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Enquiring into Experiences of Fear, Posttraumatic Stress and Nutritional Habits of Medical Students during the COVID-19 Pandemic

Tıp Fakültesi Öğrencilerinin COVID-19 Pandemisi Sırasında Korku, Travma Sonrası Stres ve Beslenme Alışkanlıklarının İrdelenmesi

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ABSTRACT

Aim: This study aimed to determine the effects of fear of coronavirus disease 2019 (COVID-19) and post-traumatic stress disorder on eating disorders and eating habits.
Material and Methods: A cross-sectional descriptive study employed 562 (167 males, and 395 females) medical students, utilizing the fear of COVID-19 scale, COVID-19 peritraumatic distress index (CPDI), SCOFF (REZZY) eating disorders scale and Mediterranean diet adherence screener (MEDAS) scale.
Results: Of the participants, 292 (52.0%) had an adequate/balanced diet, and 339 (60.3%) students had an average sleep time of <8 hours. The REZZY scale score showed 198 (35.2%) students had an eating disorder risk, and MEDAS scores exhibited 320 (56.9%) students had incompatible diets. A significant correlation was detected between the REZZY score and the fear of COVID-19 scale score (p=0.003) and CPDI score (p<0.001). The CPDI scores of the underweight participants and those with normal body mass index (BMI) class were significantly higher (p=0.009). A significant difference was spotted in respecting REZZY scores according to BMI classes (p<0.001). The ones with normal BMI class had significantly higher MEDAS score (p=0.031). Females were 2.315 times more likely to develop eating disorders. BMI value affected the risk of eating disorders (p<0.001). When BMI (kg/m^2) increased by 1 unit, the risk of eating disorders would increase by 1.220 times. Adequate and balanced nutrition had a significant impact on the risk of eating disorders (p=0.018).
Conclusion: Assuring adequate and balanced nutrition and eliminating fears and stresses experienced during epidemics are essential.
Keywords: COVID-19 fear; eating disorders; medical students; post-traumatic stress.

ÖZ

Amaç: Bu araştırmanın amacı, koronavirüs hastalığı 2019 (coronavirus disease 2019, COVID-19) korkusu ve posttravmatik stres bozukluğunun yeme bozuklukları ve yeme alışkanlıkları üzerindeki etkilerinin belirlenmesidir.
Gereç ve Yöntemler: Kesitsel tanımlayıcı çalışma, COVID-19 korku ölçeği, COVID-19 peritravmatik stres indeksi (COVID-19 peritraumatic distress index, CPDI), REZZY yeme bozuklukları ölçeği ve Akdeniz diyetine uyum izleme (Mediterranean diet adherence screener, MEDAS) ölçeği kullanılarak 562 (167 erkek ve 395 kadın) tıp öğrencisiyle gerçekleştirildi.
Bulgular: Katılımcıların 292 (%52,0)'sinin yeterli/dengeli beslendiği ve 339 (%60,3) öğrencinin <8 saat ortalama uyku süresi olduğu belirlendi. REZZY ölçeği puanı 198 (%35,2) öğrencinin yeme bozukluğu riski taşıdığını gösterirken MEDAS puanı ise 320 (%56,9) öğrencinin uyumsuz diyet yaptığını ortaya koydu. REZZY puanı ile COVID-19 korku ölçeği puanı (p=0,003) ve CPDI puanı (p<0,001) arasında anlamlı bir korelasyon bulundu. Zayıf olan katılımcılarla normal vücut kitle indeksi (VKİ) sınıfında olanların CPDI puanları anlamlı derecede yüksekti (p=0,009). VKİ sınıflarına göre REZZY puanlarında anlamlı bir farklılık tespit edildi (p<0,001). Normal VKİ sınıfında olanlar anlamlı derecede yüksek MEDAS puanına sahipti (p=0,031). Kadınların yeme bozukluğu ortaya çıkma riski 2,315 kat daha fazlaydı. VKİ değeri yeme bozukluğu riskini etkilemekteydi (p<0,001). VKİ (kg/m^2) 1 birim arttığında yeme bozukluğu riski 1,220 kat artmaktadır. Yeterli ve dengeli beslenmenin yeme bozukluğu riski üzerine anlamlı bir etkisi vardı (p=0,018).
Sonuç: Salgınlarda, yeterli ve dengeli beslenmenin sağlanması ve deneyimlenen korku ve stresin bertaraf edilmesi elzemdir.
Anahtar kelimeler: COVID-19 korkusu; yeme bozukluğu; tıp öğrencileri; posttravmatik stres.

