## **ORIGINAL ARTICLE**

# Depression Tendencies of University Graduate Elite Female Volleyball Players During The Covid 19 Outbreak And Its Effect On Their Nutritional Habits

#### GOKHAN ACAR<sup>1</sup>

<sup>1</sup>School of Physical Education and Sports, Ardahan University, Ardahan, Turkey Correspondence: Gokhan Acar, School of Physical Education and Sports, Ardahan University, Ardahan, Turkey E-mail: gokhnacar@gmail.com

#### ABSTRACT

**Background:** Depression tendencies of female volleyball players during the covid 19 outbreak and its effect on their nutritional habits.

Aim: This study aims to examine whether there is an effect on depression tendencies and eating habits of university graduate elite female volleyball players during the Covid 19 pandemic.

**Methods:** In the analysis of the data collected in the study, descriptive statistics such as arithmetic mean, frequency, standard deviation, and percentage values were used. In order to determine whether the parametric analysis can be performed for this study, it was examined whether the data showed normal distribution.

**Result:** Results show that during the Covid-19 pandemic, university graduate female volleyball players showed a high level of behavior in the eating habits dimension and food consumption frequencies dimension, and showed a low level of behavior in the dimension of non-food products. No significant relationship was found between the depression tendencies of female volleyball players and their nutritional behaviors in general. It was determined that as the depression tendencies of female volleyball players increased, their behaviors in the dimensions of eating habits and food consumption frequencies decreased slightly. In addition, it was determined that female volleyball players did not have depression tendencies in general during the Covid-19 pandemic period. The eating habits levels of female volleyball players who describe themselves as social and extrovert were found to be significantly higher than the eating habits levels of female volleyball players who describe themselves as quiet and calm and the eating habits levels of female volleyball players who describe themselves as hyperactive.

**Conclusion:** According to the differences in the depression tendency scale, the depression tendencies of female volleyball players who defined themselves as hyperactive were found to be significantly higher than the depression tendencies of female volleyball players who defined themselves as social and extrovert, and the depression tendencies of female volleyball players who defined themselves as quiet and calm.

**Keywords:** Covid 19 Pandemic, Depression Tendencies, Eating Habits, University Graduate, University Graduate, Women Volleyball Players.

## INTRODUCTION

Epidemics Epidemics and similar disasters not only pose a threat to people's health but also affect people socially and psychologically. Anxiety, panic, uncertainty, and risk create a culture of fear on an individual, social and universal scale.<sup>1</sup> The covid-19 virus is a type of virus from the betacoronavirus family, which includes Sars-CoV and Mers-CoV. The Covid-19 virus, which emerged in 2019, guickly affected the whole world in a short time, and the situation was declared as a global outbreak, that is, a "pandemic".<sup>2</sup> The Covid-19 virus was first identified on December 31, 2019. The place of origin is the city of Wuhan, China. While the epicenter of the disease was China and its surroundings at the beginning, later, it spread to the whole world by crossing the borders of Asia. On March 11, 2020, World Health Organization (WHO) assessed that COVID-19 could be characterized as a pandemic.<sup>3</sup> The first person to define depression as a disease in the medical literature was the ancient Greek physician Hippocrates. Hippocrates explained the cause of depression as an excess of black bile and named it "melaine chole". Since the 1750s, the English word "depression" has been used as a synonym for melancholy. In Latin, "de primere" is used to mean to push down.<sup>4</sup> Depression is a condition in a state of deep sadness, including feelings and thoughts of worthlessness, smallness, reluctance, pessimism with symptoms such as

slowness and stagnation in thought, speech, and movement, and slowing of physiological functions. <sup>5</sup> The most significant symptom of depression is experiencing a mood disorder every day. Individuals feel tired, bored, and sad. <sup>6</sup> In terms of core symptoms, depression leads to depressive disorders characterized by depression in the affective state, apathy, reluctance and lack of pleasure, decrease in functional and vital activity, progressive inhibition, thoughts of pessimism, worthlessness, guilt, and regret in the cognitive field, deterioration in psychophysiological functions such as sleep, appetite, and sexual reluctance. 7 Today, mood disorders and depression, in particular, are quite common and can occur at any time. Mood disorders are considered quite important, as they can occur in childhood, adolescence, or old age as a result of a physical illness or as a reaction to a stressful experience and accompany other psychological problems. <sup>8</sup> Depression is one of the most common diseases in the continuously developing and changing world. It continues to be the focus of attention of those working in the field of mental health, as it impairs the quality of life of the person and leads to suicide. Depression, which has effects such as intense sadness, loss of interest in what is happening around, feelings of guilt, shame, and worthlessness, is a common mood disorder defined as the "common cold" of mental disorders

in our age. 9 Depression is a serious mental illness and public health problem due to its prevalence in society. Although there are differences between countries in terms of epidemiological data, it has been reported that the worldwide prevalence of depression is 5-6% in females and 2-3% in males recently; The rates are similar in Turkey. <sup>10</sup> Depression is practically divided into Minor depression and Major depression. The symptoms (psychologically and somatically) of both groups of depression are very similar. The symptoms of minor depression are generally milder than the symptoms of major depression. <sup>11</sup> With the declaration of Covid-19 as a pandemic, social isolation and quarantine practices have started and led to the continuation of interpersonal relations through online platforms and telecommunication, and many lines of business and education managed the process with this method. During this period, depression, stress, anxiety, and interpersonal violence reports have increased for individuals who used to spend time together for a long time and who need other individuals to survive. 12

