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Information, perception, and utilization of vitamin supplementation among patients in private hospital in Bangladesh

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Abstract

Despite the fact that nutritional supplements are very beneficial to the human body and can help restore equilibrium when there is an imbalance, they can also have detrimental effects on the body if taken excessively, particularly if high dosages of these vitamins are taken, which can lead to a variety of health issues. The purpose of our study is to evaluate patients' knowledge, attitudes, and habits about the usage of nutritional supplements and how they affect overall health. To evaluate patient knowledge, attitudes, and practices regarding the use of nutritional supplements, an outpatient descriptive cross-sectional study was carried out in (Citylab Health Care Hospital) Kishoreganj, Bangladesh. Answers to a questionnaire created specifically for this purpose were used to gather data. Following oral consent from patients attending outpatient clinics, patients were interviewed. Data was collected for two months, starting in June 2023 and ending in July 2023. The findings of the study indicate that a majority of participants, specifically 72.5%, reported the consumption of vitamins. Furthermore, it was observed that a significant proportion of individuals, specifically 39%, were taking these vitamins under the guidance of a prescription. The results of the study indicate that vitamin C was the most widely recognized nutrient among the participants, with a prevalence rate of 62.5%. Conversely, vitamin D was found to have the lowest level of familiarity, with only 28% of respondents demonstrating awareness of this particular vitamin. The individuals obtained their knowledge regarding nutritional supplements from various sources, including internet sites, medical professionals, and books. The primary motivation for the consumption of nutritional supplements was to enhance overall health, as indicated by a majority of respondents (78%). In order to recover from the illness, they achieved a healing rate of 76%.

Keywords: Practice; Vitamins; Information; Bangladesh

1. Introduction

The need for micronutrients depends on the metabolic activities as well as on the life cycle of an individual. Even in intrauterine life, the need for micronutrients is essential for the normal development of the fetus. In particular, vitamin D, iodine, iron, and folic acid deficiencies could lead to congenital disorders or even death. The daily requirements of these micronutrients are not fixed, although many scientific papers have mentioned the daily-required allowance of various vitamins and minerals. Factors such as physical exercise, pregnancy, childhood, adolescence, old age or specific diets (e.g. Vegan) influence the need for micronutrients. Therefore, the evaluation of the micronutrients' requirements and the consequences of micronutrients' deficiencies are critical to explain their role in health and disease[1]. There is a health advantage to dietary supplements that the body cannot produce on its own. Supplemental nutrition is viewed as greed in certain parts of the world [2,3]. A requirement for the body, nutritional supplements are regarded as health items in some nations and as medications in others. Furthermore, dietary supplements including vitamins and minerals have been categorized as foods by the Agriculture and dietary Organization-sponsored Codex Alimentarius Organization [4,5]. However, it needs to be taken under medical supervision and in a healthy way [6,7]. Because abusing it will have an impact on one's physical well-being. Furthermore, vitamins B1, B2, B3, pantothenic acid, folic acid, and

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vitamin B12 are some of the most crucial vitamins that the human body need [8,9]. Vitamin deficiency can cause a person to experience certain symptoms and indicators. Among the most significant symptoms include chronic fatigue and exhaustion, back and bone pain [10,11], recurrent fractures, hair loss, depression, and a high rate of infection and disease [12,13].

Vitamin and mineral requirements can be met through a varied and balanced diet full of nutrient-dense foods such fruits, vegetables, and dairy products. Still, there's no shortage of evidence that availability or choice of food frequently makes such a diet impractical. This can cause a sizable fraction of people in both established and emerging nations to fall short of their ideal dietary requirements. For instance, the estimated average requirement (EAR) for thiamine (vitamin B1) is not met by 55% of Turkish adults of both genders[15], while the EAR for folate (vitamin B9) is not met by 68% of Mexican women[14]. Even though most Americans eat enough of the majority of nutrients to alleviate clinical symptoms, intake often falls short of the Adequate Intake Rate, or EAR, in many people [16]. Supplementing with vitamins and minerals may become necessary in these situations to ensure optimal intake. This is, in fact, one of the most common justifications offered by supplement users for their use. Taking supplements has also been linked to benefits in psychological and cognitive processes, a decrease in physical and mental exhaustion, and an increased sense of well-being [17, 18].

