

Assessment of Knowledge About consumption of Dietary Supplements Among University Students

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Abstract

Background & Aims: The utilization of dietary supplements has witnessed a rising trend, particularly among individuals aiming to improve their overall health and well-being. University students, known for their dynamic and demanding lifestyles, constitute a substantial demographic showing interest in these supplements. Consequently, the principal objective of this study is to evaluate the extent of knowledge concerning dietary supplements among university students. Methodology: The study conducted was cross-sectional and convenient sampling method used to collect data from 85 university students attending Nur International University. A self-constructed questionnaire was formulated to assess various parameters, including participant's anthropometrics, knowledge about supplements, frequency of supplement consumption, reasons for taking supplements, and potential side-effects experienced. Results: According to the collected data more than half of the sample population (75%) were taking supplements to improve their overall health. 25 % participant consume multivitamins every day while 20% used it once or twice a week. From total participants (84.5%) noticed difference in their general health after using supplements while 15.5% do not noticed any difference. Most of respondent 48.2% were aware about safety considerations when choosing supplement while 30.1% were slightly aware and 21.7% were not aware about safety considerations. Conclusion: Most of the students know about the safety considerations about supplements their knowledge needs to be improved and some are completely unaware about safety considerations. According to the collected data 25 % people consume multivitamins every day while 20% used it once or twice a week. Very few percentages from sample population experience nausea, constipation and abdominal distension while other did not experience any of it. Discouraging the irrational consumption of dietary supplements is crucial. It is imperative to seek advice and consult with a healthcare professional before using any such supplements

Keywords: Dietary Supplements, Knowledge, Students, Prevalence, Attitude, Practice

Introduction

Optimal nourishment forms the foundation of good health, and in the realm of medicine, dietary supplements have emerged as potentially transformative agents. Notably, there has been a remarkable revelation indicating that specific medications can be significantly enhanced by incorporating dietary supplements. Dietary supplements encompass products containing concentrated nutrients designed to complement diet, providing essential elements that may otherwise be lacking. By bridging these nutritional gaps, supplements contribute to maintaining excellent physical and mental well-being, ensuring that the human body operates optimally^{1,2}.

This study aims to shed light on the level of knowledge students possess about these supplements, their usage patterns, and potential misconceptions, if any. Understanding this aspect is crucial as university students may be more susceptible to misinformation or improper usage, affecting their overall health and well-being^{3,4}. Conducting a comprehensive assessment of university students' knowledge about dietary supplements involves several research methodologies and data collection techniques. Researchers may

employ surveys, questionnaires, focus group discussions, or interviews to gather information from a diverse sample of students representing different disciplines and backgrounds⁵.

As dietary supplements are readily available over-the-counter and online, it is essential to evaluate the sources of information students rely upon. The assessment should investigate whether students seek advice from reliable sources such as healthcare providers, dietitians, or reputable research studies, or if they depend on hearsay, social media influencers, or marketing campaigns from supplement manufacturers. Understanding the sources of information can provide insights into potential biases and misconceptions among the student population^{6,7}.

Introducing micronutrient supplements into the diet has demonstrated significant benefits in addressing these deficiencies. Malnutrition stands as the primary cause of poor health in developing regions, with particular emphasis on micronutrient deficiencies. Research extensively explores the vital role of micronutrients in safeguarding cells, supporting antioxidant defense mechanisms, and warding off chronic illnesses. Growing awareness of their impact on health and disease has spurred the substantial growth of supplement development and usage⁸.

The European Food Safety Authority (EFSA) defines food supplements as "concentrated sources of nutrients or other substances with a nutritional or physiological effect, alone or in combination, marketed in dose form, namely forms such as capsules, pastilles, tablets, pills, and other similar forms, as well as sachets of powder, ampoules of liquids, drop dispensing bottles, and other similar forms of liquids and powders designed to be taken in measured small unit quantities." These products are intended to supplement a normal diet and may contain various substances, including vitamins, minerals, herbs, amino acids, or their constituents⁹.

