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INVESTIGATION OF THE RELATIONSHIP BETWEEN FOOD CONSUMPTION, ANTHROPOMETRIC MEASUREMENTS AND FIVE-DIMENSIONAL WELL-BEING MODEL (PERMA) OF WHITE-COLLAR WORKERS

Ipek Ezgi Oksuzoglu, Irem Olcay Eminsoy*

Turkey.

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***Corresponding Author: Irem Olcay Eminsoy**

Turkey.

ABSTRACT

This study was carried out between December 2019-February 2020 on 300 individuals, aged 20-64, 61% were men and 39% were women. The mean age of men and women were 38.15±7.40 and 38.93±7.26 years in order. Men and women were compared, women's positive emotions, attachment, and total PERMA scores were statistically significantly higher than men ($p<0.05$). There is a statistically significant negative correlation between BMI ($r=-0.135$, $p=0.023$), waist circumference ($r=-0.133$, $p=0.026$), hip circumference ($r=0.154$, $p=0.009$), waist/hip height ($r=-0.194$, $p=0.001$) with health subheading. In the evaluation of the negative feeling, there is a statistically, $p=0.042$), waist circumference ($r=-0.135$, $p=0.022$), with hip circumference (cm) ($r=-0.118$, $p= 0.045$). The relationship between energy, carbohydrate, protein and fat intakes of the individuals participating in the study and the PERMA scale was examined. Accordingly, respectively, energy ($r=0.170$, $p=0.004$), protein ($r= 0.191$, $p= 0.001$), fat ($r=0.138$, $p= 0.019$), carbohydrates ($r=0.136$, $P=0.02$, and sucrose ($r= 0.116$, $p=0.049$) and loneliness was statistically significant positive correlation. This is the first study to evaluate the relationship between the PERMA scale, food consumption and anthropometric measures of white-collar workers. More studies on the subject will provide a better presentation of the relationship between well-being and food consumption.

KEYWORDS: White collar worker, food consumption, PERMA, well-being, obesity.

INTRODUCTION

The concept of white collar; is a term used for professional, managerial and administrative workers. This term refers to a class named after the traditional 19th and 20th century office staff wearing white shirts (Erdayı 2012, Eris et al.2020). White-collar workers are considered to be a group that works mostly at a desk, using mental power rather than physical strength. This includes a wide range of employees, from civil servants to managerial positions (Kirkkegaard 2011).

Today, although the employee profiles of individuals vary, inactivity is increasing in working environments due to the ever-evolving technology. Accordingly, the increase in consumption of fast food and packaged products, the difficulties of reaching natural food, decreased consumption of vegetables, fruits and pulp bring obesity and many related diseases to the agenda (Schulte et al 2007). The level of development of the countries; when it is considered that it depends on working and work efficiency, and this is closely related to the work performance of the working segments of the countries, it becomes very important to increase employee health (Rial-González, 2005). For this reason, it is a public health duty to raise awareness about healthy living and nutrition in working life, especially for white-collar individuals who spend "brain power". It is extremely important to provide white-collar employees with the quality and variety of meals offered at the workplace, physical activity opportunities, work environments that will serve their psycho-social development and to improve the current conditions related to them (Lee at al 2014).

Work stress, which white-collar employees also experience intensely, arises when the person fulfills his duties. This type of stress, work-related requirements; It is defined as harmful physical and emotional reactions that occur when the employee's abilities, resources or demands are not matched (Sauter 1999). Therefore, although there are some differences in occupational stress levels depending on the types of jobs required by individuals, employees experience physiological effects

from stress. It is known that mental health problems such as depression and sleep disorders, as well as physical diseases such as cardiovascular and musculoskeletal diseases are associated with occupational stress. In particular, mood disorders such as depression are quite common in the working adult population (Jung et al 2018). An increase in relationship conflicts and problems with organizational culture have been reported to be associated with a higher risk of depression, and 1 in 10 employees is likely to suffer from depression (Rial-González 2005). The results of the study show that the increase in occupational stress increases the presence of depressive symptoms and the decrease in occupational stress suppresses the development of depressive symptoms (Rial-González 2005, Jung et al 2018).