Nutrition is the intake of necessary nutrients to be used in our body for development, growth, and being healthy. 13 The incidence and prevalence of eating disorders (such as anorexia nervosa, bulimia nervosa, binge eating disorder) increase gradually in depression, and accordingly, malnutrition becomes widespread. <sup>14</sup> It is the condition that the energy and nutrients needed by the body are not taken in the desired type, amount, and quality. In case of insufficient and unbalanced nutrition that does not meet the physiological needs, physical growth and development, as well as brain development and intelligence development, are affected. <sup>15</sup> In recent years, poor diet quality has been shown to be a risk factor for depression. <sup>16,17</sup> It is known that the level of serotonin 5hydroxytryptamine (5HT) in the brain is effective on mood, and decreases in serotonin levels contribute to the etiology of depression in some individuals. Decreased intake of tryptophan, which is necessary for serotonin synthesis, causes decreases in serotonin levels. This condition can lead to mood disorders in some individuals. Decreases in the level of serotonin, a monoamine, also reduce food intake and body weight gain, and can increase energy expenditure by stimulating the paraventricular nucleus.18 Although there are many views on the role of nutrition in the etiology of depression, the mechanisms to support these views are not yet fully understood. Dietary factors, which are directly related to brain functions, are thought to play a role in depression, albeit indirectly, and are thought to be one of the possible risk factors. The strong relationship between adequate and balanced nutrition and brain functions is important in reducing the risk factors for depression.<sup>19</sup> The myth was that Milo consumed 9 kg of meat, 9 kg of bread, and about 9 liters of wine a day and won 5 Olympics in a row in wrestling. If the myth is true, this athlete's daily diet is to be around 57000 kcal. <sup>20</sup> Sports nutrition is a process that is carried out with an adequate and balanced program in which changes and arrangements are made according to age, gender, physical activity, sports branch, and the intensity and frequency of the training program.21

In this study, the changes in the social norms during the pandemic period were tried to be revealed by

examining the literature specific to changes in university graduate elite female athletes' depression tendencies and eating habits during the Covid-19 pandemic, which is the aim of the study. Along with the pandemic, the restrictions imposed by the ministries of health and the relevant institutions of the states have affected the norms of the societies, has deeply unsettled all norms and beliefs in education, sports, economy, health, and other fields, and bring new compulsory and unpredictable norms and practices in social life. With this study, the relationship between the effects of the pandemic, the depression tendencies of university graduate elite female volleyball players, and their eating habits were tried to be revealed.

## MATERIAL AND METHODS

Participants: The universe of the study consists of 96 female volleyball players who graduated from the Faculty of Sports Sciences of various universities in Turkey during the Covid-19 pandemic period. The distribution of the participant group, who are currently athletes in the Turkish women's first league of volleyball (Sigorta Shop), according to the teams is as follows; Edremit Municipality Altınoluk women's volleyball team 12, Nevsehir Municipality women's volleyball team 13, Adam women's volleyball team 11, Turkuaz Seramik OSB Technical College women's volleyball team 12, Sakarya women's volleyball team 14, Merinos women's volleyball team 12, Goztepe women's vollevball team 13. Karsıvaka women's vollevball team 9. A total of 96 female volleyball players actively playing volleyball were selected by random method. The surveys were applied by taking social distance, hygiene, and mask measures in accordance with the Covid-19 pandemic measures.

Materials: In the study, seven questions were prepared to determine the socio-demographic characteristics of participants. A nutrition scale consisting of 20 questions developed by Vural, <sup>22</sup> was used to determine eating habits. The scale, which is a Likert type, consists of 20 questions. Scale items were scored with 1, 2, 3, 4, and 5 points. The scale was formed as 1 "Never", 2 "Rarely", 3 "Sometimes", 4 "Often" and 5 "Always". The sub-factors of the scale were measured as 'Eating habits, Non-food products, Food consumption frequencies, and Performance'. As a result of the reliability analysis, the Cronbach Alpha coefficient was found to be 0.74. This result shows that the survey results are reliable. Another scale used in the study is the Depression Inventory, originally developed by Beck et al,. <sup>23</sup> Validity and reliability studies were conducted by Beck and other researchers. Hisli <sup>24</sup> conducted a validity study of the Beck Depression Inventory on Turkish university students. The Beck Depression Inventory and the MMPI-D scale were applied to 259 students, aged 17-23, studying in different departments of Ege University Faculty of Literature. As a result of the statistical analysis, the correlation coefficient between the two scales was found to be r=0.50. It has been determined that this result is in agreement with other validity studies conducted abroad with the same criteria.