Depending on how they are used, dietary supplements come in different forms, sizes, and packaging. Tablets, capsules, powders, oral ampoules, effervescent tablets. To improve their consumption and prevent the active ingredient's destruction, use sublingual drops or orally disintegrating tablets. To increase their absorption, use a nose spray or drops. Supplements in the form of sprays can result in serious localized inflammation or even lung aspiration. For rapid absorption and activity, injectable as intramuscular injections for sustained action and slow, steady absorption, the bone is anchored. Some dietary supplements are poorly absorbed¹⁰.

Nutritional supplements offer several key benefits, including concentrated nutrient content in a small volume and a specialized nutrient composition. These supplements can help individuals meet their Recommended Daily Allowance (RDA). However, when it comes to calcium supplement users, some age and sex groups have been found to have lower calcium and vitamin D intakes solely from their diet compared to nonusers. Nonetheless, the use of calcium tablets effectively elevates the average calcium intake to meet the AI levels across all age and sex groups¹¹.

Nearly 62% of U.S. adults say they occasionally or regularly consume supplements, and 46% say they do

so on a regular basis. However, they are worried that individuals would mistakenly see supplements as a replacement for better diets and that they could cause micronutrient overconsumption¹². In previous studies importance of dietary supplements was the focus of research. However, the principal objective of this study is to evaluate the extent of knowledge concerning dietary supplements among university students who were trying to improve their overall health and well-being

(H1): University students have knowledge of supplements

Assessment of knowledge of supplements in university students to improve their overall health and well-being.

Literature Review

The research aimed to investigate the utilization pattern, knowledge, and attitudes regarding the consumption of multivitamin supplements among the general public. A descriptive cross-sectional study involving 120 adult participants from various segments of the general public was carried out. The study comprised 66 male and 54 female participants. The outcomes disclosed that a significant portion (82 individuals), were regular consumers of multivitamin supplements. Additionally, (10 participants) sought guidance from family or friends before using the supplements. Among the users, an overwhelming majority, 70.96%, acknowledged the beneficial effects of such supplements¹³.

A research investigation was carried out to explore the association between nutritional supplements and their impact on human health, with a focus on promotion of overall well-being. The study utilized a methodology involving the examination of review studies and research across reputable databases. Moreover, they are beneficial in addressing increased nutritional requirements or deficiencies that cannot be adequately fulfilled by a regular diet. Nevertheless, it is essential to exercise moderation when consuming food supplements, as excessive intake may lead to various adverse effects on an individual's health¹⁴.

A study was carried out to show how nutritional supplements affect the human body when consumed through food, hence preserving and enhancing health. This study's methodology involved searching review articles and conducting research in renowned databases. The findings made it clear that nutritional supplements aid in enhancing performance, physical appearance, preventing the creation of dangerous drugs, and meeting increased organizational needs or nutrient deficiencies that cannot be satisfied by a normal diet. However, consumption of food supplements should be done in moderation¹³.

The findings revealed widespread multivitamin usage among the participants, with a significant portion being unaware of potential risks and drug interactions. Consequently, targeted educational initiatives are essential to mitigate self-directed supplement use and promote a better understanding of appropriate usage¹⁵. In a recent study assessing the effects of consuming extra fish oil, healthy college students demonstrated a notable decline in inflammation and, surprisingly, anxiety. The results show that the elderly and those at high risk for certain diseases may benefit even more if specialized dietary supplements can provide such changes in young participants. A study demonstrated the beneficial effects omega-3 supplements might have in lowering inflammation and anxiety. These students weren't worried at all. They weren't overly anxious. They were actually getting good sleep throughout this time¹⁶.

Methodology

The study design was cross-sectional. The study was conducted among the students at Nur International University. The study targeted university going students aged 18-25years old. The sampling technique was

a conventional sampling. The sample size would be about 85 people. As per previous study according to dietary supplements knowledge prevalence survey varies from 25-28% therefore for this current study a prevalence of the dietary supplement knowledge is 32%.

