

The Effect of Health Literacy Level on Vitamin Supplement Use Preferences, Knowledge Levels and Habits of Individuals

Sağlık Okuryazarlığı Düzeyinin Bireylerin Vitamin Takviyesi Kullanım Tercihleri, Bilgi Düzeyleri ve Alışkanlıkları Üzerindeki Etkisi

Ayşe Hilal Başhan Aslantaş, Murat Altuntaş

University of Health Sciences, Istanbul Bağcılar Training and Research Hospital, Clinic of Family Medicine, İstanbul, Turkey

Summary

Objective: This study aims to explore the possible effects of individuals' health literacy levels on their vitamin use preferences, habits and knowledge levels.

Material and Method: This research is a single-center, cross-sectional, descriptive survey study. It was conducted on 265 patients who applied to the Family Medicine Clinic of Bağcılar Education and Research Hospital and met the inclusion criteria. Participants were given a 14-question survey form that assessed sociodemographic data, vitamin use habits, knowledge levels, along with the Turkish validity and reliability-tested 12-item Health Literacy Scale- Short Form.

Results: No significant relationship was found between participants' health literacy scores and their gender, education level, marital status or number of visits to healthcare institutions in the past year. Participants in the 18-30 age group had significantly higher health literacy scores compared to those in the 45-60 and 60+ age groups. Participants who preferred both paid and free vitamins had significantly higher scale scores compared to those who preferred only free vitamins ($p<0.05$). 85.7% (n:228) of participants believed that laboratory tests should be done before using vitamins, while 88.7% (n:236) thought that excessive vitamin use could harm health. The majority of participants (68.7%, n:183) preferred to get information about vitamin use from healthcare professionals.

Conclusion: The absence of a change in health literacy scores based on education level indicates that increasing knowledge and awareness of health literacy at all levels of education is necessary. Increasing the population's awareness and knowledge about vitamin use will contribute positively to public health and health literacy.

Key words: Alışkanlık, bilgi, okuryazarlık, vitamin

Özet

Amaç: Bu çalışmayla kişilerin sağlık okuryazarlığı düzeyinin; vitamin kullanım tercih ve alışkanlıkları, bilgi düzeyleri üzerine olası etkilerinin ortaya konması amaçlanmaktadır.

Gereç ve Yöntem: Araştırma tek merkezli, kesitsel, tanımlayıcı bir anket çalışmasıdır. Bağcılar Eğitim ve Araştırma Hastanesi Aile Hekimliği Polikliniği'ne başvuran ve dahil edilme kriterlerine uygun olan 265 hasta üzerinde gerçekleştirilmiştir. Katılımcılara 14 soruluk; sosyodemografik veriler ile vitamin kullanım alışkanlıkları ve bilgi düzeylerini sorgulayan anket formu ve Türkçe geçerlilik güvenilirlik çalışması yapılmış olan 12 soruluk Sağlık Okuryazarlığı-Kısa Formu uygulanmıştır.

Bulgular: Katılımcıların cinsiyetleri, eğitim düzeyleri, medeni durumları, vitamin takviyesi kullanıp kullanmamaları ile sağlık okuryazarlığı düzeyleri arasında anlamlı ilişki tespit edilemedi. 18-30 yaş grubundaki katılımcıların 45-60 yaş ve 60 yaş üstü gruplardaki katılımcılardan, kronik hastalığı olmayan katılımcıların da olanlardan anlamlı düzeyde daha yüksek sağlık okuryazarlığı puanına sahip olduğu görüldü ($p<0,05$). Hem ücretli satın alabildikleri hem de ücretsiz edinebildikleri vitaminleri tercih eden katılımcıların yalnızca ücretsiz vitaminleri tercih eden katılımcılardan anlamlı şekilde daha yüksek ölçek puanına sahip olduğu görüldü ($p<0,05$). Katılımcıların %85,7'si (n:228) vitamin kullanmadan önce kan tahlili yaptırılması gerektiğini düşünürken %88,7'si (n:236) fazla vitamin kullanımının sağlığa zararlı vereceğini düşündüğünü

belirtti. Vitamin kullanımı ile ilgili bilgileri sağlık personelinden almayı tercih eden katılımcıların %68,7 (n:183) ile çoğunlukta idi.