**Statistical analysis:** The data of the study were analyzed using SPSS 21.0 Software. In the analysis of the research data, descriptive statistics such as arithmetic mean, frequency, standard deviation, and percentage values were

examined. In order to determine whether the parametric analysis can be performed for this study, it was examined whether the data showed normal distribution. As a result of the analysis, kurtosis and skewness values of the data were calculated and the results are given below.

As can be seen in Table 1, as a result of the distribution normality analysis, the skewness and kurtosis values obtained for the nutrition scale and depression scale are between -2 and +2. Distribution normality graphs were also examined, and it was determined that the data obtained from the nutrition scale and depression scale showed normal distribution. In the analysis of normally distributed research data, independent groups T-test was used for pairwise comparisons, the One Way ANOVA test was used for multiple comparisons, and the Tukey test as post hoc test was used.

For the sub-dimensions of the nutrition scale,  $x=3.88\pm0.75$  mean for the Eating habits sub-dimension,  $x=2.18\pm0.62$  mean for the Non-food products sub-dimension,  $x=3,81\pm0,62$  mean for the Food consumption frequencies sub-dimension.  $x=3.13\pm1.12$  mean for the Performancesub-dimension were obtained. The results reveal that female volleyball players showed high levels of behavior for the dimensions of eating habits and food consumption frequencies and low levels of behavior for non-food products during the Covid-19 pandemic.

Each of the 21 items in the Beck Depression Inventory, which is used to determine the depression tendencies of female volleyball players participating in the study during the Covid-19 pandemic, includes four sentences numbered 0,1,2,3. The sentence numbered "0" indicates that there are no depressive symptoms mentioned in that item, while sentences that begin with other numbers indicate that that symptom is experienced more and more intensely. The mean scores for each item of the scale were interpreted as a 4-point Likert scale from 0 to 3. The scale ranges to be used in this interpretation are given in Table 3.

The total score that can be obtained from the inventory is between 0 and 63. In studies conducted in Turkey using this inventory, it has been determined that a total score of 12 and below is considered as "not a cause for concern", and a total score of 13-16 is considered as "at the border in terms of depression." A total score of 17-24, on the other hand, indicates mild depression symptoms.<sup>25</sup>

As can be seen in Table 4, 24.0% of the female volleyball players are in the 22-24 age group, 21.9% are in the 19-21 age group, and 21.9% are in the 16-18 age group. It can be seen that 26.0% of volleyball players have been doing sports for 5-8 years, 24.0% for 9-12 years, 32.3% for 13-15 years, and 12.5% for more than 16 years. Accordingly, it can be stated that female volleyball players participating in the study have been involved in this sport since very young ages. It was determined that 81.3% of the athletes had never been a national athlete before. It was determined that 10.4% of them have competed as national athletes 6-10 times. When the athletes were asked what they do in their spare time, 36.5% said I read books, 26.0% said I go to entertainment venues, and 28.1% said I do shopping. In the question about how they define themselves in daily life, 58.3% of them stated that they are social and extroverted, 20.8% of them stated that they are quiet and calm, and 16.7% of them stated that they are hyperactive (active).

Table-1: The skewness and kurtosis values obtained for the nutrition scale and depression scale

	Skewness	Kurtosis
Nutrition Scale	-0,408	-0,367
Eating habits	-1,171	1,438
Non-food products	0,541	0,466
Food consumption frequencies	-0,236	-0,383
Performance	-0,068	-0,540
Depression scale	0,928	1,225

Table-2: Sub-dimensions of the nutrition scale

	Ν	Mean	SD
Nutrition scale mean	96	3,25	0,45
Eating habits	96	3,88	0,75
Non-food products	96	2,18	0,62
Food consumption frequencies	96	3,81	0,62
Performance	96	3,13	1,12

Table-3: 4-point Likert scale intervals for Beck depression scale

Severity	Option	Limits
0	No depressive symptoms	0,00 - 0,75
1	Few depressive symptoms	0,76 – 1,50
2	Have depressive symptoms	1,51 – 2,25
3	Many depressive symptoms	2,26 - 3,00

#### RESULTS

Information on the research results is given below.

