

Investigation of the effect of COVID-19 pandemic on employees' psychological symptoms and nutritional habits

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Abstract. *Background:* It is anticipated that the fear caused by the possible consequences of Covid-19 virus transmission and the sense of restraint caused by control applications such as quarantine may affect individuals', especially employees' psychological parameters and change their habits. *Objectives:* The aim of this study is explaining the effect of pandemic conditions and precautionary practices on the psychological parameters and nutritional habits of employees. *Methods:* In this direction, The SCL-90-R test, which was applied to 400 office workers before the pandemic, was reapplied during the pandemic period and the differences between the psychological symptoms were evaluated statistically. In addition, a mini questionnaire was applied on the change of daily nutritional habits after the pandemic. *Results:* In the period of pandemic compared to before the pandemic; a definite statistical difference was determined in somatization, interpersonal sensitivity, depression, anxiety, phobic anxiety, paranoid, and general symptom index symptoms. In addition, an acceptable difference was found for the increase in symptoms of paranoid ideation and obsessive-compulsive, and there was no statistical difference only in symptoms of hostility and psychoticism. In addition, it was found that the majority of the participants experienced a change in their daily eating methods. *Conclusion:* The increase in almost all of the psychological parameters is not evidence of psychological diseases. However, according to the average results, the parameters closest to evaluation as a problem comply with the observed behaviors in pandemic conditions. The change in nutrition methods is also thought to be a reflection of the psychological factors that changed during the pandemic period.

Keywords: COVID-19; Nutritional Habits; SCL-90-R; Psychosocial Risk Factors; Occupational Health

Introduction

Nowadays, Covid-19 has spread very quickly and turned into a pandemic. A new type of coronavirus, which can cause serious health problems and even deaths; different age groups, chronic diseases, social distance, environmental conditions, contact surfaces, etc. is an important biological risk factor that threatens the health of employees, as it has the potential to transmission with many parameters (1, 2).

Risk factors; It is classified in five main groups: physical, chemical, biological, ergonomic and psychosocial. Psychosocial risks are often neglected, as

concrete and observable factors are often addressed in risk assessments (3). However, the triggering effect of each risk factor on other risk factors is a highly controversial issue. Psychosocial factors are the most susceptible to being affected by other factors since they are the most suitable for variability (4-6).

It is anticipated that the fear caused by the possible consequences of Covid-19 virus transmission and the sense of restraint caused by control applications such as quarantine may affect individuals' psychological parameters and change their behavioral status (7). In addition, according to a study conducted in China; Obsessive compulsion, interpersonal sensitivity,

phobic anxiety, and psychoticism were found in more than 70% of the participants at the first level of the pandemic (8).

The effect of nutrition habits on psychological symptoms has been the subject of a lot of research, and some symptoms are known to be triggered or improved by nutritional habits (9, 10). From another point of view, it is thought that psychological factors may play an effective role in nutrition method. Particularly in pandemic conditions, it is expected that interest in "Fast-Food" type nutrition will decrease against the risk of virus contamination. Mental structure of people directs their perceptions and behaviors.

The aim of this study is explaining the effect of pandemic conditions and precautionary practices on the psychological parameters and nutritional habits of employees.

Methods

Participants

About a year before the pandemic conditions occurred, a test for another study was performed on a 400 people study group, all of whom were office workers, to determine psychological symptoms. After the pandemic conditions in the same group, the same test was repeated and differences between the symptoms

were examined. Informed consent forms were obtained from all participants and the study was carried out adhering to the principles of the Declaration of Helsinki (11).

When the sample sizes given in Table 1. are examined and the probability of realization of the number of people in the experimental group is equal, it is seen that it represents 100 million people with 95% accuracy rate (12).

The Symptom Checklist 90 Revised (SCL-90-R)

The SCL-90-R scale was utilized to evaluate the presence of psychiatric symptoms. The SCL-90-R scale by Derogatis consists of 90 multi-dimensional questions designed to analyze a wide range of psychological problems. The answers to these questions mainly describe nine symptoms which are classified as somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, anger-hostility, phobic anxiety, paranoid thought and psychoticism (13).

Statistical Analysis

Each of these 90 questions was rated between 0 (not at all) and 4 (extremely). Comparable statistical evaluations of the identified individual symptoms were performed with using the SPSS (SPSS for Windows, Version 21.0. SPSS Inc, U.S.A) package program.

