

Investigation of associations between the effects of COVID-19 fear on school administrators and nutrition and problematic eating behaviors

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Summary. The current study aims to explore associations between fear of COVID-19 among school administrators and nutrition and problematic eating behaviors. The sample of the descriptive research patterned on the survey model consists of 266 school administrators who participated in the research voluntarily and were determined according to the disproportionate cluster sampling technique. The data of the study were collected with the “Fear of COVID-19 Scale” and the “Dutch Eating Behavior Questionnaire.” The results of the study revealed a positive relationship between school administrators’ COVID-19 fear and their nutritional behavior. This relationship was found to be higher in the “emotional eating” behavior dimension. Additionally, the COVID-19 fear levels of school administrators and their emotional eating behaviors differed according to the gender factor. In this context, female school administrators experienced higher COVID-19 fear levels and tended to be more prone to emotional eating behaviors. Again, the results of this study reveal that the fear of COVID-19 can significantly predict the nutritional behaviors of school administrators in the dimensions of external eating, emotional eating, and restrictive eating.

Key words: COVID-19, coronavirus, fear of COVID-19, eating behavior, nutrition, pandemic, school administrator, education.

Introduction

Throughout the history of humanity, various events have occurred that have affected human life en masse and left deep traces in society. Events such as conflicts, droughts, famine, earthquakes, floods, and epidemics have negatively affected the lives of human beings, often causing mass deaths, forced population migration, or other humanitarian crises. However, none of the events of various sizes experienced throughout history have had such a wide-reaching global impact as COVID-19, which first appeared in China and quickly turned into a deadly worldwide pandemic. From this

point of view, as of April 2021, no countries have been left unaffected by the COVID-19. The COVID-19 pandemic not only negatively affected those who contracted the disease, but with the restrictions widely implemented to prevent the spread of the disease, it also had a profound effect on people’s lives around the globe. Likewise, reflections of the COVID-19 pandemic on the psychological states of individuals as well as the socioeconomic, political, and cultural effects have been severe and ruthless.

COVID-19 was declared a pandemic by the World Health Organization (WHO) in March 2020, with a total of 134,308,070 confirmed cases

of COVID-19 reported worldwide to date. The total number of people who have died of COVID-19 to date has been put at 2,907,944 (1). The COVID-19 pandemic, which quickly spread worldwide following its emergence in China, caused disruption to many routine activities, including education, business, tourism, religious practices, and social life. Countries introduced numerous measures as the pandemic unfolded in an effort to prevent the spread of the coronavirus, including the wearing of facemasks and reducing social interactions, mandatory quarantine, school closures, and widespread travel restrictions, both international and domestic (2,3). Policies were introduced around the world and enforced by governments to combat the pandemic; these included social distancing, isolation, and self-quarantine as practices unprecedented in recent human history. These restrictive policies continued to be mandatory in many parts of the world due to the lack of a definitive solution for the treatment of the disease and a lack of vaccines yet to be developed and made readily available to all (4). Since COVID-19 is a respiratory disease, measures such as lockdowns, social distancing, and quarantine have been largely adopted worldwide, and continue to be implemented with mixed levels of determination so as to halt or slow down the pandemic. In this context, most countries canceled face-to-face meetings involving mass participation, even academic-scientific events such as symposiums, conference and the like (5). As seen, the global education sector has been seriously affected by the pandemic, having deeply affected more than 1.6 billion students in more than 190 countries worldwide, and thereby creating the largest impact seen on education systems in human history. The closure of schools and other educational institutions affected 94% of the world's student population, with that rate rising to 99% in low- and low-middle-income countries. The devastating effects of the COVID-19 pandemic on education, which has also affected almost every other sector, will undoubtedly become clearer in the coming years (6).

The first case of COVID-19 in Turkey was reported on March 11, 2020 (7). Following the announcement of the first case, suspension of face-to-face education across all universities and schools was implemented immediately following a decision announced on March

14, 2020. In order to continue the educational activities of students across all grade levels, Turkey quickly started the process of converting lessons to distance education, as also seen in a number of other countries (8,9). In addition to these measures, the rapid spread of news through global media (e.g., television, radio, print, and social media) on the increasing number of coronavirus infections and deaths due to COVID-19 caused widespread negative psychological effects (10). Scientific studies on this topic have revealed that the psychological effects of the pandemic have been observed more in healthcare workers who are at the forefront of the fight against COVID-19. For example, the results of the study conducted by Karakose and Malkoc (11) revealed that medical doctors experienced psychological problems such as personal stress, anxiety, fear, panic attacks, depressive tendencies, and sleep disorders during the pandemic.

