Original Article

The Relationship of Neophobia and Neophilia to the Life Events Among Young Adults

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Abstract

Life events that the students experience during the university life can affect young individuals' food preferences and food neophobia. This study aims to evaluate the relationship of neophobia and neophilia to life events among young adults. The research is descriptive, cross-sectional, and correlational and was conducted with 408 university students studying at a private, non-profit university. Data were collected with a Personal Information Form, General Neophobia Scale (GNS), Food Neophobia Scale (FNS), and Life Events Inventory (LEI). The mean age of students was 20.8±1.85 years and 79.4% were female. The mean GNS score of female students and the mean LEI score of smokers were high ($p<0.05$). While the mean FNS score of alcohol users was low, the mean LEI score was high ($p<0.05$). There was a weak positive correlation between GNS and FNS mean scores and between GNS and LEI ($r=0.212$, $p<0.001$; $r= 0.314$, $p<0.001$). The predictors of general neophobia were gender, food neophobia, and excess of life events. Prevention of food neophobia may also affect the negative perception of students on the stressors in their lives. It is recommended to organize training programs for students on managing food neophobia and other university-related stressors.

Keywords: Neophobia, Food neophobia, Life events, Young adults

Introduction

While new and different foods are generally attracted by society, some people might be suspicious about new and different foods. More positive perceptions about a certain types of food might lead to more positive emotional reactions about that food [1]. However, food neophobia should not be confused with food selectivity. Fear of novelty is a psychological condition that can create pressure in an individual's social life [2]. In essence, it can be considered as a defense mechanism that people have developed against a new phenomenon. Neophobia tendency, on the other hand, which is the phenomenon of rejecting new and foreign foods, is seen as an important physiological defense mechanism that protects individuals from harmful foods. Therefore, food neophobia causes the tendency to consume the same type of food constantly and affects the restriction of consuming new foods [3]. Food neophobia influences individuals' daily food choices and affects behavioral and psychological effects (anxiety, fear, anger), social effects, socio-demographic characteristics (age, gender, education level, religion, culture, income status, psychological factors), and sensory characteristics of the food. It is associated with many variables such as smell, taste, appearance, nutritional value, arousal (fear, hunger), genetic and environmental effects (family and upbringing), and new technologies applied in the food industry (nanotechnology, genetic modification, functional product) [4, 5]. Studies reveal that individuals with neophobic tendencies often face negative dietary outcomes. These include poor diet quality, reduced food variety, obesity, and nutritional deficiencies [6, 7].

The role of social influence in shaping food preferences has been well-documented. Food neophobia, a phenomenon observed across various age groups, presents a complex challenge when analyzing its underlying differences. The proclivity towards food neophilia is considered a facet of personality, offering insight into individuals' openness to experimenting with new or exotic culinary options [1]. In contrast to food neophobia, food neophilia seeks to experience new foods and enjoy a wide variety of familiar and unknown foods. Individuals demonstrating food neophilia possess a keen eagerness to sample new culinary

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offerings and maintain a perpetual curiosity for novel food experiences [8]. Adaptation to changing living conditions is necessary for every stage of life. It is reported that individuals with a neophilic inclination display heightened curiosity and a greater openness to trying new foods compared to those who are not neophilic. They tend to adopt a more innovative and adventurous approach to their eating habits and lifestyle. Additionally, individuals who immerse themselves in diverse cultural experiences tend to exhibit elevated levels of neophilia [1, 8]. In a study focusing on neophilic individuals, findings revealed that they had a lower body mass index (BMI). Neophilic individuals differ from their non-neophilic counterparts in their perspectives toward new foods, distinctive lifestyle choices, and psychological characteristics. Neophilic individuals enjoy trying new foods and view experimental eating as a way to enrich their lives. They are also more open to trying foods recommended by their friends [9].

