



Determination of Perceived Food Literacy Levels in Adult Individuals

Yetişkin Bireylerde Algılanan Gıda Okuryazarlığı Düzeyinin Belirlenmesi

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ABSTRACT

Aim: This study was conducted as cross-sectional research to assess adults' perceived food literacy levels.

Materials and methods: This research was conducted as a cross-sectional study. The study population consisted of adults aged 18 and older. The unknown population sampling method was used in the research. In calculating the sample size, a 95% confidence level, a probability of $p=0.50$, and a margin of error of $d=0.05$ were used as the basis, and, according to this formula, the minimum sample size was determined to be 385 individuals. The study was completed with the participation of 814 volunteers via an online platform.

Results: The mean age of the participants was 30.78 ± 10.74 years, ranging from 18 to 68 years. Among the participants, 72.4% were women, and 87.2% were university graduates. The mean total score on the Perceived Food Literacy Scale (PFLS) was 89.66 ± 7.49 . When the mean PFLS scores were compared across participants' socio-demographic characteristics, it was determined that women had higher scores than men, single participants had higher scores than married participants, and those without any substance dependence, such as smoking or alcohol, had higher scores than those with substance dependence. The differences between these groups were statistically significant ($p < 0.05$).

Conclusion: This study revealed that adults possess moderate-to-good food literacy, yet gaps remain in label reading and meal planning. Considering that efforts to improve conscious food literacy, which significantly impacts healthy eating, were limited to a single region and relied on self-reported data, future studies should include diverse populations and investigate how contextual factors such as age, occupation, and regional culture influence food literacy.

Key words: food; healthy nutrition; adult food literacy

ÖZET

Amaç: Bu araştırma yetişkin bireylerde algılanan gıda okuryazarlığı düzeyinin belirlenmesi amacıyla kesitsel bir çalışma olarak yapılmıştır.

Gereç ve Yöntem: Bu araştırma kesitsel türde yapılmıştır. Araştırmanın evrenini 18 yaş üzeri yetişkin bireyler oluşturmaktadır. Araştırmada evreni bilinmeyen örnekleme yöntemi kullanılmıştır. Örneklem büyüklüğü hesaplamasında %95 güven düzeyi, $p=0,50$ olasılık ve $d=0,05$ hata payı esas alınmış ve bu formül doğrultusunda minimum örneklem sayısı 385 kişi olarak belirlenmiştir. Araştırma online platform üzerinden 814 gönüllü bireyin katılımıyla tamamlanmıştır.

Bulgular: Araştırmada katılımcıların yaş ortalamasının $30,78 \pm 10,74$ ve min-max: 18–68 olduğu belirlenmiştir. %72,4'ü kadın olan katılımcıların %87,2'si üniversite mezunudur. Katılımcıların Algılanan Gıda Okuryazarlığı Ölçeğinden (AGOY) elde edilen toplam puan ortalamalarının $89,66 \pm 7,49$ olduğu belirlenmiştir. Katılımcıların sosyo-demografik özelliklere göre algılanan gıda okuryazarlığı (AGOY) ölçeği puan ortalamaları karşılaştırıldığında kadınların puan ortalamalarının erkeklere göre, bekâr olan katılımcıların evli olanlara göre ve sigara, alkol gibi herhangi bir madde bağımlılığı olmayanların, herhangi bir madde bağımlılığı olanlara göre ölçek puan ortalamalarının daha yüksek olduğu ve aralarındaki farkın istatistiksel olarak anlamlı olduğu ($p < 0,05$) belirlenmiştir.

Sonuç: Özetle, bu çalışma yetişkinlerin genel olarak orta-iyi düzeyde gıda okuryazarlığına sahip olduğunu, ancak özellikle etiket okuma ve öğün planlama becerilerinde belirli eksikliklerin bulunduğunu ortaya koymuştur. Sağlıklı beslenme üzerinde oldukça etkili olan bilinçli gıda okuryazarlığı düzeyinin toplum bazında artırılması için planlanan çalışmaların yalnızca tek bir bölgedeki yetişkinlerle sınırlı olması ve verilerin öz-bildirimlere dayanması göz önünde bulundurulduğunda, gelecekteki çalışmalar daha çeşitli popülasyonları içermeli ve yaş, meslek ve bölgesel kültür gibi bağlamsal faktörlerin gıda okuryazarlığını nasıl etkilediğini araştırmalıdır.