Table-4: Demographic information of the sample group

		f	%
Age	16-18	21	21,9
	19-21	21	21,9
	22-24	23	24,0
	25-27	18	18,8
	28 and above	13	13,5
For how many years athlete	1-4 years	5	5,2
	5-8 years	25	26,0
	9-12 years	23	24,0
	13–15 years	31	32,3
	16 years and above	12	12,5
How many times competed as a national athlete?	Never	78	81,3
	1-5	4	4,2
	6-10	10	10,4
	11-15	2	2,1
	16 and above	2	2,1
What they prefer to do in their spare time?	I read book	35	36,5
	I go to the cinema/theatre	6	6,3
	I travel historical places	3	3,1
	I go to entertainment venues	25	26,0
	I do shopping	27	28,1
How they describe themself in daily life?	Quiet and calm	20	20,8
	Social and extrovert	56	58,3
	Hyperactive	16	16,7
	Nervous and irascible	4	4,2

Table-5: Eating habits of the participants during the Covid-19 pandemic

	Ν	Mean	SD
Nutrition scale mean	96	3,25	0,45
Eating habits	96	3,88	0,75
Non-food products	96	2,18	0,62
Food consumption frequencies	96	3,81	0,62
Performance	96	3,13	1,12

As can be seen in Table 5, for the sub-dimension of the nutrition scale,  $x=3.88\pm0.75$  mean for the eating habits dimension,  $x=2.18\pm0.62$  mean for the non-food products dimension,  $x=3,81\pm0,62$  mean for the food consumption frequencies dimension, and  $x=3,13\pm1,12$  mean for the performance dimension were obtained. According to these results, it can be stated that the female volleyball players showed a high level of behavior in terms of eating habits dimension and food consumption frequencies dimension, and a low level of behavior in non-food products dimension during the Covid-19 pandemic.

Table-6: Correlation analysis of the effect of participants' depression tendencies on their eating habits during the Covid-19 pandemic.

Variable (N=96)	Nutrition Behaviors	r	р
	Nutrition scale mean	-,143	,166
	Eating habits	-,280**	,006
Depression Tendency	Non-food products	,086	,407
	Food consumption frequencies	-,240*	,019
	Performance	,045	,666

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

As can be seen in Table 6, there was no significant relationship between the depression tendencies of female volleyball players and their nutritional behaviors in general. When evaluated according to the sub-dimensions of the nutrition scale, a weak negative correlation was determined between the depression tendencies of female volleyball players and the eating habits dimension (r=-0.280 p = 0.006), and a weak negative correlation was determined between the depression tendencies of female volleyball players and the food consumption frequencies dimension (r = -0.240 p = 0.019). According to these results, it can be stated that as the depression tendencies of female volleyball players increase, their behaviors in terms of eating habits and food consumption frequencies decrease slightly.

Table-7: Beck depression inventor	y mean scores of the sample group
-----------------------------------	-----------------------------------

	Ν	Mean	SD
I don't feel sad	96	0,50	0,77
I'm not desperate for the future	96	0,54	0,78
I don't see myself as unsuccessful	96	0,29	0,61
I don't enjoy everything as much as I used to	96	0,91	0,73
I don't feel guilty	96	0,60	0,64
I don't think I'm punished	96	0,73	0,75
I feel complacency	96	0,32	0,51
I don't consider myself worse than other people	96	0,38	0,57
I have no thoughts of killing myself	96	0,21	0,54
I don't think I'm crying more than usual	96	0,69	0,90
I get nervous more easily than usual	96	0,78	1,07
I'm less interested in people than I used to be	96	0,79	0,78
I can make my decisions as easily and contentedly as before	96	0,54	0,82
I don't think my appearance is any worse than before	96	0,39	0,84
I have to push harder than before to start a job.	96	0,78	0,91
I can sleep as well as before	96	0,71	0,75
I don't think I get tired any faster than usual	96	0,68	0,89
My appetite is not much different from before	96	0,36	0,63
I don't think I've lost much weight lately	96	0,16	0,36
My health doesn't worry me much	96	0,29	0,61
I haven't noticed anything in my sex life lately.	96	0,59	0,94
Depression score	96	11.24	7.30

As can be seen in Table 7, in the Beck Depression Inventory, which consists of 21 items, the mean scores of each item, except four items, ranged from 0 to 0.75 (no depressive symptoms), and the total score was determined as x=11.24. Based on these results, It can be stated that female volleyball players participating in the study do not have depression tendencies in general during the Covid-19 pandemic.

Table-8: The one-way ANOVA test results comparing the depression tendencies and nutritional behaviors of the participants during the Covid-19 pandemic according to the age variable.