University students try to adapt to their new environment and life, especially when they are just starting university; problems such as adaptation to classes and school, transportation problems, financial problems, concerns about the future, and problems with friends [10]. Being away from their families and adapting to a new environment during their education exposes them to new foods and affects their eating habits. Food neophobia could be experienced in this process can lead to negative consequences such as alcohol use, changing nutritional practices, and increased BMI [6]. In this context, life events are believed to influence both food preferences and the development of food neophobia. Understanding the factors affecting the food choices of young people can support the establishment of healthy eating habits and lifestyles in the fight against obesity and related health problems, which have become an increasing problem especially in developed and developing countries [11]. Hence, the objective of this descriptive study is to assess the relationship between fear and seeking new food and life events among young people.

Materials and Methods

Design

It is a descriptive, cross-sectional, and relationship-seeking type of research.

Setting

The research universe encompasses university students aged between 18 and 25, currently enrolled in the spring semester of the academic year 2021-2022. Sample size was calculated using the G-Power software program. Taking into account the scales employed in the study, the required sample size was established at 240. This determination was made based on an effect size of 0.32, a 95% confidence interval, and a power of 0.80 [12]. The study's sample comprised 408 students who willingly agreed to take part in the research.

Data Collection

In the research, a data collection form was created by using "Google Forms". The link to the form was then shared with university students through social media accounts and instant messaging applications by the researchers and volunteers were asked to participate.

Instruments

The research data were gathered through the utilization of the "Personal Information Form", General Neophobia Scale", "Food Neophobia Scale" and the "Life Events Inventory".

Personal Information Form

The form, derived by the researchers through an extensive literature review, comprises a total of 8 questions. These questions encompass various demographic information, including gender, age, the department they study, height, and body weight [2, 6].

General Neophobia Scale (GNS)

Developed by Pliner and Hobden in 1992, the GNS comprises 8 items designed to gauge a general aversion to new experiences, contrasting a preference for familiar situations and individuals with a willingness to embrace novel situations and people. In the current study, the reliability coefficient of Cronbach's alpha was found to be 0.860 [13].

Food Neophobia Scale (FNS)

The "Food Neophobia Scale" developed by Pliner and Hobden in 1992, was employed to assess food neophobia [13]. Comprising 10 questions, each item is rated on a 7-point Likert scale ranging from"strongly disagree" to "strongly agree." The scores from these questions are aggregated to derive the food neophobia score. Certain statements in the scale were subjected to reverse coding. Specifically, items 1, 4, 6, 9, and 10 gauge the level of innovativeness in food, while items 2, 3, 5, 7, and 8 measure the degree of fear of novelty in food. Total scores on this scale range from 10 to 70, with higher scores indicative of a greater degree of food neophobia. For this study, the Cronbach alpha reliability coefficient was determined to be 0.839.

Life Events Inventory (LIE)

The scale was developed to measure the frequency of certain daily difficulties and life events (such as transportation problems or financial problems) experienced by university students in Turkey [14]. The scale, which consists of 49 items in total, is scored as a 5-point Likert scale. In the current study, the Cronbach's alpha reliability coefficient was determined to be 0.943.

Statistical Analysis

The research data were analyzed using the SPSS (Statistical Package for Social Sciences) 26 program. The normality of the data was assessed through both visual means, such as histograms, and analytical methods, including the Kolmogorov-Smirnov and Shapiro-Wilk tests. Descriptive

statistical analyses were conducted, employing numbers and percentages for categorical variables, while continuous variables were characterized using mean, standard deviation, and minimum and maximum values. Parametric tests Student's t-test and ANOVA test were used to compare the mean scores of the General Neophobia Scale (GNS), the Food Neophobia Scale (FNS), and the Life Events Inventory (LEI), and the Pearson correlation test was used to evaluate the relationship between the scale mean scores. Hierarchical multiple regression was applied to examine the relationship between general neophobia level and demographic variables and life events. Reliability analyses were also performed with Cronbach's alpha, and $p<0.05$ was accepted as the limit of significance in all statistical decisions.

