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Healthcare professionals, how they evaluate themselves about physical image, healthy orthorexia, and physical activity

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ABSTRACT

Objective: This study was conducted to change the nutritional choices of healthcare professionals according to body image, healthy orthorexia and physical activity.

Methods: This study was conducted in a private hospital between December 2022 and February 2023 with 95 female and 42 male healthcare professionals who agreed to participate in the research. A face-to-face survey form was used for healthcare workers and general information, information on health and nutritional status, anthropometric measurements (height (cm), body weight ((kg)), Body Shape Questionnaire (BSQ-34), Teruel Orthorexia Scale (TOS) were collected, Food Choice Questionnaire (FCQ), International Physical Activity Questionnaire (IPAQ).

Results: The average BMI of healthcare workers is within the normal range (24.8±4.43kg/m2). There was a significant difference between genders in terms of body shape dissatisfaction, and it was found that women were more likely than men ($p<0.05$). While the average BSQ-34 score of obese people is highest, the average decreases as the BMI level decreases. There is a significant relationship between gender and BMI in those who do not have body shape dissatisfaction and those who have mild dissatisfaction ($p<0.05$). There is a significant difference between genders in terms of mood, fitness and body weight control factors in food selection, and the average for women is higher than for men ($p<0.05$). As body shape dissatisfaction increases, the average mood factor in food selection increases. Age positively affects healthy orthorexia ($p<0.05$, ß=0.269). The level of body shape dissatisfaction positively affects orthorexia nervosa (ß=0.409, $p<0.05$). In the case of healthy orthorexia, there is a significant positive relationship between food choice and health (ß=0.326, $p<0.05$), and a negative relationship between the sensory attractiveness factor (ß=-0.248, $p<0.05$). In the case of orthorexia nervosa, emotional state is positive (ß=0.260, $p<0.05$), sensory appeal is negative (ß=-0.426, $p<0.05$), natural content is negative (ß=-0.267, $p<0.05$) and body weight control in food selection. There is a positive relationship (ß=0.291, $p<0.05$). It was found that 44.2% of women and 45.2% of men were inactive.

Conclusion: It has been determined that women's body shape dissatisfaction, emotional state, fitness, and body weight control factors that they pay attention to in food selection have a greater impact than men, and body shape dissatisfaction affects food choice. It has been found that food choice affects healthy orthorexia.

KEY WORDS

Body shape dissatisfaction, teruel orthorexia, food preference, activity level.

INTRODUCTION

World Health Organization (WHO); It defines health as a person's complete physical, spiritual and social well-being. The absence of a disease does not indicate that the person is healthy[1]. Human health; It is affected by many factors such as genetics, environment, climate, nutrition and psychology. The most important factor for human health is nutrition[2].

Nutrition; It is the intake and use of nutrients and bioactive components that our body needs in sufficient quantities in order to protect health, physical and mental growth, development, maintenance of life and improvement of quality of life[3]. Adequate nutrition; It is to meet the needs of the individual

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according to age, gender and physical activity. Balanced nutrition is; It means taking each nutritional element as much as it needs. Unbalanced diet and a sedentary lifestyle; It can cause many diseases such as diabetes, cardiovascular diseases, obesity, hypertension, osteoporosis and vitamin and mineral deficiency[3].

Individuals' food choice is affected not only by the sensory properties of the food but also by individual and social factors. These are closely related to cultural and environmental factors such as age, gender, genetics, income level, lifestyle, and religious belief[4]. Industrialization causes individuals' food choice decisions to become complex and multifaceted[5]. Many factors such as the geography where the individual lives, the accessibility of animal and plant species and the ease of preparation of food, the natural content of the food, the health and emotional state of the individual, the climatic conditions of the region, traditions, social organizations and religious beliefs, changes of residence, family structure, business environment, income levels, etc. Many factors affect individuals' food choices[6,7].