The implementation of emergency measures and the risk of contracting COVID-19 have deeply affected the fear levels of individuals worldwide during the pandemic. Many people have experienced physical and mental difficulties, with dramatic negative effects on individuals' mental health due to separation from loved ones, loss of freedom, and general uncertainty about the course of the disease (12). It is known that school administrators, teachers, and students have also experienced negative emotional states during this period. In this context, Li (13) and Pakpour and Griffiths (10) stated that "fear" is one of the most experienced negative emotions during the COVID-19 pandemic. The most important reason that COVID-19 causes fear among people is undoubtedly the potential for serious or fatal consequences. Despite the time elapsed, COVID-19 has yet to be fully understood by the scientific community and has still not been resolved in all of its aspects. While some simple protective measures such as social distancing and handwashing help to prevent the spread of coronavirus during the current pandemic, the lack of a proven cure for COVID-19 greatly increases individuals' fear levels (13).

According to Kaya, Uzdil, and Cakiroglu (14), the COVID-19 pandemic has triggered a wide variety of psychological problems including panic attacks, anxiety, fear, depression, insomnia, and stress. Kaya et al. (14) further determined that the COVID-19 pandemic

has resulted in changes in the levels of anxiety and fear as well as the eating habits of individuals. Similarly, Ambelu et al. (15) stated that focusing on the prevention and treatment of COVID-19 does not eliminate the problems caused by the pandemic. In order to find a solution to the psychological distress experienced by society, an important aspect of fighting the pandemic has been the educating and accurate informing of adults of all ages as a means to the development of an effective intervention strategy. Furthermore, the short-term and long-term effects of the psychological problems caused by COVID-19 on nutrition and human health should also be evaluated.

Following the outbreak of the COVID-19 pandemic, certain changes have occurred in the roles and responsibilities of school administrators. According to the findings of research conducted by Kavrayıcı and Kesim (16), the in-school duties and responsibilities taken on by school administrators during the pandemic have focused on communication, coordination, and the management of education. Again, in this context, the duties and responsibilities taken on by school principals in their leadership roles have been to deliver calmness, motivation, empathy, technological leadership, rapid decision-making, teamwork, and coordination. As seen, the COVID-19 pandemic has imposed new responsibilities on school administrators who already had intense workloads. When the relevant literature is examined, it can be said that the scientific studies on the effects of the COVID-19 pandemic on education are as yet insufficient. Karakose (17) emphasized that the effects of the COVID-19 pandemic have mostly been investigated using healthcare workers as the sample. In this context, although there has been some research that has focused on COVID-19 and education worldwide, no scientific research has been found to exist in the literature that has addressed the effects of the COVID-19 pandemic on school administrators.

In the current study, the effects of the fear of COVID-19 on school administrators is examined in detail, together with the potential effects of COVID-19 fear levels on eating behaviors. The study is considered to be of importance as one of the leading studies to examine the relationship between the fear of COVID-19 and dietary habits within a sample of school administrators. Therefore, the current study is

seen as the first research paper to examine the association between the effects of COVID-19 fear and nutrition and problematic eating behaviors among school administrators in Turkey. In this context, the aim of the study is to investigate the relationship between the effects of COVID-19 fear and nutrition and problematic eating behaviors among school administrators. Within the framework of this general purpose, answers to the following questions were sought:

- a) Do school administrators' COVID-19 fear and their eating behaviors differ significantly according to gender and age variables?
- b) Is there any significant relationship between school administrators' COVID-19 fear and their eating behaviors?
- c) Are school administrators' COVID-19 fear scores a significant predictor of eating behavior scale scores?

Material and Methods

Study Design

This study is a descriptive research patterned in relational screening model (18). Because, in this study, the relationship between the psychological effects of COVID-19 fear on school administrators and nutrition and problematic eating behaviors was questioned, and it was also tested whether fear of COVID-19 predicted eating behaviors in terms of various variables. Information about the population-sample of the research, data collection tool and data analysis is given below.

