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The Psychological Impact of Covid-19 on University Students: Their Expectations of Mental Health Professionals

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ABSTRACT

The current study focused on exploring the psychological impact of the COVID -19 outbreak on university students and participants' expectations of mental health professionals. Semi-structured interviews were conducted with 80 university students aged 18 to 33 years from 19 cities in Turkey. Qualitative content analysis was used to identify important aspects of the students' experiences. According to the results, the main effects of the epidemic COVID -19 on the participants were depression and anxiety. We found that participants used various ways to cope with COVID -19 such as reading books and paying attention to hygiene. Participants also indicated that they perceived some positive situations, such as the value of nature and humanity, the importance of family, and various negative situations, such as mental exhaustion. Finally, participants stressed that they had different expectations regarding psychosocial support and the planning of individual activities by mental health professionals

Keywords:
Covid-19 psychological effects, university students, mental health professionals.

1. Introduction

Considering the 2020s, there was a dream of flying cars (NASA, 2014) and an opportunity to live on the Moon and Mars (NASA, 2020). Last year, however, almost all countries were busy teaching humanity how to wash their hands (HSGM, 2020; NHS, 2020; WHO, 2020a). On December 12, 2019, it was announced that a novel coronavirus (COVID -19) causing acute respiratory syndrome had been found in Wuhan. In the first three months, this virus reached about 120,000 cases and caused 4,300 deaths in 114 countries around the globe (Van Bavel et al., 2020). As a result, the World Health Organization (WHO) declared an international state of emergency on January 30, 2020 (WHO, 2020b). This situation was called a 'pandemic' on March 11, 2020 (WHO, 2020c). Like the whole world, Turkey has also declared this situation as a pandemic. In accordance with the recommendations of Scientific Committee of Turkey, a precautionary strategy was followed during this process by banning flights to different countries and closing borders (Çobanoğlu, 2020). The Ministry of Health (2020) announced the first case of the novel coronavirus in Turkey on March 13, 2020 and emphasized Turkey's success in coping with the process. On the other hand, the world press (Guardian, 2020) stated that Turkey is the fastest growing country considering the outbreak rate COVID -19. According to the database developed by John Hopkins University for COVID -19, the situation did not seem to be much different in other countries around the world, and even in countries like the US, Spain, Italy, France, the situation was much more serious (CCSE, 2020).

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The Impact of Covid-19

Although the mortality rate caused by COVID-19 is claimed to be not very high (Lau & Xiong, 2020) and vaccination processes are started rapidly (Ball, 2021), the constant mutation of the virus (Shariare et al., 2020) drives people into fear and panic situations (Mukhtar & Mukhtar, 2020). Also, the separation of individuals from their loved ones, thinking that they are not as free as they used to be, uncertainties about the disease, and boredom can sometimes have dramatic effects (Brooks et al., 2020). In particular, the uncertainty and low predictability of this virus threaten the physical health of people and affect their mental health, especially emotionally and cognitively (Li et al., 2020). Long-term stress and negative emotions can adversely affect the immune system of people and disrupt the balance of physiological mechanisms that progress in its course (Reed & Raison, 2016). As a result, a psychological situation may make this process much more dangerous for individuals with a possible risk of infection.

What has been done so far and Significance of the Study

Many scientists have made an intense effort to reduce and eliminate the effect of this process. Regarding the studies on COVID-19, both in Turkey and in the world, research has focused on the treatment dimension of the disease (Cascella et al., 2020; Kamer & Çolak, 2020), psychological (Arslan et al., 2021; Yıldırım et al., 2021) statistical (Roser et al., 2020) and economic interpretations (Atkeson, 2020), the investigation of ethical problems and values system caused by the process (Çobanoğlu, 2020). Conducting the current study becomes a must as there is a shortage of research examining the responsibilities of mental health professionals on this issue. Therefore, studies should be conducted immediately to identify the psychological effects of COVID-19 (Arden & Chilcot, 2020) and, in particular, the expectations from mental health professionals in this regard.

The whole world tries to take some precautions to overcome this fear, with the inner urge to survive and the will to live, and Turkey is no exception. These measures are maintaining social distance, suspending all kinds of scientific, artistic, cultural (ResmiGazete, 2020), religious activities (DİB, 2020), and ordering partial curfew. Given that man is a social being, his escape from his kind is considered far more painful than other fears. In this sense, mental health professionals should undertake important duties and responsibilities in this regard. This is because preventing the biopsychosocial development of individuals is regarded as one of the most basic requirements for a healthy developing world (Yıldırım, 2006). Thus, examining how this chaotic environment created by COVID 19 affects individuals and determining the resources to cope with this crisis process, and investigating the expectations of mental health professionals are among the aims of this study.