Anahtar kelimeler: gıda; sağlıklı beslenme; yetişkin gıda okuryazarlığı

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Introduction

Food is among the fundamental physiological needs of human beings. Nutrition is defined as the intake and utilization of nutrients necessary for growth, development, and a healthy, productive life over an extended period (1). In Maslow's hierarchy of needs, to achieve the highest level—self-actualization—the first level, namely physiological needs, must first be fulfilled. It can be stated that the basis of these physiological needs is formed by water and food, which serve as the source of energy required for metabolic activities (2,3).

Nutrition is dependent on the economic, social, and cultural structures of societies. Therefore, dietary habits may vary according to time and place. Income increases, social and cultural changes, higher levels of education, the removal of national market boundaries, improved communication opportunities, the development of retailing, and advances in transportation can all influence the nutritional levels of societies and alter food product consumption (4). Moreover, parameters such as social and cultural changes, working conditions, education level, beliefs, production, and economic status are among the factors influencing dietary patterns and food consumption within societies (5). It can be stated that, due to changing eating habits worldwide and the increasing tendency toward fast-food consumption, many chronic diseases such as cancer, diabetes, gout, and obesity have become widespread as major health problems starting from early ages (6–8). Excessive or insufficient food consumption aimed at meeting daily energy requirements may lead to health problems such as obesity, hypertension, and diabetes (9,10). In response to fast-food eating habits and negative conditions in the food system, the “slow food” movement was initiated worldwide, with objectives such as supporting biodiversity, promoting slow-food consumption, protecting local producers, and preserving traditional cooking, cultivation, and processing methods (11–14).

Food literacy emerges as a newly developed term that encompasses all knowledge and skills related to the use of food. The popular definition of food literacy is “the ability to fundamentally understand the nature and importance of food, to acquire knowledge about food, and to process, analyze, and utilize it.” Food literacy includes components such as initiative, planning and management, selection, knowledge of food sources, preparation, eating, nutrition, and language (15,16). Preventing obesity and chronic diseases can

be achieved by adopting proper dietary habits from an early age. In prevention programs prepared for this purpose, increasing food literacy is prioritized (17,18). Educational initiatives aimed at improving access to appropriate food and its use are considered integral to food literacy (19). Increasing adults' responsibility for selecting and consuming healthy food is possible by raising awareness of what to do when encountering food that poses a health risk (20,21). Although there are no precise data on food literacy rates worldwide, it has been reported that the level of food literacy knowledge in Türkiye is 36.2%, and that food literacy rates do not vary according to characteristics such as age and gender, but are associated with educational level, with food literacy increasing as education level rises (22,23). Awareness-raising initiatives and educational programs in this regard are considered effective in preventing lifestyle-related diseases and deaths. This study was conducted to determine adults' perceived food literacy levels.

Research Questions:

1. What is the perceived food literacy level among adult individuals?
2. Do individuals' socio-demographic characteristics influence their food literacy level?

Method

Type of research

This study was conducted as cross-sectional research to determine the perceived food literacy levels among adults.

Population and Sample

The study population consisted of adult individuals aged 18 and older. The unknown population sampling method was employed. In calculating the sample size, a 95% confidence level, a probability of $p=0.50$, and a margin of error of $d=0.05$ were used. According to this formula, the minimum sample size was 385 individuals. In addition, a power analysis was conducted to support the statistical validity of the study. Within the scope of the power analysis, calculations were performed by assuming a 95% confidence level, 80% test power ($1-\beta$), and a medium effect size. As a result of this analysis, it was similarly determined that the recommended sample size for the study should be at least 385 participants. The research was conducted with the

participation of 814 volunteers. The inclusion criteria for the study were: being 18 years of age or older, having no psychiatric diagnosis, and volunteering to participate. The exclusion criteria were: being under 18 years of age, having any psychiatric diagnosis, and completing the form incompletely or incorrectly.

Data Collection Tools and Characteristics

Two instruments were used for data collection. 1. A questionnaire developed by the researchers based on the literature, consisting of 8 questions regarding socio-demographic characteristics. 2. The Perceived Food Literacy Scale, developed by Poelman et al. (2018) and adapted into Turkish by Tari Selçuk et al (22), was employed. The scale consists of 29 items and 8 sub-dimensions: I. Food Preparation Skills (items 1–6), II. Resistance and Resilience (items 7–12), III. Types of Healthy Snacks (items 13–16), IV. Social and Conscious Eating (items 17–19), V. Examination of Food Labels (items 20–21), VI. Daily Meal Planning (items 22–23), VII. Spending on Healthy Foods (items 24–25), VIII. Availability of Healthy Food (items 26–29). The total score obtained from the scale indicates the level of perceived food literacy, with higher scores representing higher levels of food literacy.