Participants

This research was conducted on a total of 266 school administrators (school principals and vice-principals) working in the Kutahya province of Turkey during the 2020-2021 academic year. Prior to its implementation, the research was reviewed and approved by the Republic of Turkey Kutahya Provincial Governorship and the Provincial Directorate of National Education, with legal permission granted for the study to be conducted on school administrators

employed within educational institutions (Legal Permit Certificate-Date/Number of Documents: 17/06/2020-53490996-44-E.8011559). Prior to the commencement of the research, the necessary information was provided to the study's participants, and their approval and consent to join the study obtained.

The scales used in the data collection were sent to each participant electronically via Google Forms, and applied to school principals with the support of different Internet platforms. When the demographic information about the school administrators was examined, it was seen that the participation rates of the principals and assistant principals in the research were closely matched. Accordingly, 13.2% of the school principals who participated in the current study are female and 86.8% are male. In addition, it was noted that only 16.2% of the school administrators had received any graduate-level education. This finding may be due to a lack of regulations that require "post-graduate education" in the appointment of school administrators in Turkey. Another point that draws attention from the participant demographics is the average age of the school administrators, with only 7.9% aged 56 years or over showing that the current school administrators consist of a relatively young staff structure.

Data Collection

The data within the scope of the research was compiled using the "Fear of COVID-19 Scale," which was developed by Ahorsu et al. (19) and adapted to the Turkish context by Satici, Gocet-Tekin, Deniz, and Satici (20), and the "Dutch Eating Behavior Questionnaire" (DEBQ), which was developed by Van Strien, Frijters, Bergers, and Defares (21) and adapted to the Turkish context by Bozan (22). The Fear of COVID-19 Scale is a 5-point, Likert-type assessment scale developed to reveal participants' fears about the novel coronavirus. While adapting the scale to the Turkish context, it was reported that the fear of COVID-19 is associated with psychological distress and life satisfaction. In the original version of the scale, the Cronbach Alpha coefficient was calculated as .82 (19), whilst it was .84 in the version adapted to Turkish, and .91 in the current study. The Cronbach alpha internal consistency coefficients obtained in

the original study of the Dutch Eating Behavior Questionnaire (DEBQ) scale were calculated as .95 for the "external eating behavior" dimension, .81 for the "emotional behavior" dimension, and .95 for the "restrained eating behavior" dimension. The Cronbach alpha values for the Turkish version of the scale were between .90 (external eating) and .97 (emotional eating), whilst the internal consistency coefficient for the entire scale was calculated as .94. In this scale, where each dimension is evaluated separately within itself, high scores from the items indicate a negative situation regarding eating attitudes (22-24). The reliability coefficients and arithmetic mean values were recalculated for all measurement tools used in the study, and it was observed that the internal consistency coefficients of the DEBQ sub-dimensions ranged from .87 to .92. The internal consistency coefficient for the Fear of COVID-19 Scale was calculated as .91. In addition, when the arithmetic averages of the scores obtained from the scales were examined, it was seen that the highest averages of the DEBQ were gathered in the "restrained eating behavior" dimension. This suggests that the COVID-19 pandemic has a greater impact on school administrators with restrictive eating behaviors.

Data Analysis

The analysis of the data was conducted using IBM's SPSS Version 23 software. In the analysis of the collected data, *t*-test, ANOVA, correlation analysis, and simple linear regression analysis were performed on the data found to exhibit normal distribution, with the level of significance set as .05 ($p < .05$) in the study.

Results

In this section, a *t*-test was conducted to determine the statistical difference between the scores of the school administrators' fear of COVID-19 and their eating habits according to the gender variable, and the results obtained are presented in Table 1.

As can be seen from Table 1, the average scores obtained by the participant school administrators from the Fear of COVID-19 Scale significantly and statistically differ according to the gender variable. This