Anemia may result from dietary factors other than iron deficiency; research suggests that anemia may be caused by insufficient intake of specific B vitamins, mainly B6, B9, and B12. It is true that there are close relationships between the metabolic and functional pathways of vitamins B9, B12, and, to a lesser extent, B6. Vitamin B12 is necessary for the folate cycle, which is essential for producing the active forms of vitamin B9. B12 in the form of methyl-cobalamin is required for the functioning of the enzyme methionine synthase, which facilitates the transfer of a methyl group to facilitate the demethylation of tetrahydrofolate and the synthesis of methionine from homocysteine[19].

2. Material and methods

This study was carried out in a private hospital (Citylab Health Care Hospital) in the city of Kishoreganj, where 200 clinic ambulatory patients were questioned to gather information regarding their knowledge of nutritional supplements. There were multiple axes in the questions. After obtaining the patients' verbal agreement, the interview lasted for ten minutes.

2.1. Statistical analysis

Both descriptive statistics and the SPSS statistical tool and Microsoft excel were used to analyze the data.

2.2. Ethical consideration

This study was carried out in accordance with the required research ethics. Prior to the start of the participants' involvement in the study, the participants' agreement for participation was also sought. All information was gathered and examined anonymously. (Helsinki declaration).

3. Results

Table (1) presents the demographic features of the sample under study as well as the percentages related to gender. The majority of study participants were male, accounting for 54% of the sample. Illiteracy made up the majority of the participants' educational attainment (28%), followed by married individuals (56%), and employee/worker (51%), who made up the majority of their profession.

Table 1 Socio-demographic characteristics of study population

Variables	Response	Number	Percentage (%)
Gender	Male	108	54
	Female	92	46
Marital status	Single	68	34
	Married	112	56
	Widow	8	4

	Divorced	12	6
Education level	Illiterate	56	28
	Primary level	22	11
	Secondary level	48	24
	Collage graduate	35	17.5
	Graduate	39	19.5
Occupation	Employee/worker	102	51
	Unemployed	18	9
	Students	50	25
	Housewife	30	15

Table (2): This second table provides general vitamin information. It was discovered that 72.5% of the sample under study reported taking vitamins. Additionally, they made up (39%) and were taking it with a prescription from a doctor. And (67.5%) had information about vitamins. The majority of them were aware of vitamin A consisting 58 % and vitamin E, of which 44% of them were made of.

Table 2 Information about vitamins and studied sample

Variables	Response	Number	Percentage (%)
Do you take vitamins?	Yes	145	72.5
	No	55	27.5
Do you take a prescription?	Yes	78	39
	No	122	61
Do you know about vitamin supplements?	Yes	135	67.5
	No	65	32.5
Vitamin A	Yes	116	58
	No	84	42
Vitamin B	Yes	98	49
	No	102	51
Vitamin C	Yes	125	62.5
	No	75	37.5
Vitamin D	Yes	56	28
	No	144	72
Vitamin E	Yes	88	44
	No	112	56
Vitamin K	Yes	99	49.5
	No	101	50.5

Table (3): shows the sources of information about nutritional supplements, where most of the participants had information about vitamins from the Internet and they constituted (32.5%) and doctors and books, respectively, were accounted for (24%) and (20.5%).

Table 3 Sources of information about vitamins

Variables	Number	Percent (%)
Doctor	48	24
Television	24	12
Internet	65	32.5
Books	41	20.5
Friends	22	11

Table (4): lists the justifications for the patients' use of dietary supplements. The condition improving health accounted for 78 percent of the explanations, and the recovery from diseases accounted for 76 percent, to remove weakness accounted for 48 percent, to stop hair loss represents 27.5 percent and (20%) of the improvement in skin condition.

Table 4 The rationale behind using dietary supplements

Variables	Response	Number	Percent (%)
To improve health	Yes	156	78
	No	44	22
To heal from disease	Yes	152	76
	No	48	24
To improve skin condition	Yes	40	20
	No	160	80
Pregnancy & lactation	Yes	42	21
	No	158	79
Kidney disease	Yes	88	44
	No	112	56
Vitamin D deficiency	Yes	75	37.5
	No	125	62.5
Hair loss	Yes	55	27.5
	No	145	72.5
To remove weakness	Yes	96	48
	No	104	52

Table (5): displays the information provided by patients on the potential negative consequences of nutritional supplements. Of those surveyed, the majority (56.5%) stated that these supplements make it harder for them to fall asleep. They also result in headaches, and 53% of them were identified. 40% reported unusual feeling and 31% reported nausea.

