

# EATING HABITS CHANGES DURING COVID-19 PANDEMIC LOCKDOWN



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## Abstract

The COVID-19 pandemic outbreak affects all populations. Eating habits and lifestyle changes during COVID-19 lockdown. Aim of this paper is to explore eating habits changes during the COVID-19 pandemic lockdown. A systematic review was conducted by using the PubMed database and Google scholar to find articles published from between March and July 2020. only English and Turkish published articles were included. total nine article were analyzed. The effect of COVID-19 lockdown on dietary habits differed from community to community. The quarantine has positive and negative effects on eating habits such as returning to home meals and reducing fast food consumption while eating frequency was increased due to quarantine and stress.

**Key word:** COVID-19, eating habits, dietary habits.

## COVID-19 PANDEMİ KİLİTLENMESİ SÜRECİNDE YEME ALIŞKANLIKLARINDAKİ DEĞİŞİKLİKLER

COVID-19 pandemisinin baş göstermesi tüm popülasyonları etkiledi. COVID-19 karantinası sırasında yeme alışkanlıkları ve yaşam tarzları değişti. Bu yazının amacı, COVID-19 pandemisi karantinası sırasında yeme alışkanlıklarının değişimini araştırmaktır. 2020 yılının Mart ve Temmuz ayları arasında yayımlanan makaleleri bulmak için PubMed veri tabanı ve Google scholar kullanılarak sistematik bir derleme yapıldı. Sadece İngilizce ve Türkçe yayımlanan makaleler dahil edildi. Toplamda 9 makale incelendi. COVID-19 karantinasının beslenme alışkanlıkları üzerindeki etkileri topluluktan topluluğa farklılık gösterdi. Karantinanın yeme alışkanlıkları üzerinde pozitif ve negatif etkileri oldu. Ev yemeklerine dönüş yapılıp hazır yemek tüketimi azaltılırken karantina ve strese bağlı olarak yeme sıklığı artırıldı.

**Anahtar Kelimeler:** COVID-19, yeme alışkanlıkları, beslenme alışkanlıkları.

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## Introduction

The world is currently experiencing the pandemic of coronavirus (CoV). In late 2019, the CoV infection began in Wuhan, Hubei, China. It had been originally called 2019 nCoV and it has been renamed CoVID-19 by the World Health Organization (WHO) on February 2020. This epidemic began with animal-to-human infection, and the direct cause of death is generally due to ensuing severe atypical pneumonia (1). The ongoing epidemic has been declared by the WHO as a global public health emergency.

To date, more than 21,516,760 cases of coronavirus have been reported in world concretely. About 250,000 new cases are seen every day (2). There is no specific treatment for COVID-19 currently available. Vaccination studies continue in many countries of the world. Some vaccine studies have begun to be tested on human subjects (3,4).

In history, different methods have been tried and still being tried to combat pandemic diseases. In the manners of fighting pandemic diseases, increasing awareness, protective clothing, treatment, and perhaps most importantly vaccination are some of these methods (5). In addition, one of the most effective of these methods is quarantine application. Quarantine is a public health measure that can be implemented on voluntary basis or can be legally enforced by authorities and may be applied at an individual, group, or community level (6). It is the isolation of asymptomatic individuals from society who are thought to be incubating infection or who have had contact with confirmed or suspected cases (6,7).

In the Coronavirus pandemic, China was the first country that has made unprecedented efforts in identifying and quarantining close contacts of confirmed

patients to control the infection and cut off transmission routes. As disease spreads, more countries followed the same practice in all continents (8,9). These restrictions sparked fears of an impending economic crisis and recession. Social distancing, self-isolation and travel restrictions have led to a reduced workforce across all economic sectors and caused many jobs to be lost. Schools have closed down, and the need for commodities and manufactured products has decreased. In contrast, the need for medical supplies has significantly increased. The food sector is also facing increased demand due to panic-buying and stockpiling of food products (10). The impact of COVID-19 on the global economy is likely to be unprecedented since the 1930s Great Depression. (11) The short-term impact of COVID-19 is immediately and effortlessly felt, due to the widespread lockdown and social distancing measures globally. However the pandemic will end, it is already set to have long-lasting profound economic, social, political, and cultural impacts (12)