Ethical Approval

To conduct the research, explicit approval was secured from the university's ethics committee specializing in non-interventional studies (Date: 23.05.2022, Decision No: 111), as well as from the institution overseeing the research. During the implementation of the research, the Helsinki Declaration Principles were applied. The students participated in the study by confirming the "I agree to participate in the study" option at the entrance of the data collection form. Furthermore, authorization was sought and obtained from the authors who had previously conducted Turkish validity and reliability studies on the scales utilized in the study.

Table 1. Descriptive characteristics of students (n=408)

Descriptive Characteristics		
	Mean±SD	**Min-Max**
Age (years)	20.8±1.85	18.0-37.0
BMI (kg/m^2)	22.3±3.63	16.3-38.5
	n	**%**
Gender		
Male	84	20.6
Female	324	79.4
BMI		
Underweight (<18.5 kg/m^2)	48	11.8
Normal (18.5-24.9 kg/m^2)	279	68.4
Overweight (>25 kg/m^2)	81	19.9
Faculty		
Health Sciences	225	55.1
Social Sciences	183	44.9
Class		
Preparation	2	0.5
Freshman	193	47.3
Sophomore	120	29.4
Junior	77	18.9
Senior	16	3.9
Smoking		
Yes	95	23.3
No	313	76.7
Alcohol use		
Yes	103	25.2
No	305	74.8
Food allergy		
Evet	48	11.8
Hayır	360	88.2
Group by GNS		
Neophilic	76	18.6
Neutral	193	47.3
Neofobic	139	34.1

BMI: Body Mass Index, GNS: General Neophobia Scale, FNS: Food Neophobia Scale, LEI: Life Events Inventory

Results and Discussion

The study involved 408 students, and the mean age of these students was 20.8±1.85 years, ranging from 18.0 to 37.0 years. The participants' mean BMI was 22.3±3.63 kg/m^2 (16.3-38.5). Of them, 79.4% (n=324) were female students, 68.4% (n=279) were underweight, 55.1% (n=225) were health sciences students, and 47.8% (n=195) were freshmen. Among the students, 23.3% (n=95) reported smoking, 25.2% (n=103) use alcohol, and 11.8% (n=48) have food allergies. According to the GNS, 47.3% (n=193) of the students exhibited a neutral score **(Table 1)**.

Table 2. Students' scale scores mean (n=408)

	Mean±SD	Min- Max
GNS	29.5±9.81	8.0-56.0
FNS	35.0±11.23	10.0-70.0
LEI	143.7±32.84	62.0-245.0

GNS: General Neophobia Scale, FNS: Food Neophobia Scale, LEI: Life Events Inventory

When the scale point averages of the students are examined; The mean GNS score was 29.5±9.81, the mean FNS score was 35.0±11.23, and the mean LIE score was 143.7± 32.84 **(Table 2)**.

Table 3. Comparison of GNS, FNS, and LEI Scores to various characteristics (n=408)

Characteristics	GNS		FNS		LEI	
	Mean±SD	Test Statistics	Mean±SD	Test Statistics	Mean±SD	Test Statistics
Gender						
Male	26.6±9.11	t=-3.004	34.8±11.32	t=-0.165	138.3±34.77	t=-1.685
Female	30.2±9.86	p=**0.003***	35.0±11.23	p=0.869	145.1±32.22	p=0.093
BMI						
Underweight(<18.5 kg/m^2)	30.2±9.42	F=0.383	35.6±12.55	F=1.045	143.3±28.67	F=0.007
Normal (18.5-24.9 kg/m^2)	29.6±9.64	p=0.682	35.3±11.23	p=0.353	143.6±33.02	p=0.993
Overweight (>25 kg/m^2)	28.7±10.66		33.3±10.37		144.0±34.82	
Faculty						
Health Sciences (n=225)	29.2±9.50	t=-0.700	35.9±11.08	t=1.870	143.7±32.63	t=0.023
Social Sciences (n=183)	29.9±10.10	p=0.484	33.8±11.35	p=0.062	143.6±33.17	p=0.982
Smoking						
Yes	28.2±9.36	t=-1.485	33.3±12.60	t=-1.632	153.5±32.29	t=3.371
No	29.9±9.92	p=0.127	35.5±10.75	p=0.103	140.7±32.47	**p=0.001**
Alcohol use						
Yes	28.4±9.62	t=-1.331	32.5±11.41	t=-2.597	153.1±34.99	t=3.415
No	29.9±9.86	p=0.184	35.8±11.07	**p=0.010***	140.5±31.50	**p=0.001**
Food allergy						
Yes	29.8±8.76	t=0.228	36.2±12.58	t=0.805	144.7±34.13	t=0.223
No	29.4±9.95	p=0.820	34.8±11.05	p=0.421	143.5±32.71	p=0.823