	Age	N	Mean	Sd	F	Р	Difference
	16-18	21	3,85	0,58			
Esting hobits	19-21	21	3,98	0,58			
	22-24	23	3,77	0,92	0,251	0,908	
	25-27	18	3,93	1,00			
	28 and above	13	3,94	0,52			
	16-18	21	1,75	0,43			
Non food producto	19-21	21	2,09	0,62			1.2
Non-1000 products	22-24	23	2,43	0,46	4,965	0,001**	1<3
	25-27	18	2,25	0,61			1<5
	28 and above	13	2,47	0,81			
Food consumption frequencies	16-18	21	4,22	0,43			
	19-21	21	3,81	0,72			1. 0
	22-24	23	3,60	0,61	3,510	0,010**	1>3
	25-27	18	3,67	0,57			1 > 4
	28 and above	13	3,73	0,57			
	16-18	21	3,24	0,87			
Derfermense	19-21	21	2,88	0,76			
Performance	22-24	23	3,39	1,28	0,780	0,541	
	25-27	18	2,92	1,47			
	28 and above	13	3,15	1,14			
	16-18	21	3,26	0,33			
	19-21	21	3,19	0,33			
Nutrition scale mean	22-24	23	3,30	0,45	0,328	0,859	
	25-27	18	3,19	0,60			
	28 and above	13	3,32	0,58			
	16-18	21	9,57	8,12			
- ·	19-21	21	12,05	8,43			
Depression score	22-24	23	11,09	6,02	0,439	0,780	
	25-27	18	11,50	4,74			
	28 and above	13	12,54	9,35			

\*\* Difference is significant at the P<0.05 level.

Table-9: The one-way ANOVA test results comparing the depression tendencies and nutritional behaviors of the participants during the Covid-19 pandemic according to the years of doing sports variable.

	Years of doing sports	N	Mean	SD	F	Р	Difference
	1-4	5	3,74	0,48			
Eating habits	5-8	25	3,73	0,77			
	9-12	23	4,01	0,75	0,665	0,618	
	13-15	31	3,86	0,86			
	16 and above	12	4,08	0,43			
	1-4	5	1,70	0,54			
	5-8	25	2,00	0,65			E . 1
Non-food products	9-12	23	2,03	0,48	3,945	0,005**	5>1
	13-15	31	2,35	0,52			5 > 2
	16 and above	12	2,60	0,80			
	1-4	5	4,37	0,22			
Food consumption	5-8	25	4,13	0,50			4 . 4
Food consumption	9-12	23	3,68	0,73	5,532	0,000**	1>4
irequencies	13-15	31	3,52	0,56			2>4
	16 and above	12	3,92	0,45			
	1-4	5	3,10	1,14			
	5-8	25	3,32	0,85			
Performance	9-12	23	3,02	0,99	0,759	0,554	
	13-15	31	2,92	1,46			
	16 and above	12	3,46	0,81			
	1-4	5	3,23	0,38			
	5-8	25	3,30	0,30			
Nutrition scale mean	9-12	23	3,18	0,43	1,546	0,196	
	13-15	31	3,16	0,57			
	16 and above	12	3,51	0,36			
	1-4	5	10,20	5,07			
	5-8	25	12,76	8,15			
Depression score	9-12	23	9,04	7,35	0,851	0,497	
	13-15	31	11,55	5,76			
	16 and above	12	11,92	9,55			

\*\* Difference is significant at the P<0.05 level.

	Compete as a national athlete	Ν	Mean	SD	F	Р	Difference
	Never	78	3,88	0,74			
	1-5 times	4	3,54	0,98			
Eating habits	6-10 times	10	4,02	0,90	0,291	0,883	
	11-15 times	2	4,00	0,24			
	16 times and more	2	3,83	0,00			
	Never	78	2,13	0,64			
	1-5 times	4	2,38	0,88			
Non-food products	6-10 times	10	2,52	0,24	1,440	0,227	
	11-15 times	2	2,50	0,24			
	16 times and more	2	1,67	0,00			
	Never	78	3,85	0,62		0,290	
Food consumption	1-5 times	4	3,42	1,06			
frequencies	6-10 times	10	3,90	0,38	1,256		
irequencies	11-15 times	2	3,42	0,59			
	16 times and more	2	3,17	0,00			
	Never	78	3,06	1,06			3 > 2 3 > 1
	1-5 times	4	2,00	0,91			
Performance	6-10 times	10	4,20	0,92	3,980	0,005**	
	11-15 times	2	2,50	2,12			
	16 times and more	2	3,00	0,00			
	Never	78	3,23	0,42			
Nutrition cools	1-5 times	4	2,83	0,66			2. 2
moon	6-10 times	10	3,66	0,30	3,688	0,008**	3>2
mean	11-15 times	2	3,11	0,80			571
	16 times and more	2	2,92	0,00			
	Never	78	11,69	6,98			
	1-5 times	4	8,25	6,08			
Depression score	6-10 times	10	9,90	11,04	0,443	0,777	
	11-15 times	2	9,50	2,12			
	16 times and more	2	8,00	0,00			

Table-10: The one-way ANOVA test results comparing the depression tendencies and nutritional behaviors of the participants during the Covid-19 pandemic according to being a national athlete variable.

\*\* Difference is significant at the P<0.05 level.

