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Research Of The Relationship Between Gastronomy Product Consumption And Exercise Addiction (Afyonkarahisar Province Example)[1]

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Abstract

The purpose of this study is to investigate the relationship between the exercise dependency level and locally certified food products with geographical indication in the city of gastronomy. A quantitative research model and a correlational survey method were used in the study. The sample group consisted of 110 students (age 21.17±1.69; 56.82±7.38 kg) and 168 (age 22.29±1.88; 73.39±9.18 kg) male students enrolled at the Faculty of Sports Sciences. The Demographic Information Form, Gastronomy Product Scale (15 foods), and Exercise Dependence Scale were used in the data collection process. Frequency, percentage, mean, standard deviation, and chi-square tests were applied in the data analysis. The results showed that 50% of women were asymptomatic and 7.3% were exercise dependent, while 45.2% of men were symptomatic and 16.1% were dependent ($p<0.04$). On the gastronomy food scale, no difference was found between genders for bending, ply, sausage, wish, poppy, Afyon kebab, stuffed ilibada, eggplant pastry, eggplant kebab, beard soup and poppy seed foods, but Turkish delight consumption was found to be significantly higher among men than women ($p<0.01$). In terms of exercise addiction, the asymptomatic group showed a significant difference only in the consumption of Turkish delight and sousage kebab ($p<0.02$), while the consumption of pastrami and Turkish bread pudding was significantly high ($p=0.05$), although not statistically significant. In conclusion, foods in the gastronomic city are thought to influence exercise addiction.

Keywords: Certified product, Exercise addiction, Recreational athlete

INTRODUCTION

Every society has its own unique culinary culture (Bekar and Belpınar, 2015). These differences in culinary cultures stem from various factors such as geographical features, climatic conditions, wars, trade relations and migrations (Taşpınar, 2017). Turkish cuisine, which encompasses the unique flavours of seven different regions, is one of the world's most established and important cuisines, offering a wide variety of dishes. The geographical differences in Turkey have also shaped the richness and diversity of Turkish cuisine. Gastronomy is defined as the food culture or culinary art in which food and beverages are prepared according to hygiene and sanitation rules within a specific system and presented in a visually and tastefully appealing manner (Dilsiz, 2010).

The Afyonkarahisar cuisine has a wide range of dishes due to its formation under the influence of different cultures throughout history and its location at the intersection of various geographical regions. Afyonkarahisar is one of three cities in Turkey accepted into the UNESCO Creative Cities Network in the gastronomy category in 2019, giving it an important place on the international gastronomy scene (Sarıyer, Can and Gören., 2025). In this context, the list of foods belonging to the Gastronomy City is published on the Afyonkarahisar Governorate website.

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A balanced and adequate diet is crucial for athletes not only for maintaining health but also for sustaining high physical performance (Dinç, Gökmen and Ergin., 2017). A balanced diet with appropriate body composition enables athletes to train longer and more intensely and recover more quickly; thereby reducing the risk of fatigue, illness, and injury while contributing to increased athletic performance (Mielgo-Ayuso, Maroto-Sánchez, Luzardo-Socorro et al., 2015; Trakman, Forsyth, Devlin and Belski., 2016).

Nutrition alone cannot compensate for inadequate training or limited physical capacity; however, properly planned nutrition programmes support athletes' fitness and health, helping them to maximise their potential and performance (Sekulic et al., 2019). Athletes are advised to be cautious about high-fat diets (more than 30% of total energy intake), as high-fat nutrition can negatively affect training and competition performance by reducing carbohydrate intake. The amount of fat required generally varies depending on the athlete's training level and goals, but the type of fat consumed is also of great importance (Potgieter, 2013).