GNS: General Neophobia Scale, FNS: Food Neophobia Scale, LEI: Life Events Inventory, t: Student's t-test, F: ANOVA test, *p<0.05

The mean GNS score for female students was found to be statistically significantly higher than that of male students (t=-3.004, p=0.003). No significant difference was observed between students' BMI and the mean scores on the scale based on the departments they studied (p>0.05). The mean LIE score of students who smoke and drink alcohol is statistically significantly higher than those who do not (respectively: t=3.371, p<0.001; z= 3.415, p<0.001). Additionally, it was found that the mean FNS score for students who did not consume alcohol was significantly higher than for those who did use alcohol (=-2.597, p=0.010). No statistically significant differences

were identified in the mean scores of GNS, FNS, and LEI based on other characteristics of the students (p> 0.05) **(Table 3)**.

Table 4. Correlation analysis between students' GNS, FNS, and LEI scores (n=408)

Scales	GNS	FNS	LEI
GNS	1	0.212**	0.314**
FNS	0.212**	1	0.407
LEI	0.314**	0.407	1

p<0.001, **r= Pearson correlation coefficient

Table 4 shows the correlation analysis between students' GNS, FNS, and LEI scores. There was a weak and positive correlation between GNS and FNS mean scores and between GNS and LEI (respectively: r=0.212, p<0.001; r= 0.314, p<0.001).

Table 5. Variables associated with general neophobia

	ß	t	Adjusted R^2	(df)	F
I. Demographic characteristics			0.02	(3, 404)	3.66
Gender (Male = 1, Female = 2)	1.25	3.15*			
Age	0.06	1.26			
BMI	0.03	0.60			
II. Health variables			0.05	(7, 400)	4.34

Alcohol	0.01	0.20			
Smoking	0.03	0.50			
Food Allergy	0.01	0.24			
Food Neophobia	0.21	4.17**			
III. Life Events LIE	0.31	6.64**	0.15	(8, 399)	9.72

* p<0.05, ** p< 0.001

Hierarchical multiple regression analysis was conducted to investigate the general neophobia levels among the students. Independent variables were examined in three stages: demographic variables, health variables, and LEI scores, respectively. As shown in **Table 5**, the demographic variables accounted for 2% of the variance, and the relationship was statistically significant ($F(3, 404)=3.66$, $p<0.05$). At the first stage of the analysis, gender was found to be a significant variable. The second stage explained an additional 5% of the variance, with the relationship remaining significant $F(7, 400) = 4.34$, $p<0.001$. At this stage, food neophobia emerged as a significant variable. In the final stage, 15% of the variance was explained, with the relationship remaining significant $F(8, 399)= 9.72$, $p<0.001$. Life events were associated with general neophobia as a significant variable. In total, 22% of the variance was explained. Gender ($t=3.15$), food neophobia ($t=4.17$), and life events ($t=6.64$) were found to be positively correlated with general neophobia.