Purpose of the Study

- This study is one of the few studies to address the process of the pandemic from a "psychosocial" perspective and has a well-populated dataset (420 pages from 80 students) compared to qualitative research, revealing society's expectations of mental health professionals in such a chaotic environment. Although few of the psychological findings of the study have been taken up by other researchers, it is clear that there is a need for studies that examine the pandemic effect from a psychosocial perspective and in which this problem is comprehensively interrogated among university students. In this regard, this study aims to contribute:1. for the "staff in the field" to understand the difficulties experienced by society during such epidemic periods and the type of coping styles developed in the process.
- For the "society" to learn what is expected of mental health professionals and to increase the effectiveness of the rehabilitation and treatment process.
- For the "literature" to understand the psychosocial impact caused by the pandemic and to uncover what university students, who represent the future of society, have to say on the subject.

2. Method

2.1. Research Design

The phenomenology design, one of the qualitative research methods, was used to reveal the chaotic effects of Covid-19 on university students, their coping style with this situation, and their expectations from mental health professionals. Phenomenology research focuses on phenomena that we are aware of but do not have an

in-depth and detailed understanding (Yıldırım & Şimşek, 2016). In this design, individuals' experiences regarding a phenomenon and their meanings to these experiences are examined (Creswell, 2012).

2.2. Study Group and Data Collection

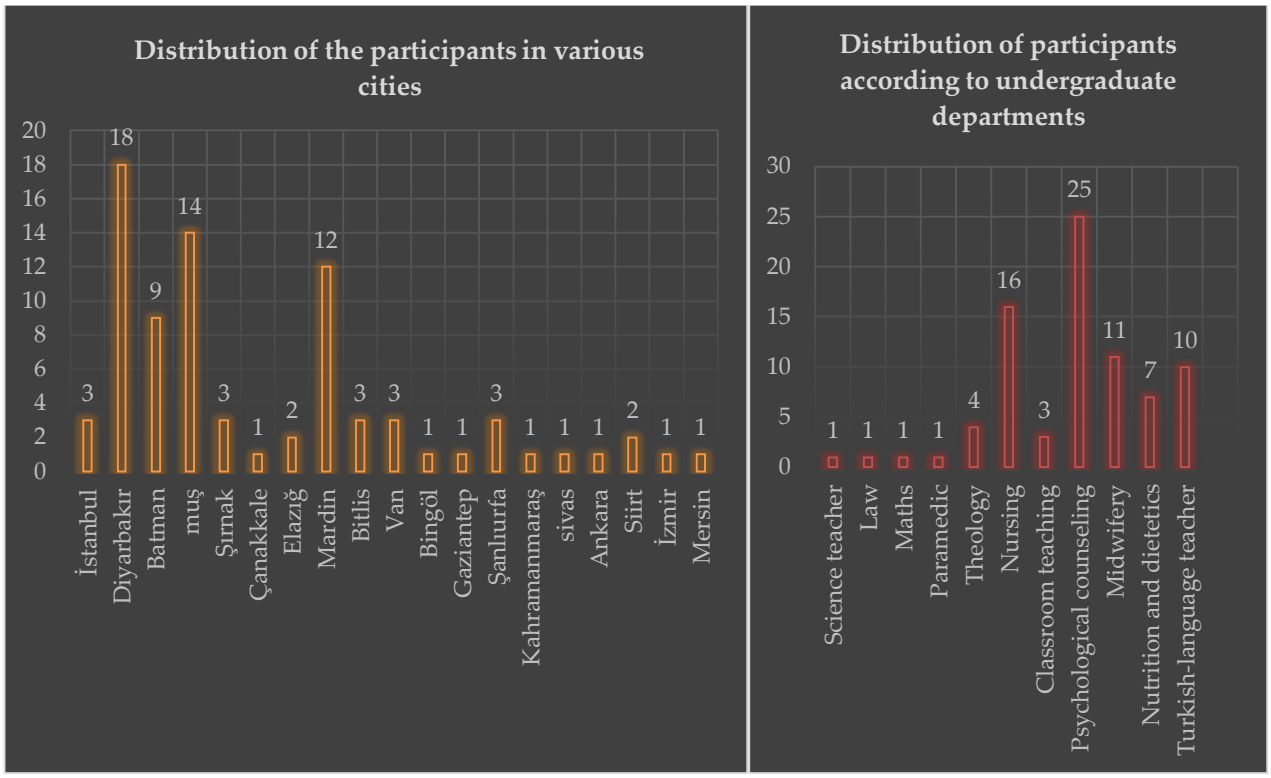
The study group consisted of 80 (16 males, 64 females) university students studying in different provinces of Turkey, aged between 18 and 33 years old (mean age = 21.26). Data were collected through a semi-structured online form prepared by the researchers. Two participants were diagnosed with COVID-19, and 11 participants stated that they had relatives diagnosed with COVID-19. Considering the infection risk of COVID-19, data were collected from university students by creating a semi-structured online (google form) document. Participants could write their ideas since it was impossible to collect data from the participants face to face. Below are some of the sample questions that we prepared to determine the psychological effects of the pandemic, the coping strategies of individuals and their expectations from mental health professionals in this chaotic process:

"What kind of psychological effects has Covid-19 had on you? How has it affected your psychological health? What changes have you observed in your environment (from a psychological point of view)?

What did you do to reduce the tension created by this process (coping strategies)? When you observe society, what are your thoughts on how they deal with this tension?