Table 1. Sample Sizes ($\alpha = 0.5$)

Number of People	0.03 sampling error	0.05 sampling error	0.10 sampling error
100	92	80	49
500	341	217	81
750	441	254	85
1000	516	278	88
2500	748	333	93
5000	880	357	94
10000	964	370	95
25000	1023	378	96
50000	1045	381	96
100000	1056	383	96
1000000	1066	384	96
100 million	1067	384	96

As a result of statistical evaluations, the differences between the psychological symptoms of employees before and after Covid-19 pandemic were evaluated.

Analysis of Change in Nutritional Habits

Together with the SCL-90-R tests applied before and after the pandemic, a mini questionnaire was given to the participants, dealing with demographic data, daily routines and personal habits.

Considering that nutrition methods, one of the most prominent daily routines, may be affected by pandemic conditions, the situation was evaluated before and after the pandemic. The relationships between psychological symptoms and eating habits were also evaluated statistically.

Results

According to the scl-90-r test results, the results were listed for each psychological symptom value of each participant. Then, averages and standard deviations were calculated. The results were found to be suitable for normal distribution. Since the application was performed to the same study group under different conditions, the t test was determined and applied as the most appropriate analysis method (14).

As a result of the calculations, “ p^a Value $\leq 0,05$ ” indicates a statistical significance, and also “ p^a Value = 0,01” indicates a definite difference (15). The means and p^a values of the symptoms before and after the pandemic are given in Table 2.

According to the p^a values; a definite statistical difference was determined in somatization, interpersonal sensitivity, depression, anxiety, phobic anxiety, paranoid and general symptom index symptoms. In addition, an acceptable difference was found for the increase in symptoms of paranoid ideation and obsessive-compulsive, and there was no statistical difference only in symptoms of hostility and psychoticism. The differences according to the means are given in Figure 1, regardless of p^a value.

When Figure 1 is examined, a trend towards somatization, obsessive-compulsive, paranoid, and interpersonal sensitivity symptoms is clearly observed after the pandemic.

The change in nutritional habits was realized by taking the concepts of “Home - Cooked” and “Fast - Food”. The change in the concepts mentioned before and after the pandemic is given in Figure 2.

When the relationships between psychological parameters and eating habits are examined; It was observed that there was a transition from “Fast-Food” eating type to “Home-Cooked” eating type in the participants who mainly had an increase in

Table 2. The means and p^a values of the symptoms before and after the pandemic

Psychological Symptoms	Before the Pandemic	After the Pandemic	p^a value
Somatization	0.39	1.24	0,01
Anxiety	0.27	0.51	0,01
Obsessive-compulsive	0.53	0.91	0,02
Depression	0.33	0.69	0,01
Interpersonal sensitivity	0.13	0.86	0,01
Psychoticism	0.33	0.56	0,23
Paranoid	0.55	1.02	0,01
Hostility	0.35	0.44	0,38
Phobic anxiety	0.13	0.52	0,01
Paranoid ideation	0.38	0.68	0,03
General symptom index	0.36	0.78	0,01