Table 1. Results of *t*-test according to gender

<i>Scale / Dimension</i>	<i>Gender</i>	<i>n</i>	\bar{X}	<i>SD</i>	<i>t</i>	<i>p</i>
Fear of COVID-19	Female	151	3.22	1.02	5.220	.000
	Male	115	2.32	0.93		
External eating behavior	Female	151	2.74	0.95	-0.508	.612
	Male	115	2.82	0.87		
Emotional behavior	Female	151	2.07	1.14	2.271	.024
	Male	115	1.70	0.87		
Restrained eating behavior	Female	151	3.03	0.90	0.549	.583
	Male	115	2.95	0.80		
DEBQ Total	Female	151	2.57	0.68	1.332	.184
	Male	115	2.42	0.60		

differentiation was found to be significant in favor of female school administrators ($p < .05$). Accordingly, it is understood that female school administrators experienced a higher level of fear of COVID-19 than male school administrators in the current study's sample. In the mean scores of the DEBQ scale, it was seen that a significant difference was found to exist according to the participants' gender only in the Emotional Eating dimension ($p < .05$). Again, it can be seen that this difference is in favor of female school administrators. In general, there was no significant difference found to exist in terms of the gender variable in either the External Eating Behavior or Restrained Eating Behavior dimensions of the DEBQ scale ($p > .05$).

ANOVA analysis was conducted in order to determine whether or not there was any significant difference in the scores of the scales applied according to the age variable, and the results of this analysis are presented in Table 2.

As seen in Table 2, the scores of the participants from the fear of COVID-19 and the DEBQ scale did not differ significantly according to the age variable ($p > .05$). The highest average score in terms of the participants' eating behaviors was in the Restrained Eating Behavior dimension. It was also found that the COVID-19 fear level was higher in school administrators aged 56 years or over. However, these results did not constitute a statistically significant difference. This result, however, is important in terms of it having shown that the fears experienced by school administrators during the pandemic were similar across all age groups.

In order to determine whether or not there was any relationship between the scores obtained from the two scales, the Pearson Product Moment Correlation Analysis was performed and the results are presented in Table 3.

When Table 3 is examined, a positive and weak correlation can be seen found between the Fear of COVID-19 Scale average scores and the DEBQ general scale score averages ($r = .380, p = .000$). Between the average scores of the Fear of COVID-19 Scale and the DEBQ dimensions, it was determined that there a positive and weak correlation exists between External Eating ($r = .172, p = .000$), Emotional Eating ($r = .350, p = .000$), and the Restrictive Eating dimension ($r = .246, p = .000$).

A simple linear regression analysis was performed to determine whether or not the participants' scores from the Fear of COVID-19 Scale significantly predicted their DEBQ scores. The regression analysis was repeated for the general and dimension scores of the DEBQ as the scores obtained from each dimension were considered independently in the evaluation of the DEBQ.

The results of the simple linear regression analysis for predicting the scores of the Fear of COVID-19 Scale scores from the overall DEBQ are presented in Table 4.

As a result of the analysis, the regression model was shown to be statistically significant ($F = 44.620, p < .01$), and that 14.5% of the DEBQ scores were explained by the COVID-19 fear variable. The effect of the fear of COVID-19 on the participants' eating

Table 2. Results of ANOVA analysis according to age variable

Scale / Dimension	Age (years)	n	\bar{X}	SD	F	p
External eating behavior	25-35	62	2.68	0.98	0.634	.593
	36-45	105	2.83	0.85		
	46-55	78	2.88	0.84		
	56+	21	2.85	0.87		
	Total	266	2.81	0.88		
Emotional behavior	25-35	62	1.69	0.91	0.611	.608
	36-45	105	1.80	0.98		
	46-55	78	1.78	0.92		
	56+	21	1.53	0.55		
	Total	266	1.75	0.92		
Restrained eating behavior	25-35	62	3.04	0.80	2.001	.114
	36-45	105	3.03	0.85		
	46-55	78	2.88	0.80		
	56+	21	2.62	0.63		
	Total	266	2.96	0.81		
Fear of COVID-19	25-35	62	2.53	1.03	0.617	.605
	36-45	105	2.46	1.07		
	46-55	78	2.32	0.88		
	56+	21	2.56	0.84		
	Total	266	2.44	0.99		

Table 3. Correlation values between scales

Scale / Dimension	Fear of COVID-19	DEBQ Total	External Eating	Emotional Eating	Restrained Eating
Fear of COVID-19	1	.380**	.172**	.350**	.246**
DEBQ Total		1	.548**	.840**	.662**
External Eating			1	.179**	.019
Emotional Eating				1	.428
Restrained Eating					1

* $p < .05$ ** $p < .01$ **Table 4.** Regression analysis of the predictor of eating behavior by fear of COVID-19

Variables	B	Se	β	t	p
Constant	1.863	.093		20.079	.000
Fear of COVID-19	0.235	.035	.380	6.680	.000
Dependent variable: DEBQ	$R^2 = .145, p = .000, F = 44.620$				

behaviors was found to be 0.235. In addition, the results of the regression analysis for predicting the scores of the three DEBQ dimensions of the fear of COVID-19 were found to be statistically significant.