The primary reason for choosing nutritional supplements is to support athletes in achieving adequate and balanced nutrition, strengthen their immune systems, enhance their athletic performance, and contribute to accelerating recovery processes following injuries. Such products are thought to help athletes meet their daily nutritional requirements and provide the additional support the body needs during training periods (Ayyıldız, 2024). Exercise addiction, which has been addressed as a type of addiction in recent years, is a dysfunctional behaviour pattern that results in negative experiences in a person's physical and psychological health, as well as their social life, due to the loss of control over excessive exercise or training behaviours, and which can thus become a behavioural addiction (Nogueira et al., 2018; Juwono and Szabo, 2021). Sports nutrition is a rapidly growing field of scientific research that attracts intense interest from both the academic community and the general public interested in sports. The interaction between exercise and nutrition is both complex and fascinating. There are countless potential sports nutrition products, pathways, and hypotheses to be tested (Nieman, 2021). With the art of gastronomy, individuals have begun to derive greater visual and gustatory pleasure from food. This pleasure derived from food is now surrounded by consumer culture, leading to excessive consumption. This situation has caused some deterioration in body appearance and some health problems (Özdemir, 2022). The effect of increased food consumption on exercise has been the subject of research.

Most research has focused on the effects of exercise training protocols on energy intake (Titchenal, 1988), but no study has been found on the effects of gastronomic cities on exercise addiction. This research is expected to contribute to this gap. In this context, our topic is the investigation of “Exercise dependency among university students living in a gastronomic city”.

METHOD

Research Model: The research employed a quantitative research model using a survey method. A simple random sampling method was used for sample selection in the research.

Ethics Approval: Before the research, approval was obtained by the A.K. University Health Sciences Scientific Research and Publication Ethics Board with the decision dated (17.04.2024 -2024/130-06). In addition, permission from the relevant institution has also been obtained.

Population and Sample / Study Group: The sample group for the study consisted of 110 students (age 21.17±1.69; 56.82±7.38 kg) and 168 (age 22.29±1.88; weight 73.39±9.18 kg) male students enrolled at the Faculty of Sports Sciences at Kocatepe University in Afyonkarahisar.

Data Collection Tools: The Demographic Information Form (age, height, body weight, how long they have lived in Afyon), Gastronomy Food Survey (15 foods) and Exercise Addiction Scale (EAS-21) were used in the research data collection process.

The gastronomy food survey used registered gastronomic products from the official website of the Afyonkarahisar Governorship and asked about the frequency of their consumption. Chorbach’s Alpha 0,85.

Exercise Addiction Scale (EAS-21): The scale consists of 21 items, each rated on a 6-point Likert scale from never (1) to always (6). Seven addiction criteria are used. Individuals scoring between 1 and 2 are non-dependent (asymptomatic), those scoring between 3 and 4 are symptomatic, and those scoring between 5 and 7 are exercise dependent.

Collection of Data: The application of data collection tools was conducted outside of teaching hours. Data was collected between June and November 2024. Participants were voluntarily included in the data collection process. Participants were informed about the purpose of the research and that the information obtained would be used solely for research purposes and not for any other purpose. They were informed that they could withdraw from the research at any time. Voluntary consent forms were obtained from the participants.

Procedure: Prior to the research, a literature review was conducted and the necessary permissions were obtained. The scales were applied, and data entry and analysis were carried out. Reporting was conducted based on the results obtained.

Analysis of Data: For the analysis and evaluation of the data, the Statistical Package for the Social Sciences (SPSS) 25.0 software package was used, with a significance level of 0.05. Scale data were analysed using frequency analysis, percentage values, mean values, and standard deviation. The research data was found to be normally distributed, with normality analysis ranging from -1.5 to +1.5, skewness (0.472) and kurtosis (-0.810) (Tabachnick and Fidell, 2013). Due to the categorical nature of the variables, data analyses were evaluated using the Pearson Chi-square test.

RESULTS

Table 1. Demographic characteristics and frequency distribution of variables

Variables	Gender	N	%	$\overline{X}$	ss
Age (year)	Women	110	(39,6)	21,17	1,69
	Man	168	(60,4)	22,29	1,88
Height (cm)	Women	110	(39,6)	165,39	5,96
	Man	168	(60,4)	178,05	6,78
Body weight (Kg)	Women	56,82	(39,6)	56,82	7,38
	Man	73,39	(60,4)	73,39	9,18
Length of residence in Afyon province (years)	Women	110	(39,6)	10,96	8,7
	Man	168	(60,4)	11,17	9,29

The average age of women is 21.17±1.69, while the average age of men is 22.29±1.88. Table 2 shows height, body weight, and length of residence in Afyon Province. The length of residence in the province was reported to be 10.96 years for women and 11.17 years for men.