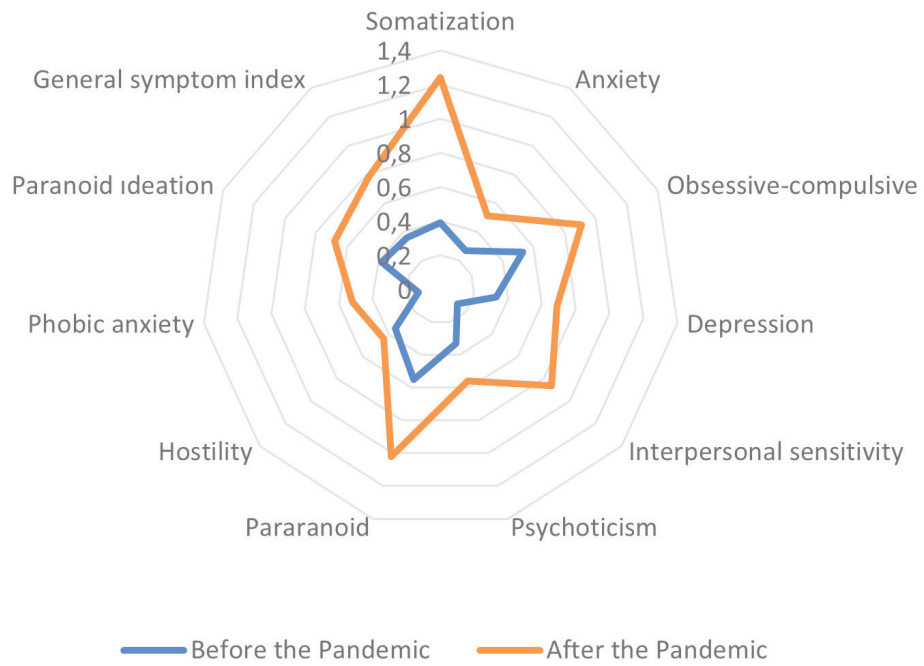


Figure 1. The differences according to the means

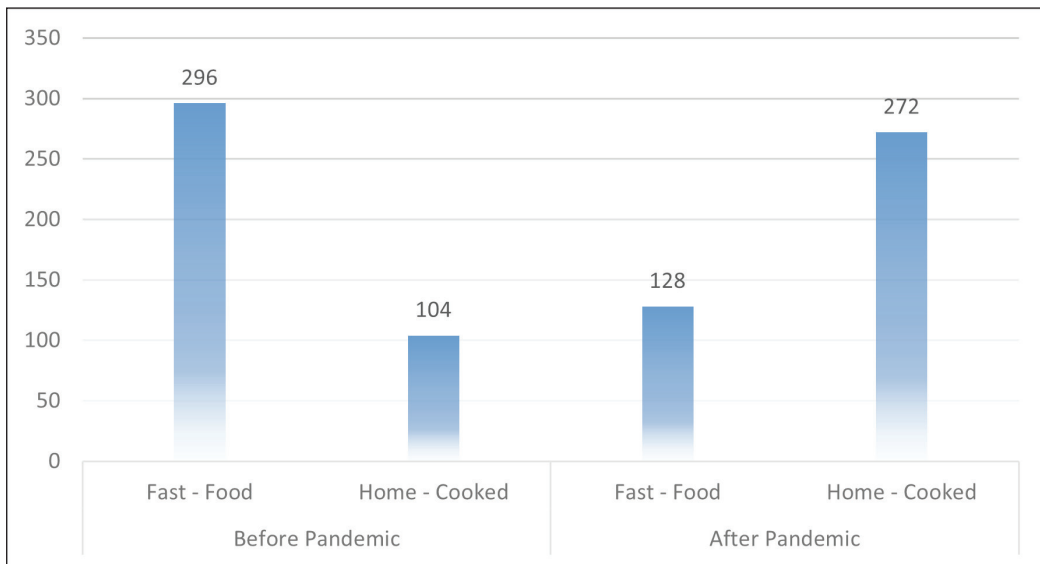


Figure 2. The change in nutritional habits before and after the pandemic

obsessive-compulsive, anxiety, and interpersonal sensitivity symptoms.

Discussion

Pandemic process; It creates negative effects on the psychological parameters of people due to both the fear of disease transmission and the negativity caused by measures such as quarantine. According to some studies conducted on communities that lived under pandemic conditions; although the people who lived in pandemic conditions spend their future pandemic conditions with more robust psychology, psychological parameters are negatively affected (16, 17).

When interpreted findings, an increase in almost all psychological symptoms during the pandemic period indicates that a biological risk factor affects psychological factors as well as their own negativities. However, this result is valid when all other conditions are neglected.

When psychological symptoms are evaluated regardless of statistical significance, it is clearly observed that a general disorder in somatization, obsessive-compulsive, paranoid, and interpersonal sensitivity parameters. Somatization is a problem that the people show psychological symptoms without any medical findings (18). Obsessive-compulsive disorder is a mental problem that consists of obsessive thoughts, ideas and impulses, repetitive behaviors, and mental rituals (19). The paranoid disorder can be expressed as extreme distrust and suspicion (20). Examining other people's movements by monitoring them at an extreme level is one of the symptoms of interpersonal sensitivity (21). All these explanations are compatible with the results of the research as they are frequently observed in human behavior under pandemic conditions.

Since the working group in the research is composed entirely of people working actively; It is thought that the fear of exposure to the virus due to the obligation to go to work or financial concerns caused by not going to work during quarantine periods may play a role in this degree of affecting psychological parameters.

The effect of nutritional habits on psychological factors is known (Lim et al., 2016). In this study, the

change in eating habits of people who have anxiety and interpersonal sensitivity disorders under pandemic conditions, reveals the effect of psychological symptoms on diet patterns. This relationship can be interpreted as that people who are concerned about virus contamination by constantly observing human behavior switch from "Fast-Food" eating type to a safer "Home-Cooked" eating type.

Ethical Considerations & Disclosure(s): This study is performed following the Scientific Research Ethics Committee of the Canakkale Onsekiz Mart University approval with the number of 2020-131.

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