It has been found that long working hours cause impaired mental health, increased job dissatisfaction and increased smoking in female workers (Artazcoz et al 2007). A study conducted in Japan shows that regulating the overtime working hours of employees is effective in reducing their psychological distress (Hino et al 2015). Studies show that there is a significant relationship between working conditions and the emotional state of employees (Taris et al 2011, Sohn et al 2016, Esin et al 2012). In particular, employees with precarious jobs and unstable working hours were found to be more likely to show depressive symptoms (Esin et al 2012). Similarly, the risk of developing mood disorders was found to be higher in employees with high job demands, low job control, and low social support (Sohn et al 2016). In a study on this subject, working more than 10 hours a week was associated with a higher incidence of depression; at the same time, it was found that employees who felt less social support in the working environment were 1.5 times more likely to show depressive symptoms (Sohn et al 2016).

It has been reported that those who do desk jobs in working life are at risk for obesity because they move less as a result of their professional requirements, they can use their muscles and joints less effectively in daily life, and they rarely do activities of different intensities that increase the heart-respiratory rate (Ozer 2008, Levine et al 2005, Coopoo et al 2008-35). It has been stated that white-collar workers with a high education level and working with a high income level have lower physical activity values than blue-collar workers with a low education level and low income level (Leslie et al 2013). Weight control, nutrition and physical activity levels of employees; age, marital status, lack of suitable opportunities for exercise in the working environment and leisure time activities were found to be affected (Esin 2012).

For a healthy lifestyle, it is recommended that adults do at least 30 minutes of moderate to vigorous physical activity a day, at least five days a week. In a study conducted in England on this subject, it was reported that white-collar workers, who make up more than half of the country's workforce, have low physical activity and high sitting time (Hunter et al 2014). In the United States, office workers seem to spend higher levels of sedentary time than traditional blue-collar workers (Smith et al 2018). Studies in Australia, Scotland and Sweden have shown that office workers spend 66-82% of their working hours inactive (Parry et al 2013, Ryan et al 2011, Bergman et al 2015). These results; shows that the decrease in the level of activity and energy expenditure in occupations over the years is an important reason for the increase in obesity (Bergman et al 2015).

According to the International Labor Organization (ILO) report, meal planning in workplaces is usually either considered later or not taken into account by employers. It is stated that this situation becomes an obstacle for employees to acquire good eating habits (Wanjek 2005).

The daily energy intake and meal content planning of the employees are done in accordance with the needs. It is stated that insufficient daily energy intake brings with it fatigue, weakness and distraction (İLO 2019). For white-collar workers, skipping meals or the absence of catering services in the workplace leads to hypoglycaemia. This situation; results in a shortening of the attention span and slowing down the speed of processing information, reducing both the productivity and performance of the employees and preparing the ground for the accidents that may occur in the workplace (McAulay 2001). One of the problems affecting the well-being and job performance of employees is obesity, which is associated with excessive energy intake. In particular, it is stated that individuals in occupational groups who consume high-energy foods and have low physical activity levels have a higher risk of being overweight and obese (Anderson 2009). Long working hours, sitting for long hours, shift system and work stress were found to be associated with increases in body mass index (BMI) in employees (Pandalai 2013). In a study on the energy intake of employees; it was found that there were significant correlations between body weight, BMI, fat consumption and energy intake, and abdominal obesity and being overweight, according to gender and type of work (Bortolozo 2016). It is stated that white-collar workers move less as a result of their occupational requirements, and their muscle and joint use in daily life can remain at a very low level (Ozer 2008, Parry 2013). On the other hand, with the effect of rapid urbanization, consumption of fast food, which is rich in sugar and saturated fats, is increasing in every segment. A diet rich in fat and carbohydrates, and poor in fibre and protein foods, increases the prevalence of obesity (WHO 2003). In a study conducted with approximately 400 employees, a positive correlation was found between fat consumption and heart diseases and obesity. It has been stated that the fatty food consumption of workers with heart disease is significantly higher (Baydur 2019).