If you were an active mental health professional, what would you think society needs most right now? And what would you do/want to do about it? If I asked you about your expectations from mental health professionals during this process, what would you say?"

Demographic information regarding the departments of the participants and the cities they live in were given below.



Graphic 1. *Demographic Information Regarding the Place Where the Participants Live andtThe Departments they Studied*

There are 11 different departments, such as Psychological Counseling, Nursing, and Midwifery, and data were obtained from 19 different cities, mainly in eastern provinces.

2.3. Data Analysis

NVivo 12.0 was applied for analyzing the data. Themes and sub-themes were created by using both descriptive and content analysis. Despite the possibility that some expressions cannot be noticed with descriptive analysis and this analysis may remain superficial, content analysis enables these concepts to be discovered. The most fundamental process in this analysis is to combine concepts that are similar to each other under certain themes and sub-themes (Yıldırım & Şimşek, 2016). Accordingly, the authors read the entire data set to become familiar with them before any coding and then coded all of them. They coded and combined them under deeper and inclusive themes. In the last stage, they controlled data by deleting repetitiveness and combining close themes.

Responses from participants were sometimes shown in the text with direct quotations. Participant number and gender and the first letter of the department were included without giving the participants' identity (only PA was used for the Paramedic department). For example, considering 2MP, 2 referred to participant number; M (male) refers to gender; P (psychological counselling) indicated department.

3. Findings

3.1. The Impact of COVID-19 on Individuals and Community Psychology

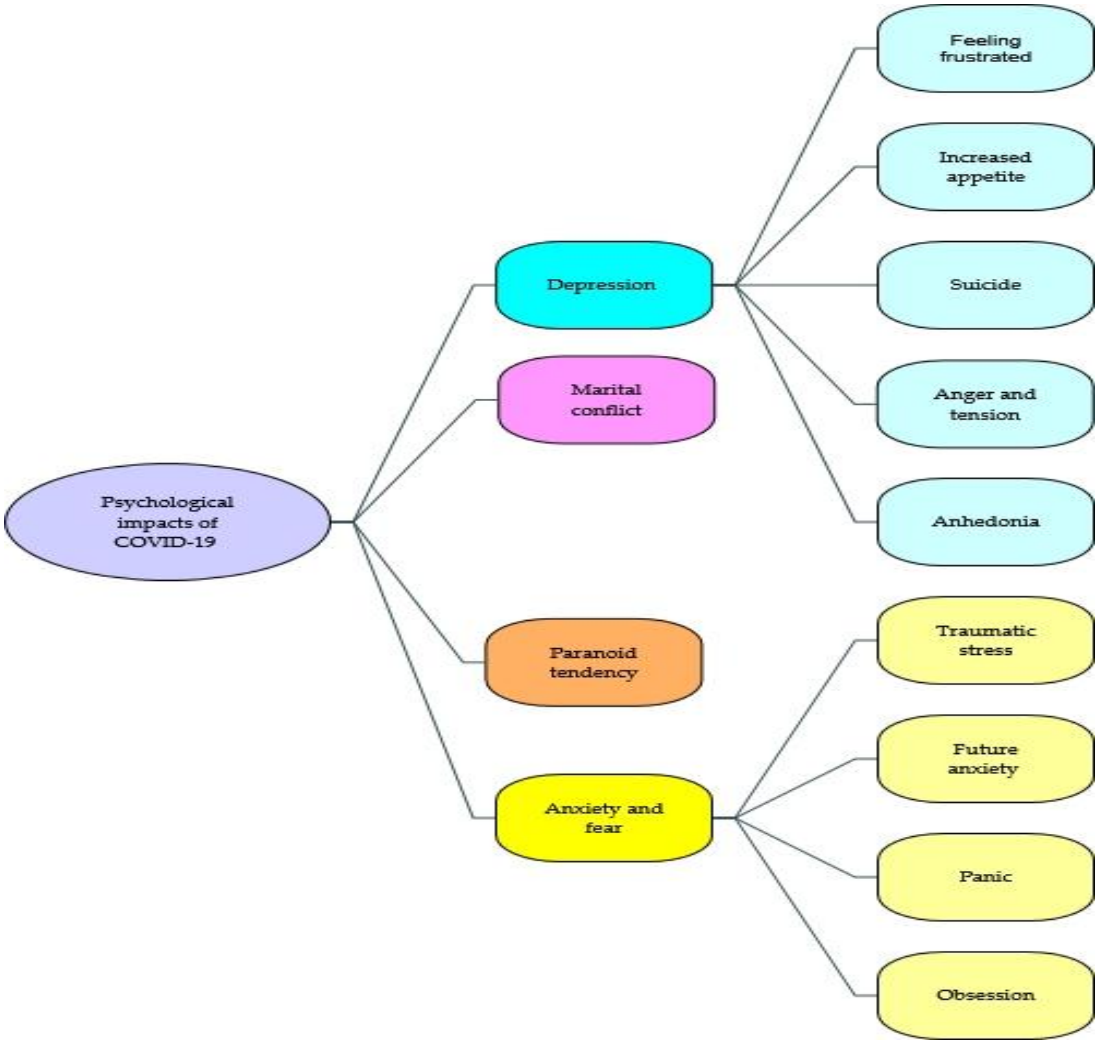


Figure 1. *Themes and Sub-Themes Regarding the Impacts of COVID-19 on Individual and Community Psychology*

