

# Prevalence of Vitamin Supplements Usage Among Private University Students in Iraq

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## Abstract

Products that intended to supplement the diet and contain one or more of the following ingredients (mineral, vitamin, herb, or amino acid) is defined as dietary supplements. Most people all over the world have micronutrition deficiency. Vitamin supplements used not only by patients but also by healthy population in all ages and in different regions of the world. Aim of study: This study is conducted to explore the prevalence of vitamin supplements use among students in Al-Bayan university. Also, to identify the reasons to use the supplements, the specific type used, the source of participant's information about the supplements, and their beliefs. Method: Descriptive cross-sectional study was carried out on (353) medical students in Al-Bayan University during September 2021. Students were asked to participate in this study by using electrical questionnaire. Results: The prevalence of vitamin supplements use among students was (76.5%), multivitamins are the more frequently used (44.8%) followed by vitamin C (22.8%). The main reason for consuming supplements was to enhance their immunity (28.2%) and to maintain good health (23.1%) and majority of them (66.2%) used the supplements according to doctor's and pharmacist's advice. It is concluded that there is a high prevalence of vitamin supplement use among medical students, there was a relation between gender and vitamin consumption. The most frequent used vitamins were multivitamins. Vitamin supplements are consumed to boost immunity especially during COVID-19 pandemic and to maintain good health.

**Keywords:** Awareness, Vitamins, Students, Iraq

## 1. Introduction

Dietary supplements are defined that any product intended to supplement the diet that contains one or more of the following ingredients (mineral, vitamin, herb, or amino acid) [1]. A billion of people all over the world have micronutrition deficiency [2]. Vitamin supplements used not only by patients but also by healthy population in all ages and in different regions of the world [3]. Dietary supplements by increasing daily intake of vitamins may have health benefits such as chronic disease prevention and birth defects [4]. There is increasing interest in reducing chronic diseases by addition of vitamins and minerals to the food all over the world [5]. Specific vitamins and minerals reduce the risk of diseases according to previous studies [6]. Previous study revealed that multivitamin supplements intake has protective effect against death from acquired immune deficiency [7]. In addition, there is a link between the supplements of vitamin A, C, and E and the protection against cancers [6]. Regular intake of multivitamins and multi-minerals supplements may reduce infections among patients with diabetes [8]. Calcium supplements use may prevent osteoporosis disease and hip fractures [9].

On the other hand, overuse of vitamin supplements can lead to different side effects on liver and gastrointestinal tracts and may cause toxicity and drug interactions [10]. Several randomized clinical trials recorded that there is no significant beneficial effect of multivitamin supplements [11]. Previous studies revealed that there is a relationship between supplement use and the education level [12] and the income of the consumers [5, 6, 13] also there is a significant association between BMI of the users and the consumption of vitamin or minerals [5, 6, 14]. A study among college students found that the majority of vitamin users were younger female [6, 15]. Studies from different countries reported the dietary supplements use is higher among college students compared with other populations [16]. People have

many reasons for consuming vitamin supplements, but the main reason is to maintain good health and to decrease health problems in addition to increase energy as recorded by several studies [17].

In Iraq, vitamin-mineral supplements are available without prescription from pharmacies, selecting the type and the dose of these ingredients depend on the information of the consumers.

The prevalence of vitamins supplements among university students in Iraq remain undocumented and for our best knowledge there is no such study documented in Iraq.

**Aim of study:** This study is conducted to determine the prevalence of vitamin supplements use among students in Al-Bayan university. Also, to identify the reasons to use the supplements, the specific type, the source of participant's information, and their beliefs about the supplements.

## 2. Method

Descriptive cross-sectional study was carried out on (353) students of p in Al-Bayan University during September 2021. Students were asked to participate in this study by using electrical questionnaire (google forms) and they informed about the aim of the study. The questionnaire was prepared by the author based on published researches.

Questionnaire include demographic characteristics such as age and gender, in addition, questions about the frequency, type, purpose of taking the supplements, source of their information about the supplement used & reason for using it. Collected data were analyzed by using frequency and percentage.

## 3. Results

A total of 355 students in medical colleges of Al-Bayan  
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University responded the questionnaire in this study. More than half of the students were female (58.3%). Their age was 18-25 years old (Table 1). The prevalence of vitamin supplement use among students was 76.5%. 29.2% of them used the supplement daily, 28% weekly, and 19.3% monthly (Table 2).

Variable	Percentage
Age	18-25 year
Gender	Male (41.7%) Female (58.3%)
College	Pharmacy (68.2%) Nursing (31.6%)
<b>Total</b>	<b>353</b>

Question	Percentage
Daily	29.2%
weekly	28%
monthly	19.3%
Never used	23.5%

Table 3 and figure 1 summarize the type of vitamin supplement used by the participants, the majority of the participants took multivitamins (44.8%), (22.8%) of them consume vitamin C, (14.9%) vitamin D and (6%) only of them used omega 3.