As can be seen in Table 8, according to the results of the one-way ANOVA test, significant differences were found between the groups in the dimensions of products used other than food and the food consumption frequencies in the nutrition scale. Accordingly, in the nonfood dimension, the levels of female volleyball players in the 22-24 age group (x=2.43±0.46) and 28 and above age group (x=2.47±0.81) was significantly higher than the levels of female volleyball players in the 16-18 age group (x= 1.75±0.43) (p<0.05). In terms of food consumption frequencies, the levels of female volleyball players in the 16-18 age group (x=4.22±0.43) was found to be significantly higher than the levels of female volleyball players in the 22-24 age group (x=3.60±0.61) and 25-27 age group (x=3,67±0.57) (p<0.05). There was no significant difference in depression tendencies of female volleyball players according to age groups.

As can be seen in Table 9, according to the results of the one-way ANOVA test significant differences were found between the groups in the dimension of non-food products and food consumption frequencies of the nutrition scale. In terms of the non-food product dimension, the levels of female volleyball players with a sports history of 16 years or more (x=2.60±0.80) was significantly higher than the levels of female volleyball players in the 1-4 years sports history group (x=1.70±0.54) and 5-8 years sports history group (x = $2.00\pm0.65$ ) (p<0.05). In terms of the food consumption frequencies dimension, the levels of female volleyball players with a sports history of 1-4 years (x=4,37±0,22) and the levels of female volleyball players with a sports history of 5-8 years (x=4,13±0,50) were significantly higher than the levels of female volleyball players with a sports history of 13-15 years (x=3,52±0,56) (p<0.05). There was no significant difference in depression tendencies of female volleyball players according to their sports history.

As can be seen in Table 10, according to the results of the one-way ANOVA test, significant differences were determined between the groups in nutrition scale mean and in the performance dimension. Accordingly, in terms of general nutritional behavior, the levels of female volleyball players who were national athletes 6-10 times (x=3.66±0.30) was significantly higher than the levels of female volleyball players who were national athletes 1-5 times (x=2,83±0,66) and who were never compete as a national athlete (x=3,23±0,42) (p<0.05). Similarly, in the performance dimension, the levels of female volleyball players who were national athletes 6-10 times (x=4,20±0,92) was significantly higher than the levels of female volleyball players who were national athletes 1-5 times (x=2,00±0,91) and who were never compete as a national athlete (x=3,06±1,06) (p<0.05). There was no significant difference in depression tendencies of female volleyball players according to their experience of being a national athlete.

As can be seen in Table 11, according to the results of the one-way ANOVA test, significant differences were found between the groups in nutrition scale mean and in other dimensions except for the performance dimension. The general nutritional behavior levels of female volleyball players who describe themselves as social and extrovert (x=3.40±0.40), was significantly higher than the levels of female volleyball players who describe themselves as quiet and calm (x=2.97±0.41) and who describe themselves as hyperactive (x=3, 01±0.45) (p<0.05). In terms of the eating habits dimension, the level of female volleyball players who define themselves as social and extrovert (x=4.08±0.58) was significantly higher than the level of female volleyball players who define themselves as quiet and calm (x=3.62±0.77). In terms of non-food products, the level of female volleyball players who define themselves as social and extrovert (x=2,30±0,60) was significantly higher than the level of female volleyball players who define themselves as define themselves as quiet and calm (x=1,78±0,54). In terms of the food consumption frequencies dimension, the level of female volleyball players who define themselves as social and extrovert and calm (x=1,78±0,54).

 $(x=3,96\pm0,51)$  was significantly higher than the level of female volleyball players who define themselves as hyperactive  $(x=3,96\pm0,51)$  (p<0,05).

In terms of the differences in the depression tendency scale, the depression tendency levels of female volleyball players who define themselves as hyperactive (x=19,25±6,59) was significantly higher than the depression tendency levels of female volleyball players who define themselves as quiet and calm (x=9,40±4,42) and the levels of female volleyball players who define themselves as social and extrovert (x=9,50±7,05) (p<0,05).

Table-11: The one-way ANOVA test results comparing the depression tendencies and nutritional behaviors of the participants during the Covid-19 pandemic according to the self-definition variable.

	How they define themself?	Ν	Mean	SD	F	Р	Difference
	Quiet and calm	20	3,62	0,77			
Eating habits	Social and extrovert	56	4,08	0,58	2 4 2 7	0.020**	2.1
-	Hyperactive	16	3,59	0,97	3,427	0,020	2 > 1
	Nervous and irascible	4	3,59	1,16			
	Quiet and calm	20	1,78	0,54		0.000**	
Non food producto	Social and extrovert	56	2,30	0,60	4 426		2 . 1
Non-1000 products	Hyperactive	16	2,14	0,66	4,430	0,000	2 > 1
	Nervous and irascible	4	2,59	0,29			
	Quiet and calm	20	3,77	0,67			
Food consumption frequencies	Social and extrovert	56	3,96	0,51	4.024	0,010**	2. 2
	Hyperactive	16	3,38	0,74	4,024		2>3
	Nervous and irascible	4	3,75	0,73			
	Quiet and calm	20	2,73	1,40		0.070	
Dorformonoo	Social and extrovert	56	3,25	1,00	2 400		
Fenomance	Hyperactive	16	2,94	1,00	2,400	0,073	
	Nervous and irascible	4	4,13	1,03			
	Quiet and calm	20	2,97	0,41			
Nutrition scale	Social and extrovert	56	3,40	0,40	7 094	0.000**	2 > 1
mean	Hyperactive	16	3,01	0,45	7,904	0,000	2 > 3
	Nervous and irascible	4	3,51	0,27			
	Quiet and calm	20	9,40	4,42			
Depression seers	Social and extrovert	56	9,50	7,05	10 202	0.000**	3 > 1
Depression Score	Hyperactive	16	19,25	6,59	10,295	0,000	3 > 2
	Nervous and irascible	4	12,75	3,40			ĺ