Table 5 Details regarding the side effects of vitamin supplements

Variables	Response	Number	Percent (%)
Nausea & vomiting	Yes	62	31
	No	138	69
Difficulty sleeping	Yes	113	56.5
	No	87	43.5
Headache	Yes	106	53
	No	94	47
Unusual feeling	Yes	80	40
	No	120	60
Bad health on impact	Yes	51	25.5
	No	149	74.5

4. Discussion

The demographic features of the sample under study as well as the percentages related to gender. The majority of study participants were male, accounting for 54% of the sample. Illiteracy made up the majority of the participants' educational attainment (28%), followed by married individuals (56%), and employee/worker (51%), who made up the majority of their profession. Regarding their occupation, the majority of them were employees, and 51 percent of them were counted. This investigation does not align with the research carried out by (Emanua AS, 2018) [20]. Also the information regarding vitamins with their side effects are different from previous literature. As the study conducted in Bangladesh and the literature we utilized were from different countries, so it is normal that the data given represents dissimilar. According to another study, vitamin D deficiency and arthritis account for the majority of the reasons people use nutritional supplements[21].

The majority of people can obtain all the vitamins and minerals they require by eating a healthy, balanced diet and do not require vitamin supplements. Our body requires certain vitamins and minerals, such iron, calcium, and vitamin C, in little amounts in order to function correctly. Although many people decide to take supplements, doing so in excess or for an extended period of time may be hazardous. Specific groups of persons who are at risk of deficiency are advised to take specific supplements by the Department of Health and Social Care[22]. There are two types of vitamins: fat-soluble and water-soluble. There are thirteen vitamins in humans: nine water-soluble (vitamin C and eight B vitamins) and four fat-soluble (A, D, E, and K). In general, water-soluble vitamins are quickly dissolved in water and eliminated from the body, to the point that urine production serves as a reliable indicator of vitamin intake[23] It is crucial to consume them more consistently because they are not as easily stored[24] Lipids (fats) aid in the absorption of fat-soluble vitamins via the gastrointestinal tract. The body may get overloaded with vitamins A and D, which could lead to hazardous hypervitaminosis. In patients with cystic fibrosis, fat-soluble vitamin insufficiency caused by malabsorption is especially important [25].

Certain vitamins have been found to exhibit acute or chronic toxicity when consumed in excessive amounts, a condition known as hypertoxicity. The Tolerable Upper Intake Levels (ULs) for vitamins with known toxicity have been determined by the European Union and several national governments[26-28]. The user has provided a range of numbers. The probability of excessive consumption of any vitamin through food is minimal, but, the occurrence of excessive intake, also known as vitamin poisoning, can happen as a result of dietary supplement usage. The American Association of Poison Control Centers received reports in 2016 of overdose exposure to various types of vitamins and multi-vitamin/mineral formulations. A total of 63,931 persons reported such exposures, with the majority (72%) of these cases being children under the age of five. The user has provided a numerical reference[29].

Understanding and familiarizing oneself with this subject matter is crucial for its effective utilization in every aspect of healthcare. The maintenance of optimal health has become more important in contemporary times. Numerous studies have been conducted to examine the impact of dietary patterns on nutritional status, and the consensus among researchers is that bad eating habits are associated with an elevated risk of malnutrition. The incidence of malnutrition is more pronounced in low- and middle-income nations in contrast to high-income nations. The primary objective of

this study was to provide a comprehensive understanding of the subject matter pertaining to Multivitamins & Vitamins, thereby contributing to the existing body of knowledge in this area

5. Conclusion

This study illuminates a significant societal issue, particularly within the context of Bangladesh, given the recent growth and advancement of internet platforms such as Facebook and Instagram. The promotion of the utilization of nutritional supplements without medical prescriptions is prevalent, leading individuals to eagerly adopt their usage without enough awareness of their potential adverse effects and physiological consequences. Hence, it is essential for the media to disseminate accurate information regarding the appropriate utilization of nutritional supplements. In this regard, healthcare professionals and physicians play a crucial role in providing comprehensive knowledge about these supplements through educational courses, lectures, seminars, and online publications. This ensures that individuals are well-informed about the subject matter. These nutritional supplements are commonly utilized in a manner that promotes good health

Compliance with ethical standards

Disclosure of conflict of interest

There is no conflict of interest regarding this paper.

Statement of ethical approval

Prior to the start of the participants' involvement in the study, the participants' agreement for participation was also sought. The study was approved by ethics management committee of Jahangirnagar University.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

Author contribution

All author contributed significantly to design and development of this work.

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