The COVID-19 pandemic has also brought a new set of challenges for the individual to maintain a healthy diet. The lockdown status announced in many countries of the world, various mechanisms behavioral, psychosocial and various sports variants. Individuals were asked to stay home and avoid contact with other people. These precautions and practices have serious effects on both access to food and use. The confinement to one's home has direct effects on one's lifestyle, including dietary habits, eating, and physical activity patterns (13,14). Since quarantine is associated to the interruption of the work routine, this could be result in boredom. Boredom has been associated with a greater energy intake, as well as the consumption of higher

quantities of fats, carbohydrates, and proteins (1,15). Further, during quarantine continuously hearing or reading about the pandemic without a break can be stressful. Consequently, the stress pushes people toward overeating, mostly looking for sugary “comfort foods” (16). Furthermore, the combination of working from home, on-line education and social media usage have all caused screen time to surge. These reasons have led to widespread and rapid weight gain among certain populations worldwide (17).

In some populations, during the quarantine period, it was observed that the consumption of fast food decreased, the rate of cooking at home increased, and the behavior of choosing healthy food to keep the immunity strong increased (18,19). Keeping foods that are good sources of immuno-supportive nutrients, planning times to eat, meals, portions and having a cutoff time for eating but mostly having in mind positive attitudes could be helpful to tackle the negative health effects of quarantine (1). In this paper, we tried to explore eating habits changes during the COVID-19 pandemic lockdown.

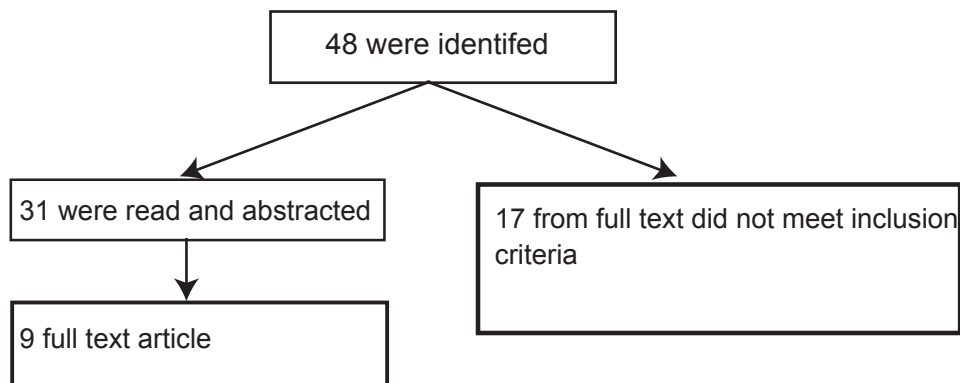
## Materials and Methods

We conducted a detailed review of published articles on eating habits changes during COVID-19 pandemic

lockdown. Literature searches were conducted by using the PubMed database and Google scholar to find articles published from between March and July 2020. We included only English and Turkish articles and official news, reports from the institute, international organisation such WHO. Studies with inappropriate topics and those were not pertinent to the focused purpose of the study were excluded. In addition, unofficial news and personal views published on social media were also excluded from the study.

The search term combinations used to search the knowledge base included COVID-19 lockdown, COVID-19 pandemic, home confinement, eating habits and changed dietary habits. In order to identify studies meeting the inclusion criteria, we screened the titles and abstracts of all retrieved records. The studies were selected independently and the results were discussed to make the final selection. After reading the full text of all potentially eligible articles, a final decision was made for each study.

Initially, the search process using the search term yielded 48 articles. Finally, 31 articles remained to be reviewed in detail. Finally we selected 9 studies those fulfilled all the selection criteria. These 9 selected studies were full-text original publications and they were used for our analysis (Fig. 1).