Tartışma: Eğitim düzeyine göre sağlık okuryazarlığı puanında bir değişim olmaması bize eğitimin her basamağında sağlık okuryazarlığı üzerine bilgi ve görgünün artırılması gerektiğini göstermektedir. Vitamin kullanımı ile ilgili popülasyonun farkındalığının ve bilgi düzeyinin artırılması toplum sağlığına ve sağlık okuryazarlığına da olumlu katkılar yapacaktır.

Anahtar kelimeler: Habit, knowledge, literacy, vitamin

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Introduction

Vitamins are essential organic compounds required for humans to sustain vital functions. Since human body is unable to produce vitamins on its own, they must be obtained from external sources. Therefore, it becomes necessary to take the right and sufficient vitamins through diet to prevent vitamin deficiency (1). In recent years, there has been a notable increase in the population's interest in vitamin supplements. Examining the new data reveals that the nutritional and vitamin supplement industry now provides close to 100000 different products, a substantial rise from the roughly 4000 available in 1994, highlighting a notable expansion (2). Moreover, an increasing number of individuals are consuming vitamin and mineral supplements, motivated by reasons such as improving health, preventing deficiencies, or enhancing physical performance (3). It is known that people often use vitamin supplements based on physician prescriptions, while sometimes they use them individually without the supervision of healthcare professionals.

Several research studies have shown that specific vitamins may reduce the risk of chronic diseases. Nevertheless, consuming vitamin supplements without appropriate supervision can potentially do more harm than good for certain individuals. Specifically, overconsumption of these supplements can lead to various drug interactions, neurological and gastrointestinal symptoms, liver damage and also congenital anomalies (4).

Maintaining overall health, achieving balanced nutrition, enhancing physical appearance and supporting weight loss are among the primary reasons for supplement use identified in recent studies (5). When individuals were questioned about where they obtained information for supplement purchases, the most commonly mentioned sources were health professionals, media and family/friends (6,7).

Health literacy is defined by World Health Organization (WHO) as; the ability of individuals to “gain access to, understand and use information in ways which promote and maintain good health” for themselves, their families and their communities (8).

Health literacy is a multifaceted concept encompassing various components. It includes several essential skills, such as reading, understanding related information and finally making informed decisions and taking appropriate actions (9). Health literacy is gaining greater significance as healthcare systems become more complex individuals being expected to take a more active role in managing their health and medical conditions (10).

Research in the literature indicates that low health literacy is linked to poor health decisions, negative outcomes, and difficulties in communication with healthcare professionals. Conversely, high health literacy is associated with improved understanding of health information (11). Therefore; the effect of individuals' health literacy level on vitamin use is a matter of curiosity.

Material and Methods

This research is a single-center, cross-sectional, descriptive survey study. The study was conducted on 265 patients who applied to the Family Medicine Outpatient Clinic of the University of Health Sciences, Bagcilar Training and Research Hospital and met the inclusion criteria. Participants completed a survey form; consisting of 14 questions, questioning sociodemographic data, vitamin usage habits and knowledge levels and also the Health Literacy-Short Form, a 12-question survey validated in Turkish by Karahan Yılmaz et al. It was observed that the total number of patients over the age of 18 who applied during the 6-month period to the outpatient clinic was 5166. Thus, the monthly average number of patients was calculated as 861.

When the calculation was made using the simple random sampling method from the population, with a 95% confidence interval and a 5% margin of error, the number of participants to be reached was determined as 265.

The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki (1964) and the study protocol was approved by Istanbul Medipol University Non-Invasive Research Ethics Committee: 13.05.2024, No: 622. Informed consent was obtained from all participants in the study.