Data Analysis

Statistical analyses were performed using the statistical package for the social sciences (IBM Statistical Package for Social Sciences (SPSS) program version 22.0). A significance level of $p < 0.05$ was accepted. To present the distributions of participants' demographic characteristics and the main variables used in the study, a frequency analysis was conducted. This method was preferred to describe the sample's general structure and summarize the data. To determine whether there was a statistically significant difference between the participants' binary variables and the mean scale values, an independent samples t-test was applied. For comparing the mean values of the scales across three or more variables, a one-way ANOVA was used.

Ethical Approval

Ethical approval for the study was obtained from the Kafkas University Faculty of Health Sciences Non-Interventional Research Ethics Committee, with decision number 02 and reference number 81829502.903/19, dated 29.02.2024.

Results

The mean age of the participants was 30.78 ± 10.74 . It was determined that 72.4% of the participants were female, 87.2% were university graduates, 1.7% were primary school graduates, 58.5% were single, and 83.8% lived in a nuclear family. Additionally, 21.0% of the participants reported having an income less than their expenses, 62.8% had an income equal to their expenses, 23.7% reported smoking or alcohol use, and 17.2% had a chronic disease (Table 1).

When examining the scores from the Perceived Food Literacy Scale (PFLS), the mean total score was 89.66 ± 7.49 . Regarding the sub-dimensions of the scale, the mean score for the food preparation skills sub-dimension was 19.94 ± 2.70 , for resistance and resilience it was 18.04 ± 3.15 , for the types of healthy snacks sub-dimension it was 12.95 ± 1.96 , and for the social and conscious eating sub-dimension it was 11.47 ± 1.99 . In addition, among the other sub-dimensions of the scale, the mean score for examination of food labels was 6.08 ± 0.85 , for daily meal planning it

Table 1. Socio-demographic characteristics of the participants (n=814)

Variables	$\bar{X} \pm SD^*$	min-max
Age	30.78 ± 10.74	18.0 ± 68.00
Variables	n	%
Gender		
Female	589	72.4
Male	225	27.6
Educational status		
Primary school	14	1.7
Secondary school	7	0.9
High school	83	10.2
University	710	87.2
Marital status		
Single	476	58.5
Married	338	41.5
Family type		
Nuclear family	682	83.8
Extended family	132	16.2
Income status		
Income less than expenses	171	21.0
Income equal to expenses	511	62.8
Income greater than expenses	132	16.2
Smoking, alcohol use		
Yes	193	23.7
No	621	76.3
Chronic disease		
Yes	140	17.2
No	674	82.8

*: mean \pm standard deviation.

Table 2. Descriptive statistics of the scores obtained from the Perceived Food Literacy Scale (PFLS) (n=814)

Scale and sub-dimensions	n	Minumum	Maximum	$\bar{X} \pm SD^*$
Perceived Food Literacy Scale (PFLS)	814	64	111	89.66±7.49
Food preparation skills	814	10	27	19.94±2.70
Resistance and resilience	814	9	28	18.04±3.15
Types of healthy snacks	814	7	19	12.95±1.96
Social and conscious eating	814	3	15	11.47±1.99
Examination of food labels	814	2	9	6.08±0.85
Daily meal planning	814	2	10	6.19±1.80
Spending on healthy foods	814	2	10	7.06±1.67
Availability of healthy food	814	4	20	11.15±1.83

*: mean ± standard deviation.

was 6.19±1.80, for spending on healthy foods it was 7.06±1.67, and for availability of healthy food it was 11.15±1.83 (Table 2).

When participants' socio-demographic characteristics were compared with the mean scores on the Perceived Food Literacy Scale (PFLS), women had higher scores than men, and the difference between them was statistically significant ($p < 0.05$). It was determined that married participants had higher mean scores than single participants, and the difference between them was statistically significant ($p < 0.05$). Participants without any substance dependence, such as smoking or alcohol use, had higher scores than those with substance dependence, with the difference being statistically significant ($p < 0.05$). However, no statistically significant differences ($p > 0.05$) were found between PFLS mean scores and participants' educational differences, income levels, or presence of chronic disease (Table 3).

Discussion

In this study, the perceived food literacy levels of adults and their relationship with socio-demographic variables were examined. The participant profile in the present study, with respect to various socio-demographic characteristics, was consistent with that reported in similar studies, such as the study conducted by Tari Selçuk (2). This comparability suggests that the sample is appropriate for concluding in the context of adult food literacy research.