Seligman defended the PERMA model he developed (Seligman, 2012) as a guide based on a dashboard of five

domain indicators; Positive emotion (P), Commitment (E), Relationships (R), Meaning (M), and Achievement (A). Positive relationships such as family, friends and colleagues; the meaning derived from being a part of and contributing to something greater than is possible as an individual; and fulfilling rewarding tasks (Seligman, 2012). High levels of each component of PERMA have been shown to protect against negative emotions, improve resilience, increase life expectancy, satisfaction, protect against physical illness, and reduce depression and stress levels (Iasiella et al, 2017). People can experience both negative and positive emotions simultaneously. Numerous reviews support the value of positive emotion across a range of life outcomes. In positive psychology, measures have focused on flow, or an extreme level of psychological engagement that involves intense concentration, absorption, and focus. Relationships has been linked to less depression and better physical health, psychopathology, healthier behaviours lower mortality risk, and other positive outcomes. A sense of meaning has been defined in terms of having direction in life, connecting to something larger than oneself, feeling that one's life is valuable and worthwhile, and that there is a purpose. Accomplishment involves a sense of working toward and reaching goals, mastery, and efficacy to complete tasks (Bulter 2016).

The study was planned and conducted in order to investigation of the relationship between food consumption, anthropometric measurements and five-dimensional well-being model (PERMA) of white-collar workers

METHODOLOGY

Study design and subjects

This study was carried out between December 2019 and February 2020 on a sample of 300 individuals, aged 20-64, working in different public institutions as white-collar workers and voluntarily agreeing to participate in the study. The demographic characteristics, health status, physical activities, nutritional habits and moods of the individuals participating in the research were determined by the researcher by applying a questionnaire with multiple choice and open-ended questions. The applied questionnaire form; it includes general characteristics of individuals, general habits and health information, nutritional habits and Food Consumption Frequency Registration Form, PERMA scale. This study was approved by Baskent University Institutional Review Board (Project no: KA19/350) and supported by Baskent University Research Fund.

Anthropometric measurement

Body weight measurement of the participants with a portable digital scale; height measurement, with a height meter; waist and hip circumference measurements were also made by the researcher with a non-stretchable tape measure. body weigt (kg), the body weight of the patients was weighed with as little clothing as possible and without shoes. Height (cm) was measured with the feet bare and side by side, with the head in the Frankfort plane BMI (kg/m²), calculated using the formula BMI = [Body Weight (kg) / Height (m^2)) with the height and body weight values obtained as a result of the measurement and were evaluated according to the WHO classification. Hip circumference (cm), was measured from the widest circumference of the hip with the help of a non-flexible measuring tape, parallel to the ground. During both measurements, attention was paid to the fact that the individuals were in an upright position, their arms were at their sides, and their feet were close to each other. Waist/Hip Ratio; was calculated with the formula waist circumference (cm) / hip circumference (cm). The results obtained were evaluated according to the WHO classification (WHO 2010, WHO, 2011).

Dietary intake

A food consumption frequency form was obtained from the participants. "Computer Assisted Nutrition Program, Nutrition Information Systems Package Program (BeBIS)" developed for Turkey was used to determine and evaluate daily dietary energy and nutrient intakes.

PERMA

A growing number of individuals, organizations, and policy makers worldwide are focusing on wellbeing, and with good reason. Seligman (2012) defined wellbeing in terms of five pillars: Positive emotion, Engagement, Relationships, Meaning, and Accomplishment, or PERMA. The Turkish adaptation of the PERMA scale, created by Butler and Kern (2016), was made by Demirci et al (2017). Mental health is not only the absence of mental illness, but also the presence of positive emotions and the positive functioning of personal and social life. Well-being consists of emotional well-being, psychological well-being and social well-being. It consists of 23 items focusing on both hedonic and eudemonic well-being, with 15 questions to assess the five PERMA domains (three questions for each domain); three questions accounting for negative emotion and health and a single question on loneliness and overall happiness. Responses for each item are rated from 0 (or never) to 10 (or always). Scores from each PERMA domain consist of averaging their three items. The total score of well-being is calculated by computing the average of the 15 PERMA items and the single happiness question (Butler and Kern 2016).