INTRODUCTION

The current day holds the fact that in particular with the rapid increase in the emergence of the relevant outcomes of globalization, an epidemic that breaks out in any part of the globe will spread in a considerably fast fashion constituting a severe threat to the whole world, evolving into a pandemic. With that being said, healthcare workers arguably suffer from the heaviest consequences of such epidemics. It is a predictable result that hundreds of thousands of individuals who will have lost their lives due to the coronavirus disease 2019 (COVID-19) pandemic all over the world will be mostly healthcare workers who are at the forefront during the fight against the pandemic (1,2). Healthcare workers are indeed concerned about infecting both themselves and their loved ones during the course of a post-apocalyptic-like environment, and thence the stress they are exposed to has both individual and societal effects, which carry the potential to cause disruptions in the(ir) service quality whilst trying to serve under that intense stress (3,4). The fact that the death rate as a result of COVID-19 among healthcare workers is higher than the mortality rate in society further reinforces the level of anxiety and fear, at the same time enhancing the perceived individual risk of COVID-19, affecting the societies and leading to anxiety, fear, and stress (5-7). A fair number of preventive measures have been ensured with a view to halting the spread of the virus, shifting the everyday lives of individuals in a rather sudden and unexpected manner. These very alterations have put medical students into one of those groups most impacted by what the pandemic brought (8). It would be fair to accentuate that those uncertainties pertaining to the fight against the disease lead to considerable fear and anxiety. Interns and trainee students, who are prospective medical doctors, have also tried to struggle against the psychological effects of all the processes in question. Verily, the educators of those medical students are doctors who are fighting the pandemic on the front line and who are psychologically affected by the unstable atmosphere and the rather hazy future (9). Thereupon, it turns out that medical students who do their practical training amidst the pandemic inescapably experience anxiety and fear. This is owing to the fact that these students who continue their medical education in the midst of the COVID-19 pandemic are a part of the group with the highest risk of transmission, like onsite healthcare workers, while endeavoring to embrace the ever-changing nature of their education (10). The ongoing apprehension and anxiety of being in this group with a high risk of contagion caused these students to have difficulty in concentrating and to be negatively influenced by psychological means (11). In addition to these, boosted levels of stress and anxiety the pandemic yielded are mirrored in the nutritional habits, particularly in those of the involved individuals. On the other hand, it goes without saying that providing adequate and balanced nutrition is one of the main determinants of health for any group and in particular for those who have the risk of experiencing stress and several sorts of difficulties in their everyday lives. On top of these, since an effective treatment for COVID-19 is not yet available as of the year 2022, escalating the immune response of individuals in the asymptomatic stage of the disease is deemed vital for the protection of health. On the flip side, maintaining an unhealthy diet and lifestyle can cause non-communicable diseases with adverse effects on COVID-19 (12). Certain emotions, to wit, stress, anxiety, and depression can be related to eating, likewise, boredom can trigger eating, elevate fat and calorie consumption, alongside one's resorting to unhealthy snacks, and may precipitate shifts in eating habits. Thereby food consumption and meal patterns of individuals may tend to become unhealthier (13). Albeit there was an observed rise in body weight in numerous individuals during the pandemic period, an inclination in embracing the Mediterranean diet, in healthy eating obsession, and even anorexia were witnessed as well (14).

When it comes to students at the tertiary level, it is apparent that the COVID-19 pandemic has caused severe stress as well as modified eating habits among these groups. In spite of the growing number of studies on eating disorders and stress in university students during the COVID-19 pandemic, it has been detected that research on medical students has not attained sufficing levels as of the year 2022. The situation with medical students all through the COVID-19 pandemic as a group with the higher risks of transmission becomes worthy of delving into for the relevant parties viz. educators, health professionals, and policymakers.

The aim of this study was then to be able to reveal the effects of fear, post-traumatic stress, and nutritional habits experienced by medical students during the COVID-19 pandemic.

