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ANALYSIS OF FACTORS INFLUENCING THE USE OF SUPPLEMENTS OR VITAMINS IN STUDENTS OF ISLAMIC STATE UNIVERSITY OF NORTH SUMATERA

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Abstract

The use of supplements and vitamins has become part of the modern lifestyle, including among university students, as an effort to maintain health, increase endurance, and complement daily nutritional needs. This study aims to investigate the various internal and external factors that influence the use of supplements and vitamins by students at the State Islamic University of North Sumatra (UINSU). The method used in this study is a quantitative approach with a cross-sectional research design. Samples were taken by simple random sampling method from active students, taking into account predetermined inclusion and exclusion criteria, and the sample size was determined based on the Slovin formula. Data were collected using a questionnaire covering aspects of knowledge about nutrition, eating habits, physical activity, health conditions, peer influence, and exposure to the media. Data were analyzed descriptively and analytically using the chi-square (χ^2) test with a significance level of $p < 0.05$. The results of this study indicate that the most influential factor in the use of supplements and vitamins is the appearance factor, in the statistical test results obtained P Value 0.012 or (<0.05) which means that the appearance factor shows a significant relationship to the use of supplements and vitamins. Conclusion: the most influential factor in the use of supplements and vitamins is the appearance factor, while the other two factors, namely the knowledge factor, there is no relationship between knowledge and the frequency of taking vitamins, and the exposure factor is also not related to the frequency of taking vitamins.

Keywords: Supplement and Vitamins, Knowledge, Exposure, Appearance

Introduction

Health supplements are products that are believed to strengthen the body's defense system because they function to meet nutritional needs, maintain, improve, or restore health, because they contain one or more components such as vitamins, minerals, and amino acids (Ningsih et al., 2021). According to the definition given by BPOM (2019), health supplements are products designed to complement nutritional needs from food and can contain one or more components consisting of vitamins, minerals, amino acids, or other ingredients of both plant and non-plant origin, and have nutritional content and physiological effects in certain concentrations (Widyaningrum et al., 2021). Vitamins and dietary supplements are micronutrients that are essential for proper body function. They play a role in overcoming nutritional deficiencies and come in various forms such as tablets, capsules, and powders (Pralhad Jadhav et al., 2024).

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Taking supplements aims to fulfill additional nutritional needs from food, not as a substitute. However, in recent times, there have been changes in people's lifestyles and diets that may be due to increased levels of wealth, technological developments and western influences. These changes are mostly experienced by teenagers who are more familiar with fast foods that are low in nutritional value but high in calories. This is the reason many people take supplements, because they assume that minerals and vitamins obtained from food are not enough to maintain a healthy body (B. S. et al., 2020). The essence of using supplements is to fulfill nutritional deficiencies that cannot be met by daily food. Their use is not to replace food, but rather as an addition when the body requires more nutritional intake (Muhammad Kautsar, 2024).

There are several elements that influence students' choices in using supplements, including cultural, social, personal and psychological. Culture is a characteristic shared by a group of people and passed down from generation to generation to guide them in their daily lives. Social factors include an individual's social status or economic circumstances, which consist of disposable income, savings, and employment. Personal factors are also influenced by pocket money, economic conditions, and lifestyle, while psychological factors are influenced by motivation, perception, and knowledge (Estyqomah, 2023). It is known that 77.63% of university students in Indonesia reported having taken dietary supplements in the past three months, while only 59.52% consumed them regularly. This suggests an increase in supplement use during the post-delta phase (d'Arqom et al., 2023). A total of 91% of college students reported having taken at least one type of dietary supplement, indicating a general view that supplements can help support a healthier lifestyle, although no significant differences in biomarkers were observed based on the level of supplement consumption (Arikawa et al., 2023).

Some types of supplements contain active substances that can affect the body, making them potentially harmful if not used properly. Therefore, the selection and use of supplements must be done carefully and cautiously so as not to pose a risk to health. Students are one of the target markets for supplement sales, because they need to maintain their health conditions in order to study, do activities, and complete college assignments well (Ningsih et al., 2021). Supplement use among college students is not new; many students have integrated supplements into their daily routine. Students who take health supplements have various goals. Among them are to support sports activities, improve appearance, fulfill nutritional needs, strengthen endurance, improve memory, improve the learning process, and various other reasons (Muhammad Kautsar, 2024).

Research conducted previously concluded that studies that have been conducted in various regions in Indonesia show that there are still students who do not understand the use of supplements. Students have a very important role in educating the next generation to provide education to the community. Research by Ningsih et al. (2021) revealed that there was an increase in the use of supplements by 7.8% and the use of traditional medicines by 13.8% among students during the pandemic (Aryan et al., 2023).

This study was conducted on students of the State Islamic University of North Sumatra, which is one of the leading public higher education institutions in Medan City. The purpose of this study is to identify various factors that influence the consumption of supplements or vitamins among UINSU students.