Food choice plays an important role in daily life by affecting the variety and quality of food consumed [15]. One of the significant factors influencing the food choices of individuals is food neophobia. The term food neophobia is characterized by an aversion or apprehension towards trying new or unfamiliar foods. Food neophobia could be a persistent personality trait that begins in childhood and continues into adulthood [16]. Children are influenced by exemplary models in their environment (such as parents) and they can create a diet accordingly by imitating their parents' nutritional preferences. This situation constitutes feeding behaviors during adulthood. In addition, the attitude towards the food of another child, who is seen as strong by the teacher, friend, or child, whom children see as a role model, might affect the food neophobia tendencies. Despite the universality of food neophobia, there is inter- and intra-individual variability [17]. Food neophobia has been linked to individuals having restricted food preferences and a limited variety in their food choices [18]. Moreover, it has been associated with diets characterized by low food variety, insufficient nutrient intake, and potentially risky dietary patterns [19]. In addition, because exposure to food shapes people's perspectives, the specific environment in which they live might be one of the factors affecting food neophobia. The social conditions contribute to people trying new types of food. The university students are a group with a high probability of meeting new foods due to their new social areas and unfamiliar nutritional environments. Food neophobia can be an important problem for these students due to the types of food to are accustomed to, the time problem, and the financial problems of the students [20]. The university period, which is one of the most important turning points and one of the most stressful periods in life, also affects the eating habits of young people [21]. The current study was conducted among young people. It is specifically valuable as being a study that evaluates the relationship between fear, the search for new food the life events that were experienced among young adults. Studies of food neophobia in adults are relatively rare in the literature [22].

The mean FNS score detected in this study is higher than in studies conducted with similar age groups in Finland (31.2) [23], and England (31.1) [24]. Göbel *et al*. (2023) reported a food neophobia score of 37.2 in their study with university students [5]. The most important reasons for different results are considered to be the effect of eating culture and religious beliefs [5]. The general neophobia score average of the students was determined as 29.5. In a study conducted with bartenders and cooks, the overall neophobia score average was determined as 19.54 [25]. It is an expected result that the members of this profession, who have intercultural interaction and dominate the world's cuisines, are more open to new experiences. A situational factor affecting the food neophobia tendency of consumers is elements such as taste, flavor, smell, and texture. Food neophobia serves as a significant determinant influencing smell, taste, and food consumption behavior [26]. According to the results of this study, gender is identified as one of the variables influencing general neophobia. It was determined that female students were more neophobic than males. This can be interpreted as reducing the tendency of female students to try new foods, especially at the point of maintaining body weight control [27]. Proserpio *et al*. (2018) found that adults with a higher BMI and overweight were more neophobic than those who were not overweight [7]. On the other hand, while some studies sugeset that food neophobia does not differ between women and men [15, 16], most research indicates that men tend to be less neophobic [28, 29]. The tendency of men to exhibit lower food neophobia could also be linked to social or psychological factors, such as traditional gender norms encouraging men to take more risks or be more adventurous, including with food choices. It is considered that this gender-related difference may be related to many variables related to the country where the studies were conducted, the age group of the participants, ethnicity, and cultural and religious beliefs.

A positive correlation has been observed between general neophobia, food neophobia, and life events, based on the findings of this study. Limited information from the literature also supports the result of this study [13, 25]. Considering that low food neophobia is associated with openness to experiences [23], it is an expected outcome that what drives one to avoid new foods generally also leads to avoidance of new and unfamiliar life experiences. On the other hand, students exhibiting high levels of food neophobia tend to perceive the stressors associated with university life as potential threats. Life events are a major source of stress. Negative life events experienced in university life were also found to be associated with depressive symptoms [30]. In this study, life events were found to be associated with general neophobia. Life events are one of the predictor variables of neophobia.