Participants' statements about the impact of COVID -19 on individual and community psychology are shown in Figure 1. The greatest impact of COVID -19 on participants caused 'anxiety and fear' and 'depression' for both the individual and the community. In addition, 'paranoid tendencies' and 'marital conflict' were other themes mentioned by participants. One of the participants expressed the impact of this process as follows: *I did not imagine this time to be like this... Unable to maintain my normal life, I am finding it difficult to settle in at home... I am unfocused and can not concentrate on my lessons. I have to talk face to face with different people which makes me*

*aggressive. I have a sleeping disorder and an eating disorder. I spend my time eating all the time. I sleep too late and wake up too late. I worry a lot, not about myself, but about my family...*He expressed the effect on the community as follows:

> *'We are going through a difficult process. Based on my observation, I can say: There is an increase in people's anxiety levels. This is much more difficult for people with psychological disorders. Obsessive-compulsive disorders proliferated. Disconnection with people caused social media use. Hygiene obsession occurred. People need frequent hand washing. Sleep disorder occurred. People started to get angrier. I saw that people with financial problems and students preparing for the exam were very stressful (23FP)'*

Finally, the following statement summarizes the psychological impact of the process:

> *'I think people's sense of confidence has been shaken… In normal life, there were dangers around us, but it was not so deadly. The possibility of carrying this disease and causing someone else's death caused a general feeling of panic and suspicion. People worry more due to the lack of clear information about when this unusual danger situation will end. Most people feel aggressive because they feel that they will not reach enough food and money after a while. Considering hygiene, we used to eat and drink very comfortably in the restaurant or anywhere outside, but now we started to think about whether it is hygienic. Hygiene issues caused an increase in obsessions and compulsions in people who were a bit obsessive. There has also been an increase in anxiety disorder because the state of uncertainty brings along high anxiety. The insufficiency of the intensive care units in the hospital and respiratory equipment caused high stress and sleep problems (26FP).'*

3.2. The Coping Styles with the Psychological Tension Caused by COVID-19

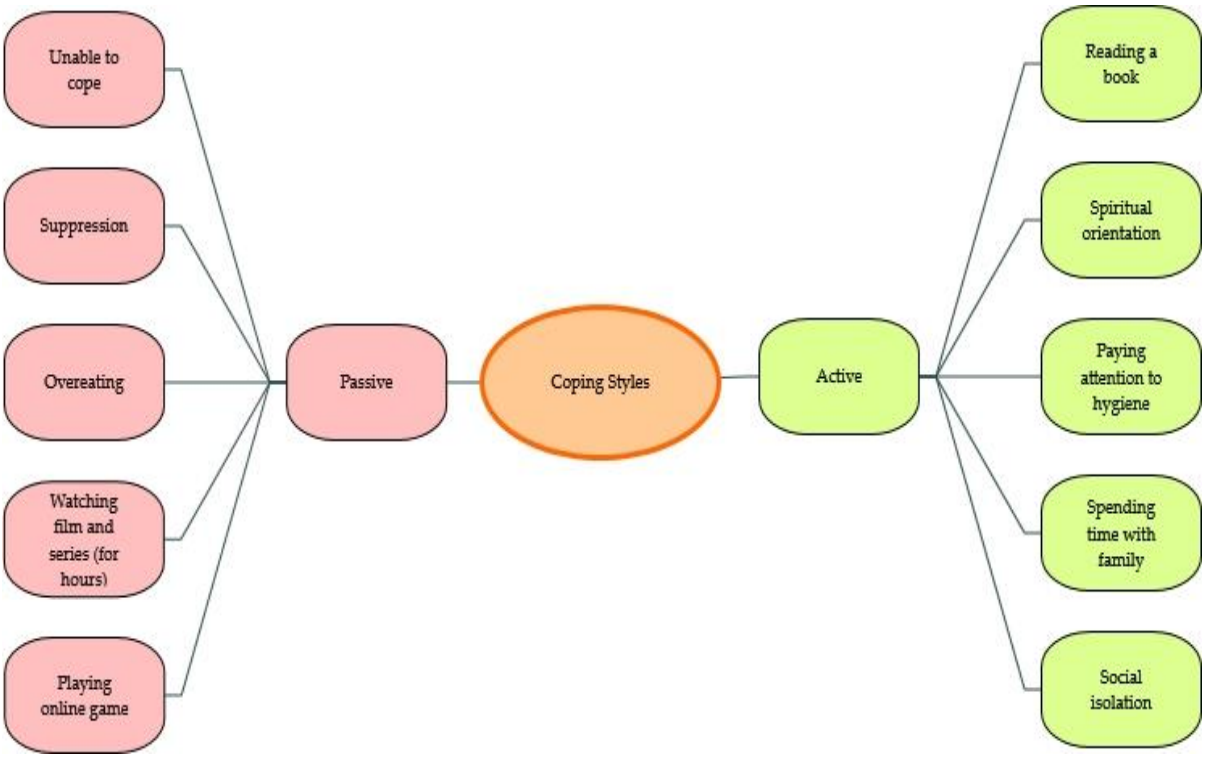


Figure 2. *Themes and Sub-themes Regarding the Coping Styles with the Psychological Tension Caused by COVID-19.*