Table 2. Distribution level of exercise dependency by gender

Variables			Asymptomatic	Symptomatic	Dependent	Total	df	x^2	P
Gender	Women	N	55 ^{a}	47$^{a, b}$	8^{b}	110	2	6,152	0,04*
		%	(50,0)	(42,7)	(7,3)				
	Man	N	65^{a}	76$^{a, b}$	27^{b}	168			
		%	(38,7)	(45,2)	(16,1)				
	Total	N	120	123	35	278			
		%	(43,2)	(44,2)	(12,6)				

p* <0.05 Different letters indicate that the groups are different, while the same letters indicate that they are similar.

Table 3. Preference Distribution of UNESCO-Certified Foods by Gender

Variables	Gender	Never\Rarely n (%)	Sometimes n (%)	Frequently n (%)	Total	Df	x^2	P
Bending	Women	35 (31,8)	45 (40,9)	30 (27,3)	110	2	2,545	0,28
	Man	49 (29,2)	58 (34,5)	61 (36,3)	168			
	Total	84 (30,2)	103 (37,1)	91 (32,7)	278			
Layered	Women	40 (36,4)	43 (39,1)	27 (24,5)	110	2	2,844	0,24
	Man	59 (35,1)	53 (31,5)	56 (33,3)	168			
	Total	99 (35,6)	96 (34,5)	83 (29,9)	278			
Sousage	Women	37 (33,6)	37 (33,6)	36 (32,7)	110	2	3,128	0,20
	Man	41 (24,4)	59 (35,1)	68 (40,5)	168			
	Total	78 (28,1)	96 (34,5)	104(37,4)	278			
Pastrami	Women	75 (68,2)	21 (19,1)	14 (12,7)	110	2	0,427	0,80
	Man	112 (66,7)	30 (17,9)	26 (15,5)	168			
	Total	187 (67,3)	51 (18,3)	40 (14,4)	278			
Wish	Women	72 (65,5)	22 (20,0)	16 (14,5)	110	2	2,522	0,28
	Man	95 (56,5)	38 (22,6)	35 (20,8)	168			
	Total	167 (60,1)	60 (21,6)	51 (18,3)	278			
Poppy	Women	45 (40,9)	39 (35,5)	26 (23,6)	110	2	4,090	0,12
	Man	70 (41,7)	43 (25,6)	55 (32,7)	168			
	Total	115 (41,4)	82 (29,5)	81 (29,1)	278			
Afyon Kebab	Women	53 (48,2)	29 (26,4)	28 (25,5)	110	2	0,684	0,71
	Man	73 (43,5)	46 (27,4)	49 (29,2)	168			
	Total	126 (45,3)	75 (27,0)	77 (27,7)	278			
İlibada	Women	76 (69,1)	19 (17,3)	15 (13,6)	110	2	0,480	0,78
	Man	114 (67,9)	34 (20,2)	20 (11,9)	168			
	Total	190 (68,3)	53 (19,1)	35 (12,6)	278			
Eggplant pastry	Women	67 (60,9)	21 (19,1)	22 (20,0)	110	2	1,717	0,42
	Man	115 (68,5)	27 (16,1)	26 (15,5)	168			
	Total	182 (65,5)	48 (17,3)	48 (17,3)	278			
Aubergine Kebabı	Women	63 (57,3)	25 (59,0)	22 (20,0)	110	2	1,264	0,53
	Man	101 (60,1)	42 (25,0)	25 (14,9)	168			
	Total	164 (59,0)	67 (24,1)	47(16,9)	278			
Sousage Doner	Women	57 (51,8)	24 (21,8)	29 (26,4)	110	2	3,153	0,20
	Man	78 (46,4)	29 (17,3)	61 (36,3)	168			
	Total	135 (48,6)	53 (19,1)	90 (32,4)	278			
Soup that hits the bread	Women	71 (64,5)	23 (20,9)	16 (14,5)	110	2	2,275	0,32
	Man	114 (67,9)	24 (14,3)	30 (17,9)	168			
	Total	185 (66,5)	47 (16,9)	46 (16,5)	278			
Knotted poppy	Women	84 (76,4)	17 (15,5)	9 (8,2)	110	2	0,048	0,97
	Man	127 (75,6)	26 (15,5)	15 (8,9)	168			
	Total	211 (75,9)	43 (15,5)	24 (8,6)	278			
Bread Stick	Women	44 (40)	25 (22,7)	41 (37,3)	110	2	3,974	0,13
	Man	49 (29,2)	39 (23,2)	80 (47,6)	168			
	Total	93 (33,5)	64 (23,0)	121 (43,5)	278			
Turkish delight	Women	40^{a} (36,4)	$29^{a,b}$ (26,4)	41^{b}(37,3)	110	2	$13,073^{a}$	0,01*
	Man	33^{a} (19,6)	$38^{a,b}$ (22,6)	97^{b}(57,7)	168			
	Total	73 (26,3)	67 (24,1)	138 (49,6)	278			

