

Use of Dietary Supplements, Individual Tendencies, and Knowledge Level in the Course of Weight-Loss Dieting

Zayıflama Diyeti Sürecinde Gıda Takviyesi Kullanımı, Bireysel Eğilimler ve Bilgi Düzeyi

¹Rabia MAVİOĞLU, ²Ali TAMER

¹Department of Clinical Nutrition, Master's Program, Sakarya University, Sakarya, Türkiye

²Department of Internal Medicine Sciences, Faculty of Medicine, Sakarya University, Sakarya, Türkiye

Rabia Mavioğlu: <https://orcid.org/0009-0002-8840-2129>

Ali Tamer: <https://orcid.org/0000-0003-2005-0737>

ABSTRACT

Objective: This study aimed to evaluate the reasons, frequency, and awareness levels regarding dietary supplement use during weight-loss diets.

Materials and Methods: This cross-sectional and descriptive study included 106 individuals who were dieting for weight loss and using dietary supplements. Data were collected using a questionnaire and analyzed with SPSS (IBM SPSS Statistics 29.0.2.0). While frequency and percentage distributions were used for demographic data, one-way analysis of variance (ANOVA), independent samples t-test, and chi-square tests were employed to examine the relationship between awareness level and supplement use.

Results: According to the findings, the most commonly preferred supplements were vitamins and minerals (74.5%), fish oil (39.6%), and probiotics (35.8%). Among the reasons for supplement use, boosting immunity (64.2%) and supporting weight loss (45.3%) stood out. Data obtained from a five-item Likert scale developed to assess awareness showed significant differences by age and education level. For example, awareness regarding the statement "Every natural supplement is harmless" differed significantly across age groups ($F = 4.134, p = 0.008$). Similarly, the statement "Products recommended on social media are reliable" differed by education level ($F = 4.853, p = 0.006$).

Conclusions: The data suggest that, particularly during weight loss, individuals tend to turn to dietary supplements and that age, education level, and the influence of social media may be determining factors in these preferences. Furthermore, dietary supplement use appears to depend not only on individual preferences but also on knowledge and awareness.

Keywords: Diet, dietary supplements, knowledge level, weight loss, weight management

ÖZ

Amaç: Bireylerin zayıflama diyeti sürecinde gıda takviyesi kullanım nedenleri, sıklığı ve bilinç düzeylerini değerlendirmek amacıyla bu çalışma yapılmıştır.

Materyal ve Metot: Çalışmaya toplam 106 kişi katılmıştır ve veriler anket yoluyla toplanmıştır. Veriler SPSS (IBM SPSS Statistics 29.0.2.0) programı ile analiz edilmiştir. Demografik bilgilerin analizinde frekans ve yüzde dağılımları kullanılırken bilinç düzeyi ve takviye kullanımı arasındaki ilişkiyi incelemek için tek yönlü varyans analizi, bağımsız örneklem t-testi ve ki-kare testleri kullanılmıştır.

Bulgular: Araştırmada elde edilen bulgulara göre, katılımcıların en sık tercih ettiği takviyeler %74,5 vitamin-mineral, %39,6 balık yağı ve %35,8 probiyotikler olmuştur. Takviye kullanım nedenleri arasında; %64,2 bağışıklığı güçlendirme ve %45,3 kilo vermeyi desteklemek öne çıkmıştır. Katılımcıların bilinç düzeyini değerlendirmek için oluşturulan 5 maddelik Likert ölçeğinden elde edilen veriler, yaş ve eğitim düzeyine göre anlamlı farklılıklar göstermiştir. Örneğin, "Doğal olan her takviye zararsızdır" ifadesine ilişkin bilinç düzeyi yaş gruplarına göre anlamlı farklılık göstermiştir ($F = 4,134, p = 0,008$). Benzer şekilde, "Sosyal medyada önerilen ürünler güvenilirdir" ifadesi eğitim düzeyine göre farklılık göstermiştir ($F = 4,853, p = 0,006$).