While the active coping styles most frequently used by individuals in this process were generally "reading a book", "spiritual orientations", and "paying attention to hygiene", some participants stated that society could not healthily cope with this process. Finally, "suppression", "overeating", and "watching TV for hours" are among the other passive strategies expressed by the participants. Here is a representative statement:

> *'I am doing many things to relieve the tension of this process. Now, we have a lot of time that we normally do not have. For example, when I stay at home, I read books, watch movies, try to do sports as much as possible, and find*

separate time for all of them. Besides, we play games with our family. I try to benefit from all resources I can find, including music, songs, videos, education. I think these lowered the tension a bit. (52MP).'

One participant expressed how she coped with his fears as follows:

'I had a terrible fear in the first days, but now I am not. Prayer reduces fear. I try to cope with the tension created by this process by reading books, studying, reading the Quran and its meaning' (22FE).

Regarding coping methods of community, a participant stated that:

'Previously, people weren't that sensitive about hygiene, but now everyone cares a lot about it. Since the virus has no cure, many people take refuge in Allah, pray and spend most of their time in worship. Many unbelievers also started to pray' (67FP).

3.3. The Personal Awareness that Emerged with the COVID-19 Process

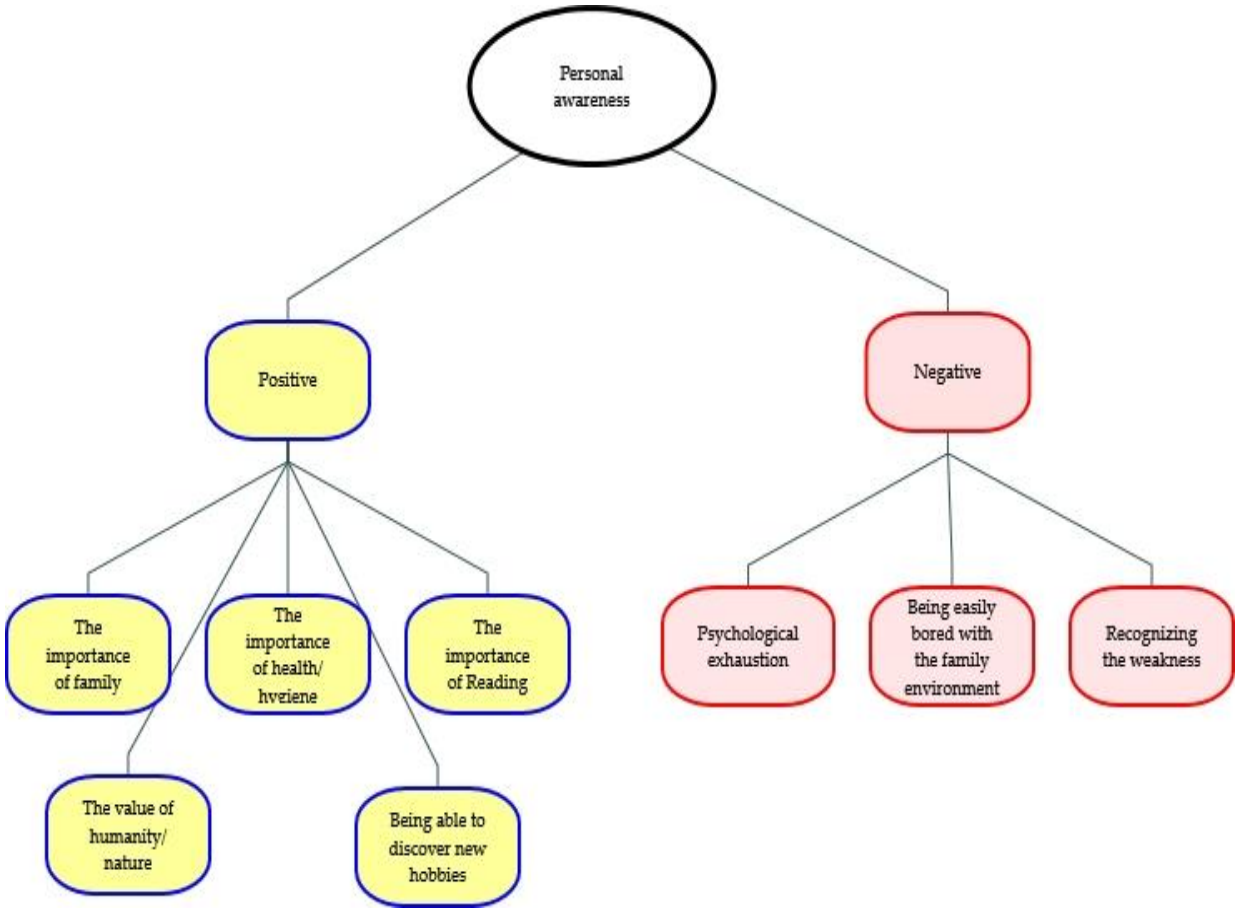


Figure 3. *Themes and Sub-themes Regarding the Personal Awareness Caused by the Impact of COVID-19 on Individuals and The Community*

