	2.95	0.834

\*Independent t test was performed, level

**DISCUSSION**

In our study around 83.2% of the athletes were taking sport supplements and this was consistent with the previous studies that found an increase in supplement consumption among young athletes <sup>9</sup>. There was a variation in the prevalence of sport supplement usage among studies; this was likely because of the differences in sample size, age category, and opposition among athletes. The study found that as people aged, they tended to use more sport supplements. This was likely because they saw the benefits of supplementation in terms of improved performance<sup>10</sup>.

This study found that more than 60% of athletes consumed more than four supplements, compared to 16.8% who did not use supplements. The requirement to use various energy boosters during sporting events may lead to an increase in the number of sport supplements used in these sports. The study found that the prevalence of whey protein in this sample differed from the study by Froiland *et al.*, (2004) <sup>11</sup>, which found that the prevalence of whey protein was 22.7%. Whey protein has been increasingly consumed over the past two decades, reaching a peak of 30% in 2006 <sup>12</sup> and then settling down at around 54.5% in this study.

In order to achieve new world records in exercise, current intensive regimes necessitate more protein intake in order to achieve improved metabolic adaptation, well-being, and faster tissue restoration. Well-balanced meal plans typically do not meet the requirements for adequate protein, but additional protein consumption satisfies these

requirements. This provides a contented option for young athletes, who do not spend time preparing their meals<sup>2</sup>. Mass protein is a popular sports supplement among young athletes; roughly 35% of these athletes consume it <sup>13</sup>. The widespread use of mass protein supplements can be attributed to their greater presence in sports, where strength and speed are key factors<sup>14</sup>. About 13.4% of the competitors detailed utilizing vitamins and mineral complexes, compared to 41.0% of the Australian competitors<sup>15</sup> and 45-47% of the United Kingdom (UK) athletes <sup>16</sup>. These findings differed from the prevalence of more than the 80% usage found in other studies<sup>12</sup>. The likely difference in add up to share can be credited to the expanding utilize of other sports supplements in comparison to the apparently same sums of vitamins and mineral complexes utilized over the past decade. Some youthful competitors (57.2%) accept that supplementation is imperative for athletic accomplishment, as opposed to 78.4% of competitors, within the Petróczi *et al.* (2008)<sup>13</sup> study, who did not emphasize on the noteworthiness of supplementation, in spite of the fact that a modification in the demeanor can be licensed to develop media motivation and showcase the sports supplements.

One of the main reasons people use supplements is to improve their athletic performance. This study's findings validate the findings of other studies that have explained the same perceptual phenomenon <sup>9,17</sup>. Health anxiety is also a powerful motivator, but only 3.4% of the athletes believe it, which agrees with Nieper's (2005) <sup>16</sup> findings and contrasts with the high percentage of athletes in other studies, <sup>18</sup> who believe that taking sports

supplements is primarily motivated by health concerns. Despite the fact that young German athletes were surveyed in the Braun *et al.*'s, 2009 study<sup>12</sup>, those in this study were particularly concerned with improving their athletic performance. There is a large percentage of athletes who do not use supplements, and the main reason they give is that they did not need them<sup>7,9</sup>.

Another strong reason for avoiding supplements was a lack of knowledge, and this study confirms that the more knowledge an athlete has about supplements, the better prepared he/she is to use them<sup>16</sup>. One thing all young athletes agree on is: Some sports supplements have posed serious health risks to 48.8% of them, which is somewhat predictable, given that athletes in the early stages of their semi-professional or professional sport profession are very passionately committed to their coaches and devote a lot of time to them. This is parallel to an American study,<sup>15</sup> which is a referendum of young athletes, about the dangers of some nutritional supplements, where 72% of the coaches are the main sources of information on data regarding supplements. Nonetheless, these findings emphasize the significance of sports supplement education programs for coaches.

Based on their precise answers on the proper and proposed use of sports supplements, the study participants demonstrated a comparatively low level of knowledge in areas of sports supplementation. The young athletes had problems understanding the character and the proposed benefits of various supplements. This study's findings support those of Tawfik *et al.*, 2016<sup>9</sup>, who discovered the same misconception about the role of proteins as an energy drive and source substance for physical movement rather than for muscle growth and repair. Petróczy *et al.*, 2008<sup>13</sup> discovered a discrepancy between planned and apparent knowledge. As a result, continuing education on nutrient roles is recommended. In a research by Denscombe *et al.* (2010),<sup>15</sup> athletes (36.0%) were still mostly uninformed about how to use sports supplements, although in a study by Slater (2003),<sup>18</sup> more than 60% had little to no expertise.

It is clear that for athletes who used supplements properly, their trainer and the Internet continued to be the main source of information. As the relationship between the trainer and the athlete has already been discussed, it is not surprising that young athletes use the Internet as well, because it has become the main source of information. It is important to note that trainer education on this subject is crucial, because many trainers lack the information necessary to teach proper supplement

references<sup>19,20</sup>. The limitation of the current study, that is, four sports gyms in Baghdad, makes it impossible to generalize the results to the entire group of athletes in Iraq. Sports success through the use of illicit drugs: There are numerous reasons for this thought, but one of the most significant ways to change that perception is to continue educating people about the benefits that supplements will likely have on their health and well-being, regardless of whether they are allowed or not.

## CONCLUSION

To summarize, young athletes have an acceptable level of knowledge about sport supplements and a positive attitude toward the use of prohibited supplements. There is a requirement for more health promotions aimed at young people, who use gyms in Baghdad. We must focus on young adult athletes, to teach them the proper time, amount, and usage of sport supplements, as well as how to avoid prohibited supplements. We have to provide them with accurate information.

## Conflicts of interest

The authors declare no conflicts of interest

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