Statistical Analysis

SPSS Statistics 25™ program and BeBIS computer package program were used for statistical analysis of all the findings obtained in this study. In order to tabulate the data, first of all, descriptive statistics such as percentage and frequency were used. However, in some tables, criteria such as mean and standard deviation are used. Finally, dependent and independent sample t-tests and one-way analyses of variance (ANOVA) were applied to test the statistical significance of the differences between group means. Confidence level was

determined as 95% in all tests and hypothesis tests were carried out considering this criterion.

RESULTS

Demographic characteristics of individuals are shown in Table 1. 183 of the participants are men and 117 of them are women. While the mean age of men was 38.15±7.40 years, the mean age of women was 38.93±7.26 years. The mean age of all participants was found to be 38.46±7.34 years. The rate of individuals with postgraduate education such as doctorate and master's degree is 28.3%. 74.2% of the participants in the study are married individuals. The rate of individuals who include themselves in the middle and high income group is 90% of all participants. Similarly, income status and occupational group distributions are distributed in a way that creates a significant difference according to gender, but this is not the case in terms of marital status and age distributions (p>0.05). In terms of diagnosed diseases, the most common diseases in individuals diagnosed with the disease are diabetes (30.3%) and hypertension (30.3%) in men, while the most common ones in women are hypothyroid hashimoto (32.4%) and bone-joint (18.9%).

Table 1: Demographic characteristics of individuals.

Demographic characteristics	Men (n:183)		Woman (n:117)		Total (n:300)		
	$\bar{x}$	SS	$\bar{x}$	SS	$\bar{x}$	SS	
Age (Years)	38.1	7.40	38.9	7.26	38.5	7.34	
	n	**%**	**n**	**%**	**n**	**%**	**p**
Education							
High School and Equivalent	15	8.2	7	6.0	22	7.3	
University	128	69.9	65	55.6	193	64.3	
Degree	32	17.5	40	34.2	72	24.0	0.011*
Doctor	8	4.4	5	4.3	13	4.3	
Marital Status							
Married	136	75.6	83	72.2	219	74.2	0.797
Single	44	20.0	26	22.6	61	23.3	
Income status							
Very good	4	2.2	4	3.5	8	2.7	
Good	63	34.8	52	45.6	115	39.0	
Middle	102	56.4	51	44.7	153	51.9	0.015*
Bad	11	6.1	2	1.8	13	4.4	
Very bad	1	0.6	5	4.4	6	2.0	
Age group							
24-30 age	24	13.1	11	9.4	35	11.7	
31-40 age	101	55.2	64	54.7	165	55.0	0.713
41-50 age	46	25.1	32	27.4	78	26.0	
51 age and up	12	6.6	10	8.5	22	7.3	
Profession							
Engineer/Technical Staff	70	38.3	35	29.9	105	35.0	0.007*
Specialization Staffs	38	20.8	31	26.5	69	23.0	
Officer	72	39.3	40	34.2	112	37.3	
Health personnel	3	1.6	11	9.4	14	4.7	
Chronic illnesses*							
Diabetes	10	30.3	5	13.5	15	21.4	
Hypertension	10	30.3	2	5.4	12	17.1	
Cardiovascular	3	9.0	4	10.8	7	10.0	
Stomach Discomfort	2	6.0	3	8.1	5	7.1	
Bone Joint	3	9.0	7	18.9	10	14.2	
Nervous system	1	3.0	1	2.7	2	2.8	
Fatty Liver	1	3.0	0	0.0	1	1.4	
Ulcerative Colitis	1	3.0	0	0.0	1	1.4	
Immune System	2	6.0	1	2.7	3	4.2	
Anemia	0	0.0	1	2.7	1	1.4	
Cancer	2	6.0	1	2.7	3	4.2	
Anxiety Depression	0	0.0	2	5.4	2	2.8	
Hypothyroid Hashimoto	2	6.0	12	32.4	14	20.0	

The data showing the distribution of the classification of the anthropometric measurements of the individuals by gender are given in Table 2. 3% of the participants were underweight (women 6%, men 1.1%), 49.2% were normal (women 62.9%, men 40.3%), 37% were slightly overweight (women 25% men 44.8%), and 10% obez (women %6, man %13.8) obese. In terms of waist circumference, 28.8% of the participants were underweight (women 27.8% men 29.4%), 33.9% were at risk (women 27.8% men 37.8%) and 37.3% were at high risk (women 44.3% men 32.8%). When the waist-hip ratios of the participants are examined, it is seen that 29.8% are in the normal (women 45.2% men 20%) group and 70.2% in the risky group (women 54.8% men 80%). Finally, when the waist height ratio is considered, 4.1% of the participants are low (women 9.6% men 0.6%), 15.6% normal (women 29.6% men 6.7%), 63.1% risky (women 43.5% men 75.6%) and 17.3%. three are in the high-risk group (17.4% for women, 17.2% for men).