MATERIAL AND METHODS

Participants and Procedures

A descriptive cross-sectional study was deployed and a total of 562 medical students, 167 males, and 395 females, aged between 22-26 years, were reached within 3 months, namely, from February to April 2021. The participants reached were students of medical faculties of various universities i.e., Ankara University, Gazi University, Ankara Medipol University, and Hacettepe University located in the capital. The snowball sampling method allowing for reaching other participants once the first participants are found was referred to in the selection of the sample. Following the construction process of the questionnaire forms, they were uploaded to Google Forms and delivered to the volunteered participants, with whom the researchers communicated through individual relationships via social media channels (i.e., WhatsApp, Facebook, Twitter, Instagram, and alike). It took approximately 20 minutes for the participants in question to complete the questionnaire.

The research protocol obtained from the ethics committee of Ankara Medipol University (14.01.2021/53), where the study was designated and carried out, is in accordance with the provisions of the Declaration of Helsinki. In addition, the participants were informed about the purpose of the present research and shared their electronic informed consent as a requirement for participation. The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Instruments

In total 4 scales were determined so as to investigate the relevant perceptions as well as attitudes toward the

COVID-19 pandemic together with dietary habits, mindful eating, and tendencies of intuitive eating of the participating individuals. The aforementioned instruments made use of in the current research are classified under seven chief parts: *i)* Information that is pertinent to demographics (3 questions); *ii)* Anthropometric measurements (3 questions); *iii)* Information respecting dietary habits and health (6 questions); *iv)* Fear of COVID-19 Scale (7 items); *v)* COVID-19 Peritraumatic Distress Index (CPDI) (24 items); *vi)* SCOFF (REZZY) Eating Disorders Scale (5 items); and *vii)* Mediterranean Diet Adherence Screener (MEDAS) Scale (14 items).

The participants completed the questionnaire within around 20 minutes using digital devices, that is, PCs, tablets, or mobile phones. Upon the completion of each tool, the related tool was submitted to Google Forms and finally, the latest version of the report was imported as a Microsoft Excel file.

Fear of COVID-19 Scale

The fear of COVID-19 scale which was developed in 2020 by Ahorsu et al. (6), includes a single dimension with 7 items and there are not any reverse items. It constitutes the form of a 5-point Likert (1: strongly disagree to 5: strongly agree) and in light of the given responses, the possible scores may range from 7 to 35. The final score to be received from all of the items indicates the level of fear of COVID-19 experienced by the relevant participant. A higher score herein points to a higher level of fear of COVID-19 (6).

COVID-19 Peritraumatic Distress Index (CPDI)

The COVID-19 peritraumatic distress index (CPDI) is composed of 24 items. CPDI inquired about the frequency of anxiety, depression, specific phobias, cognitive change, avoidance and compulsive behavior, physical symptoms, and loss of social functioning in the former week. The items may be categorized further under four domains (negative mood, changes in behavior and cognitive abilities, tiredness and hyperactivity, and somatization) concerning the COVID-19 outbreak. Scale items are rated on a 5-point scale, ranging from Never: 0 to Often: 4. The total score ranges from 0 to 96. A score between 28 and 51 shows mild to moderate distress whereas a score that is ≥52 implies severe distress (15).

SCOFF (REZZY) Eating Disorders Scale

SCOFF eating disorders scale which was developed in 2010 by Hill et al. (16) allows detailed examination and analysis by screening the eating disorder risk. The scale, which mainly aims to question eating control, eating out, and body dissatisfaction, involves 5 questions. Individuals scoring 2 or more points on the scale, where 1 point is given to each item, are evaluated as the ones with the risk for eating disorders (16).

Mediterranean Diet Adherence Screener (MEDAS)

To measure individuals' adaptation to the Mediterranean diet, Martinez-Gonzalez et al. (17) came up with a scale in 2012 that has 14 questions. The sort of basic oil used by individuals in meals, the amount of olive oil consumed daily, fruit and vegetable portions, margarine-butter and red meat consumption, weekly consumption of wine, pulses, fish-sea products, nuts, cakes, tomato sauce with olive oil, and the ratio of white meat to red meat are investigated through this scale. There exist 14 questions questioning preferences in this regard. 1 or 0 points can be received for each question and the total score is calculated accordingly. Scores are evaluated as ≤5: low agreement, 6-9: moderate agreement, and ≥10: high agreement (17).