**Fig. 1:** Flow diagram for the process of review of the literature.

**Table 1:** List of the 9 selected articles and data of publication.

No.	Title of selected articles	Year of publication	Reference
1	Covid-19 Confinement and Changes of Adolescent's Dietary Trends in Italy, Spain, Chile, Colombia and Brazil	2020	19
2	Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey	2020	20
3	Dietary choices and habits during COVID-19 lockdown: Experience from Poland	2020	21
4	Eating and exercise behaviors in eating disorders and the general population during the COVID-19 pandemic in Australia: Initial results from the COLLATE project	2020	22
5	Changes in Weight and Nutritional Habits in Adults with Obesity during the 'Lockdown' Period Caused by the COVID-19 Virus Emergency	2020	23
6	Covid-19 and the Subsequent Lockdown Modified Dietary Habits of Almost Half the Population in an Italian Sample	2020	24
7	Dietary and Lifestyle Changes During COVID19 and the Subsequent Lockdowns among Polish Adults: A Cross-Sectional Online Survey PLifeCOVID-19 Study	2020	25
8	Chronicles of Corona v7	2020	26
9	Effects of COVID-19 Home Confinement on Eating Behaviour and Physical Activity: Results of the ECLB-COVID19 International Online Survey	2020	27

It has been seen that both similar and different findings in terms of eating habits exist in the 9 studies that we examined. In a survey study conducted in Italy in April, life style and eating habits during the quarantine period of the COVID19 pandemic were questioned, it

was observed that eating habits changed in 37% of the participants while 34% of the participants stated that their appetite increased (20). Another study in Poland showed that during the pandemic lockdown, eating behaviors often changed and a general tendency to

consume more food could be seen in individuals who were ordered to follow the advice to stay at home. In general, 43.5% of surveyed individuals reported eating more during quarantine. Compared to the group not reporting modifications, increased food consumption and snacking were reported by individuals with higher Body mass index (BMI) (21). In a study conducted in Australia, changes in eating behaviors in general population and the population with eating disorders were examined. The general population were found to eat more than before the pandemic. 35% of the sample reported increased rates of binge eating since the COVID-19 pandemic. 35.5% of the group that has eating disorder were associated with increased binge eating (22). When we examined a study on obese people in Italy, participants reported many unhealthy dietary habits, such as eating more (40%), not paying attention to the healthiness of the consumed food (28%), consuming more sweets (50) (23).

In Scarmozzino and Visiolin's study in Italy, nearly half (49.6%) of the responders did not substantially modify their diet during the lockdown however 52.9% of them reported that they have been eating more during confinement and 19.5% gained weight. 42.7% percent of this cohort attributed this increase to higher anxiety levels (24). In a different study conducted in Poland, 34% of the participants declared an increase in total food intake (25). In the survey study in Turkey, 24% of the participants stated that they consumed more food and ate unhealthily (26).

In half of the studies that we examined, almost 50% of the participants reported increase in the snacks which they consumed between meals in COVID-19 lockdown period. In

Scarmozzino and Visiolin's study in Italy, respondents reported increase in consumption of "comfort food", especially chocolate, ice cream and sweets(42.5%) and salty snacks (23.5%) (24). In the study that Sidor and his friends conducted, more than half of the participants admitted they've been having more snacks between meals (21). And in Pellegrini's study which was on obese people, 33% of the participants admitted that they've been consuming more snacks than before the lockdown (23). Similarly results of the ECLB-COVID19 International Online Survey showed that compared to before the consumption of unhealthy food, uncontrolled eating and snacking between meals increased significantly during the period of COVID-19 lockdown (27). It was seen in Di Renzo's study in Italy that consumption of sweets increased (20). According to the conclusions of Górnicka and his friends' study, 33% of the participants increased sweets consumption (25). Again in Pellegrini's study, half of the participants reported increase in sweet intake (23). Nevertheless some studies showed that the rates of snack consumption decreased. Di Renzo came to conclusion that there was a decrease at consumption of salty snacks, processed meats, snacks, fizzy drinks and sweet drinks in the COVID-19 lockdown (20). According to the online survey results in Turkey, snacks such as crisps (19%), biscuits (16%), chocolates (16%) and frozen foods (32%) were less consumed than before the lockdown (26).