p*<0.05 **p<0,01 The same letters indicate similarities, while different letters indicate differences.

Table 3 shows that there were no differences in the consumption of food products such as bending, layered, sousage, pastrami, wish, poppy, Afyon kebab, ilibada, Eggplant pastry, Egglant kebab, sousage doner, soup that hits the beard, knotted poppy, and Bread Stick (p>0.05). However, men's consumption of Turkish delight showed a statistically significant difference compared to women (p=0.01).

Table 4. Food Consumption Frequency and Exercise Addiction

Variables		Asymptomatic N (%)	Symptomatic N (%)	Dependent N (%)	Total	df	x^2	p
Bending	Never\Rarely	31 (36,9)	41 (48,8)	12 (14,3)	84	4	3,616	0,46
	Sometimes	44 (42,7)	48 (46,6)	11 (10,7)	103			
	Frequently	45 (49,5)	34 (37,4)	12 (13,2)	91			
Layered	Never\Rarely	39 (39,4)	50 (50,5)	10 (10,1)	99	4	2,771	0,59
	Sometimes	44 (45,8)	38 (39,6)	14 (14,6)	96			
	Frequently	37 (44,6)	35 (42,2)	11 (13,3)	83			
Sousage	Never\Rarely	37 (47,4)	33 (42,3)	8 (10,3)	78	4	2,621	0,62
	Sometimes	44 (45,8)	39 (40,6)	13(13,5)	96			
	Frequently	39 (37,5)	51 (49,0)	14 (13,5)	104			
Pastrami	Never\Rarely	83^{a}(44,4)	84^{a}(44,9)	20^{a}(10,7)	187	4	9,491^{a}	0,05
	Sometimes	27^{a}(52,9)	18^{a}(35,3)	6^{a}(11,8)	51			
	Frequently	10^{a}(25,0)	21$^{a,\ b}$(52,5)	9^{b}(22,5)	40			
Wish	Never\Rarely	71^{a}(42,5)	76^{a}(45,5)	20^{a}(12,0)	167	4	8,426	0,07
	Sometimes	29^{a}(48,3)	28^{a}(46,7)	3^{a}(5,0)	60			
	Frequently	20$^{a,\ b}$(39,2)	19^{b}(37,3)	12^{a}(23,5)	51			
Poppy	Never\Rarely	55 (47,8)	51 (44,3)	9 (7,8)	115	4	7,506	0,11
	Sometimes	37 (45,1)	35 (42,7)	10 (12,2)	82			
	Frequently	28 (34,6)	37 (45,7)	16 (19,8)	81			
Afyon Kebab	Never\Rarely	63^{a} (50,0)	45^{b}(35,7)	18^{a,b}(14,3)	126	4	9,050	0,06
	Sometimes	32^{a}(42,7)	37^{a}(49,3)	6^{a}(8,0)	75			
	Frequently	25^{a}(32,5)	41^{a}(53,2)	11^{a}(14,3)	77			
İlibada	Never\Rarely	86 (45,3)	82 (43,2)	22 (11,6)	190	4	1,825	0,76
	Sometimes	22 (41,5)	24 (45,3)	7 (13,2)	53			
	Frequently	12 (34,3)	17 (48,6)	6 (17,1)	35			
Eggplant pastry	Never\Rarely	82 (45,1)	78 (42,9)	22 (12,1)	182	4	2,876	0,57
	Sometimes	22 (45,8)	19 (39,6)	7 (14,6)	48			
	Frequently	16 (33,3)	26 (54,2)	6 (12,5)	48			
Eggplant Kebab	Never\Rarely	71 (43,3)	69 (42,1)	24 (14,6)	164	4	4,466	0,34
	Sometimes	33 (49,3)	29 (43,3)	5 (7,5)	67			
	Frequently	16 (34,0)	25 (53,2)	6 (12,8)	47			