Dieter Habits Information

The number of main and snack meals consumed, the status of skipping main or snack meals, the reasons behind skipping meals, daily consumption of water, tea, and coffee, sleep duration, and activity for 30 minutes or more in the previous week were inquired into in this sense.

In this study, the information about measurements belonging to height and body weight was obtained according to the self-reports of the participants since the data were collected during the COVID-19 pandemic. Put differently, the pandemic did not let the researchers meet the participants in person or face-to-face. The body mass index (BMI) of the individuals was assessed using their height (cm) and body weight (kg). Relatively younger individuals were grouped into three as to their BMI, as underweight: <18.5 kg/m^2, normal weight: 18.5-24.9 kg/m^2, and overweight: ≥25.0 kg/m^2 (18).

Statistical Analysis

Statistical analyses were carried out utilizing a package program entitled IBM SPSS Statistics v.24. Frequency tables and descriptive statistics were turned to for the assessment of the results. Non-parametric methods were made use of for the values which did not conform to a normal distribution as per the Kolmogorov-Smirnov test. Mann-Whitney U and Kruskal-Wallis tests were applied in non-parametric tests. In the Kruskal-Wallis test, the post hoc Mann-Whitney U test was used to determine the group that caused the difference. The correlation between the scales was analyzed with the Spearman correlation test. Determination of the factors influencing the risk status of eating disorders was identified by binary logistic regression analysis by applying the backward LR model. A p value of <0.05 was considered significant.

RESULTS

The mean age of the students was 23.81±1.11 years and 55.0% (n=309) of them were ≥24 years old. 70.3% (n=395) of them were female, 97.0% (n=545) were single, and 66.5% (n=374) had normal BMI. 28.8% (n=162) of the participants pronounced that there was no change in their body weight, and 45.2% (n=254) uttered that there was an increase in body weight in the previous year. Addedly, 52.0% (n=292) reported that they had an adequate/balanced diet, 61.4% (n=345) consumed two main meals, 60.3% (n=339) slept <8 hours on average, and 55.0% (n=309) did ≥30 minutes of activity in the last one week (Table 1).

According to the REZZY scale score, 35.2% (n=198) of the participants had an eating disorder risk, and the other 64.8% (n=364) were normal. According to the MEDAS scores, 56.9% (n=320) of them were not compatible with their diets. It was figured out that 27.6% (n=155) of them had an acceptable level and 15.5% (n=87) of them had a tight fit (Table 2).

Considering the REZZY scale score, a positive, weak, and statistically significant correlation was found between the fear of COVID-19 scale score (p=0.003), and also between the CPDI scores (p<0.001), negative mood, changes in behavior and cognitive abilities, tiredness and hyperactivity, and somatization scores (Table 3).

According to the presented model, gender was found to be a parameter of a salient sort influencing the risk of eating disorders (p<0.001). It was known that females were 2.315 times more likely to have an eating disorder than males. When BMI (kg/m^2) increases by one unit, so does the risk of eating disorders, to be more specific, 1.220 times. Adequate and balanced nutritional status was determined as an eminent parameter impacting the risk of eating disorders (p<0.001). The risk of eating disorders was 1.600 times higher for those who do not have an adequate and balanced diet than those with an adequate and balanced diet. It was found that CPDI value was a pivotal factor impacting the risk of an eating disorder (p=0.018). When the CPDI value increases by 1 unit, the risk of eating disorders will do so 1.049 times (Table 4).

CPDI, REZZY, MEDAS, and fear of COVID-19 scale scores belonging to the females were significantly higher than those of the males (p<0.001). The CPDI scores of those who were underweight and with normal BMI classes were significantly higher than the ones in the overweight group (p=0.009). What is more, a statistically significant difference was detected vis-à-vis of REZZY scores according to BMI classes (p<0.001). REZZY scores of those in the underweight BMI class were significantly higher than those pertaining to the normal weight and overweight. The participants in the normal BMI class had significantly higher MEDAS scores than those who were overweight (p=0.031). The individuals in the underweight BMI class had significantly higher fear of COVID-19 scale scores than those who were overweight (p=0.026). The CPDI scores of those whose weight diminished and raised in the previous year were significantly higher than those who did not experience any changes (p=0.001). Those with reduced and raised weight had significantly higher REZZY scores than the ones who did go through any changes (p<0.001). The MEDAS scores of those with lessened and unchanged weights were identified to be statistically significantly higher than the others with lifted weights (p=0.006). No significant difference was found in fear of COVID-19 scores according to the change in weight in the last year (Table 5).