Table 5 shows the results of the regression analysis regarding the predictive effect of the fear of COVID-19 in the dimensions of external, emotional, and restrictive eating behaviors.

Table 5. Regression analysis for predictive effect of fear of COVID-19 on External Eating, Emotional Eating, and Restrictive Eating Behavior scores

<i>Variables</i>	<i>B</i>	<i>Se</i>	<i>β</i>	<i>t</i>	<i>p</i>
Constant	2.439	.142		17.215	.000
Fear of COVID-19	0.153	.054	.172	2.845	.000
Dependent variable: External Eating Behavior	$R^2 = .030, p = .000, F = 8.094$				
<i>Variables</i>	<i>B</i>	<i>Se</i>	<i>β</i>	<i>t</i>	<i>p</i>
Constant	0.957	.141		6.793	.000
Fear of COVID-19	0.325	.053	.350	6.068	.000
Dependent variable: Emotional Eating Behavior	$R^2 = .119, p = .000, F = 36.822$				
<i>Variables</i>	<i>B</i>	<i>Se</i>	<i>β</i>	<i>t</i>	<i>p</i>
Constant	2.466	.129		19.116	.000
Fear of COVID-19	0.202	.049	.246	4.120	.000
Dependent variable: Restrained Eating Behavior	$R^2 = .246, p = .000, F = 16.974$				

As seen in Table 5, as a result of the analysis regarding the predictive effect of the fear of COVID-19 on the External Eating Behavior dimension, the regression model was shown to be statistically significant ($F = 8.094, p < .01$), and that 3% of the variance in external eating behavior was explained by the fear of COVID-19 variable. In the regression model, the effect of the fear of COVID-19 on the external eating behavior dimension was found to be 0.153.

As a result of the analysis regarding the predictive effect of the fear of COVID-19 on the Emotional Eating Behavior dimension, the regression model was shown to be statistically significant ($F = 36.822, p < .01$), and that 11.9% of the variance in the Emotional Eating Behavior dimension was explained by the fear of COVID-19 variable. In the regression model, the effect of the fear of COVID-19 on the Emotional Eating Behavior dimension was found to be 0.325. In other words, it was shown that a 1-unit increase in the fear of COVID-19 caused an increase of 0.325 units in the Emotional Eating Behavior dimension.

As a result of the analysis regarding the predictive effect of the fear of COVID-19 on the Restrained Eating Behavior dimension, the regression model was shown to be statistically significant ($F = 16.974, p < .01$), and that 24.6% of the variance in the Restrained Eating Behavior dimension was explained by the fear of COVID-19 variable. In the regression model, the effect of the fear of COVID-19 on Restrictive Eating Behavior dimension was found to be 0.202. In other

words, it was shown that a 1-unit increase in the fear of COVID-19 caused an increase of 0.202 units in the Restrained Eating Behavior dimension.

Discussion and Conclusion

A total of 266 school administrators working in public schools in the Kutahya province of Turkey voluntarily participated in this study which aimed to investigate the relationship between the fear of COVID-19 and nutritional behaviors experienced by school administrators during the pandemic. The data for the study were collected online in order not to endanger the health of either the researchers or the participant school administrators.

The results obtained from this research showed the COVID-19 fear levels among school administrators to be generally low. In addition, the school administrators' fear of COVID-19 and their emotional eating behaviors varied according to gender. Accordingly, the female school administrators were shown to experience higher levels of fear of COVID-19; however, the participants' gender did not reveal a statistically significant difference in terms of their "external eating and restrained" behaviors.

The findings of the study further revealed a positively weak relationship between the school administrators' fear of COVID-19 and their eating behaviors, and that this relationship was higher in the "emotional

eating behavior” dimension. In addition, their fear of COVID-19 was shown to significantly predict the school administrators’ eating behaviors (external eating, emotional eating, and restrictive eating).