The sample size for assessing dietary supplement knowledge among students was determined using the formula

$$n = Z^2 P(1-P)/d^2$$

The symbol (n) is the sample size (P) is the prevalence Z denotes the confidence level and d is the precision

$$n = Z^2 P(1-P)/d^2$$

$$n = 0.952^2 0.3(1-0.3) / 0.05^2$$

$$n = 0.9025 0.3 (0.7) / 0.0025$$

$$n=85$$

- Students within 18-25yr. of age
- Not fulfilling IDA diagnostic criteria based on sign and symptoms
- Students who were taking drugs for any condition
- Students who were suffering from any medical condition

A self-constructed questionnaire was formulated to assess various parameters among university student including participant's anthropometrics, knowledge about supplements, frequency of supplement consumption, reasons for taking supplements, and potential side-effects experienced.

Data was entered by using IBM-SPSS V-23 software. The continuous variable (Age) was expressed as Mean \pm SD and categorical data was expressed as frequency and percentage. P value less than 0.05 was taken as statistical significance. Various graphs were used to display the data. Outcome measure was to detect the osteosarcoma. This study is approved by our Institutional Review Board. Statistical analysis was performed by using IBM-spss v-23 Software. The continuous variable (Age) was expressed as Mean \pm SD and categorical data as frequency and percentage. P value less than 0.05 (P < 0.05) was taken as statistical significance. Various graphs was used to display the data. Outcome measure was to detect the osteosarcoma.

This study was approved by our Institutional Review Board.

Results and Discussion

This study aimed to assess knowledge about the consumption of dietary supplements among university students. Self-constructed questionnaire was formulated to assess the mentioned parameter. It has questions about the participant's anthropometrics as well as knowledge, frequency, reasons and side-effects for supplements they are consuming.

Demographic Characteristics of Participants

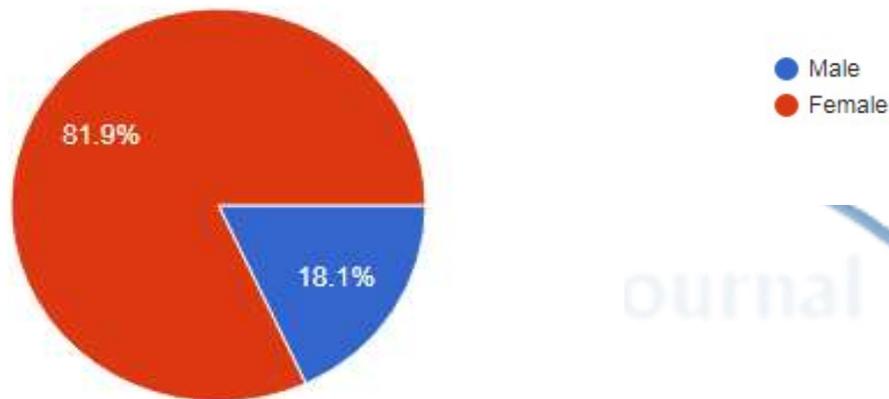


Figure 1 Gender of Participants

Figure 1 shows that the study include representation from both genders. However, study had slightly more representation from females 81.9% than males 18.1%. In similar study of the 120 study participants there were 65.3% of females and 35.7% were male from total study population¹⁴.

Age group of Participant

Figure 2 shows that most of participants (46.4%) were using supplements from age of 18-20 years. However, 28.6% participants start taking supplements from the age of 21-25 years old and only while 16.7% are younger than 18 and only 8.3% are 25 or older¹⁶.

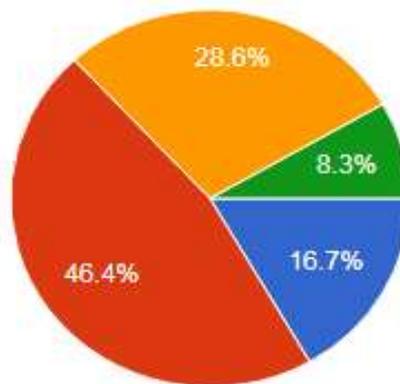


Figure 2 Age group of Participants

Supplement Intake History:

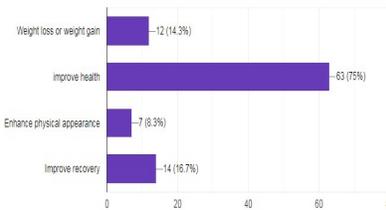


Figure 3 Reason to consume supplement

As figure 3 depicts that more than half of the sample population (75%) were taking supplements to improve their overall health, 16.7% for improve recovery and 14.3% were intake supplements for weight loss or weight gain weight management, a smaller percentage (8.3%) utilized supplements to enhance their physical appearance. Interestingly, findings from a similar study indicated that the prevalent reasons for supplement adoption were attributed to the desire for overall improvement (45%), followed by weight management objectives (33%), and maintaining general well-being (36%).