Sonuç: Elde edilen veriler bireylerin özellikle kilo verme sürecinde gıda takviyelerine yöneldiğini ve bu tercihlerinde yaş, eğitim düzeyi ve sosyal medya etkisinin belirleyici olabileceğini göstermiştir. Ayrıca gıda takviyesi kullanımının yalnızca bireysel tercihlere değil, bilgi ve bilinç düzeyine de bağlı olduğu görülmüştür.

Anahtar Kelimeler: Bilgi düzeyi, diyet, gıda takviyesi, kilo verme, kilo yönetimi

Sorumlu Yazar / Corresponding Author:

Ali Tamer

Şirinevler, Adnan Menderes Cd Sağlık Sk No:195, 54100 Adapazarı/Sakarya

Tel: +905335400368

E-mail: tamer@sakarya.edu.tr

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INTRODUCTION

With the increasing prevalence of obesity today, individuals have resorted to alternative approaches alongside weight-loss diets. One such approach is the growing interest in dietary supplement use. In addition to classical diet and exercise programs, the proportion of individuals who turn to dietary supplements to support the weight-loss process has increased. Factors underlying this increase include the influence of expert recommendations, the expectation of supporting metabolic rate, posts on social media, and the perception that natural products are harmless, among many others.¹ Reasons for using dietary supplements include accelerating metabolism during weight loss, achieving appetite control, and supporting fat oxidation, among others. However, no definitive conclusions have been reached regarding their effectiveness, side effects, and level of safety.² Studies have shown that non-scientific sources such as social media, personal recommendations, and commercial advertisements influence individuals' decisions to use supplements.¹ In recent years, social media platforms have become frequently utilized sources of information for individuals regarding nutrition and weight loss. However, it has been reported that a significant portion of the content on these platforms is unverified and lacks a scientific basis.^{1,2} Some dietary supplements have been reported to have beneficial effects on weight loss; for example, omega-3 polyunsaturated fatty acids reduce abdominal fat mass. Nevertheless, the widespread belief that natural supplements are harmless lacks a scientific basis, and consumption should be undertaken consciously.³ Studies examining the effects of dietary supplement use on body composition and fat loss indicate that young individuals are more interested in such products.⁴

This study aims to examine the frequency and types of dietary supplements used, as well as the level of knowledge, among individuals following a weight-loss diet. It also explores the relationship between demographic characteristics and supplement use to determine whether usage is influenced not only by weight-loss goals but also by information sources and individual awareness. The findings are expected to contribute to the promotion of safer and more informed supplement use.

MATERIALS AND METHODS

Ethics Committee Approval: Ethics committee approval was received from the Sakarya University Ethics Committee (Date: 17.06.2025, decision no: 380). The study was planned under the Helsinki Principles.

Sample and Study Design: This cross-sectional observational study evaluated the reasons for supplement preference and awareness levels during weight loss among individuals who used dietary supplements. The study sample was determined using a convenience sampling method. The study was conducted between June 2025 and August 2025. Participants included 106 individuals aged 18 years and older who were on a weight-loss diet and used dietary supplements, and who presented to a private dietitian's office. A questionnaire assessing demographic characteristics, diet process, supplement use, and level of knowledge was administered.

Data Collection Tools: A three-stage survey was administered to collect data on participants' socio-demographic characteristics, employment status, body mass index, waist circumference, and height. The survey consisted of three main sections: (1) demographic information (e.g., age, gender, education level), (2) information regarding the weight-loss diet process (including diet duration, method, and supplement use status), and (3) a five-item Likert-type scale developed by the researchers to assess participants' attitudes toward dietary supplement use (1 = Strongly disagree, 5 = Strongly agree). The items included in the scale were: (1) Supplements are essential for weight loss, (2) Supplements should be used upon expert recommendation, (3) Products recommended on social media are reliable, (4) Every natural supplement is harmless, and (5) Weight loss is possible without supplements. Higher scores on the scale indicate stronger agreement with the corresponding statement.

Data collection: Data were collected using researcher-designed surveys between June and August 2025. The first page of the form, which included the informed consent statement, outlined the purpose and methodology of the study as well as the measures taken to ensure data confidentiality. Participants were asked whether they were willing to take part in the study. Those who provided consent proceeded to the survey questions, whereas those who declined were excluded from the study.