Body shape perception is the individual's self-evaluation of his or her positive and negative feelings towards his or her own body[8]. As a result of the change in social structure, the perception of body shape and, accordingly, the nutrition style of individuals change and an increase in eating disorders can be observed[9]. It has been observed that having body shape perception disorder causes body dissatisfaction in individuals with eating disorders, leading to negative thoughts and feelings about their own bodies and reinforcing the fear of gaining weight[10,11]. For example; It has been determined that orthorexia nervosa (ON), a pathological eating disorder that includes obsession with healthy eating along with emotional distress (such as guilt, self-punishment) that occurs when the individual's own eating rules are violated[12,13]. A non-pathological dimension of orthorexia is healthy orthorexia. This situation; It consists of interest in healthy nutrition and eating behaviors, and these individuals tend to perceive healthy nutrition as a lifestyle[14]. The aim of this study is to evaluate the food choices of healthcare professionals according to body image, healthy orthorexia and physical activity status.

MATERIALS AND METHODS

This study was conducted at a private hospital in Ankara between December 2022 and February 2023, with medical personnel who agreed to participate in the study voluntarily. A survey consisting of eight sections was applied to 137 healthcare professionals participating in the research. In the survey; general information, information on health status and nutritional status, anthropometric measurements (height (cm), body weight (kg)) Body Shape Questionnaire (BSQ-34), Teruel Orthorexia Scale (TOS), Food Choice Questionnaire (FCQ), International Physical Activity Questionnaire (IPAQ) was administered. All data collection tools were collected using face-to-face interview technique. Permission was received for the research by the decision of Başkent University Non-Interventional Clinical Research Ethics Committee dated 07/12/2022 and numbered 22/204.

Data collection tools

The Body Shape Questionnaire (BSQ-34) was used to identify concerns about body shape and body weight. The Turkish validity and reliability study of BSQ-34 was performed in 2012 by Akdemir et al.[15] . The survey consists of 34 questions and participants have a 6-point Likert scale for each question. Marks the appropriate option from the scale (never, rarely, sometimes, often, very often, always). An increase in the score obtained is associated with body dissatisfaction. Body shape below 80 points is considered as no anxiety, 80-110 points as mild, 111-140 points as moderate, and above 140 points as severe body dissatisfaction.

In order to determine the beliefs and behaviors of individuals towards healthy eating, Teruel orthorexia Scale (TOS) was used. of TOS Its Turkish validity and reliability were performed by Asarkaya and Arcan in 2021[16]. Scale for healthy orthorexia (9 items) and orthorexia it consists of 2 sub-dimensions, nervosa (7 items). The score for each dimension is calculated as the sum of the item responses.

The Food Selection Questionnaire (FCQ) was used to determine the factors that individuals pay attention to in their food choices. The validity and reliability of FCQ in Turkey was done by Dikmen et al.[17]. The questionnaire consists of 36 items and the participants gave each item a 4-point Likert scale. marks the appropriate option from the scale (not very important, somewhat important, moderately important, very important). These items are; It includes health, mood, fitness, sensory characteristics, natural content, price, weight control, familiarity, and ethnic factors subscales. By comparing the scores of the factors, it was determined which factor the individuals gave more importance in food selection.

In order to determine the physical activity status of individuals, the International Physical Activity Questionnaire Short Form (IPAQ) was used. The validity and reliability study of the short version of the questionnaire in Turkey was carried out by Öztürk[18].

Analysis of Data

Data analysis was performed with SPSS 21.0 at 95% confidence level. T-test for examining 2-group variables with normal distribution; Examination of variables with 3 or more groups was analyzed by ANOVA test. The analysis of the variables with 2 groups that did not show normality distribution was analyzed with the Mann Whitney test. Chi-square test is the relationship between categorical variables and the relationship between measurements is Pearson. analyzed by correlation test.

RESULTS

The socio-demographic characteristics of the participants are shown in Figures 1, 2 and 3. 137 people participated in the study, 69.3% of whom were women and 30.7% were men. The average age of healthcare workers is 34.2±11.24. The average age of female health workers is 32.9 ± 10.90, and the average age of male healthcare workers is 37.0 ± 11.64.