When considering the personal awareness evoked by the impact of COVID -19 on the individual and the community, two main themes emerged: 'positive' and 'negative'. In addition, the themes were created in accordance with what the participants said. One of the positive themes is an understanding of the importance of 'nature/humanity', 'family' and 'health'. For example, one participant said, 'I realized that I am a conscious individual and my family members are also selfless. I realized that health is more important than anything else and that this outbreak required a vaccine. I have become aware of the value of my loved ones" (29FP). On the other hand, problems arose due to the tension caused by the process, such as mental exhaustion, weariness with the home environment, and recognition of one's weakness in the face of the virus.

Another excerpt is as follows:

Thanks to the call 'Do not go out, stay home', I have come to realize how valuable and necessary the time I spend at home is. I came to believe that people have the power to contribute to their own development in many ways. When I realized that death was not far away, I realized that it was time for me to stop my personal procrastination. I make little plans to overcome my inadequacies and laziness. I have once again encountered the fact that success must be continuous. Therefore, I have decided not to compromise and take steps to ensure that my actions reflect my consciousness as soon as possible" (46FP).

Here is another statement:

'People have realized the importance of collaboration as well as health. Parents have learned the difficulties that teachers had while teaching and they have respected and appreciated the teachers. The importance and necessity of hygiene come into prominence. People have started to pay attention to having a talk and communication. They have learned the necessity of patience. Since people who harm animals stay at home, the animals will be able to walk around comfortably for a while' (74FP).

3.4. Events that Being Witnessed

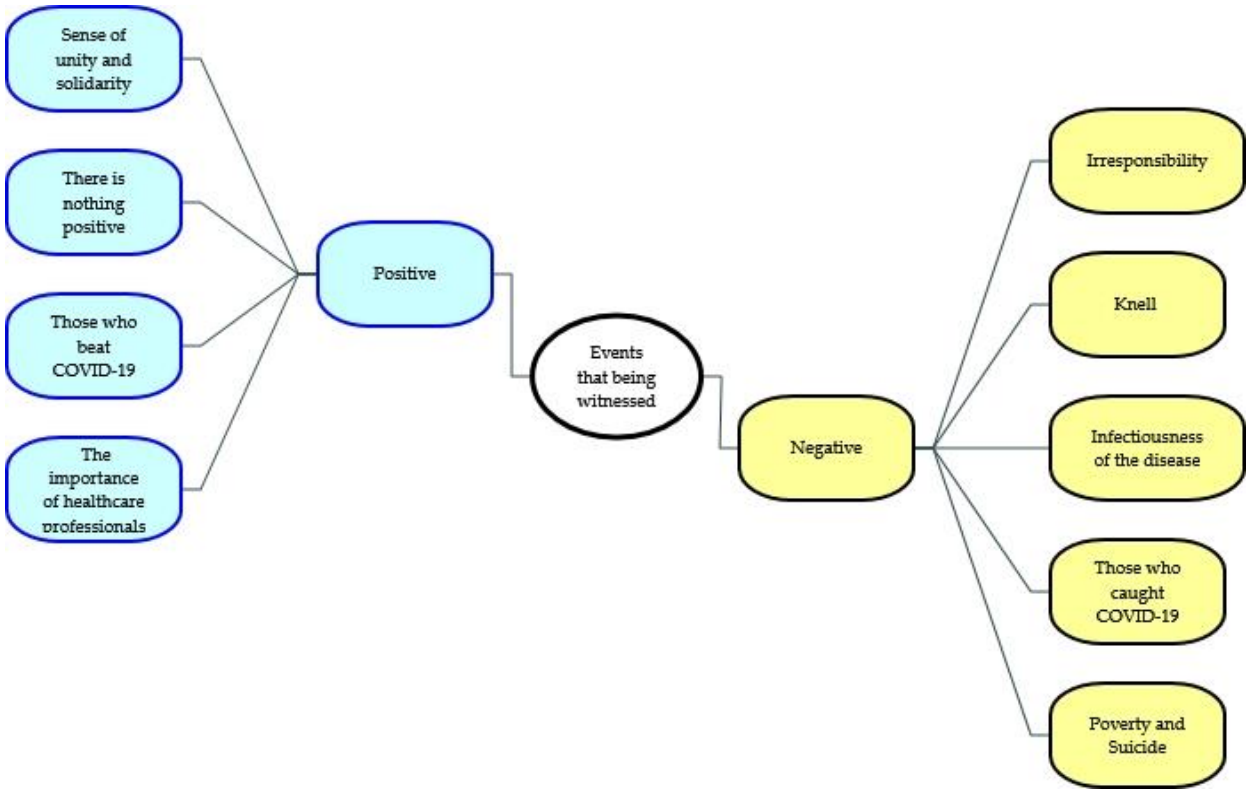


Figure 4. *Themes and Sub-themes Created from those that were Monitored, Read, Experienced, and Witnessed During the COVID-19 Process*