Statistical Analyses: Data were analyzed with IBM SPSS Statistics 29.0.2.0. Frequency and percentage distributions were calculated for demographic features. To assess the relationship between supplement use and awareness level, one-way analysis of variance (ANOVA), independent samples t test, and chi-square test were applied. The Kolmogorov-Smirnov test was employed to assess the normality of the data distribution. A *P*-value of less than 0.05 was considered indicative of statistical significance.

RESULTS

A total of 106 individuals participated in the study, and their sociodemographic and clinical characteristics are presented in Table 1. The majority of participants were female (83%, $n = 88$). In terms of age distribution, the largest group consisted of individuals aged 19–29 years (33%), followed by those aged 30–39 (28%), 40–49 (25.5%), and 50–65 years (13.2%). According to the Body Mass Index (BMI) classification, 0.9% of participants were underweight, 31.1% were of normal weight, 30.2% were overweight, and 37.7% were classified as obese. Regarding educational status, most participants were university graduates (76.4%), while smaller proportions had completed high school (10.4%), held a master's or doctoral degree (9.4%), or graduated

from primary school (3.8%). Regarding diet duration, 26.4% had been dieting for less than one month, 37.7% for 1–3 months, and 35.8% for more than 3 months (Table 1).

Regarding the types of dietary supplements used during the weight-loss process, the highest consumption rate was observed for herbal teas (67.6%). This was followed by minerals (44.4%), probiotics (40.7%), and herbal oils (32.4%). Multivitamins (25.0%) and digestive enzymes (25.0%) were used at similar rates, while turmeric and ginger extract was reported by 25.9% of participants. Fiber supplements were used by 17.6% of individuals, whereas L-carnitine (5.6%) and other products (8.3%) showed the lowest prevalence (Table 2).

Table 1. Demographic information.

Variable		n (%)
Sex	Female	88 (83)
	Male	18 (17)
Age (years)	19-29	35 (33)
	30-39	30 (28)
	40-49	27 (25.5)
	50-65	14 (13.2)
BMI (kg/m ²)	<18.5 Underweight	1 (0.9)
	18.5–24.9 Normal	33 (31.1)
	25–29.9 Overweight	32 (30.2)
	≥30 Obese	40 (37.7)
Education level	Primary school	4 (3.8)
	High school	11 (10.4)
	University	81 (76.4)
	Master's/Doctorate	10 (9.4)
Diet duration	<1 month	28 (26.4)
	1–3 months	40 (37.7)
	>3 months	38 (35.8)

Table 2. Dietary supplements used and usage rates.

Supplement	n (%)
Probiotics	44 (40.7)
Herbal oils	35 (32.4)
Minerals	48 (44.4)
Fiber supplements	19 (17.6)
L-carnitine	6 (5.6)
Digestive enzymes	27 (25.0)
Herbal teas	73 (67.6)
Multivitamin	27 (25.0)
Turmeric, ginger extract	28 (25.9)
Other	9 (8.3)

An analysis of the reasons for dietary supplement use revealed that the most frequently reported motivation was to increase metabolism (n = 72). This was followed by increasing energy (n = 40) and suppressing appetite (n = 29). Less frequently reported motivations included rapid weight loss (n = 36) and “other reasons” (n = 23). When examined by supplement type, herbal teas were most commonly used for the purpose of increasing metabolism (76.7%). Similarly, probiotics were also frequently consumed for the same purpose (79.5%). Multivitamins were predominantly used to increase energy (70.4%), whereas the primary motivation for using fiber supplements was rapid weight loss (63.2%). The majority of L-carnitine users (83.3%) reported using it for rapid weight loss. In addition, digestive enzymes were mainly used to increase metabolism (85.2%) and to suppress appetite (37%) (Table 3). A one-way ANOVA was conducted in SPSS for five items included in the Likert scale: “Supplements are essential for weight loss,” “Supplements should be used upon expert recommendation,” “Products recommended on social media are reliable,” “Every natural supplement is harmless,” and “Weight loss is possible without supplements.” Each item was analyzed by age group and education level. For the

item “Weight loss is possible without supplements,” a statistically significant difference was found across age groups. The highest mean score was observed in the 19–29 age group (Mean = 3.77), followed by the 50–65 age group (Mean = 3.5). The 30–39 and 40–49 age groups reported lower mean scores (Mean = 2.8 and 2.81, respectively). Similarly, for the item “Products recommended on social media are reliable,” a significant difference was identified according to education level. The lowest mean was observed among high school graduates, whereas the highest mean was reported by the master’s/doctorate group (Table 4).