It was observed that the most 56.9% (n:78) of the healthcare professionals participating in the study were university/college graduates, and the most occupational group participating in the study was nurses (38.7%) in both genders. 62.1% of the women participating in the study were normal, 22.1% were slightly overweight, 9.5% were obese, and 6.3% were underweight. As for men; 52.4% are slightly overweight, 28.6% are normal, 19.0% are obes.

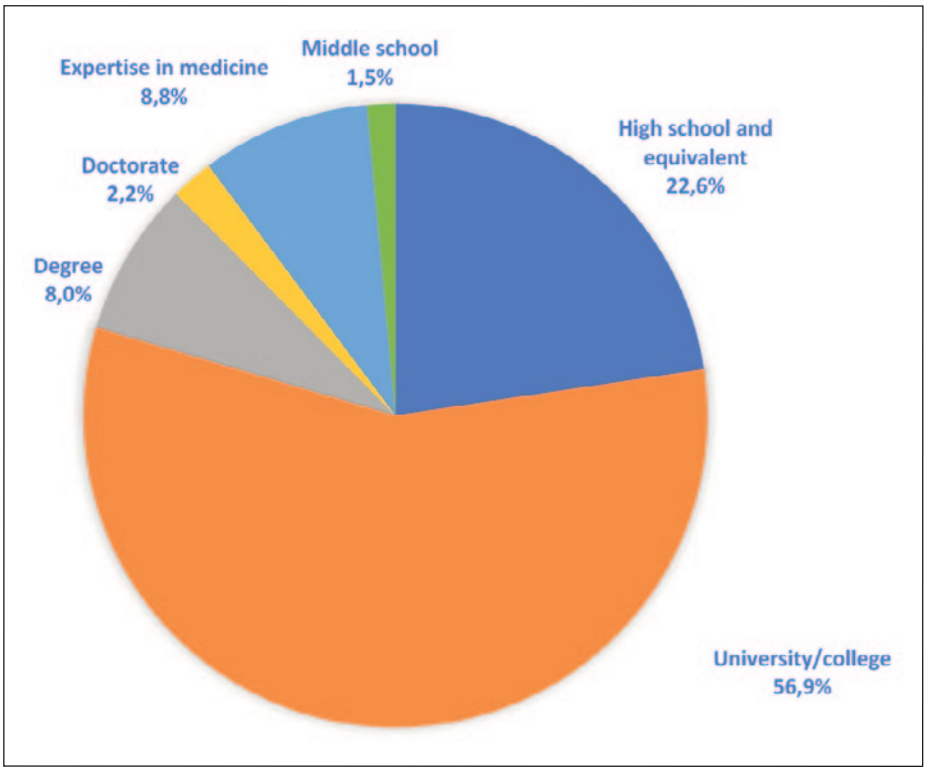

Figure 1. Molecular docking utilization

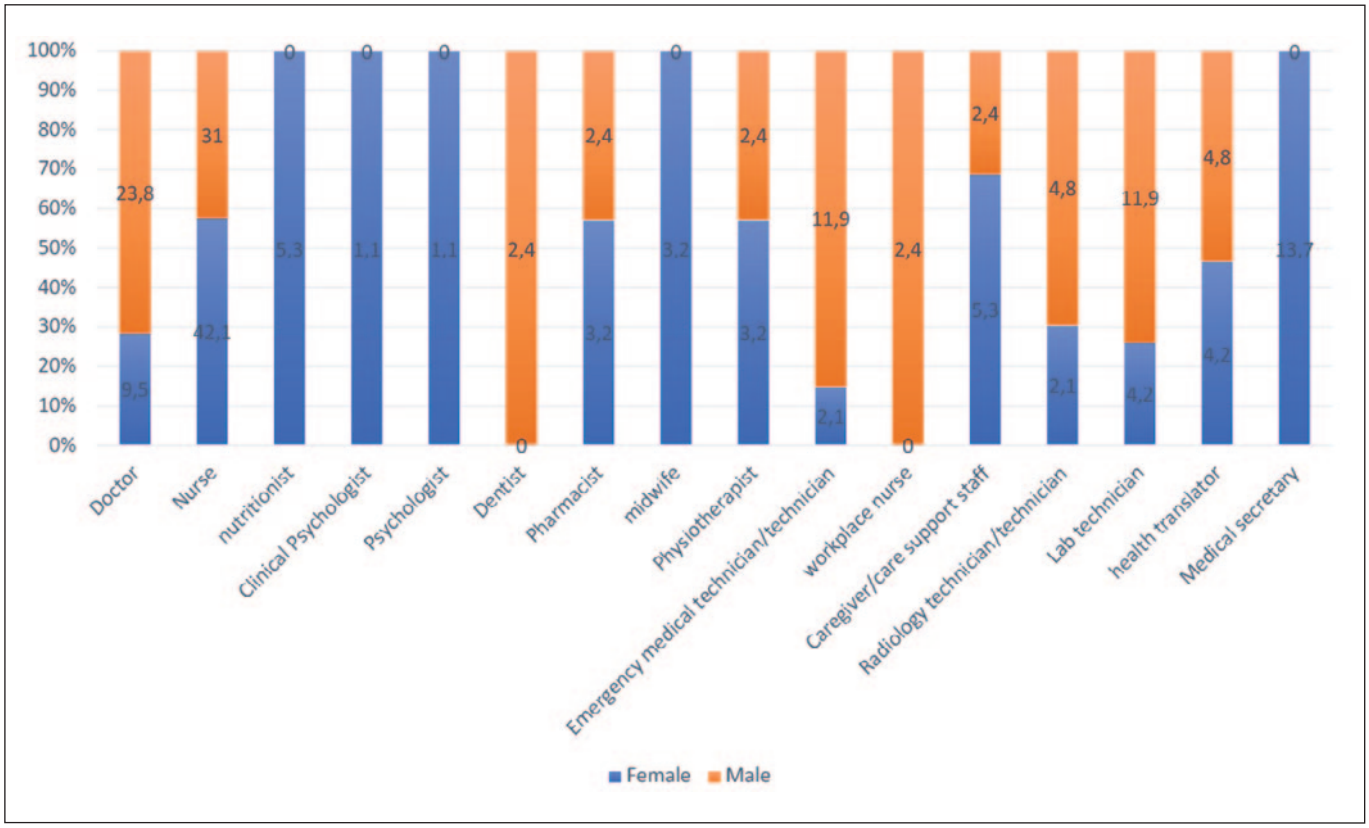

Figure 2. Occupational distribution of individuals participating in the study

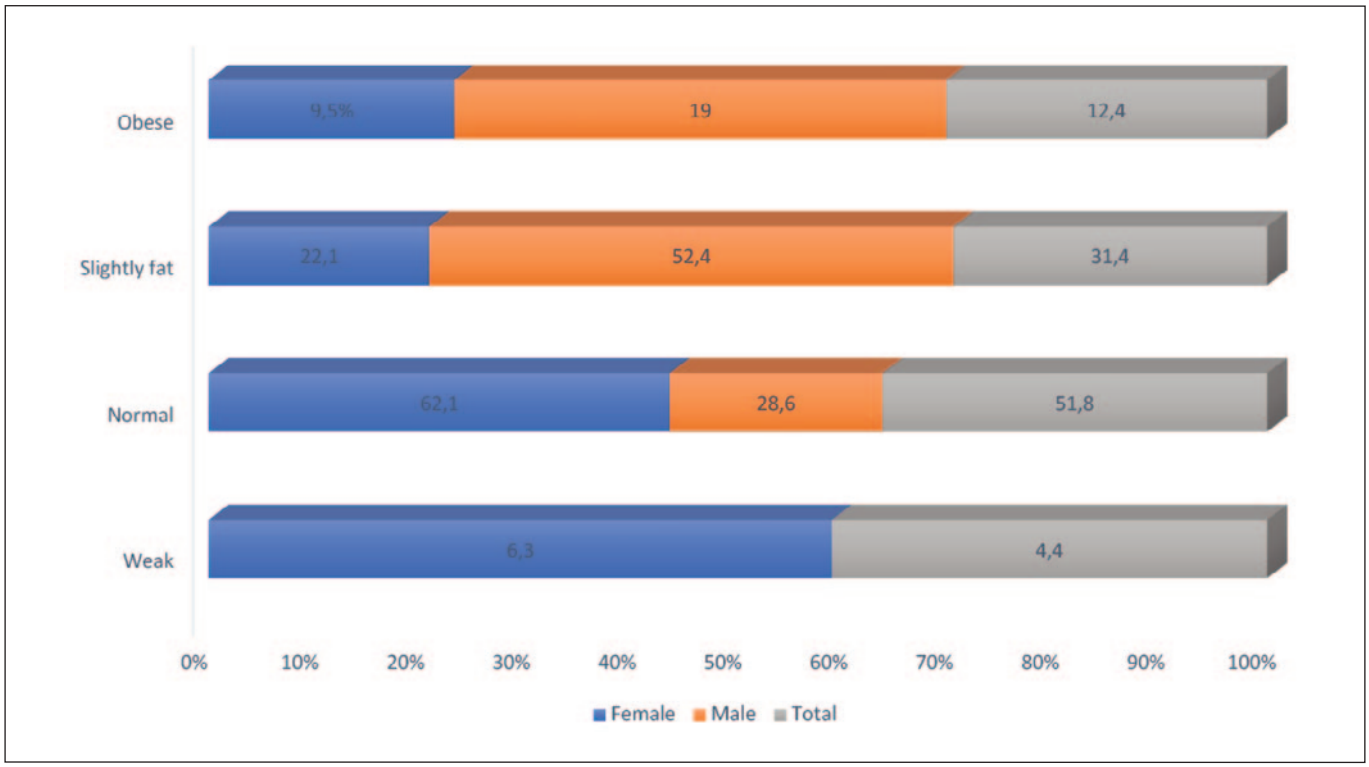

Figure 3. BMI class distributions of individuals participating in the study

The body perception satisfaction levels of the healthcare professionals participating in the study are shown in Table 1. The proportion of women who do not have body image dissatisfaction is 56.8%, the proportion who have mild