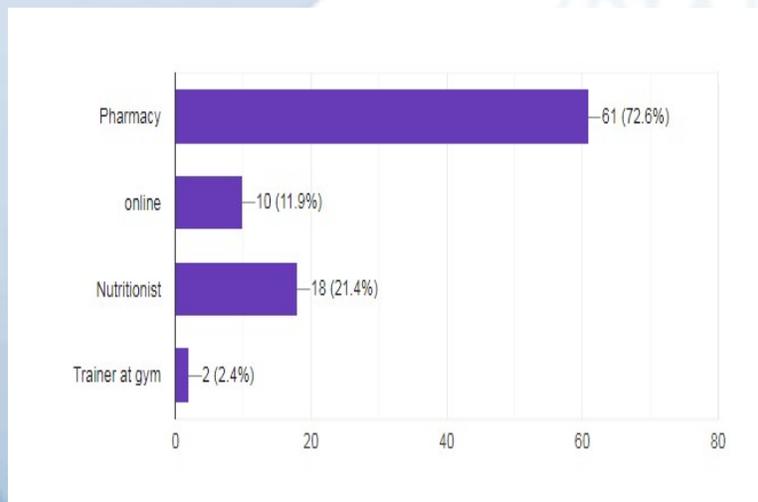


Figure 4 source of supplement

As figure 4 shows that (72.6%) majority of the respondents sourced supplements from pharmacy and 11.9% got it online while 21.4% respondent consult nutritionist and only 2.4% from trainer at gym

Frequency of supplement consumption

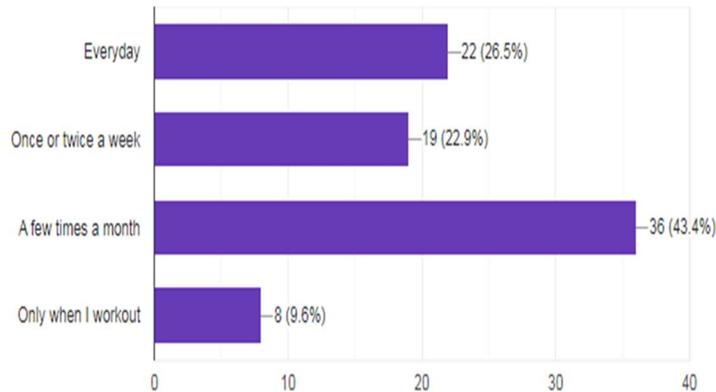


Figure 5 supplement intake Frequency

Figure 5 show that most of participants (43.4%) consume supplements few times a month only 26.5% were consuming it daily. participants used every day while 22.9% were using once or twice a week only 9.6% participant use supplements during their workout. Similar studies reported that only 60% of supplement users consume them every day.



Figure 6 Frequency of supplement consumption

Figure 6 depicts only 25% consume multivitamins every day while 20% used calcium once or twice in a week. From sample population 25% took once in a month and 18% participants never used supplements. Similar studies showed that most commonly used supplements include protein powder (54.3%), BCAA (44.8%), multivitamins (35.2%), fish oil (31.4%), protein bar (21.9%) and energy drinks (21.0%)