DISCUSSION

The global scale of the COVID-19 epidemic, which indeed makes it a pandemic, interferes with human health at both individual and societal levels, yielding fear and anxiety for varying groups (19). High case numbers, deaths, and fear of quarantine have all impacted health workers as members of society, who are working hard to resist the pandemic. These factors generate issues alongside unwanted consequences such as anxiety, depression, and stress for all, again exclusively for these healthcare workers (20). Healthcare workers are faced with a heavier burden in their front-line fight against COVID-19 in relation to the fact that they are most at risk of being infected, with the realms of overworking and burnout, isolation from society, and even with exposure to discrimination (21).

At this point, it is worthwhile to note that there is a significant relationship between burnout and insomnia (22). As a matter of fact, good sleep quality is invaluable for anyone and to a great extent for healthcare professionals assisting in their working better and supporting immune

Table 1. General characteristics of the participants (n=562)

Age (year), mean±SD	23.81±1.11
Age group, n (%)	
<24	253 (45.0)
≥24	309 (55.0)
Gender, n (%)	
Male	167 (29.7)
Female	395 (70.3)
Marital status, n (%)	
Single	545 (97.0)
Married	17 (3.0)
BMI (kg/m^2), mean±SD	22.63±3.82
BMI group, n (%)	
Underweight (<18.5 kg/m^2)	59 (10.5)
Normal (18.5-24.9 kg/m^2)	374 (66.5)
Overweight-Obese (≥25 kg/m^2)	129 (23.0)
Change in weight in the last year, n (%)	
Decreased	146 (26.0)
No change	162 (28.8)
Increased	254 (45.2)
Sleep time (hour), mean±SD	7.30±1.03
Sleep time, n (%)	
<8 hours	339 (60.3)
8 hours	163 (29.0)
>8 hours	60 (10.7)
≥30 minutes activity in the last week, n (%)	
Yes	309 (55.0)
No	253 (45.0)

BMI: body mass index, SD: standard deviation

Table 2. Distribution of the scale scores

Scale	Mean±SD	Median [min-max]
Fear of COVID-19	15.9±5.10	16 [7-35]
CPDI	27.1±15.24	25 [0-96]
Negative mood	7.4±3.97	8 [0-20]
Changes in BCA	7.3±4.25	12 [0-28]
TH	9.2±6.39	14 [0-28]
Somatization	3.2±3.45	13 [0-20]
REZZY	1.1±1.16	3 [0-5]
MEDAS	6.2±2.14	6 [1-13]

COVID-19: coronavirus disease 2019, CPDI: COVID-19 peritraumatic distress index, BCA: behavior and cognitive abilities, TH: tiredness and hyperactivity, REZZY: SCOFF eating disorders, MEDAS: Mediterranean diet adherence screener, SD: standard deviation

Table 3. Correlation between the scale scores

	REZZY		MEDAS	
	r_s	p	r_s	p
Fear of COVID-19	0.124	**0.003**	0.014	0.735
CPDI	0.334	**<0.001**	-0.044	0.301
Negative mood	0.234	**<0.001**	-0.020	0.637
Changes in BCA	0.331	**<0.001**	-0.042	0.319
TH	0.319	**<0.001**	-0.027	0.529
Somatization	0.211	**<0.001**	-0.056	0.183

COVID-19: coronavirus disease 2019, CPDI: COVID-19 peritraumatic distress index, BCA: behavior and cognitive abilities, TH: tiredness and hyperactivity, REZZY: SCOFF eating disorders, MEDAS: Mediterranean diet adherence screener, r_s: Spearman's rho

Table 4. Logistic regression model based on eating disorder

	β	SE	p	OR	95% CI
Gender (female)	0.840	0.253	**<0.001**	2.315	1.411-3.801
BMI (kg/m^2)	0.199	0.031	**<0.001**	1.220	1.147-1.298
Adequate diet (no)	0.470	0.199	**0.018**	1.600	1.084-2.363
CPDI	0.048	0.007	**<0.001**	1.049	1.035-1.064