dissatisfaction is 23.2%, serious is 10.5%, and moderate is 9.5%. In men; 81.0% do not have body image dissatisfaction, mild is 16.7%, moderate is 2.4% and there is no serious body dissatisfaction. There is a significant relationship between gender and body image dissatisfaction ($p<0.05$). It seems that women's body image dissatisfaction is higher than men.

Table 2 shows the factors that healthcare professionals who participated in the study pay attention to when choosing food. There is a significant difference between men and women in terms of mood, fitness and body weight control factors in food selection ($p<0.05$). The average of these factors that women pay attention to when choosing food is higher than men. No statistically significant difference was observed between men and women in terms of health, sensory appeal, natural content, price, familiarity with food, and ethnic factors in food selection ($p>0.05$).

Table 1. Distribution of Individuals' Body Perception Satisfaction Status by Gender

	Gender						Chi-square	p
	Female (n = 95)		Male (n =42)		Total (n = 137)			
	S	%	S	%	S	%		
Body image dissatisfaction								
None	54	56.8	34	81.0	88	64.2	9.609	0.017*
Light	22	23.2	7	16.7	29	21.2		
Middle	9	9.5	1	2.4	10	7.3		
Serious	10	10.5	0	0	10	7.3		

*p<0.05 Chi-square test.

Table 2. Evaluation of the Factors Considered by Individuals in Food Selection According to Gender

	Gender			t	p
	Female	Male	Total		
	$\bar{X}$ ± SS	$\bar{X}$ ± SS	$\bar{X}$ ± SS		
Health	2.8±0.71	2.6±0.71	2.7±0.72	1.755	0.081
Mood	2.8±0.75	2.4±0.75	2.7±0.77	2.937	0.004*
Suitability	2.9±0.77	2.5±0.71	2.8±0.77	2.842	0.005*
sensory appeal	3.2±0.73	3.0±0.65	3.1±0.71	1.422	0.157
Natural ingredient	2.6±0.89	2.7±0.91	2.6±0.90	-0.873	0.384
Price	2.8±0.76	2.7±0.68	2.8±0.74	0.394	0.694
Body weight control	2.5±0.78	2.2±0.76	2.4±0.78	2.032	0.044*
Become accustomed to food	2.7±0.71	2.6±0.74	2.7±0.72	0.731	0.466
Ethnic factors	2.2±0.83	2.2±0.91	2.2±0.85	-0.569	0.570

*p<0.05 t test.