DISCUSSION AND CONCLUSION

Excessive weight gain, particularly obesity, leads to numerous health problems. Therefore, weight loss constitutes a critical step in the treatment process. In addition to pharmacotherapy, dietary supplements have been reported in the literature to contribute to weight reduction by suppressing appetite, increasing thermogenesis, and regulating fat metabolism.⁴ The findings of our study support this evidence, demonstrating that individuals tend to use supplements during weight-loss diets.

The most frequently preferred products among parti-

Table 3. Reasons for using dietary supplements and their proportions by supplement type.

Supplement	Rapid weight loss n (%)	Suppress appetite n (%)	Increase energy n (%)	Increase metabolism n (%)	Other n (%)	Total (n)
Probiotics	21 (47.7)	12 (27.3)	15 (34.1)	35 (79.5)	9 (20.5)	44
Herbal oils	15 (42.9)	16 (45.7)	17 (48.6)	25 (71.4)	8 (22.9)	35
Minerals	14 (29.2)	13 (27.1)	25 (52.1)	31 (64.6)	10 (20.8)	48
Fiber supplements	12 (63.2)	8 (42.1)	10 (52.6)	18 (94.7)	5 (26.3)	19
L-carnitine	5 (83.3)	2 (33.3)	2 (33.3)	4 (66.7)	2 (33.3)	6
Herbal teas	25 (34.2)	22 (30.1)	27 (37.0)	56 (76.7)	13 (17.8)	73
Digestive enzymes	12 (44.4)	10 (37.0)	9 (33.3)	23 (85.2)	10 (37.0)	27
Multivitamin	8 (29.6)	6 (22.2)	19 (70.4)	14 (51.9)	4 (14.8)	27
Ginger, turmeric extract	8 (28.6)	6 (21.4)	9 (32.1)	22 (78.6)	5 (17.9)	28
Other	4 (44.4)	3 (33.3)	4 (44.4)	7 (77.8)	1 (11.1)	9
Total (n)	36	29	40	72	23	106

Table 4. Means, standard deviations, and ANOVA results by education level and age group for “Weight loss is possible without supplements” and “Products recommended on social media are reliable”.

Variable (Likert item)	Group	Mean ± SD	p	F (df)	η ²
Weight loss is possible without supplements	19-29 years	3.77 ± 1.19	0.008	4.13 (3,102)	0.11
	30-39 years	2.8 ± 1.39			
	40-49 years	2.81 ± 1.24			
	50-65 years	3.5 ± 1.55			
Products recommended on social media are reliable	Primary school	1.75 ± 0.95	0.005	4.41 (3,102)	0.04
	High school	1.00 ± 0.00			
	University	1.3 ± 0.68			
	Master’s/Doctorate	2.1 ± 1.37			

ANOVA: One-way analysis of variance. η²: Eta-squared effect size (0.01 small, 0.06 medium, 0.14 large). Post hoc comparisons were performed using Tukey HSD test. p < 0.05 was considered statistically significant; M: Mean, SD: Standard Deviation.

participants were vitamin-mineral supplements, fish oil, and probiotics. It was determined that 38.1% of women had used at least one supplement within the past year, with the most common products being vitamin B12, iron, and vitamin D. Moreover, 43.5% reported using supplements such as green tea and lemon for weight-loss purposes. These results indicate that supplement use has become widespread and diverse in society.