Statistical analysis:

In this study, statistical analyses were performed using the NCSS (Number Cruncher Statistical System) 2019 Statistical Software (Utah, USA). Descriptive statistical methods (mean, standard deviation, median, percentage, minimum, maximum) were used to evaluate the study data.

The normality of the quantitative data was tested using skewness and kurtosis values. For comparisons between two groups of normally distributed quantitative variables, the Student's t-test was used, and for comparisons between more than two groups, a one-way analysis of variance (One-Way ANOVA) was performed. To determine which groups had significant differences in the ANOVA test results, post-hoc tests were applied; the Scheffe test for conditions with homogeneous variances, and the Tamhane's T2 test for conditions with heterogeneous variances. Statistical significance was considered at $p < 0.05$.

Findings

Descriptive statistics obtained using sociodemographic questions are shown in Table 1.

Table 1. Descriptive statistics

	n (%)		n (%)
Gender		Income Level	
Female	172 (64.9)	Below minimum wage	25 (9.4)
Male	93 (35.1)	Minimum wage	55 (20.8)
Age Groups		Minimum wage to 2 times the minimum wage	105 (39.6)
18-30	60 (22.6)	Minimum wage to 2-3 times the minimum wage	52 (19.6)
30-45	80 (30.2)	3 times the minimum wage and more	28 (10.6)
45-60	73 (27.5)	Having a chronic disease	
60+	52 (19.6)	No	197 (74.3)
Educational Status		Yes	68 (25.7)
Primary education or below	38 (14.3)	Number of applications to healthcare institutions in the last year	
Middle school / High school	84 (31.7)		
College degree	124 (46.8)	0 to 1	72 (27.2)
Post-graduate degree or above	19 (7.2)	2 to 5	132 (49.8)
Marital Status		6 to 9	37 (14)
Single	66 (24.9)	10+	24 (9.1)
Married	172 (64.9)		
Divorced/ Widow	27 (10.2)		

In Table-2 statistics of vitamin supplement use questions are shown. The majority of participants reported preferring healthcare personnel as their primary source of information about vitamins. In addition, it was observed that the majority of participants thought that a blood test should be performed before using vitamin supplements and

that excessive use of vitamins could be harmful to health.

No significant relationship was found between participants' health literacy scores and their gender, education level, marital status, or number of visits to healthcare institutions in the past year.

However, when the age groups of the participants were examined, it was seen that those in the 18-30 age group had significantly higher scale scores than the 45-60 age group and the over 60 age group ($p<0,05$). In addition, it was observed that participants earning 3 times the minimum wage or more had significantly higher scale scores than participants earning minimum wage ($p<0,05$).

Also it was found that participants without chronic diseases had significantly higher scale scores than those with chronic diseases ($p<0,05$). In questions regarding the use of vitamin supplements; a significant difference was only found in one of the questions. Accordingly, the scale scores of participants who prefer to use both paid and free vitamin supplements are significantly higher than the participants who prefer to use only free supplements ($p<0,05$). Statistical data regarding the mentioned questions are shown in Table-3.

Figure-1 shows participants' awareness about vitamin types. While vitamin K is the least known type of vitamin ($n=120$), vitamin B12 has been found to be the most known type of vitamin ($n=260$).

As shown in Table-4; it was found that for each vitamin evaluated, those who are aware of the vitamin had statistically significantly higher Health Literacy Scale scores compared to those who are not aware of it.

In Figure 2, the responses of participants regarding their reasons for using vitamins are presented. Accordingly, the most common reason ($n=67$) for taking vitamin supplements was found to correct vitamin deficiencies detected in test results.