The findings indicate that, overall, participants had an above-average level of food literacy ($M=89.66 \pm 7.49$).

Table 3. Mean distributions of the perceived food literacy scale (PFLS) according to the socio-demographic characteristics of the participants (n=814)

Variables	Groups	n	\bar{X}	SD**	T-test		
					t	sd	p
Gender	Female	589	90.30	7.40	-3.69	812	0.00
	Male	225	87.99	7.46			
Marital status	Single	476	88.34	7.58	-6.11	812	0.01
	Married	338	91.52	6.94			
Family type	Nuclear family	632	89.67	7.41	-0.12	812	0.90
	Extended family	132	89.58	7.89			
Smoking, alcohol use	Yes	193	87.49	7.51	-4.65	812	0.00
	No	621	90.33	7.35			
Chronic disease	Yes	140	90.20	8.15	-0.94	812	0.34
	No	674	89.55	7.34			
Educational status	Primary school	14	91.97	8.24	1.51	810	0.21
	Secondary school	7	92.25	7.10			
	High school	83	88.42	7.83			
	University	710	89.73	7.42			
Income status	Income less than expenses	171	88.84	7.57	1.54	813	0.22
	Income equal to expenses	511	89.77	7.56			
	Income greater than expenses	132	90.29	7.04			

*: mean; **: standard deviation.

This result is consistent with studies conducted across different regions of Türkiye, including those involving university students and adult populations in urban areas (e.g., Izmir, Ankara) (23,24). However, the mean scores are lower than those reported in studies from high-income countries, including Australia and Canada (25,26). These differences may be attributed to regional variations in educational systems, national food policies, food labeling regulations, and cultural dietary practices (27). For instance, while food literacy

is supported through structured nutrition education and community-based programmes in countries like Australia, similar initiatives are less common in many parts of Türkiye.

When examining the sub-dimensions, participants obtained the highest score on the food preparation skills sub-dimension ($M=19.94\pm 2.70$). This finding suggests that individuals are experienced in food preparation processes in daily life. On the other hand, the sub-dimensions of examining food labels ($M=6.08\pm 0.85$) and daily meal planning ($M=6.19\pm 1.80$) had the lowest mean scores. This indicates that individuals tend to rely on habits and practical orientations rather than on knowledge-based evaluations when making dietary choices. Similarly, the literature reports that label literacy generally remains weak across societies, which in turn limits conscious food consumption (26,27). Possible barriers to label literacy may include limited nutrition education, the small, complex design of labels, a lack of standardisation in labelling formats, and the use of technical terminology that consumers find difficult to understand. Furthermore, time constraints during shopping and the perception that label reading is unnecessary or confusing can also contribute to low levels of label literacy (28,29).

When evaluated by socio-demographic characteristics, women ($M=90.30\pm 7.40$) had significantly higher food literacy levels than men ($M=87.99\pm 7.46$) ($p < 0.01$). This finding aligns with previous studies reporting that women generally exhibit greater nutritional awareness and are more actively involved in food purchasing and preparation (30,31). In addition, married individuals ($M=91.52\pm 6.94$) scored higher than single individuals ($M=88.34\pm 7.58$), suggesting that family life and shared household responsibilities may promote more regular and healthier eating behaviours, consistent with similar findings in the literature (32). Participants who reported smoking and/or alcohol use ($M=87.49\pm 7.51$) had lower food literacy scores compared to non-users ($M=90.33\pm 7.35$) ($p < 0.01$), supporting previous research linking poor dietary awareness to other unhealthy lifestyle habits (33,34). In contrast, no significant differences were found in relation to the presence of chronic disease ($p=0.34$), family type ($p=0.90$), educational level ($p=0.21$), or income status ($p=0.22$). Although education and income are typically considered determinants of food literacy (25,26), the absence of significant differences in this study may be explained by the

relatively homogeneous profile of participants, most of whom were university graduates with similar socioeconomic characteristics.

In summary, this study highlighted that while adults generally exhibit moderate-to-good food literacy, specific gaps remain, particularly in label reading and meal-planning skills. The results also identified groups at greater risk of low food literacy, including men, single individuals, and those who engage in smoking or alcohol use. Targeted interventions for these groups should be prioritised in future public health strategies. Improving label literacy through simplified food labelling, digital education tools, and community-based nutrition programmes may help reduce disparities. Considering that the sample was limited to adults from a single region and relied on self-reported data, future studies should include diverse populations and explore how contextual factors such as age, occupation, and regional culture influence food literacy.

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