Table 3 evaluates the factors that healthcare professionals pay attention to in food selection according to body image dissatisfaction. There is a significant difference in terms of mood factor among the factors taken into consideration when choosing food between groups with different body image dissatisfaction (p<0.05). The average of those who were not dissatisfied was 2.6±0.73; The average of those with mild dissatisfaction was 2.7±0.9; The average of those with moderate dissatisfaction was 3.0±0.73; The average of those who are seriously dissatisfied is 3.3±0.56. Accordingly, while the average mood factor of those with severe body image dissatisfaction is highest, the average decreases as dissatisfaction decreases.

Table 3. Evaluation of Factors that Individuals Consider in Food Selection According to Body Perception Dissatisfaction Status

	Body Image Dissatisfaction				F	p
	None	Light	Middle	Serious		
	$\bar{X}$ ± SS	$\bar{X}$ ± SS	$\bar{X}$ ± SS	$\bar{X}$ ± SS		
Health	2.7±0.70	2.8±0.73	2.8±0.74	2.7±0.88	0.248	0.863
Mood	2.6±0.73	2.7±0.90	3.0±0.73	3.3±0.56	2.759	0.045*
Suitability	2.7±0.77	2.9±0.73	2.9±0.86	3.3±0.78	1.840	0.143
sensory appeal	3.1±0.68	3.1±0.80	3.2±0.85	3.3±0.56	0.448	0.719
Natural ingredient	2.7±0.89	2.7±0.97	2.7±0.63	2.0±0.80	1.677	0.175
Price	2.7±0.73	2.8±0.70	2.8±0.86	3.2±0.66	1.456	0.230
Body weight control	2.3±0.77	2.6±0.74	2.8±0.79	2.4±0.90	2.063	0.108
Become accustomed to food	2.6±0.70	2.8±0.66	2.7±0.74	2.7±1.01	0.397	0.755
Ethnic factors	2.2±0.82	2.3±1.00	2.5±0.67	1.9±0.85	0.836	0.477

*p<0.05 ANOVA test.

Table 4 shows the relationship between the factors that the healthcare professionals who participated in the study pay attention to in food selection according to healthy orthorexia and orthorexia nervosa status. The health factor in food selection positively affects healthy orthorexia (p<0.05 ß=0.326). As the health factor score in food selection increases, the healthy orthorexia score also increases. Sensory appeal factor in food selection negatively affects healthy orthorexia (p<0.05 ß=-2.605). As the sensory appeal factor score in food selection increases, the healthy orthorexia score decreases. Mood and body weight control factors in food selection positively affect orthorexia nervosa (p<0.05, ß=0.260 and ß=0.291). As the mood and body weight factor score in food selection increases, the orthorexia nervosa score also increases. Sensory appeal factor in food selection negatively affects orthorexia nervosa (p<0.05 ß= -0.426). Accordingly, as the sensory appeal factor score in food selection increases, the orthorexia nervosa score decreases.

Figure 4 shows the evaluation of physical activity levels of healthcare professionals participating in the study according to IPAQ by gender. Among women, the rate of those who are inactive according to physical activity measurement is 44.2%, while the rate of those who are very active is 20.0%; While the rate of inactive men is 45.2%, the rate of very active men is 23.8%.

DISCUSSION

In this study, there was a significant relationship between gender and body image dissatisfaction (p<0.05). There was a significant relationship between gender and BMI in those with mild body image dissatisfaction (p<0.05). It is seen that women are more dissatisfied with their body image than men. Dumas and Desroches According to his study[19]; Similar to this study, when women's body image is compared to men's, it is stated that they have a higher tendency to think negatively about their body image and weight. It is thought that body image perception is more effective in women because there is a more sexist approach in society regarding body image, they give more importance to their appearance and there is an increasing use of social media.