Table 2. Statistics of vitamin supplement use questions

	N (%)		N (%)
Do you use vitamin supplements?		Do you think that excessive vitamin supplement use may be harmful to your health?	
Yes	117 (44.2)	Yes	235 (88.7)
No	148 (55.8)	No	8 (3)
Source of information about vitamins		Indecisive	22 (8.3)
Healthcare professionals	182 (68.7)	Which one do you prefer When purchasing vitamin supplements?	
Television / Radio	8 (3)	Free	94 (35.5)
Social Media / Internet	62 (23.4)	Paid	22 (8.3)
Relatives / Friends	13 (4.9)	Both	149 (56.2)
Is it necessary to have a blood test before using vitamin supplements?			
Yes	227 (85.7)		
No	13 (4.9)		
Indecisive	25 (9.4)		

Table 3. Data on statistically significant values

	Health Literacy Scale Score	p
Age Groups		
18-30	34,58±8,26	0.00
30-45	30,81±9,55	
45-60	28,97±11,66	
60+	24,59±13,31	
Income Level		
Below minimum wage	28,77±13,32	0.045
Minimum wage	26,89±11,10	
Minimum wage to 2 times the minimum wage	29,89±11,29	
Minimum wage to 2-3 times the minimum wage	31,43±9,26	
3 times the minimum wage and more	34,37±10,94	
Having a chronic disease		
No	30,94±10,20	0.03
Yes	27,03±13,28	
Which one do you prefer when purchasing vitamin supplements?		
Free	27,32±10,87	0.018
Paid	31,05±13,58	
Both	31,43±10,75	

Figure 1. Awareness about vitamin types

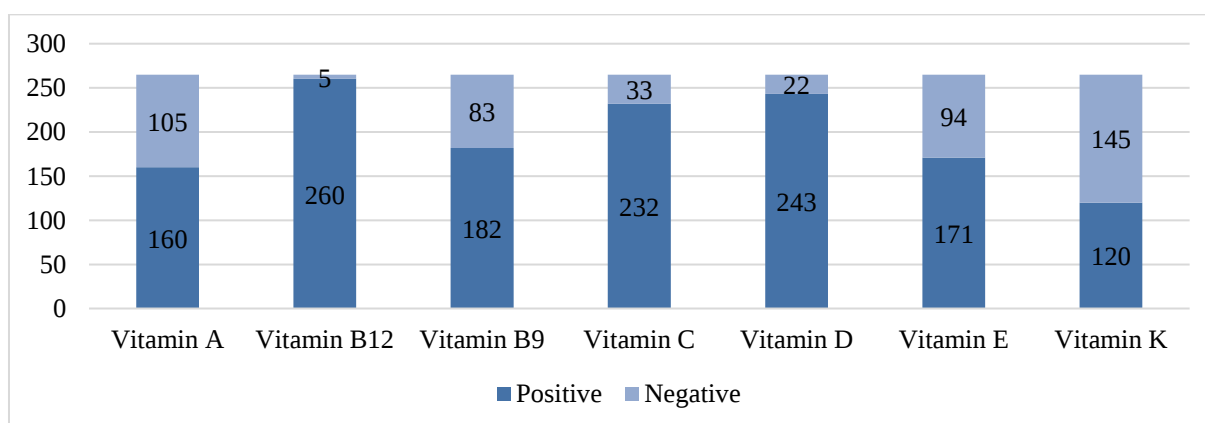
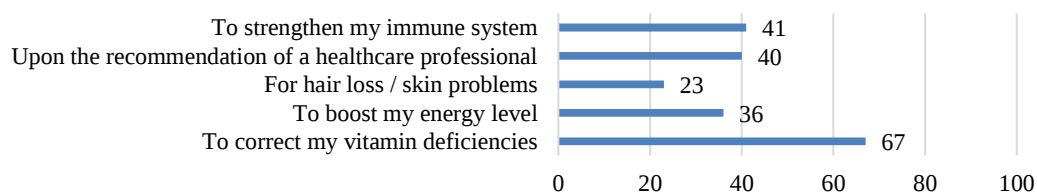


Table 4. The relationship between participants' awareness of vitamins and their Health Literacy Scale scores