Method

This study used a quantitative approach with a cross-sectional design to analyze the relationship between internal and external factors on the use of supplements and vitamins among UINSU students. Samples were taken by simple random sampling from active students who met the inclusion (active students, willing to become respondents by signing an informed consent form, and not currently involved in other studies related to supplement and vitamin consumption) and exclusion (students who are not active, have special conditions that require regular consumption of supplements, or cannot be contacted for data verification purposes) criteria. Data were collected through questionnaires covering respondent characteristics, knowledge, peer influence, media, health, consumption, and body image perception. Analysis was performed descriptively and analytically using SPSS, with a chi-square test to test the relationship between categorical variables at a significance level of 0.05. The results are expected to identify factors that are significantly associated with the use of supplements and vitamins.

Results

1. Gender Characteristics of Respondents

Table 1. Frequency distribution by gender

Gender	Frequency	Percentage
Male	40	26,5 %
Female	111	73,5 %
Total	151	100 %

Table 1 shows that the frequency of using supplements or vitamins is dominated by women with a proportion of 111 people with a percentage of around 73.5% and men with a proportion of 40 people with a percentage of around 26.5%. From the frequency data table 1 shows that in this research the respondents are dominated by women. This proves that the use of supplements and vitamins is more dominated by women with various factors causing their use.

2. Age Characteristics of Respondents

Tabel 2. Frequency distribution by age

Age	Frequency	Percentage
16	1	7 %
17	2	1,3 %
18	1	7 %
19	30	19,9 %
20	71	47,0 %
21	39	25,8 %
22	5	3,3 %
23	1	7 %
24	1	7 %
Total	151	100,0 %

Table 2 shows that the frequency of respondent characteristics in terms of age is dominated by the age of 20 years with a total proportion of 71 people, with a percentage of around 47.0%. From the results of the table above, all respondents who filled out the questionnaire were in the age range of 16-24 years. With the largest proportion of 71 people at the age of 20 years. Then the second largest

proportion was at the age of 21 years with a proportion of 39 people and a percentage of 25.8%. And the third largest proportion is at the age of 19 years with a proportion of 30 people with a percentage of around 19.9%.

3. Appearance Characteristics of Respondents

Table 3. Frequency table of appearance categories

Appearance Category	Frequency	Percentage
Bad	76	50.3
Good	75	49.7
Total	151	100.0

Table 3 shows that the frequency of appearance categories of the respondents studied found that the frequency of respondents with poor appearance obtained a proportion of 76 people, with a percentage of 50.3%. And the frequency of respondents who had a good appearance was 75 people with a percentage of 49.7%. This proves that respondents have a good appearance of the total research respondents.

4. Knowledge Characteristics of Respondents

Table 4. Frequency table of knowledge categories

Knowledge Category	Frequency	Percentage
Low	19	12.6
High	132	87.4
Total	151	100.0

Table 4 shows that the proportion of knowledge is mostly in the good knowledge of respondents with a total proportion of 132 people with a percentage of 87.4% of the total population of 151 people. This proves that research respondents have good knowledge about the use of supplements and vitamins. And the proportion of low respondent knowledge was 19 people with a percentage of 12.6% of the total population of 151 people. From table 4, it proves that the respondents in this study are very good so that the use of supplements and vitamins is based on their knowledge of the impacts caused.

5. Respondents' Exposure Characteristics

Table 5. Frequency table of exposure categories

Exposure Category	Frequency	Percentage
Low	15	9.9
High	136	90.1
Total	151	100.0

Table 5 above shows that the high exposure category of respondents has a proportion of 136 people with a percentage of 90.1%, this proves that media exposure has a significant effect on the use of supplements and vitamins. And from the table above shows that the media is very influential on the use of supplements and vitamins. And has a fairly far comparison with the number of respondents who have low exposure categories as many as 15 people with a percentage of 9.9% of the total population of 151 people.

6. The results of bivariate analysis of factors that influence the use of supplements or vitamins.

Table 6. Results of bivariate analysis of factors influencing the use of supplements and vitamins

Independent Variable	Consumption Category		P value	Cl 95%
	New	Lama		
Appearance Factors				
Good	32 (42,7 %)	43 (57,3 %)	0.012	2.439
Bad	49 (64,5 %)	27 (35,5 %)		1.266-4.698
Knowledge Factor				
Low	11 (57,9%)	8 (42.1%)	0.807	1.218
High	70 (53.0%)	62 (47.0%)		0.460-3.221
Exposure Factors				
Low	11 (73.3%)	4 (26.7%)	0.171	2.593
High	70 (51.5%)	66 (48.5%)		0.787-8.546

Table 6 shows that the results of bivariate analysis indicate that the most influential factor on the use of supplements and vitamins is the appearance factor, the statistical test results obtained a P Value of 0.012 or (<0.05) which means that the appearance factor shows a significant relationship to the use of supplements and vitamins, and the good appearance factor has a risk of 2.4 times to consume vitamins with old status. As for the other two factors, namely the knowledge factor, the statistical test results show a P Value of 0.807 or greater than 0.05, which indicates that there is no relationship between knowledge and frequency of vitamin consumption. Meanwhile, for the exposure factor, the statistical test results show a P Value of 0.171 or greater than 0.05, which means that there is no relationship between exposure and frequency of vitamin consumption.