BMI: body mass index, CPDI: COVID-19 peritraumatic distress index, SE: standard error, OR: odds ratio, CI: confidence interval, CCR=78.4%, $\chi^2_{(8)}$=10.184, p=0.252

Table 5. Comparison of the scale scores of the participants according to gender, BMI group, and change in weight

Gender	Male (n=167)		Female (n=395)		p
	Mean±SD	Median (IQR) [min-max]	Mean±SD	Median (IQR) [min-max]	
Fear of COVID-19	14.12±5.05	14 (7) [7-30]	16.73±4.93	16 (7) [7-35]	**<0.001**
CPDI	22.73±13.94	19 (17) [1-71]	28.92±15.40	27 (21) [0-96]	**<0.001**
REZZY	0.65±1.06	1 (2) [0-5]	1.18±1.20	1 (2) [0-5]	**0.047**
MEDAS	5.66±2.04	6 (3) [1-13]	6.43±2.14	6 (3) [1-13]	**<0.001**

BMI Group	Underweight (n=59)		Normal (n=374)		Overweight-Obese (n=129)		p
	Mean±SD	Median (IQR) [min-max]	Mean±SD	Median (IQR) [min-max]	Mean±SD	Median (IQR) [min-max]	
Fear of COVID-19	17.09±4.96[a]	17 (6) [7-33]	16.09±5.03[ab]	16 (6) [7-35]	15.03±5.28[b]	14.5 (8) [7-28]	**0.026**
CPDI	30.78±15.73[a]	31 (29) [10-74]	27.48±14.93[a]	26 (19) [0-96]	24.37±15.53[b]	19 (17.5) [1-71]	**0.009**
REZZY	0.51±1.02[a]	0 (1) [0-5]	1.14±1.18[b]	1 (2) [0-5]	1.30±1.09[b]	1 (2) [0-4]	**<0.001**
MEDAS	6.03±2.20[ab]	5 (4) [2-12]	6.34±2.17[a]	6 (3) [2-13]	5.83±1.95[b]	6 (2) [2-11]	**0.031**

Change in Weight in the Last Year	Decreased (n=146)		Unchanged (n=162)		Increased (n=254)		p
	Mean±SD	Median (IQR) [min-max]	Mean±SD	Median (IQR) [min-max]	Mean±SD	Median (IQR) [min-max]	
Fear of COVID-19	16.31±5.20	12.5 (6.5) [7-33]	15.64±5.49	16 (8) [7-35]	15.94±4.79	17.5 (9) [7-28]	0.678
CPDI	29.27±15.02[a]	21 (15.5) [0-74]	24.32±15.97[b]	20 (20.5) [2-96]	27.58±14.68[a]	27 (32.5) [2-65]	**0.001**
REZZY	1.39±1.21[a]	2 (1.75) [0-4]	0.69±1.00[b]	0 (1) [0-4]	1.22±1.16[a]	2.5 (1.75) [1-3]	**<0.001**
MEDAS	6.56±1.90[a]	7 (2.75) [2-11]	6.36±2.39[a]	6 (3.25) [1-13]	5.89±2.05[b]	4 (3.5) [1-12]	**0.006**

COVID-19: coronavirus disease 2019, CPDI: COVID-19 peritraumatic distress index, REZZY: SCOFF eating disorders, MEDAS: Mediterranean diet adherence screener, BMI: body mass index, SD: standard deviation, IQR: interquartile range, [a,b]: different superscripts denote the significant difference according to the post hoc test results