Sousage Doner	Never\Rarely	61^{a}(45,2)	55^{a}(40,7)	19^{a}(14,1)	135	4	11,329	0,02*
	Sometimes	28^{a}(52,8)	24^{a,b}(45,3)	1^{b}(1,9)	53			
	Frequently	31^{a}(34,4)	44^{a}(48,9)	15^{a}(16,7)	90			
Soup that hits the bread	Never\Rarely	78 (42,2)	80 (43,2)	27 (14,6)	185	4	6,655	0,15
	Sometimes	25 (53,2)	21 (44,7)	1 (2,1)	47			
	Frequently	17 (37)	22 (47,8)	7 (15,2)	46			
Knotted poppy	Never\Rarely	97 (46,0)	86 (40,8)	28 (13,3)	211	4	6,378	0,16
	Sometimes	17 (39,5)	23 (53,5)	3 (7,0)	43			
	Frequently	6 (25,0)	14 (58,3)	4 (16,7)	24			
Bread Sticks	Never\Rarely	44^{a}(47,3)	40^{a}(43,0)	9^{a}(9,7)	93	4	9,207^{a}	0,05
	Sometimes	35^{a}(54,7)	23^{a}(35,9)	6^{a}(9,4)	64			
	Frequently	41^{a}(33,9)	60^{a,b}(49,6)	20^{b}(16,5)	121			
Turkish delight	Never\Rarely	43^{a}(58,9)	23^{b}(31,5)	7^{a,b}(9,6)	73	4	18,086	0,02*
	Sometimes	33^{a}(49,3)	30^{a,b}(44,8)	4^{b}(6,0)	67			
	Frequently	44^{a}(31,9)	70^{b}(50,7)	24^{b}(17,4)	138			

p*<0.05 **p<0,01 The same letters indicate similarities, while different letters indicate differences.

According to Table 4, in the analysis comparing the frequency rate of smoked foods with exercise dependency levels, sousage döner (p=0.02) and Turkish delight (p=0.02) showed a statistically significant difference between groups. Sousage döner is consumed the least among exercise-dependent individuals, with occasional use observed. Turkish delight consumption was found to be frequent. Although the values for ekmek kadayıfı and pastrami (p=0.05) were not statistically significant, they were close to the threshold. Although no statistically significant differences were observed in the frequency of use of other products, differences in exercise dependency levels could be seen within the groups.

DISCUSSION and CONCLUSION

Participants in the study reported living in the city center for an average of 10.96-11.17 years (Table 1). Our research revealed that men consumed more Turkish delight than women, while no gender differences were observed in the consumption of other foods (Table 3). Differences were observed in the consumption of sousage döner and Turkish delight based on exercise dependency, while ekmek kadayıfı and pastrami were within the threshold values. Among athletes, the highest consumption was observed for ekmek kadayıfı, Turkish delight, and sousage. It was concluded that other gastronomic products, primarily pastrami, were rarely or never consumed.