	N (%)	Health Literacy Scale Score	p
Vitamin A			0
Not aware	105 (39.6)	26,17±11,22	
Aware	160 (60.4)	32,41±10,47	
Vitamin B12			0.014
Not aware	5 (1.9)	17,8±10,55	
Aware	260 (98.1)	30,17±11,08	
Vitamin B9			0
Not aware	83 (31.3)	25,03±11,99	
Aware	182 (68.7)	32,18±10,05	
Vitamin C			0
Not aware	33 (12.5)	23,14±13,11	
Aware	232 (87.5)	30,90±10,56	
Vitamin D			0
Not aware	22 (8.3)	19,58±11,01	
Aware	243 (91.7)	30,87±10,73	
Vitamin E			0
Not aware	94 (35.5)	25,62±11,55	
Aware	171 (64.5)	32,31±10,25	
Vitamin K			0
Not aware	145 (54.7)	26,63±11,66	
Aware	120 (45.3)	33,93±9,12	

Figure 2. Reasons behind taking vitamin supplements

Discussion

In the study, it was found that 44.2% of the participants used vitamin supplements. Different studies in the literature have reported percentages such as 68.33%, 53%, and 40%. Study results are consistent with the literature. The high prevalence of vitamin supplement use is evidence of the increasing interest in this area (12,13,14).

A study conducted in Pakistan, similar to this one, revealed that doctors were the most common source of information about vitamins (15). In a study on cancer patients, doctors were also identified as the most frequent source of information (16). The results of the study are similar with the literature, and this finding is reassuring in terms of preventing unnecessary supplementation and hypervitaminosis.

In a study examining awareness of vitamins, similar to this one, vitamin K was found to have the lowest level of awareness. However, unlike the study, the highest level of knowledge was found for vitamin C (15). In this study, unlikely, even for the vitamin with the highest awareness, the rate was found to be 16.9%, which is much lower compared to the results. The differences in the populations studied may have led to this result. Several research studies in the literature have shown that a higher level of health literacy affects the use of dietary supplements and vitamins (17, 18). In the study, among the topics questioned about vitamins, only the use of vitamins that are available for purchase or free of charge was found to be associated with health literacy. This result may be attributed to the study's limited sample size and its single-center design.

It was seen that the most common reason underlying the participants' motivation to use vitamins was to correct the deficiencies revealed in the tests. The second most common answer was to strengthen the immune system. In a similar study, also conducted in Turkey, most of the participants responded with "I want to feel good," and "I want to be resistant to diseases," when asked about their expectations from vitamin use (19). It was observed that individuals associate the use of vitamin supplements with strengthening the immune system and protection against diseases.

It is anticipated that the motivations and reasons for taking vitamin supplements vary between individuals. However, individuals need proper advice to manage their expectations, follow the correct supplement dosages, and comprehend achievable results (20).

Study limitation

This study was conducted with a limited number of participants and in a single center.

Conclusion

Study results indicate that the health literacy level of the entire population should be improved, regardless of gender and education level. In this way, not only will advancements be achieved in all areas of health, but positive outcomes regarding vitamin use, which is the subject of the study, will also be observed.

When individuals apply to a healthcare institution, in addition to their regular medications, their use

of vitamin supplements should also be asked about and medical counseling should be provided on this matter. Unregulated or unnecessary use of supplements should be addressed, and patients should be counseled on the potential consequences of vitamin use. Furthermore, individuals should be informed about the possible consequences of using vitamins without there commendation of healthcare professionals.

It should be kept in mind that improving health literacy within society will positively influence health-related decisions in every area, and health policies should be developed accordingly.

Conflict of Interest:

The authors have no conflict of interest to declare.

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Correspondance:

Murat Altuntaş, Assoc.Prof.Dr.

University of Health Sciences,

Istanbul Bağcılar Training and Research Hospital,

Clinic of Family Medicine, İstanbul, Turkey

Tel: +90.530.5618703

E-mail: medihukuk@gmail.com