The research results revealed that the COVID-19 fear level varied significantly according to the gender variable. Furthermore, female school administrators were shown as being more afraid of COVID-19, which concurs with the results of other studies on this subject. Studies conducted on COVID-19 in Italy, China, Russia, Belarus, Turkey, Israel, Cuba, and India have all found that females have experience greater levels of COVID-19 fear (25-30). Generally speaking, higher levels of COVID-19 fear experienced by females may be related to many factors. In some studies, it has been reported that females face greater vulnerability, perceived risk, fear, and preventive behaviors compared to males during a pandemic (31,32). The fact that females have experienced higher levels of fear than males during the COVID-19 pandemic may be due to beliefs that the disease will more negatively affect their health and that of their immediate family. Another important development regarding this issue has been the closure of schools and kindergartens following the onset of the pandemic. The care needs of children within the family unit have therefore increased significantly due to the closure of educational institutions, and this situation has further aggravated the responsibility and burden on many working mothers (33,34).

Regarding the gender variable, the scores of the DEBQ were only found to significantly differ in the dimension of Emotional Eating. Accordingly, the female participants exhibited a higher level of “emotional eating behavior” compared to their male counterparts. In this context, emotional eating behaviors occur in response to emotional situations such as stress, anxiety, depression, and deterioration in social relationships. During periods of distress, individuals may see “eating behavior” as a method of coping with negative emotions (35-37). From this perspective, stress, anxiety, and depression caused by the COVID-19 pandemic may have had a greater effect on females and thereby led to higher instances of emotional eating behaviors. The findings from the current research concur with those of studies conducted by Bailly, Maitre, Amanda, Hervé, and Alaphilippe

(38), Karakose (39), Karakose (40), Nagl, Hilbert, de Zwaan, Braehler, and Kersting (41), and Serin and Koç (42). Also, Cecchetto, Aiello, Gentili, Ionta, and Osimo (43) found that isolation and widespread closures had a negative effect on the eating behaviors of the Italian population. The most important of these effects is the emotional eating behavior impairment. In a study conducted by Özer and Okat (44), it was determined that the eating attitudes of the majority of individuals during the coronavirus pandemic had an “emotional eating” tendency. The research in question determined that people tend to overeat due to negative emotions such as loneliness, stress, and depression.

In the current study, the ANOVA analysis results in terms of the fear of COVID-19 were not found to be statistically significant according to the age variable. Similarly, in a study conducted by Kasapoğlu (45), it was reported that the fear of COVID-19 did not differ according to age range. However, these findings are not seen as compatible with many other research findings published in the literature. For example, Caycho-Rodríguez et al. (46), Kassim et al. (47), and also Niño, Harris, Drawve, and Fitzpatrick (48) found that the fear of COVID-19 was very closely related to age. Accordingly, it was reported that as the age of the participants increased, they experienced higher levels of COVID-19 fear. The reason for this may be that as people age, their level of COVID-19 fear increases as a result of the weakening of their immune system, and therefore they face a greater risk of contracting the disease as well as from suffering more severe symptoms and higher mortality rates.

The ANOVA results conducted according to the age variable in the three dimensions of the DEBQ scale were also not found to be statistically significant. However, the analysis results did show that the highest average for eating behaviors was for “restrained eating behavior.” This result is consistent with those of Bailly et al. (38), who concluded that restrictive eating behavior scored higher on average compared to the other dimensions. During the COVID-19 pandemic, as a result of the strict measures taken by governments, many people faced the risk or reality of losing their jobs, which caused significant difficulties in their daily lives. The increased time spent at home during quarantine or lockdowns also resulted in a more sedentary

lifestyle, which caused individuals to worry about excessive weight gain (49). As a result, individuals have tried to avoid binge-eating behaviors during the pandemic (50). These data suggest that the fear and stress brought on by the COVID-19 pandemic may have similarly affected the eating behaviors of individuals of all age groups.

In the current study, a positive and weak relationship was found to exist between the COVID-19 fear levels of the participants and their eating behaviors. It was seen that the fear of COVID-19 was mostly associated with the Emotional Eating dimension. This result is supported by the findings of other studies in the literature such as the research of Papandreou, Arija, Aretouli, Tsilidis, and Bulló (51), who found that participants in Spain and Greece had high scores for inappropriate eating behaviors and showed a high frequency of depression and anxiety symptoms. In the same study, emotional eating scores of participants in both Spain and Greece were found to be higher than in the other dimensions. In a study conducted by Culfa, Yildirim, and Bayram (52), the psychological atmosphere created by the COVID-19 pandemic and its restrictions to daily life was reported to have greatly affected the eating habits of individuals, leading to a decrease in physical activity levels, increased food intake, and increased propensity to obesity. This viral disease, which has significantly changed habits in daily life for whole swathes of the world population, has led to a departure from healthy eating behaviors for many, as well as changes in the food they consumed and their food-related preferences (53).