Table 2: Average Values of Anthropometric Measurements of Participants.

Antropomethric measurements	Men (n:183)				Woman (n:117)				Total (n:300)			
	$\bar{x}$	SD	Mİn	Max	$\bar{x}$	SD	Mİn	Max	$\bar{x}$	SD	Mİn	Max
Weight (kg)	80.8	12.44	48	125	63.5	9.65	45	93	74.1	14.21	45	125
Height (cm)	175.7	6.91	156	191	163.8	5.14	152	180	171.09	8.58	152	191
BMI (kg/m^2)	26.2	3.73	18.06	39.37	23.6	3.51	16.52	33.74	25.2	3.85	16.52	39.37
Waist circumference (cm)	97.8	8.96	69	124	85.6	12.51	58	123	93.0	12.05	58	124
Hip circumference (cm)	104.9	7.11	88	128	100.5	7.97	82	123	103.2	7.75	82	128
Waist/Hip ratio	0.9	.06	0.68	1.12	0.8	.09	0.52	1.01	0.90	.08	0.52	1.12
Waist/Height ratio	0.5	.06	0.39	0.92	0.5	.07	0.36	0.74	0.54	.07	0.36	0.92

It was determined that 25% of the individuals participating in the study had the habit of eating at night. While the rate of those who say that they are obsessed with healthy eating is 22.7%, the rate of those who state that they feel pressure to look thin at work is 13%. While the rate of those who stated that the events they experienced in the workplace affected their daily moods was 53.3%, this rate was higher in women than in men. The rate of those who resort to food while struggling with stress is around 26.7%. While the rate of women who state that they resort to food while struggling with stress is 35.9%, this rate decreases to 20.8% in men. Therefore, it can be said that women resort to food at a higher rate than men in the fight against stress. The rate of those who said that they sometimes have a snack between meals was 56.8%. In this regard, it has been observed that men snack more between meals than women. Tea (68.5%) and nuts (67.3%) were consumed the most between meals. 54.3% of the participants stated that they consume breakfast at work. In terms of lunch, it is seen that those who consume it at work are mostly concentrated. It can be said that individuals mostly prefer to eat at home for dinner. On the other hand, while the rate of those who state that they regularly consume their meals on weekdays is 90%, this rate was 43% on weekends.

Some of the nutrient intakes was shown in Table 3. The mean energy intake was found to be 1439.6±638.93 kcal in men and 1422.8±509.37 kcal in women. It was determined that the daily carbohydrate intakes of the individuals were 169.9±84.62 g and the women 158.1±79.98 g. While the total amount of protein that individuals take daily and the percentage of energy coming from protein were found to be 58.0±28.71 g and 16.3%±3.11 in men, it was 56.3±20.88 g and 16.2%±2.91 in women. Daily fat intake of individuals; 58.5±31.34 g and 62.3±10.65 g in men and women, respectively. The difference between the fat and carbohydrate intake percentages of women and men was statistically significant ($p<0.05$). While the mean intake of vitamin A was 597.8±390.96 mcg in men, it was 732.94±419.34 mcg in women. The mean intake of vitamin C was determined as 66.1±52.25 mg in men and 85.15±58.23 mg in women. Considering the average intake of B group vitamins of individuals; thiamine 0.8±0.46 mg and 0.8±0.36 mg, riboflavin 1.1±0.46 mg and 1.1±0.45 mg, vitamin B6 0.9±0.50 mg and 1.0±0.46 mg in male and female individuals, respectively. The mean calcium intake is 585.2±293.18 mg and 627.8±250.12 mg in males and females, respectively. The mean magnesium intake was found to be 241.86±150.18 mg in men and 241.8±95.24 mg in women. The mean iron intake was 9.6±5.06 mg and 9.3±3.80 mg in men and women, respectively, and the mean zinc intake was 9.9±5.16 mg and 9.5±3.63 mg.