\*\* Difference is significant at the P<0.05 level.

#### CONCLUSION

According to the results obtained from the demographic information of the female volleyball players participating in the research 24.0% of the female vollevball plavers are in the 22-24 age group, 21.9% are in the 19-21 age group, and 21.9% are in the 16-18 age group. It can be seen that 26.0% of volleyball players have been doing sports for 5-8 years, 24.0% for 9-12 years, 32.3% for 13-15 years, and 12.5% for more than 16 years. Accordingly, it can be stated that female volleyball players participating in the study have been involved in this sport since very young ages. It was determined that 81.3% of the athletes had never been a national athlete before. It was determined that 10.4% of them have competed as national athletes 6-10 times. When the athletes were asked what they do in their spare time, 36.5% said I read books, 26.0% said I go to entertainment venues, and 28.1% said I do shopping. For the question about how they define themselves in daily life, 58.3% of them stated that they are social and extroverted, 20.8% of them stated that they are quiet and calm, and 16.7% of them stated that they are hyperactive (active). For the subdimension of the nutrition scale, mean for the eating habits mean for the non-food products dimension, dimension, mean for the food consumption frequencies dimension, and mean for the performance dimension were obtained.

According to these results, it can be stated that the female volleyball players showed a high level of behavior in terms of eating habits dimension and food consumption frequencies dimension, and a low level of behavior in nonfood products dimension during the Covid-19 pandemic. There was no significant relationship found between the depression tendencies of female volleyball players and their nutritional behaviors in general. When evaluated according to the sub-dimensions of the nutrition scale, a weak negative correlation was determined between the depression tendencies of female volleyball players and the eating habits dimension, and a weak negative correlation was determined between the depression tendencies of female volleyball players and the food consumption frequencies dimension. According to these results, it can be stated that as the depression tendencies of female volleyball players increase, their behaviors in terms of eating habits and food consumption frequencies decrease slightly. In the Beck Depression Inventory, which consists of 21 items, the mean scores of all items except four items were determined as within the range (no depressive symptoms). Based on these results, It can be stated that female volleyball players participating in the study do not have depression tendencies in general during the Covid-19 pandemic. Significant differences were found between the

groups in the dimensions of products used other than food and the food consumption frequencies in the nutrition scale. Accordingly, in the non-food dimension, the levels of female volleyball players in the 22-24 age group and 28 and above age group were significantly higher than the levels of female volleyball players in the 16-18 age group. In terms of food consumption frequencies, the levels of female volleyball players in the 16-18 age group were found to be significantly higher than the levels of female volleyball players in the 22-24 age group and 25-27 age group. There was no significant difference in depression tendencies of female volleyball players according to age groups. Significant differences were found between the groups in the dimension of non-food products and food consumption frequencies of the nutrition scale. In terms of the non-food product dimension, the levels of female volleyball players with a sports history of 16 years or more were significantly higher than the levels of female volleyball players in the 1-4 years sports history group and 5-8 years sports history group. In terms of the food consumption frequencies dimension, the levels of female volleyball players with a sports history of 1-4 years and the levels of female volleyball players with a sports history of 5-8 years were significantly higher than the levels of female volleyball players with a sports history of 13-15 years. There was no significant difference in depression tendencies of female volleyball players according to their sports history. Significant differences were determined between the groups in nutrition scale mean and in the performance dimension. Accordingly, in terms of general nutritional behavior, the levels of female volleyball players who were national athletes 6-10 times were significantly higher than the levels of female volleyball players who were national athletes 1-5 times and who were never compete as a national athlete. Similarly, in the performance dimension, the levels of female volleyball players who were national athletes 6-10 times were significantly higher than the levels of female volleyball players who were national athletes 1-5 times and who were never compete as a national athlete. There was no significant difference in depression tendencies of female volleyball players according to their experience of being a national athlete. Significant differences were found between the groups in nutrition scale mean and in other dimensions except for the performance dimension. The general nutritional behavior levels of female volleyball players who describe themselves as social and extrovert were significantly higher than the levels of female volleyball players who describe themselves as quiet and calm and who describe themselves as hyperactive. In terms of the eating habits dimension, the level of female volleyball players who define themselves as social and extrovert was significantly higher than the level of female volleyball players who define themselves as quiet and calm. In terms of non-food products, the level of female volleyball players who define themselves as social and extrovert was significantly higher than the level of female volleyball players who define themselves as quiet and calm. In terms of the food consumption frequencies dimension, the level of female volleyball players who define themselves as social and extrovert was significantly higher than the level of female volleyball players who define themselves as hyperactive. In terms of the differences in the depression tendency scale, the depression tendency levels of female volleyball players who define themselves as hyperactive were significantly higher than the depression tendency levels of female volleyball players who define themselves as quiet and calm and the levels of female volleyball players who define themselves as social and extrovert.