When considering the level of exercise addiction, it is seen that the Asymptomatic (43.2) and Symptomatic (44.2) groups are more numerous than the exercise-addicted (12.6) groups. In terms of gender, it was observed that men were more numerous than women (7.3%) in the addicted group (16.1%), but this ratio was at a low level (Table 2).

Çebi and Çebi (2021) reported that their study examining exercise addiction among university students during the pandemic period found no significant differences in terms of age or place of residence. Given that this period involved staying at home, unlike routine times, the absence of differences can be considered normal.

In a study involving 406 students (191 female, 215 male) continuing their education at Bitlis Eren and Dicle Universities, it was observed that students' exercise addictions and healthy living skills behaviours were at a good level, and that male students had higher average addiction scores than female students (Erdoğan et al., 2023).

Another study that measuring exercise addiction among 504 individuals, comprising 208 males and 296 females, studying at 10 different faculties and colleges within the university, it was again determined that male participants had a higher average score than female participants (Çingöz and Mavibaş, 2022). In our study, we can also state that the average dependency of male participants is higher than that of female participants. However, it is thought that the level of exercise dependency is low compared to other studies and that gastronomy may be one of the contributing factors.

A study conducted among university students in Afyonkarahisar province reported that there was no difference in exercise addiction based on gender, but there were differences in eating attitudes and behaviours based on gender (Yıldırım et al., 2017).

Although exercise addiction positively supports an individual's physical health, when pursued uncontrollably, it can have negative psychological, mental, physical, and social effects (Ögel, 1997; Özer, 2016; Tekkurşun-Demir et al., 2018). Therefore, it is important to evaluate balanced nutrition and exercise habits together.

It is noteworthy that the overall exercise dependency level found in the study is lower than that of other university samples in the literature. This suggests that Afyonkarahisar being a city with a strong gastronomic culture has an indirect effect on individuals' lifestyles.

For example, Afyonkarahisar layered (1681.93 kcal - 130.80 g), prepared using butter, was found to be the product with the highest energy and fat content. It was stated that ilibada sarma, made from labada, a dark green leafy vegetable, contains the highest amount of fibre (11.19 g) and is the richest food in terms of vitamins A (1145.19 µg), K (875.09 µg) and C (62.15 mg) (Sarıyer, Can and Gören., 2025). Ayyıldız (2024) also suggested the use of gastronomic products instead of food supplements used in the sports field in his research, stating that it would provide healthy nutrition for individuals who actively participate in sports.

We believe that when used in a controlled and conscious manner, they can replace supplementary foods, but when not complemented by exercise, their high energy and fat content can pose a threat to health.

Programmes that involve children in cooking and meal preparation and increase physical activity throughout the school day are attracting attention in research on combating childhood obesity (Nelson, Corbin and Nickols-Richardson, 2013; Groffik et al., 2012). Studies aiming to control eating behaviour

and physical activity together from an early age have been observed. A more accurate approach would be to evaluate exercise and eating behaviour together.

In regions with a strong gastronomic identity, such as Afyonkarahisar, adapting the local food culture to the lifestyle of athletes can contribute to both the development of healthy living awareness and regional development.

In this context, we anticipate that the results may differ if gastronomic cities are evaluated separately in future research.

Among the limitations of the study are the fact that the sample group consisted solely of university students and that the number of participants was limited to a specific region. Comparative studies conducted in different gastronomic cities could more clearly reveal the effects of cultural eating habits on exercise dependency using our research data.

Consequently, living conditions, dietary habits and cultural identity emerge as significant determinants of exercise dependency. In this context, it is recommended that sports scientists, dieticians and local authorities collaborate to develop policies that promote healthy and balanced physical activity habits while preserving local dietary culture.

Authors' Statement of Contribution to the Article: Article design: SGB; Data Collection and Processing: ABD; Statistical analysis/Comment: SGB; Literature review: ABD, SGB; Article writing: SGB, ABD; Consulting: SGB

Conflict of Interest: The authors have no conflict of interest to declare.

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Peer Review: After the blind review process, it was found suitable for publication and accepted.

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