The most influential factors among the factors affecting food selection are sensory appeal, convenience and price. The least important factor is; Ethnic factors, body weight control were observed. In this study, it was observed that the factors that individuals pay attention to in food selection according to gender, mood, fitness and body weight control factors have a higher effect in women than in men. In this study, it was observed that as body perception satisfaction changes, the mood factor affects food selection. In the study of Steptoe et al.[20], the most important factors affecting food selection were found to be sensory appeal, price and health, similar to this study. Food habituation and ethical factors were found to be the least important factors. In the ranking of the factors according to gender, similar to this study, the three most important factors for men and women are sensory appeal, fitness, health and natural content, while the least important factors are body weight control, food habituation and ethical

Table 4. Healthy Orthorexia and Orthorexia of Individuals The Relationship Between Factors Considered in Food Selection According to Nervosa Status

	Healthy orthorexia			Orthorexia nervosa		
	ß (95% GA)	t	p	ß (95% GA)	t	p
Health	0.326(0.650;4.646)	2.622	0.010*	0.131(-0.864;2.607)	0.994	0.322
Mood	-.100(-2.294;0.785)	-0.970	0.334	0.260(0.264;2.938)	2.369	0.019*
Suitability	0.067(-1.027;2.039)	0.653	0.515	0.124(-0.569;2.094)	1.133	0.259
Sensory appeal	-0.248(-3.603;-0.492)	-2.605	0.010*	-0.426(-4.224;-1.522)	-0.207	0.000*
Natural ingredient	0.187(-0.282;2.714)	1.607	0.111	-0.267(-2.721;-0.119)	-2.160	0.033*
Price	-0.023(-1.663;1.301)	-0.241	0.810	0.055(-0.929;1.646)	0.551	0.583
Body weight control	0.066(-0.901;1.882)	0.698	0.486	0.291(0.561;2.978)	2.898	0.004*
Become accustomed to food	-0.116(-2.462;0.580)	-1.225	0.223	-0.082(-1.865;0.777)	-0.815	0.417
Ethnic factors	0.176(-2.462;0.580)	1.844	0.068	0.132(-0.384;1.860)	1.302	0.195
Model	F=7.638 p=0.00 R2=0.035			F=5.146 p= 0.00 R2=0.026		

*p<0.05 regression test.

