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Investıgatıon of the Rates of Weıght Gaın and the Frequency of Obesıty Durıng the Covıd-19 Pandemıc

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Abstract

Mortality and morbidity of COVID-19 disease remain higher than expected. The presence of advanced age, male sex, obesity, hypertension, diabetes mellitus and chronic diseases was noteworthy in those who lost their lives in the COVID-19 pandemic that started in December 2019 worldwide. A pandemic caused by a known virus has emerged as a disease full of unknowns. It is known that obesity is one of the important risk factors for mortality and morbidity in patients with COVID-19. It is known that weight gain and obesity increase during the COVID-19 pandemic. In this study, it was planned to investigate the rates of weight gain and the frequency of obesity during the COVID-19 pandemic.

Keywords: Nutritional Status, Physical Activity, Covıd-19, Obesity Prevalence

Introductıon

Pneumonia cases of unknown etiology first started to appear in Wuhan, China, on December 31, 2019. As a result of detailed clinical examinations, on January 7, 2020, the causative agent of this disease was named SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) virus, and the disease was named Coronavirus Disease 2019 (COVID-19) by the World Health Organization [1]. This type of coronavirus is a RNA type virus that has a high risk of contagion and causes severe respiratory tract infection. It is stated that COVID-19 is transmitted through droplets and by contact with the mouth, nose and eye mucosa of the hands after touching surfaces containing the virus. While the disease can be asymptomatic, symptoms such as cough, fever, and shortness of breath are sometimes observed in mild cases; In severe cases, serious acute respiratory tract infection and mortality may occur [2]. New type of coronavirus; It threatens especially elderly individuals and individuals with chronic diseases such as diabetes, hypertension, respiratory and kidney diseases. Obesity has also been reported to be an important risk factor for COVID-19 [3]. The mechanism that will explain the relationship between obesity and COVID-19 is not clearly known. However, in previous retrospective studies conducted during the influenza A virus H1N1 pandemic, it was emphasized that obesity is important in the course of the disease and the risk of mortality [4, 5]. This study aimed to investigate the changes in weight and obesity rates of individuals affected and unaffected by the disease during the COVID-19 pandemic.

Table 1: Demographic characteristics of individuals.

Category	Data
Age (years)	56.05
Sex (n, %)	
Male	268 (53.7%)
Female	231 (46.3%)
Comorbidities (n, %)	
Diabetes Mellitus	332 (66.5%)

Hypertension	208 (41.7%)
Hyperlipidemia	239 (47.9%)
Coronary Artery Disease	308 (61.7%)
Smoking (n, %)	
Yes	325 (65.1%)
No	174 (34.9%)
Source of Information (n, %)	
Doctors	117 (23.4%)
Television	112 (22.4%)
Social Media	168 (33.7%)
Friends and Family	102 (20.4%)
Education (n, %)	
Primary School	62 (12.4%)
Less than High School	50 (10.0%)
Licence	173 (34.7%)
Doctorate	214 (42.9%)

Results

Demographic characteristics of the participants are presented in Table 1. Accordingly,

A total of 499 individuals participated in the study with weight changes distributed as: gained weight (63%), remained the same weight (25%), or lost weight (12 %). The average age of the individuals is 56 years, 53.7% (n=268) are male and 46.3% (n=231) are female. 65.1% of the participants declared that they smoked, 66.5% had a previous diagnosis of DM, 41.7% had a diagnosis of HT, 47.9% had a diagnosis of HL, and 61.7% had a diagnosis of CAD. Changes in daily physical activity, daily sleep time, eating habits, number of snacks per day, stress status and time spent in front of the screen (entertainment/work) in the participants before and during the COVID-19 outbreak are given in Table 2. Accordingly, when individuals' physical activity was compared before COVID-19 (M = 2.03; SD = 1.04) and during COVID-19 (M = 1.5; SD = 0.97), it was observed that daily physical activity decreased [Z = - 9.6, p = 0.000]. When sleep time was compared before COVID-19 (M=0.35; SD=0.48) and during COVID-19 (M=0.38; SD=0.49), it was found that sleep time did not change [Z = -1.52, p = 0.128]. When the number of daily snacks in individuals was compared before COVID-19 (M = 0.54; SD = 0.51) and during COVID-19 (M = 0.68; SD = 0.54), it was determined that the number of daily snacks increased [Z = -4.94, p = .0000] . When the stress status of individuals was compared before COVID-19 (M = 0.97; SD = 0.54) and during COVID-19 (M = 1.26; SD = 0.62), it was observed that stress increased [Z = -10.17, p = 0.000]. When the time spent in front of the screen (entertainment) of individuals was compared before COVID-19 (M = 1.28; SD = 0.85) and during COVID-19 (M = 1.69; SD = 0.942), it was found that the time spent in front of the screen (entertainment) increased [Z = -12.06 , p =0 .000]. When the time spent in front of the screen (study) was compared before COVID-19 (M = 1.03; SD = 1.17) and during COVID-19 (M = 1.2; SD = 1.24), it was found that the time spent in front of the screen (study) increased [Z = -4.78, p = 0.000]. Weight changes in participants before and during the COVID-19 outbreak are given in Table 3. Accordingly, when the weight change was compared before COVID-19 (M = 77.42, SD = 11.25) and during COVID-19 (M = 80.18, SD = 11.73), there was a significant increase in body weight (t = -15.52, p < .001, d = 0.41).

Table 2: Changes in physical activity, sleep duration, number of snacks per day, stress status, and screen time before and during COVID-19.