Participants' statements were divided into two separate themes: positive and negative statements. Positive statements were highlighted much less than negative statements. Looking at Figure 4, the most frequently expressed themes under the 'positive testimonies' theme were 'sense of unity and solidarity and 'those who beat COVID -19'. Those saying that there was nothing positive were also in the majority. On the other hand, the most noticeable theme in the 'negative testimonies' related to the 'irresponsibility' of individuals in society as well as the 'bell' and the 'contagiousness of the disease'. Below is the testimony of one of the participants on the positive theme: *'The number of people who have recovered, the unity of the people, the perfect manifestation of nature's existence without human touch, and the hope that everything will be alright…' (29FP)*

The following participant slammed the negativities:

'Unfortunately, food is stored in households because of the stress caused by uncertainty and the desire to protect ... Some young people say my immunity is already good and selfishly walk the streets ... There are politicians still trying to play politics ... Loss of confidence in the state ... Why does the state exist and why do we pay taxes? This is a big question I have. This is a question we will try to answer during the quarantine.. Living in their luxury houses, those who are in a good financial situation say, "stay at home!" and make judgments on those who live on minimum wage ... I think this rate is 50% in the world. We are confronted once again that the vast majority of capital in the world belongs to some individuals.… Some people make fun of even this situation' (26FP)

Finally, a participant stated that the process would be remembered negatively due to the following reasons:

I realized that we need to understand those who are starving, those who cannot do as they wish (e.g., those who are in a war zone and cannot go out), those who are sick and bedridden. I realized that we should know the value of health and time, because they show that the virus has the danger to infect and kill everyone, without making a difference between rich, poor, young and old. This process will be remembered with its negative aspects as long as the capitalists do this business. For example, those who sell a 3 lira mask for 30 lira and produce fake disinfectants and threaten human health...' (47FP).

3.5. The Expectations from Mental Health Professionals

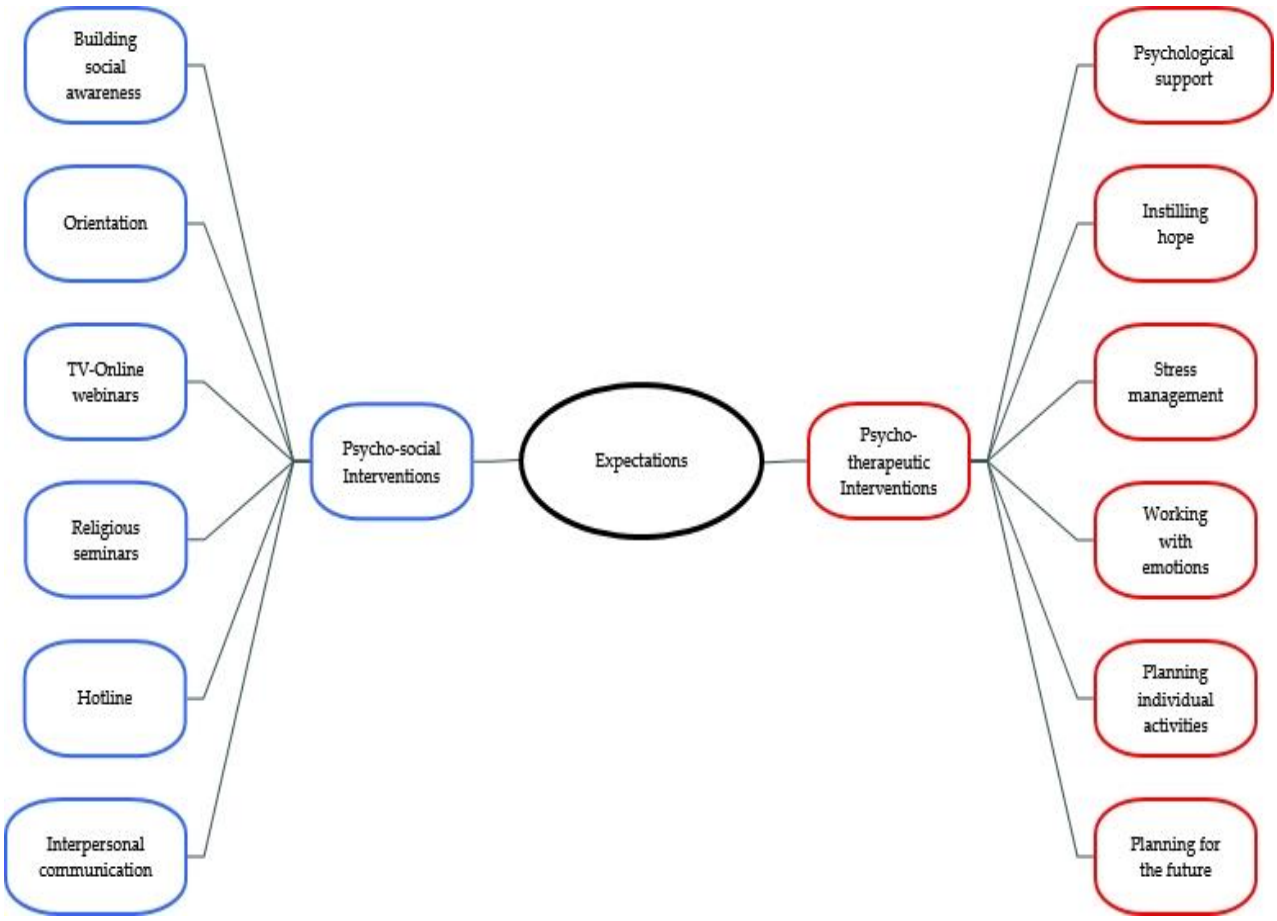


Figure 5. *Themes and Sub-themes Regarding the Expectations from Mental Health Professionals*