Conclusion

Within the scope of this study, it was seen that the variables predicting general neophobia were gender, having food neophobia, and excess of life events. With globalization, non-traditional food varieties find their place in the country's markets. Avoiding trying new foods can also negatively affect the act of eating, which is an important part of socialization. In this context, it is evaluated that the prevention of food neophobia at a level that may cause adverse effects on health in the youth period will also affect the negative perception of students on the stressors in university life. It is recommended to organize training programs for students on the management of food neophobia and university-related stressors.

Limitations

This cross-sectional study was carried out within a country, one university and relying on the self-report statements provided by university students.

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References

1. Baah NG, Bondzi-Simpson A, Ayeh JK. How neophilia drives international tourists' acceptance of local cuisine. Curr Issues Tourism. 2020;23(18):2302-18. doi:10.1080/13683500.2019.1619676
2. Yiğit S, Doğdubay M. A research on consumers' fear of novelty in food. Gastroia J Gastron Travel Res. 2020;4(1):1-16. doi:10.32958/gastoria.604386
3. Jaeger, SR, Chheang, SL, Prescott J. Variations in the strength of association between food neophobia and food and beverage acceptability: A data-driven exploratory study of an arousal hypothesis. Nutrients. 2021;13(10):3657. doi:10.1016/j.sbspro.2015.01.039
4. Pliner P, Salvy S. Food neophobia in humans. Front Nutr Sci. 2006;3:75. doi:10.1079/9780851990323.0075
5. Göbel P, Şanlıer N, Yılmaz S, Açikalin B, Kocabaş Ş. Investigation of the relationship between food neophobia, body perception, and life satisfaction in university students. Gevher Nesibe J Med Health Sci. 2023;8(1):202-12. doi:10.5281/zenodo.7601544
6. Hazley D, McCarthy SN, Stack M, Walton J, McNulty BA, Flynn A, et al. Food neophobia and its relationship with dietary variety and quality in Irish adults: Findings from a national cross-sectional study. Appetite. 2022;169:105859. doi:10.1016/j.appet.2021.105859
7. Proserpio C, Laureati M, Invitti C, Pagliarini E. Reduced taste responsiveness and increased food neophobia characterize obese adults. Food Qual Prefer. 2018;63:73-9. doi:10.1016/j.foodqual.2017.08.001
8. Siddiqui SA, Zannou O, Karim I, Kasmiati, Awad NM, Gołaszewski J, et al. Avoiding food neophobia and increasing consumer acceptance of new food trends—A decade of research. Sustainability. 2022;14(16):10391. doi:10.3390/su141610391
9. Premordia I, Gál T. Food neophilics' choice of an ethnic restaurant: The moderating role of authenticity. Plos One. 2023;18(5):e0281453. doi:10.1371/journal.pone.0281453
10. Mokhampanyane M. Adjustment dynamics of first-year students to university life at a rural university in South Africa. Education. 2024;5(7):1238-49. doi:10.38159/ehass.20245714
11. Białek-Dratwa A, Szczepańska E, Szymańska D, Grajek M, Krupa-Kotara K, Kowalski O, et al. Neophobia—A natural developmental stage or feeding difficulties for children? Nutrients. 2022;14(7):1521. doi:10.3390/nu14071521
12. Hos K, Çiftçi EZ. Consumers' lifestyle and food neophobia tendency. Turk J Tour Stud. 2022;6(1):139-62. doi:10.26677/TR1010.2022.945
13. Pliner P, Hobden K. Development of a scale to measure the trait of food neophobia in humans. Appetite. 1992;19(2):105-20. doi:10.1016/0195-6663(92)90014-W
14. Oral M. Relationship between perfectionist personality traits and life events and depression symptoms in university students. "Examination of depression susceptibility-stress model" (Master's thesis). Middle East Technical University Institute of Social Sciences, 1999, Ankara.
15. Çakır B, Durmaz SE, Kılınç FN, Özenir Ç, Gümüş AB. Relationship between food neophobia and dietary habits in Turkish adults: A cross-sectional study. Artuklu Int J Health Sci. 2023;3(1):10-7. doi:10.58252/artukluder.1240393
16. Zhao JB, Gao ZB, Li YX, Zhang XY, Zou LQ. The food neophobia scale (FNS): Exploration and confirmation of factor structure in a healthy Chinese sample. Food Qual Prefer. 2020;79:103791. doi:10.1016/j.foodqual.2019.103791
17. Guidetti M, Carraro L, Cavazza N, Roccato M. Validation of the revised food neophobia Scale (FNS-R) in the Italian context. Appetite. 2018;128:95-9. doi:10.1016/j.appet.2018.06.004
18. Soucier VD, Doma KM, Farrell EL, Leith-Bailey ER, Duncan AM. An examination of food neophobia in older adults. Food Qual Prefer. 2019;72:143-6. doi:10.1016/j.foodqual.2018.10.010
19. Sarin HV, Taba N, Fischer K, Esko T, Kanerva N, Moilanen L, et al. Food neophobia associates with poorer dietary quality, metabolic risk factors, and increased disease outcome risk in population-based cohorts in a metabolomics study. Am J Clin Nutr. 2019;110(1):233-45. doi:10.1093/ajcn/nqz100
20. Dhillon J, Diaz Rios LK, Aldaz KJ, De La Cruz N, Vu E, Asad Asghar S, et al. We don't have a lot of health options: Food environment perceptions of first-year college students attending a food desert campus. Nutrients 2019;11(4):16. doi:10.3390/nu11040816
21. Arslan N, Aslan Ceylan J, Hatipoğlu A. The relationship of fast food consumption with sociodemographic factors, body mass index and dietary habits among university students. Nutr Food Sci 2023;53(1):112-23. doi:10.1108/NFS-01-2022-0003
22. Marcontell DK, Laster AE, Johnson J. Cognitive-behavioral treatment of food neophobia in adults. J Anxiety Disord. 2003;17(2):243-51. doi:10.1016/S0887-6185(01)00090-1
23. Knaapila A, Silventoinen K, Broms U, Rose RJ, Perola M, Kaprio J, et al. Food neophobia in young adults: Genetic architecture and relation to personality, pleasantness and use frequency of foods, and body mass index—A twin study. Behav Genet. 2011;41:512-21. doi:10.1007/s10519-010-9403-8