	PHYSICAL ACTIVITY	
	Before	**During**
	Percentage %	Percentage %
Never	4.8	11.0
do housework	26.5	45.9
1-3 times a week	40.5	30.5
4-5 times a week	17.2	7.4
Every day	11.0	5.2
Total	100.0	100.0
	SLEEP DURATION	
	Before	During

	Percentage %	Percentage %
< 7 hours	64.5	62.1
> 7 hours	35.3	37.9
Total	100.9	100.0
	NUMBER OF SNACKS PER DAY	
	Before	During
	Percentage %	Percentage %
1-2 meals	46.7	35.9
3-4 meals	52.9	60.5
≥5 meals	0.4	3.6
Total	100.0	100.0
	STRESS STATUS	
	Before	During
	Percentage %	Percentage %
Never	16.0	9.8
Sometimes	71.0	54.3
Always	13.0	35.9
Total	100.0	100.0
	SCREEN TIME (FUN)	
	Before	During
	Percentage %	Percentage %
less than 30 minutes/day	17.6	11.4
1-2 hours/day	45.1	30.1
3-5 hours/day	28.9	36.3
> 5 hours/day	8.4	22.2
Total	100.0	100.0
	SCREEN TIME (WORKING)	
	Before	During
	Percentage %	Percentage %
less than 30 minutes/day	48.3	44.3
1-2 hours/day	18.6	14.8
3-5 hours/day	14.6	17.0
> 5 hours/day	18.4	23.8
Total	100.0	100.0

*The difference between the groups was evaluated with the Wilcoxon Test.

Table 3: Weight changes before and during COVID-19.

Measure	Mean	N	Std. Deviation	Std. Error Mean	t	Degree of Freedom (df)	Significance (2-tailed)
Pre-pandemic body weight	77.42	374	11.248	0.582			
Body weight during the pandemic	80.18	374	11.734	0.607			
Weight before the pandemic – weight during the pandemic	-2.762		3.442		-15.517	373	0

*Weight changes before and during the pandemic were evaluated with a dependent Paired T-test.

Methods

A total of 499 people over the age of 18 who applied to TOBB hospital cardiology clinic were included in the study, regardless of whether they had COVID-19 or not. During the outpatient clinic visits of our patients, whose consent was obtained, clinical interviews and surveys were conducted by the researcher caring for these patients. The results of the surveys were examined and statistical findings were presented.

Results

The average age of the participants was 56 years, 53.7% (n=268) were men and 46.3% (n=231) were women. It was determined that daily physical activity decreased in individuals, sleep duration did not change, the number of daily snacks, stress status and time spent in front of the screen (entertainment/work) increased. There was a significant increase in the body weights of the participants.

Discussion

In this study, it was observed that the frequency of weight gain and obesity increased due to changes in daily physical activities and eating habits due to the increase in the duration of individuals' stay at home during the COVID-19 epidemic. Most of the participants in the study switched to working from home or remotely. The increase in the duration of stay at home with the COVID-19 epidemic provides individuals with a safe environment in terms of the virus, while causing an increase in food intake and a decrease in daily physical activity levels. In addition to maintaining energy balance, physical activity is also known to have a positive effect on depression and anxiety and to strengthen the immune system [6, 7]. It can be predicted that it may negatively affect the negative consequences that Covid-19 may cause, such as decreased physical activity, possible body weight increase and mood changes that will occur with the increase in time spent at home. It is known that individuals with short sleep duration are more prone to inadequate and unhealthy nutrition, and short sleep duration is associated with an increase in junk food consumption. In a study, it was determined that 23% of the total energy intake in individuals who slept less than 6 hours came from snacks. It has been reported that individuals with long sleep duration skip one of the three main meals [8]. In another study, an increase in sleep duration was associated with a decrease in total energy intake [9]. In our study, no change was observed in the sleep duration of individuals, but it was observed that the increase in the duration of stay at home caused an increase in total energy intake due to the consumption of ready meals and the increase in the number of snacks per day. These results are not consistent with the literature. However, with the increase in the duration of stay at home in the current conditions, an increase in the total energy intake of individuals is expected due to the consumption of ready-to-eat meals and the increase in the number of daily snacks. It has led to an increase in the rate of obesity due to changes in the eating habits of individuals. The effects of mood on nutrition have been studied for many years [10]. Emotional conditions such as depression, anxiety, and stress can increase food intake, and in some individuals, it decreases it in the opposite direction [11, 12]. Jayne et al. associated emotional eating behaviors with an increase in body weight [13]. Cheng and Kamil reported that increased stress was associated with a decrease in food intake [12]. These results suggest that changes in mood may affect nutritional status in different ways. In this study, it was observed that most of the participants had changes in their emotional states due to COVID-19 and that these changes could increase their food intake. It is thought that this situation may cause an increase in body weight in individuals. While the time spent in front of the screen has increased, physical activity has decreased, paving the way for obesity.

Conclusıon

The findings of the study show that there are changes in the nutrition, sleep and physical activity patterns of individuals during and after COVID-19. As a result, it has been observed that COVID-19 increases the frequency of obesity.

This study provides up-to-date data to evaluate the changes in individuals' daily physical activity and nutritional habits after the COVID-19 outbreak. Most of the participants have switched to working from home or remotely. The increase in the duration of stay at home with the COVID-19 epidemic causes an increase in individuals' food intake and a decrease in their daily physical activity levels. Increased stress during the quarantine period has caused individuals to consume excess calories. Increasing the time spent in front of the screen decreased physical activity and as a result, an increase in the risk of weight gain and obesity was detected.

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