Table 3: Mean nutrient intake of participants.

Nutrient	Men (n:183)			Women (n:117)			Total (n:300)		P*
	$\bar{x}$	SD	DRI%	$\bar{x}$	SD	DRI%	$\bar{x}$	SD	
Energy (kcal)	1439.6	638.93		1422.8	509.37		1433.1	590.94	0.801
Protein (g)	58.0	28.71		56.3	20.88		57.4	25.91	0.563
Protein (%)	16.3	3.11		16.2	2.91		16.2	3.03	0.787
Fat (g)	58.5	31.34		62.3	22.95		60.0	28.38	0.259
Fat (%)	35.7	8.50		39.3	8.44		37.1	8.64	0.000*
Carbs (g)	169.9	84.62		158.1	79.98		165.3	82.91	0.228
Carbs (%)	47.8	10.07		44.2	9.66		46.4	10.05	0.003*
Fiber (g)	18.8	12.20	95.6	19.1	9.20	76.4	18.9	11.11	0.786
Vitamin D (mcg)	4.8	5.65	96.0	6.0	5.79	120.0	5.3	5.72	0.099
Vitamin A (mcg)	597.8	390.96	66.4	732.94	419.34	104.7	650.5	406.9	0.005*
Vitamin B12 (mcg)	3.5	2.25	145.8	3.6	1.86	150.0	3.5	2.10	0.657
Vitamin E (mg)	9.8	6.89	65.3	10.6	3.96	70.7	10.1	5.93	0.256
Thiamine (mg)	0.8	0.46	66.7	0.82	.36	74.5	0.8	0.42	0.826
Riboflavin (mg)	1.1	0.55	84.6	1.1	.45	100.0	1.1	0.51	0.362
Vitamin B6 (mg)	0.9	0.50	69.2	1.0	.46	76.9	0.9	0.48	0.285
Folate (mcg)	254.0	133.56	63.5	268.7	115.57	67.2	259.8	126.85	0.330
Vitamin C (mg)	66.1	52.25	73.4	85.1	58.23	113.5	73.5	55.35	0.004*
Potassium (mg)	1810.0	979.31	38.5	1960.5	822.73	41.7	1868.7	922.92	0.169
Calcium (mg)	585.2	293.18	58.5	627.8	250.12	62.8	601.8	277.54	0.194
Magnesium (mg)	241.8	150.18	57.6	241.8	95.24	75.6	241.8	131.33	0.999
Phosphorus (mg)	942.9	473.08	134.7	945.6	339.61	135.1	944.0	425.41	0.957
Iron (mg)	9.6	5.06	120.0	9.3	3.80	51.7	9.5	4.61	0.509
Zinc (mg)	9.9	5.16	90.0	9.5	3.63	118.8	9.7	4.62	0.368

Table 4 shows the mean and standard deviations of the PERMA scale scores by gender. When men and women are compared, women's positive emotions, attachment, and total PERMA scores are statistically significantly higher than men ($p<0.05$).

Table 4: PERMA scale according to gender.

PERMA scale subtitles	Men (n:183)		Women (n:117)		Total (n:300)		P*
	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	
PE1	7.2	1.62	7.7	1.45	7.4	1.58	*0.007*
E2	7.6	1.60	8.0	2.72	7.7	2.10	0.057
R3	7.1	1.69	7.9	3.30	7.4	2.45	*0.006*
M4	7.3	1.61	7.7	1.33	7.5	1.52	0.029
A5	7.4	1.47	7.8	1.38	7.5	1.44	0.036
H6	7.2	1.73	7.2	1.78	7.2	1.75	0.926
L7	4.3	2.65	4.3	2.48	4.3	2.58	0.936
N8	4.4	1.66	4.6	1.77	4.5	1.70	0.239
P9	6.0	1.13	6.4	1.23	6.1	1.19	*0.002*

(PE[1] positive emotions, E[2] engagement, R[3] positive relationships, M[4] meaning, A[5] accomplishment, H[6]health, L[7] Loneliness, N[8] negative feelings, P[9] PERMA $p<0.05$)

In Table 5, the relationship between energy, carbohydrate, protein and fat intakes of the individuals participating in the study and the PERMA scale was examined. Accordingly, respectively, energy ($r=0.170$, $p=0.004$), protein ($r= 0.191$, $p= 0.001$), fat ($r=0.138$, $p= 0.019$), carbohydrates ($r=0.136$, $P=0.02$, and sucrose ($r= 0.116$, $p=0.049$) and loneliness was statistically significant positive correlation.