24. Stafford LD, Tsang I, López B, Severini M, Iacomini S. Autistic traits associated with food neophobia but not olfactory sensitivity. Appetite. 2017;116:584-8. doi:10.1016/j.appet.2017.05.054
25. Ceylan V, Sarıışık M, Mustu C. Associations between food neophobia and culinary creativity: A study with a sample of chefs and bartenders in Turkey. JOTAGS. 2020;8(4):2402-16. doi:10.21325/jotags.2020.718
26. Sorokowska A, Chabin D, Hummel T, Karwowski M. Olfactory perception relates to food neophobia in adolescence. Nutrition. 2022;98:111618. doi:10.1016/j.nut.2022.111618
27. Bolat H, Ergun C. Fear of experimenting with new foods: Both a cause and a consequence of obesity development. Adnan Menderes Univ Fac Health Sci J. 2023;7(1):145-58. doi:10.46237/amusbfd.1152162
28. Nyberg M, Olsson V, Wendin K. Reasons for eating insects? Responses and reflections among Swedish consumers. Int J Gastron Food Sci. 2020;22:100268. doi:10.1016/j.ijgfs.2020.100268
29. Colín-Mar I, Zúñiga-Torres MG, Rojas-Rivas E. Food neophobia among university students: A study of the social perception of food in times of COVID-19. Estud Soc. Rev Aliment Contemp Desarro Reg. 2021;31(58). doi:10.24836/es.v31i58.1134
30. Ji L, Chen C, Hou B, Ren D, Yuan F, Liu L, et al. A study of negative life events driven depressive symptoms and academic engagement in Chinese college students. Sci Rep. 2021;11(1):17160. doi:10.1038/s41598-021-96768-9