From this perspective, it is possible to say that the changes in the diets of people from many countries around the world during the COVID-19 pandemic may have been caused by the fear and anxiety they experienced. Furthermore, considering that eating habits are routinely affected by stress, distress, and many emotional disorders, it is obvious that the increased fear and stress experienced during this the pandemic may result in increased unhealthy eating behaviors. In general, the psychological effects of COVID-19 are reported as mostly negative, such as fear of infection, as well as increased levels of frustration and anger (12,52). In some studies conducted in this context, it has been frequently emphasized that

changes in eating habits can be a “natural” response to stress, as well as increased emotional states due to both psychological and physiological mechanisms (54-60).

As a result of the regression analysis conducted within the scope of the current study, it was concluded that the fear of COVID-19 significantly predicted external eating, emotional eating, and restrictive eating behaviors of the participant school administrators. The eating behavior in which the fear of COVID-19 was found to be predictive the most was “emotional eating.” These findings are compatible with those of the research conducted by Kalkan Uğurlu, Mataracı Değirmenci, Durgun, and Gök Uğur (61), who found a statistically significant relationship existed between depression, anxiety, stress levels, and eating behaviors (emotional eating, external eating, and restrictive eating). In their study, it was seen that the anxiety, depression, and stress levels of students increased in conjunction with their emotional, restrictive, and external eating behaviors. Furthermore, in research conducted by Shen, Long, Shih, and Ludy (62), it was concluded that stress affects emotional eating behaviors. However, the findings of research conducted prior to the COVID-19 pandemic also showed that emotional changes such as fear, anxiety, and depression can result in increases or decreases to certain eating behaviors (63-66). In this context, the results of the research conducted during the current pandemic suggests that intolerance to uncertainty leads to higher COVID-19 fear levels, which in turn affects the level of depressive symptoms exhibited, and as a result, high levels of depression-related symptoms are likely to increase emotional eating. Accordingly, it can be said that depression, which most likely develops with fear, was triggered by “intolerance to uncertainty” during the COVID-19 pandemic, which then led to increased instances of emotional eating. As a result of the restrictions applied during the COVID-19 pandemic, schools were closed and curfews imposed; both of which negatively affected the social life of many individuals. It can be said, therefore, that the uncertainty that emerged as a result of the failure to contain the COVID-19 created an atmosphere of fear within society, and as a consequence, the nutritional behavior of individuals was negatively affected.

Suggestions

The following suggestions have been developed in line with the findings obtained from the current study.

Within the scope of the current study, with higher levels of COVID-19 fear experienced by female school administrators compared to their male counterparts, implementing the measures deemed necessary to urgently provide professional psychological support for female school administrators may help to contribute to a reduction in the levels of fear, anxiety, and stress experienced by the female population as a result of the pandemic.

Again, the findings of the current study reveal that the emotional eating behaviors of especially female school administrators were negatively affected during the COVID-19 pandemic. For this reason, prioritizing females in the vaccination efforts until problems in vaccine supplies are eliminated may help to minimize the COVID-19 fears that are being experienced. In addition, considering the negative effects of the COVID-19 pandemic on eating behaviors, additional training and informational activities could be conducted by the Turkish Ministry of Health with regards to healthy eating during the pandemic.

The fact that no relationship was found in the current study between the age variable and COVID-19 fear shows that the fear experienced by school administrators is similar across the age groups. Therefore, accelerating and expanding vaccination efforts in order to eliminate the fear caused by COVID-19 in society and the negative situations brought on by it may help to reduce the fear and stress caused by the coronavirus.

In order to correct negative nutritional behaviors, which is one of the consequences of the fear of COVID-19, the Turkish Ministries of National Education and also Health should coordinate cooperation with educational institutions nationwide in order to raise awareness by establishing online support centers that include dietitians, psychologists, and also medical doctors, through which significant contributions may be made towards changing the problematic nutritional behaviors seen in society today.

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