Table 5: PERMA scale correlation with food consumption.

		PE[1]	E[2]	R[3]	M[4]	A[5]	H[6]	L[7]	N[8]	P[9]
Energy	r	0.06	-0.026	0.038	0.038	-0.038	0.012	0.170	0.053	0.01
	p	0.31	0.663	0.519	0.519	0.517	0.835	*0.004*	0.371	0.859
Protein	r	0.019	-0.011	0.02	0.03	-0.015	0.005	0.191	0.033	0.001
	p	0.753	0.851	0.736	0.615	0.798	0.935	*0.001*	0.572	0.989
Protein%	r	-0.071	0.021	-0.02	-0.021	0.016	-0.034	0.065	-0.048	-0.021
	p	0.227	0.719	0.733	0.722	0.789	0.562	0.27	0.415	0.722
Fat	r	0.055	0.028	0.057	0.011	-0.029	-0.024	0.138	0.018	0.036
	p	0.354	0.639	0.335	0.854	0.627	*0.68*	*0.019*	0.756	0.54
Fat%	r	0.04	0.113	0.056	-0.013	0.011	-0.065	-0.016	-0.061	0.073
	p	0.497	0.054	0.342	0.825	0.858	0.271	0.78	0.303	0.213
CHO %	r	-0.014	-0.104	-0.039	0.016	-0.015	0.071	-0.007	0.066	-0.056
	p	0.811	0.077	0.51	0.793	0.805	0.234	0.909	0.262	0.34
CHO	r	0.056	-0.064	0.016	0.051	-0.041	0.04	0.136	0.071	-0.011
	p	0.339	0.275	0.78	0.394	0.483	0.497	*0.02*	0.228	0.855
Glucose	r	.125*	-0.009	0.107	0.068	0.049	0.057	0.087	-0.02	0.082
	p	0.034	0.874	0.068	0.252	0.405	0.333	0.14	0.739	0.162
Fructose	r	0.112	-0.003	0.099	0.055	0.046	0.054	0.096	-0.005	0.078
	p	0.055	0.965	0.091	0.351	0.439	0.363	0.101	0.929	0.184
Saccorese	r	0.079	0.031	0.018	0.008	0.004	0.024	0.116	0.016	0.038
	p	0.176	0.594	0.758	0.894	0.946	0.68	*0.049*	0.779	0.519

(PE[1] positive emotions, E[2] engagement, R[3] positive relationships, M[4] meaning, A[5] accomplishment, H[6]health, L[7] Loneliness, N[8] negative feelings, P[9] Perma, p<0.05)

In Table 6, the relationship between the anthropometric measurements of the individuals participating in the study and the PERMA scale was examined. There is a statistically significant negative correlation between BMI (kg/m2) (r=-0.135, p=0.023), waist circumference (cm) (r=-0.133, p=0.026), hip circumference (cm) (r=0.154, p=0.009), waist/hip height (r=-0.194, p=0.001) with health subheading. In the evaluation of the negative feeling, there is a statistically significant negative correlation weight (kg) (r=-0.127, p= 0.031) BMI (kg/m2) (r=-0.120, p=0.042), waist circumference (cm) (r=-0.135, p=0.022), with hip circumference (cm) (r=-0.118, p= 0.045).

Table 6: PERMA scale correlation with anthropometric measurements.