Discussion

1. Influence of appearance factors on supplement or vitamin consumption

The phenomenon of supplement and vitamin use is a complex practice influenced by various multidimensional factors. Bivariate analysis of the data presented highlights interesting interactions between individual characteristics and their propensity to adopt supplementation practices. In particular, appearance factors emerged as significant predictors of supplement and vitamin use, with many people believing that supplements can improve skin, hair and nail health, with 87% of users citing this reason for their consumption (Zamil et al., 2023) .Proportionally more individuals who rated their appearance as "Good" used supplements and vitamins (42.7%) compared to those who rated their appearance as "Poor" (64.5% in the non-using group). Supplements are often sought after for their potential benefits in skin health, including photoprotection and antioxidant properties, although evidence of efficacy remains limited (Marcílio Cândido et al., 2022) . The possible mechanisms underlying this relationship could be diverse as the influence of self-appearance factors on supplement or vitamin consumption is significant, especially when individuals seek to improve their physical appearance and health (Wicklund, 2023) .

2. The influence of knowledge factors on the consumption of supplements or vitamins

Although knowledge level did not show a significant association with supplement or vitamin consumption (P-value = 0. 807), the group with better knowledge tended to have a slightly higher percentage of supplement and vitamin users. This contradicts the findings of previous studies which indicated that knowledge influences the decision to use supplements. (Estyqomah & Melviani, 2023) . Although the P-value for the knowledge factor (0.807) did not indicate an association with supplement

or vitamin use, the difference in percentage use between the low (57.9% no use) and high (53.0% no use) knowledge groups indicated a trend. Individuals with higher levels of knowledge appear slightly more likely to use supplements and vitamins, because knowledge is one of the main factors that make behavior change in a person or called behavioral predisposing factors (A'yuna et al., 2022) .

The underlying mechanism may be related to an increased understanding of the function of nutrients and the possible benefits of supplement use. Sufficient skills are required for the safe and logical self-administration of supplements (Widyaningrum et al., 2021) . Individuals with a better understanding of health are likely to be more sensitive to possible nutrient deficiencies in their diet or may better understand health statements relating to certain supplements, mortality rates. Therefore, it is important to provide information and increase knowledge regarding health supplement products, so that people can choose and use health supplements appropriately and wisely. (Puspasari & Puspita, 2022) .

3. Influence of exposure factors on supplement or vitamin use

The media exposure factor also showed a trend, although not statistically significant (P- value = 0.171), where individuals with higher levels of media exposure tended to use more supplements and vitamins. In the digital age of information abundance, the media plays an important role in shaping public views and beliefs about health and nutrition. Advertisements for supplements, health content on social media and information from websites can influence consumer choices, which is in line with the findings of previous studies that showed a link between television viewing time and adolescents' diets. The longer adolescents spend watching television, the higher the frequency with which they consume promoted foods, drinks and mineral supplements (Wahyuniar & Karyadi, 2020) .

Therefore, although media exposure may increase awareness about supplements and vitamins, a deep and critical understanding of the information remains essential. Similar to the knowledge factor, the exposure factor (P-value = 0. 171) also showed no correlation with supplement or vitamin use. This is in line with previous studies which state that media promotion factors have no effect on the decision to use supplements (Rizkia et al., 2022) , but there is a trend where groups with higher exposure tend to use more supplements and vitamins (51.5% use vs. 73.3% do not use in the low exposure group), because promotions provide priority and have the ability to increase purchases such as supplements and vitamins (Belva Felicia & Kristiawan, 2024) .

A possible mechanism is that the media is often a source of information about health and nutrition, including the promotion of supplements and vitamins. Advertisements, health articles and social media content may influence individuals' perceptions and beliefs about the benefits of supplements. Higher exposure to this information can increase awareness and interest in using supplements, promotion of supplement or vitamin products that are positive for consumers makes consumers buy these products, these consumers will also tell the surrounding people to make supplement or vitamin purchases (Paramita & Wahyuni, 2019) .

Conclusion

In this study it can be concluded that the most influential factor on the consumption of supplements and vitamins is the appearance factor, based on the results of statistical analysis obtained a P value of 0.012 or (< 0.05) which indicates there is a relationship between appearance factors and the frequency of vitamin consumption. Meanwhile, for the exposure factor, the results of statistical analysis show a P value of 0.171 or (>0.05) which means there is no relationship between exposure and the frequency of vitamin consumption. And for the Knowledge Factor, the statistical test results obtained a P Value of 0.807 or (>0.05) which means there is no relationship between knowledge and the frequency of taking vitamins.

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