A study conducted in Türkiye examined the frequency of herbal product use for weight loss among women and the factors influencing this behavior, revealing that social expectations and misinformation were important determinants.⁴ Similarly, in our study, social media and unverified sources were found to influence individuals' supplement preferences. A recent meta-analysis on omega-3 fatty acids showed no direct effect on weight loss, but reported an increase in serum adiponectin levels, improved insulin sensitivity, and a reduction in inflammatory markers such as hs-CRP.^{5,6} In addition, the positive effects of green tea and probiotics on hematopoietic and inflammatory parameters have been emphasized in the literature.⁷

International studies have also reported similar findings. In Australia, 69% of university students were found to use vitamin-mineral supplements and 63% other supplements, with usage varying by gender, age, and physical activity.⁸ In Northern Cyprus, women often consumed slimming teas without professional guidance, driven by the perception that "herbal products are harmless," while labels were reported to lack adequate content information.² In Poland, 69.5% of individuals used supplements for weight loss, particularly among women, young adults, and those with higher education levels.⁹ Likewise, a study in the United States among adults with disabilities reported that supplement use was more common among women and those with higher income and education levels.¹⁰ In Denmark, supplement use in children was associated with exceeding upper intake levels for certain micronutrients, highlighting the potential health risks of uncontrolled use. Another study from the United States indicated that supplements can effectively address micronutrient deficiencies.^{11,12}

In addition to human studies, experimental animal studies also support our findings. In obese mice, yogurt enriched with green tea containing *Lactibacillus paracasei* E1 was shown to promote beneficial changes in immune cells.⁷ Furthermore, a Mediterranean diet-inspired multi-component supplement reduced weight gain and hepatic steatosis, improved insulin sensitivity, and had positive effects on gut health and lipid profiles.¹³ Similarly, another study reported that multi-component supplements (such as forskolin, green coffee bean, and green tea)

reduced body weight and fat mass in obese individuals.¹⁴ These findings suggest that functional foods and multi-component supplements may have potential efficacy in weight management.^{13,14}

On the other hand, the safety aspect should not be overlooked. Commonly used weight-loss supplements such as green tea extract, *Garcinia cambogia*, and resveratrol have been reported to interact with medications such as orlistat, statins, and warfarin, posing serious health risks.¹⁵ This supports the findings of our study, indicating that individuals need to be informed not only about effectiveness but also about safety.

The influence of social media on supplement preferences was another notable finding of our study. Especially among individuals with higher education levels, greater trust in products recommended on social media increases the risk of misinformation. Literature has similarly highlighted this issue. A qualitative study demonstrated that product promotions by accounts with more than 100,000 followers, particularly those showcasing the product's use in daily life, significantly increased consumer interest.¹⁶ Furthermore, widespread misinformation on nutrition across social media platforms has been shown to lead individuals to develop inappropriate dietary behaviors.¹⁷ The results of our study are consistent with this evidence.

In conclusion, this study examined the use of dietary supplements among individuals on weight-loss diets. Sociodemographic factors, social media influence, and potential drug-supplement interactions were identified as important determinants. However, several limitations should be acknowledged. First, only individuals who were already using dietary supplements during dieting were included in the sample. This exclusion of those who diet without supplements prevents direct comparison between users and non-users and may have led to an overestimation of supplement use prevalence. Additionally, although age and education showed significant associations, other potentially important confounding variables such as income level, general health status, cultural background, and access to healthcare services were not controlled for, which may have affected the observed associations. Moreover, the cross-sectional design limits causal inference, and the relatively small, non-random sample may not represent all individuals on weight-loss diets, restricting generalizability. Despite these limitations, the study provides valuable insights and highlights the importance of accurate information from healthcare professionals, the regulation of misleading social media content, and the need for large scale, controlled studies to ensure the safe and effective use of dietary supplements.

Ethics Committee Approval: Ethics committee approval was obtained from the Sakarya University Ethics Committee (Date: 17/06/2025, decision no: 2025/380). The study was planned in accordance with the Helsinki Principles.

Conflict of Interest: No conflict of interest was declared by the authors.

Author Contributions: Concept; RM, Supervision; RM-AT; Materials; RM-AT; Data Collection; RM-AT; Analysis and/or Interpretation; RM-AT, Writing: RM-AT

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