Supplement-Related Effects

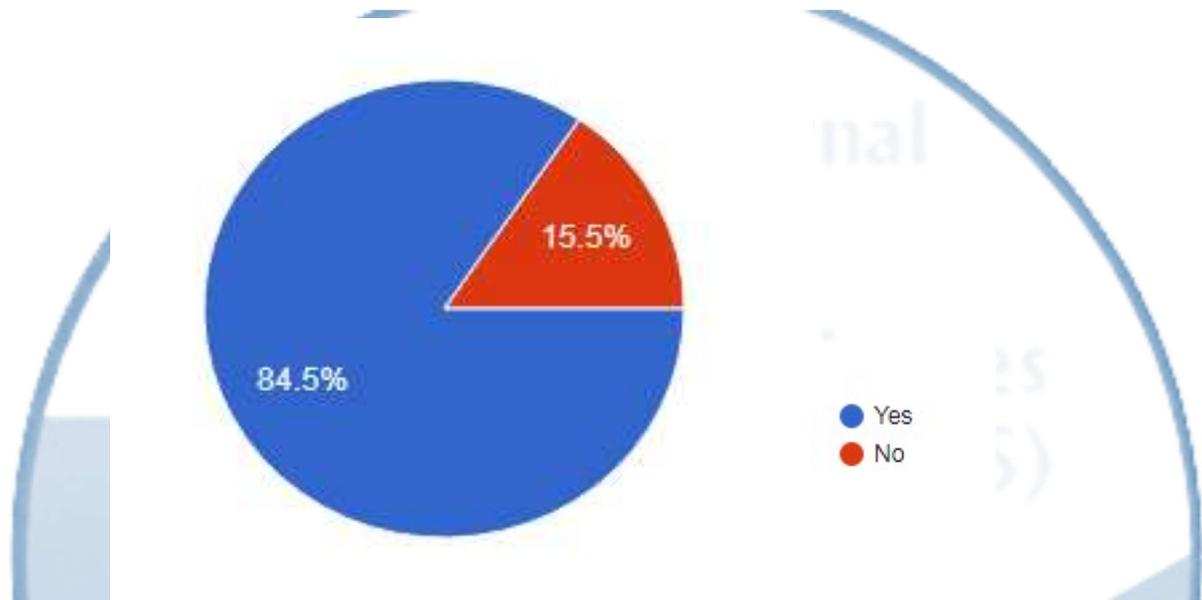


Figure 7 Improvement in health of participant

As figure 7 depicts that from total participants (84.5%) noticed improvement in overall health after using supplements while 15.5% do not noticed any difference

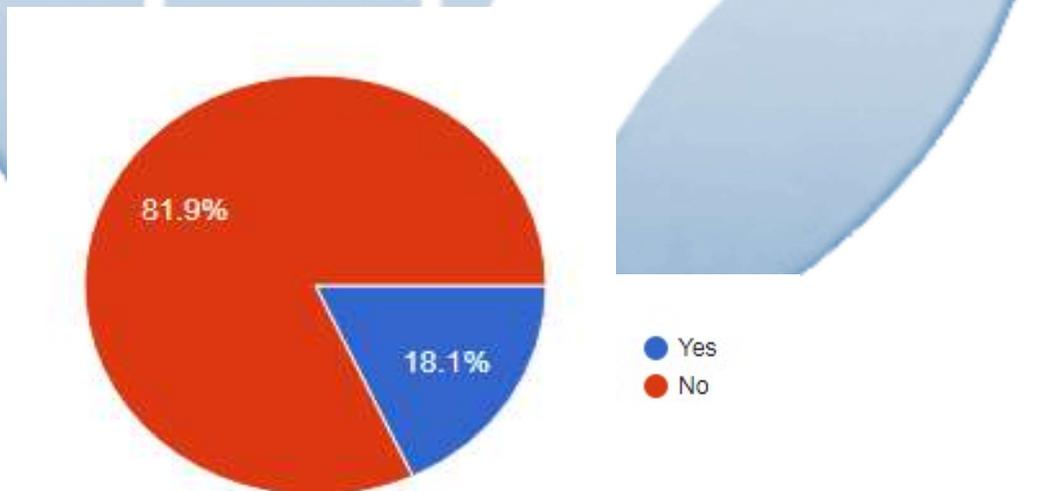


Figure 8 supplement-related negative effects

As figure 8 depicts that from total participants 81.9% did not noticed any negative side effect after using supplements while 18.1% were experienced some side effects.