Total, 16% of the participants who stated that their eating habits has changed, described this change as "in a good way" in the study that Di Renzo conducted in Italy (20). In the study conducted in Australia, among the



participants, 2%8 of the general population and 64,5% of the population that have eating disorders; exhibited behaviours of increased eating restrictions (22). In the multicenter study on adolescents in Italy, Spain, Chile, Colombia and Brazil, it was seen that fast food and convenience food consumption decreased (Only 44,6% of the adolescents were consuming fast food less than one time per week before lockdown, this number increased to 64% during lockdown.) additionally it was seen that the rates of homemade food intake increased in Di Renzo's study (19,20). Likewise in Górnicka and his friends' study in Poland; 37% of the respondents reported a decrease in the fast food consumption rates, while 48% of them increased the rates of homemade food intake (25). Scarmozzino and Visiolin's study also showed a decrease at the rate of 50% in purchasing convenience foods (24).

When we examined the changes in fruits and vegetables intake in the period of COVID-19 lockdown, three of the studies showed that fruits and vegetables intake increased in this period while three other studies showed that it decreased. 35,8% of the population in Di Renzo's study stated that they have been eating less healthier foods (fruits, vegetables, legumes, nuts) whereas approximately one third of the participants in Sidor and his friends' study haven't been consuming fresh fruits and vegetables daily, the same rate of people have admitted that they've been eating sweets at least everyday (20,21). Pellegrini's study on obese people showed that 18% of the participants ate less fruits and vegetables (23). Scarmozzino and Visiolin's study showed that 21,2% of the participants increased eating fruits and vegetables (24). Ruiz and Roso's

multicenter study on adolescents showed that adolescents significantly increased their consumption of fruits and vegetables in this duration (19). As for the online survey study in Turkey, it was shown that almost half of the participants increased fruits and vegetables intake (26).

## Discussion

In this review, the effect of COVID-19 lockdown on dietary habits differed from community to community. In the studies examined, while the eating habits of some of the participants did not change, some of them preferred to eat home food instead of fast food. In some of them, it was observed that there was an increase in food consumption and a tendency towards snacking. Reason for different results may be due to the fact that the studies were conducted in different parts of the world and on different age groups. Quarantine is a difficult experience in some ways. Separation from loved ones, loss of freedom, fear of illness, and boredom can cause anxiety and stress (28). It is known that stress affects eating in a dual way; While a group reduces food intake and loses weight during or after stress, most people increase their food intake during stress (29,30). This may explain why one group increases eating while the other group acts restraint in studies. Time-restricted feeding (TRF) in which the time of access to food is restricted to a few hours without caloric restriction, supports robust metabolic cycles and protects against nutritional challenges that predispose to obesity and dysmetabolism (31). However, a long stay at home during the quarantine period provides unlimited access to food and may cause a perturbation of

time-restricted feeding and creating a tendency for snacking nutrition. At the same time spending too much time at home may also increase the consumption of homemade meals. The studies reviewed for this review include different regions of the world. Since it was done during the quarantine period, all of the studies were conducted using an online self-reported questionnaire. Due to the method used, a certain group may have stood out or the inclusion exclusion criteria could not be applied. There are some limitations in the our review, firstly, no many studies related to topic due to the COVID-19 pandemic is current and new. Secondly, we only include papers published in English and Turkish languages.

## Conclusions

As a result, although quarantine has positive and negative effects, during the pandemic some people returning to home meals and reducing fast food consumption. Consuming foods that support the immune system, planning times to eat, meals, portions, having positive thoughts can help to cope with the negative health effects of quarantine. The changes in eating habits caused by increased stress due to quarantine stand out as an important problem because of increased in food consumption and a tendency towards snacking.

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