Vitamin's type	Percentage
Vitamin C	22.8%
Vitamin D	14.9%
Omega 3	6%
Multivitamins	44.8%
Other	11%

Regarding the reason for taking supplements among the participants, the majority of them consumed the vitamin to boost their immunity (28.2%) followed by maintaining good health (23.1%), then according to doctor's direction (14.4%), about (11.5%) used vitamin to prevent COVID-19 infection, for body building also vitamins consumed in about (5.4%) and finally for weight gain (1.7%) and there were other reasons for vitamins consuming in 15% of the participants. (Table 4).

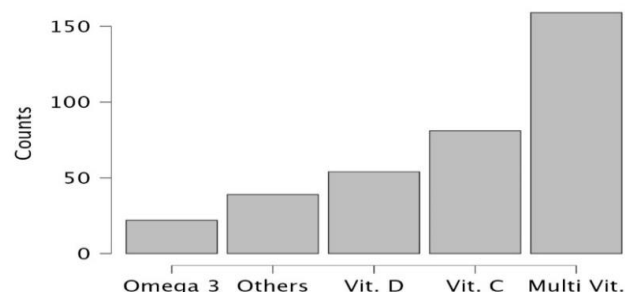


Figure 1: Types of vitamin supplements used among students

Reason	Percentage
Maintaining good health	23.1%
Enhance immunity	28.2%
Doctor's directions	14.4%
Weight gain	1.7%
Body building	5.4%
Prevent COVID-19	11.5%

Other	15.8%
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The results showed significant differences between male and female regarding vitamin supplements consumption with  $p < 0.05$ . (Table 5)

Vitamin supplements	Male		Female		X <sup>2</sup>	P value
	N	%	N	%		
Omega 3	11	50.0	11	50	17.989	0.001*
Vitamin D	13	24.1	41	75.9		
Vitamin C	39	48.1	42	51.9		
Multivitamins	60	37.7	99	62.3		
Others	25	64.1	14	35.9		

\* $p < 0.05$  significant difference

Table 6 summarized the source of information about vitamin supplements intake among the participants, 66. % of them get their information from doctor or pharmacist, and 23.6% from internet, 7.9% from friends and family members, and only 2% from the advertisement

Source of information	Percentage
Doctors and pharmacists	66.2%
Family members	7.9%
Internet	23.9%
Advertisements	2%

Regarding the participant's beliefs about vitamin supplement consuming, majority of them believed that they are necessary for all ages (42) and there are no harmful effects on the general health (28.5%). About 18.9% of them satisfied that the regular use of supplements may prevent the risk of chronic diseases. 9.9% of them also believed that the supplements used as prophylaxis from COVID-19 infection during the pandemic. (Table 6)

Beliefs	Percentage
Necessary for all ages	42.5%
No harmful effect on health	28.5%
Daily consumption of supplements prevents chronic diseases	18.9%
Prevent COVID-19 infection	9.9%

#### 4. Discussion

This study shows that the majority of participants using one of the supplements (76.5%). This finding is higher than results recorded among university students in Saudi Arabia (46.8%), Jordan (23%), Japan (22%), Korea (31.1%) and South Africa (42%) [3, 6, 16, 18, 19]. The high results may be account for the beliefs about the need for supplements especially during COVID-19 pandemic, in addition to widespread information about dietary supplements from sources such as TV and internet. Regarding the type of the vitamin used, the findings were consistent with previous studies conducted among pharmacy students in other countries in which the most

frequently used vitamin was multivitamins followed by vitamin C and D [16, 20, 21]. The study also revealed that there were significant differences between male and female regarding vitamin consumption. The common justification for consuming vitamin supplements among our participants was to enhance immunity followed by maintaining good health, these finding similar to previous studies in which the main reasons to use vitamin supplements is to maintain good health and to prevent disease [16]. Body building and weight gain were also reasons for adding vitamin supplements among our participants which was also recorded by previous studies in different countries [16, 21].

Majority of our participants believed that vitamin supplements recommended for all age groups and there are no harmful effects of using them, in addition every day consumption may prevents chronic disease, these results similar to that recorded among pharmacy students in Saudi Arabia [16]. In addition, about 10% of the participants believed that the supplements may prevent the COVID-19 infection, these results were first recorded by this study, and no previous study conducted during the COVID-19 pandemic.

Doctor's and pharmacist advice was the strongest influence in the student's decision to take supplements (66.2%), this is similar to study among Jordanian students [6]. The internet was the second source of information among participants this is disagree with findings recorded by nationwide survey in Japan which indicated that the internet was the strongest influencer in the participant's decision to take the dietary supplements (38.3%) while those that get their information from clinic was only 2.8% (3).

The positive aspect of this study was that the majority of the participants used the vitamins according to information from doctors and pharmacists. Finally, this study only examined medical students in one university, thus the results may not be generalized to all medical students across Iraq or general population.

## 5. Conclusion

It is concluded that there is a high prevalence of vitamin supplement use among medical students and the most frequent used vitamins were multivitamins. There was a relation between gender and vitamin use. Vitamin supplements are consumed to boost immunity and to maintain good health. The main source of participants information was doctors and pharmacists and majority of the students believed that vitamin supplements is necessary for all age and there are no harmful effects of supplements.

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