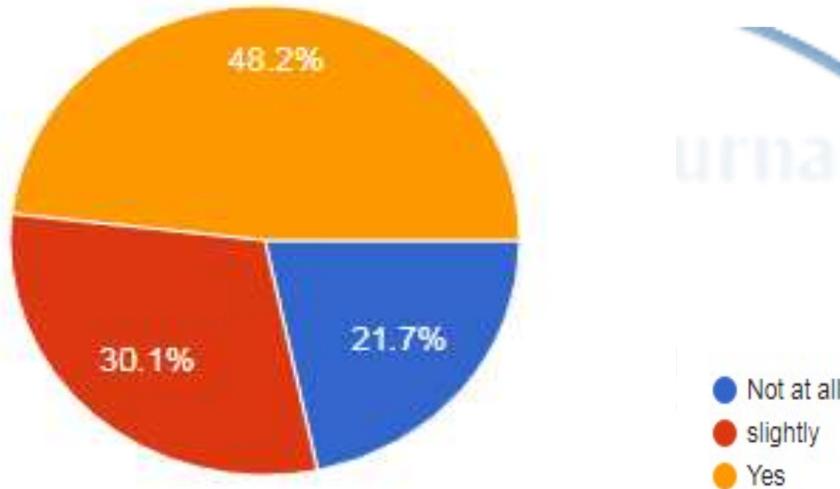


Figure 9 Safety considerations about choosing supplement

Figure 9 show that most of respondent 48.2% were aware about safety considerations when choosing supplement while 30.1% were slightly aware and 21.7% were not aware about safety considerations

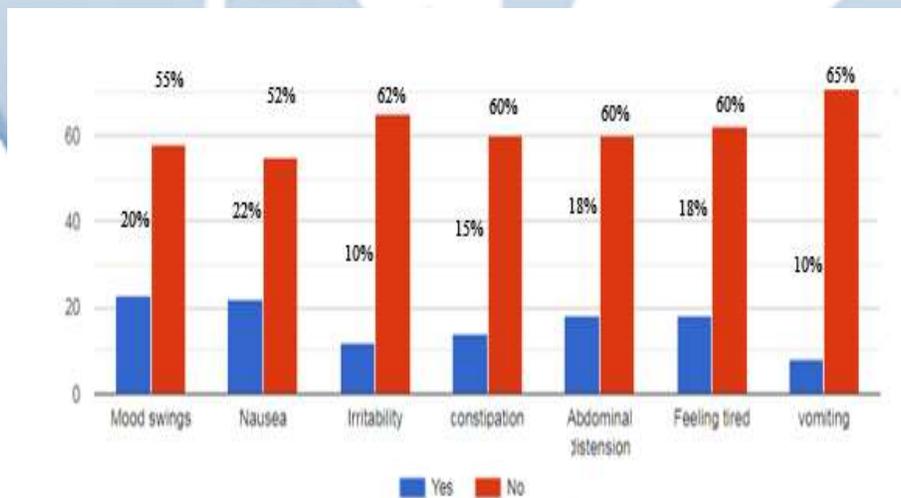


Figure 10 commonly observe effects of supplements

Above Figure 10 shows that only 5% to 20% from sample population experience nausea, constipation and abdominal distension while other did not experience any of it. Similar studies showed that most commonly experienced negative effects are nausea and constipation.

Conclusion

Dietary supplements are commonly ingested to promote and sustain general health and well-being, prevent or address various ailments, and enhance performance levels. During the course of this study, a higher number of female participants were represented compared to males. Among the total sample population, over half of the individuals were found to be consuming supplements with the aim of bolstering their overall health and facilitating their recovery process. Additionally, some participants reported using supplements for weight management purposes, whereas only a minority sought them out to improve their physical appearance. Majority (84.5%) participants noticed improvement in overall health after consuming supplements. Most of the students know about the safety considerations about supplements their knowledge needs to be improved and some are completely unaware about safety considerations. According to the collected data 25 % people consume multivitamins every day while 20% used it once or twice a week. Discouraging the irrational consumption of dietary supplements is crucial. It is imperative to seek advice and consult with a healthcare professional before using any such supplements.

Recommendation & Limitation

In future studies, larger sample size should be selected for more generalized results. Equal numbers of male and female participants could not be selected by the reason of shorter time duration. All data was collected from students at Nur International University; however, data collection from several universities would be more reliable.

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