		PE[1]	E[2]	R[3]	M[4]	A[5]	H[6]	L[7]	N[8]	P[9]
Weight (kg)	r	-0.057	-0.055	-0.093	-0.067	-0.078	-0.076	0.009	-.127	-0.09
	p	0.334	0.351	0.114	0.258	0.187	0.198	0.878	*0.031*	0.129
BMI (kg/m^2)	r	-0.014	-0.004	-0.04	-0.035	-0.053	-.135	-0.037	-.120	-0.031
	p	0.806	0.943	0.495	0.559	0.375	*0.023*	0.535	*0.042*	0.601
Waist circumference (cm)	r	-0.071	-0.015	-0.071	-0.061	-0.087	-.133	-0.062	-.135	-0.076
	p	0.233	0.798	0.227	0.309	0.145	*0.026*	0.298	*0.022*	0.204
Hip circumference (cm)	r	0.01	-0.009	0.012	-0.046	-0.04	-.154	-0.042	-.118	-0.006
	p	0.871	0.884	0.837	0.443	0.504	*0.009*	0.478	*0.045*	0.922
Waist/Hip ratio	r	-0.112	-0.013	-0.099	-0.048	-0.095	-0.059	-0.041	-0.098	-0.099
	p	0.059	0.833	0.094	0.427	0.109	0.32	0.485	0.099	0.094
Waist/Height ratio	r	-0.084	0.01	-0.027	-0.072	-0.076	-.194	-0.072	-0.114	-0.048
	p	0.157	0.863	0.652	0.227	0.2	*0.001*	0.226	0.053	0.421

(PE[1] positive emotions, E[2] engagement, R[3] positive relationships, M[4] meaning, A[5] accomplishment, H[6] health, L[7] Loneliness, N[8] negative feelings, P[9] PERMA, p<0.05).

DISCUSSION

It was determined that white-collar employees generally do not pay attention to their main meals, financial difficulties are effective in insufficient and unbalanced nutrition problems, and their nutrition is not at a good level due to poor working conditions (Korkut, Sevinc 2021). According to a study, a correlation between healthy diet quality and quality of life, and therefore an increased risk of inflammation due to inadequate antioxidant intake, has been found to increase the risk of chronic disease and therefore a decrease in quality of life in people who eat low-quality foods (Berret et al, 2016). In a study, a strong, positive and significant relationship was found between the nutritional knowledge of white-collar employees and their positive nutrition and affection satisfaction (Korkut, Sevinc 2021).

In one study, it was found that the number of people who ate alone increased with the change in lifestyle. It has been reported that people who are considered as high socio-economic status such as income, education level and white-collar occupation status also experience problems in nutrition quality (Chae et al 2018).

According to a study white collar workers consuming more fiber, sodium, and total, saturated, and polyunsaturated fat; blue collar workers consuming more cholesterol and calories; and service workers consuming more carbohydrates (Kachan et al 2012). In this study, it was determined that the fiber, calcium and potassium intakes of white-collar men and women could only meet about half of the DRI value.

Accodind to a study, blue collored employees executive presented an anecdotal observation that men and women brought home lunch and ate separately almost every day; men eat in the break rooms, women eat in the cafeteria. Increasing the onsite availability of health food and wellness classes may be more beneficial for blue collored employees because they don't buy their food onsite and have a less flexible schedule. The underlying reasons for the differences may include ethnic or cultural and educational differences between groups, as well as differences in work-related activities (Leslie et al 2013).

In a study using the three Factor Nutrition Questionnaire, it is stated that individuals with emotional eating behavior consume more snacks such as cakes, pastries and biscuits. In the same study It is seen that individuals prefer more fatty and salty foods in uncontrolled eating behavior, and they prefer less fatty and high protein foods in cognitive restriction (Fleurbaix Laventie Ville Sante 2004). Looking at the relationship between sugar consumption according to Three-Factor Eating Questionnaire-R18, it was observed that there was not much change in the eating behavior of individuals in negative emotions and stress situations (Yurtas , 2019).

Energy, protein, fat, carbohydrates, and sucrose and loneliness was statistically significant positive correlation. There is a statistically significant negative correlation between BMI, waist circumference hip circumference, waist/hip height with health subheading. In the evaluation of the negative feeling, there is a statistically significant negative correlation weight BMI, waist circumference, with hip circumference.

As this is the first study to evaluate the relationship between the PERMA scale, food consumption and anthropometric measures of white-collar workers, the discussion section is therefore limited. More studies on the subject will provide a better presentation of the relationship between well-being and food consumption.

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