function (23). Reversing it, negative factors such as anxiety, stress, and insomnia are acknowledged to prompt an unhealthy lifestyle. Long-term stress heightens the secretion of the hormone cortisol, which in return erects the feeling of hunger in the body (24). In a study conducted with healthcare professionals, it was declared that individuals whose unhealthy eating behaviors were on the increase during the pandemic experienced a higher rate of mental health problems (25). Stress and psychological problems on account of what the pandemic effectuates can also incite sleep disturbances that worsen stress, upturn food intake, clearing the way for a vicious circle (26). Manifestly, healthcare workers are a risky group for insomnia problems. It has been announced that most of the professionals that care for COVID-19 patients experience insomnia and psychological stress symptoms (3). Through the line of relevant literature, it has been underpinned that individuals whose unhealthy eating behaviors increase during the COVID-19 pandemic are more likely to experience negative mental health symptoms like stress burden, trauma, burnout, anxiety, sleep problems, and fatigue (25). Another study pinpointed that emotional eating was common among females during the COVID-19 pandemic and the main predictors for emotional eating were dietary energy, number of meals, sugar, fat, and fast food (27). In this mentioned study, 28.8% of the participants had no change in body weight during the COVID-19 process, 45.2% had an addition in body weight in the previous year, 52.0% had an adequate/balanced diet, and 61.4% consumed two main meals. It was adjudged that 55% of them had an average of 8 hours of sleep and did ≥30 minutes of activity in the former week. The results of our study appear to support the results of this research.

Checking the REZZY scale score, 35.2% of the participants were revealed to carry the risk of eating disorders, 64.8% were normal, and according to the MEDAS scores 56.9% had incompatible diets, 27.6% had an acceptable level, and 15.5% had a tight fit. Howbeit, it is punctuated that the Mediterranean diet, with its properties of anti-inflammatory and immunomodulatory nature, might be beneficial to block or deplete the acuteness of the infection in individuals who have been negatively influenced by COVID-19. It is also proven to be a diet rich in phenolic compounds. Bearing in mind these, one could comfortably put forth that the Mediterranean diet could potentially be beneficial against infections such as COVID-19 by reason of its effects on immunity (28). In a study conducted with individuals aged 18-30 during the COVID-19 pandemic, it was unearthed that 73.5% of these participants were with moderate adherence to the Mediterranean diet, whereas the remaining adherence to the Mediterranean diet was found to be high according to the MEDAS scale (29). Speaking of the REZZY score and fear of COVID-19 and CPDI, a positive, weak, and statistically significant correlation was found between negative mood, changes in behavior and cognitive abilities, tiredness and hyperactivity, and somatization scores. As for the fear of COVID-19 scale and sub-dimensions of CPDI, it is understood that as negative mood, changes in behavior and cognitive abilities, tiredness and hyperactivity, and somatization score increased, REZZY eating disorder score increased.

In this study, those with underweight and with normal BMI had higher CPDI scores than those with overweight. The CPDI scores of those who did not have adequate and balanced nutrition were found to be higher than those who had a balanced diet. This draws attention once again to the role and place of adequate and balanced nutrition, which was constantly emphasized during the course of the pandemic. One study proclaimed that the strongest predictor of dietary restriction and/or a binge eating event was among concomitant eating disorder symptoms. It has