#### REFERENCE

- 1. Yildirim S, Social-psychological view of the epidemics: Covid-19 (corona virus) pandemic case. Turkish studies. 2020;15(4):1331-51.
- World Health Organization. Coronavirus disease (Covid-19) advice for the public 2020a. Available at: https://www.cdc.gov/coronavirus/2019-ncov/need-extraprecautions/people-at-higher-risk.html.
- 3. World Health Organization. 2020b. Available at http://www.euro.who.int/en/healthtopics/
- healthemergencies/coronavirus-covid-19/covid-19-latest-updates.
- Kocabasoglu N, Doksat MK, Dogangun B, Various aspects of relationship between anxiety and depression. Yeni symposium dergisi. 2004; 42(4): 168-76.
- Sharon M, Judith M, Diagnosing and treatment major depression amoung people with cancers. Cancer nurs journal. 1997; 20(3): 168-77.
- Miller LJ, Postpartum mood disorders. Washington, D.C: American Psychiatric Press Incorporated 1999.
- 7. Kuey L, Birinci basamakta depresyon: tanima, ele alma, yonlendirme. Psikiyatri dunyasi. 1998; 2(1): 5-12.
- 8. Sayil I, Bireyden topluma ruh sagligi, Istanbul: Eczacibasi Ilac Pazarlama Yayinlari 2004.
- 9. Morris CG, Maisto AA, Understanding psychology, Paperback: Prentice Hall 2000.
- Koknel O, Depresyon ruhsal cokuntu, Istanbul: Altin Kitaplar Basimevi 1989.
- Dashdamirov E, Universite ogrencilerinin aska iliskin tutum bicimleri ile depresyon duzeyleri arasindaki iliskinin incelenmesi. Unpublished Master Thesis, Marmara Universitesi, Egitim Bilimleri Enstitusu 2013.
- Aslan R, How does Covid 19 effect physiology and psychology?. Ayrinti goller bolgesi aylik ekonomi ve kultur dergisi, 2020; 8(88): 47-53.
- 13. Baysal A, Genel beslenme. Ankara: 13. Baski, Hatiboglu Yayinevi 2010.
- 14. Rosen DS, Identification and management of eating disorders in children and adolescents. Pediatrics, 2010; 126(6):1240-53.
- 15. Baysal A, Beslenme. Ankara: Hatiboglu Yayinevi 2012.
- Lopresti AL, Hood SD, Drummond PD, A review of lifestyle factors that contribute to important pathways associated with major depression: diet, sleep and exercise. Journal of affective disorders, 2003; 148(1):12-27.
- Tolmunen Ť, Hintikka J, Voutilainen S, Ruusunen A, Alfthan G, Nyyssonen K, Viinamaki H, Kaplan GA, Salonen JT, (2004). Association between depressive symptoms and serum concentrations of homocysteine in men: a population study. American society for clinical nutrition, 2004; 80(1): 1574-78.
- Ciftci H, Yildiz E, Mercanligil S, Depresyon ve beslenme tedavisi. Turkiye klinikleri j. med. sci, 2008; 28(3):369-77.
- 19. Kaner G, Samur G, Postpartum depresyonda beslenmenin rolu. Beslenme ve diyet dergisi, 2012; 40(1): 51-58.
- Grandjean AC, Diets of elite athletes: has the discipline of sports nutrition made an impact?. The journal of nutrition, 1997;127(5): 874-77.
- 21. Gunes Z, Spor ve beslenme. Ankara: Nobel Yayinlari 2005.
- Vural BS, Futbolcularin beslenme aliskanlikları ile performanslari uzerine bir arastirma. Unpublished Master Thesis, Okan Universitesi, Sosyal Bilimler Enstitusu, Istanbul 2018
- Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J, An inventory for measuring depression. Archives of General Psychiatry, 1961; 4(6): 561-71.
- 24. Hisli N, Beck depresyon envanteri'nin universite ogrencileri icin gecerligi, guvenirligi, Psikoloji dergisi. 1989; 7(23): 3-13.
- Dokmen ZY, Bem cinsiyet rolu envanteri kadinsilik ve erkeksilik olcekleri turkce formunun psikometrik ozellikleri. Kriz dergisi, 1999; 7(1): 27-40.