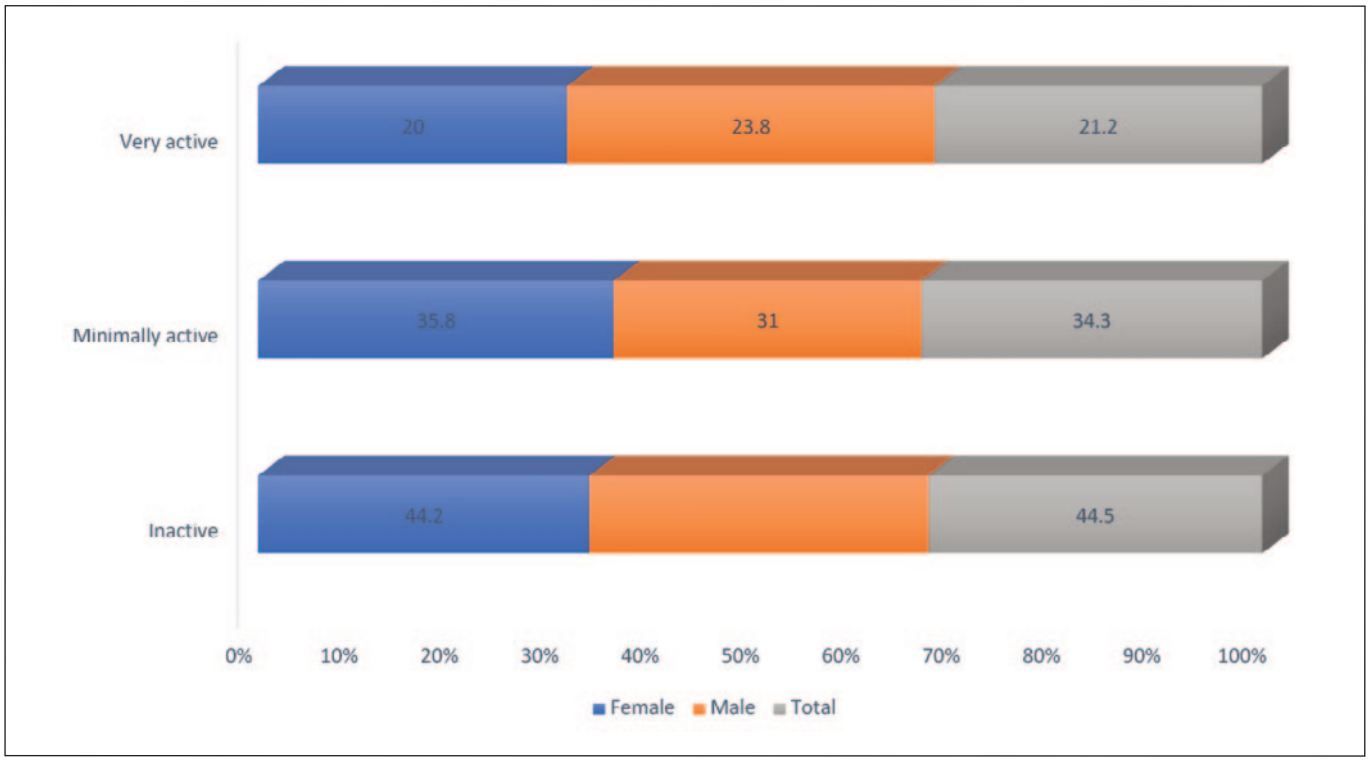

Figure 4. Evaluation of physical activity levels of healthcare workers according to IPAQ according to gender

factor. However, women attach more importance to these factors than men. It is thought that this difference between the sexes in food selection may be due to the fact that women give more importance to healthy nutrition than men and have a higher level of nutritional knowledge, rather than differences in metabolism. It is thought that individuals give importance to sensory factors such as the taste, smell and appearance of the food, since the desire for sweet, fatty or bitter food is an innate human characteristic. Price and availability also play an important role in food selection. It is thought that in this fast-paced society, individuals may prefer ready-made or easy-to-prepare foods in their food selection.

It has been observed that the interest in healthy eating, that is, the healthy orthorexia score, increases with the state of thinking whether it is healthy when choosing food. ($p<0.05$ ß=0.326) It was observed that as the importance given to the sensory attractiveness of the food increased, the interest in healthy nutrition decreased ($p<0.05$ ß=-2.605). The relationship between the factors considered in food selection and healthy orthorexia was not evaluated in previous studies, but was evaluated in this study.

The rate of women who were inactive according to physical activity measurement was 44.2% and 45.2% for men. According to the UFAA score of the participants in the study of Yildirim et al., (2019), in which the relationship between physical activity and quality of life in health workers was evaluated; It was determined that 21.7% were physically inactive, 52.9% had low physical activity levels, and 25.4% had sufficient physical activity. Although studies measuring the physical activity of health care workers are rare, the rate of inactive health workers was found to be very high in this study.

CONCLUSION

In this study, it was found that women were more dissatisfied with body shape than men. Food choice consists of many sensory and non-sensory factors that are versatile and interact with each other, and in this study, sensory appeal, suitability and price appear to be the most affecting factors among the factors affecting food choice. The least affecting factors are; It was observed that there were ethnic factors and body weight control. It has been determined that the factors that women pay attention to when choosing food, such as mood, fitness and body weight control, have a greater impact than men. While the mean of the mood factor in food selection was highest for those with severe body shape dissatisfaction, the mean also decreased as dissatisfaction decreased. As the health factor score in food selection increased, the healthy orthorexia score, defined as the state of interest in healthy eating, also increased. As the sensory appeal factor score increased, the healthy orthorexia score decreased. In addition, it was determined that as body shape dissatisfaction increased, the orthorexia nervosa score, defined as an obsession with healthy eating, increased. It has been observed that the majority of healthcare workers are inactive.

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