been disclosed that persons having pre-existing eating concerns are at risk of being engaged in problematic eating behaviors throughout the time of an emerging issue such as COVID-19 (30). A possible eating disorder was spotted in 26.5% of the participants who made at least one dietary alteration in view of the pandemic. It has been promulgated that the participants with eating disorders have significantly higher levels of depression and anxiety symptoms yet lower levels of psychological well-being (31). In another study conducted with university students, the prevalence of REZZY was 20.5%. This rate was spotted to be higher in females, in overweight and obese groups. Allegedly, this situation might be related to stress and depression (32). In this study, the prevalence was found to be 35.2%. The fact that the faculty of medicine offers a long and difficult education process, the reality of meeting with patients one-on-one as well as the long working hours of night shifts may be the reasons for the higher frequency of eating disorders. The psychological distress experienced by healthcare professionals in the wake of working under risky conditions around the time of the pandemic also upraises by virtue of the uncertain nature of the disease, the rate of transmission, and also the related measures applied (33). In a study, it was seen that health workers developed post-traumatic stress disorder during the period when they were exposed to infected people in epidemics (34). One remarkable note to share is the reason why females get COVID-19 less than males is that their immune systems are stronger than males and they are less affected by viral infections (35). Advanced age, which is a risk factor, is influential for males more, and the loss of function in the immune system occurs more rapidly in males than females (36). Depression and academic stress related to COVID-19 have been associated with eating disorders (32). In this study, a statistically significant positive result was spotted between the REZZY score and fear of COVID-19 and CPDI scores. As the scores obtained from the scales get higher, the REZZY score increases. A study designated in Croatia underlined moderate adherence to the Mediterranean diet during the COVID-19 pandemic, with an increase in MEDAS scores after closure. The majority of the participants with higher dietary adherence were female, with the highest education level and with normal BMI reported (37). Along similar lines, in our study, compliance was discovered to be higher in females, those who had an adequate and balanced diet, those with normal BMI, and those who did physical activity. In the presence of other factors required for a healthy life, greater compliance with the Mediterranean diet is an expected result. The higher compliance in females may be on the basis of the fact that they attach more importance to body appearance and healthy life. In a study, adherence to the Mediterranean diet was found to be inversely proportional to increasing (38). Other studies have pointed out that obesity is also ascribed to the augmented severity of COVID-19 (39). It has also been annunciated that each unit expansion in BMI is attributed to a 12% extension in the risk of serious COVID-19 disease (40). In a study carried out in France, excess body weight (BMI ≥25 kg/m2) was also discerned to be significantly linked to COVID-19 severity (41). In our study, it was concluded that those who did not comply with the Mediterranean diet were in the obese group. With that being said, the socioeconomic status of the students participating in our study and if they live with their families or not is not known are the two major limitations. In this study, among the factors influencing the risk status of eating disorders, gender, BMI, and adequate and balanced nutrition come to the fore. The instinct of females to struggle to cater to all of their family members and carry too many responsibilities can make them more anxious during the pandemic period. In this direction, it may be necessary to provide comforting psychological and social support to females. The low CPDI scores of those with high BMIs also raise the question of whether they pay enough attention to epidemic measures. In this context, it is essential to plan novel research with these groups and to take protective measures in line with the results. The findings of this study seem to be consistent with some other studies showing that the COVID-19 outbreak causes more fear and psychological effects in females (42,43). Research denotes that females scored significantly higher than males regarding the fear of COVID-19 (44) and being a female is an indicator of moderate to high fear of COVID-19 (42). Correspondingly, anxiety rates were found to be approximately 3 times higher (45) and mild/moderate and severe peritraumatic distress was located in one-third of the participants. Those in quarantine shared less distress than those who were not (46). In a study conducted using the CPDI and the fear scale, the mean scores of females were perceived to be higher in both scales. It has also been delineated that anxiety levels, depression, and stress rates are high in females and young people, and this difference may be by dint of the inability of males to express their fears due to gender roles (47). In another study with healthcare professionals, and using CPDI, it was articulated that females had relatively higher mild-to-moderate stress (42.7% vs 31.4%) compared to males, with a severe stress ratio of 10.4% vs. 4.3% (48). In this study, when the sub-dimensions of the CPDI scale were examined, negative mood, tiredness and hyperactivity, and somatization were determined commensurate with the total score of the scale. It was expressed that females had higher scores than males, and singles had a higher change in behavior and cognitive abilities scores than married ones. This may be in consequence of the fact that married people exhibit a more stable situation based on their family responsibilities.

In plentiful studies performed in the literature during the pandemic, it is clear that health workers experience fear of contamination and death when working under high risk, and thereupon they are inclined to develop psychological disorders, namely, depression, anxiety, and stress. As the fear of COVID-19 scale score increases, the stress scale value increases. It can be put forward that health workers experience similar psychological problems since, on top of all the other things, they feel that they are stigmatized and discriminated against in this process. This situation may also give rise to stress factors (49-51). All in all, our findings are mostly supported by the literature.

CONCLUSION

In the development of not only epidemics but also innumerable other diseases, especially chronic diseases, adequate and balanced nutrition is humans' most essential defense weapon. In truth, the most basic approach to

warrant adequate and balanced nutrition is the condition of accessing sufficient healthy food for those living in society. To be able to make sure the said desired to act, all stakeholders from decision makers to researchers need to take over vital duties. In order for such an understanding of nutrition to be fully embraced and internalized by society, trainings on the subject should be given to raise the awareness of the shareholders and healthy nutrition should be made a part of the lifestyle. Lastly, we hold the belief that it would be beneficial to support mental health within the scope of preventive measures, as the psychological distress experienced by individuals during the pandemic process may have longer-term side effects.

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