Participants' statements regarding the expectations from mental health professionals were examined and gathered under two main themes: the application of psychosocial and psychotherapeutic interventions. Considering the expectations, the most emphasized themes were "instilling hope", "stress management", "building social awareness", "orientation", and "giving seminars or webinars" through TV or online system. Although all themes of the 'expectations' sub-theme contain 'psychological support', the only reason for creating such a theme is that the participants directly used this expression. Here is a representative excerpt:

'What society needs most right now is healthy psychology. The news related to disease published every night creates depression. The authorities explain the situation calmly, appropriately, and without a doubt. However,

after a while, society becomes aware of the reality. People experience panic, stress, and sadness affects psychology. I expect from the authorities to be informed about how to get used to staying at home all time and what to do during our stay at home. Also, it seems very logical and helpful to find out what society thinks by doing this kind of survey. I believe such surveys should be done more '(20FH).

One participant underlined the need for mental health professionals:

'Mental health professionals should be as active as doctors. In Turkey, unfortunately, people get psychological advice from so-called YouTubers or phenomena. Therefore, mental health professionals should be active in every field, should conduct studies to gain skills about well-being and how to cope with stress and should give recommendations that can be applied by everyone' (26FP)

Another participant stated as follows:

'If I were the authority, I would organize TV programs (as therapy) on a few days a week to reduce our stress management and anxiety. It should be done with government assistance to reach the majority. The TV programs can be run as a live broadcast, and they can provide the opportunity to ask questions. In this period, mental health professionals have a great responsibility. They should appeal to people and take control of stress management. This is what I expect from them' (65MP).

4. Conclusion, Discussion, and Recommendations

Pandemics, various infections, and bioterrorism have become an international health problem (Ursano, 2005). Severe Acute Respiratory Syndrome (SARS) was an example of future pandemics and has helped prepare people for future outbreaks (Bonanno et al., 2008). The current study was conducted to examine the psychological impact of the COVID -19 outbreak on individuals. It found that COVID -19 has similar effects on individual and community psychology. Looking at the psychological effects of COVID -19 on the individual and community, various effects such as "fear and anxiety", "depressive symptoms", "paranoid tendency" and "marital conflict" are found.The results showed that most participants felt anxiety and fear. Anxiety refers to the future, not the 'here and now' as it is called in a psychotherapeutic concept, and warns us that we might be in danger (Tompkins, 2013). When we feel anxious, our mind and body go into a waking state and prepare us for the worst. Therefore, it will continue to be an inevitable part of life as long as there are threats and dangers in life. Fear is evidence of our willingness to experience, enrich, and overcome the things that threaten us (Steimer, 2002). In short, fear is a life force. Anxiety is a concept related to the 'here and now' and when the individual is in danger, it sounds the alarm. In a state of anxiety, there is no need to think about whether one is in danger or what that danger might be. For example, when we feel fear, we do not think about running away, we just do and it happens so quickly that we do not have to make the connection that we are in danger (Tompkins, 2013). Ultimately, anxiety and fear, although perceived as negative, can be expressed as the two most basic reactions that are vital for individuals to protect themselves from life, hold on to life, and protect themselves when in danger (American Psychiatric Association [APA], 2013). Accordingly, anxiety and fear reactions can be considered as natural reactions of individuals to overcome the COVID -19 outburst.Research indicates that both citizens and healthcare workers experienced high levels of anxiety during the SARS outbreak that occurred in China (Yueqin et al., 2003; Tam et al., 2004; Cheng et al., 2004; Ho et al., 2005; Yu et al., 2005; Bonanno et al., 2008). Like the previous SARS virus, Wuhan originated coronavirus disease (COVID-19) in China's Hubei province spread throughout China at the beginning of 2020. As a result of the rapidly increasing number of confirmed cases and deaths, healthcare professionals and the public have been reported to experience intense anxiety and fear problems (Xiang et al., 2020; Kang et al., 2020). Limited information and negative news about COVID-19 can cause anxiety and fear in the community (Bao et al., 2020; Shigemura et al., 2020). Many studies have also determined that pandemics cause anxiety and fear among people. Even so, the fear of COVID-19 has been called coronaphobia (Ahorsu et al., 2020; Asmundson & Taylor, 2020; Lee, 2020; Lee et al., 2020; Qiu et al., 2020; Roy et al., 2020; Wang et al., 2020a). The current study's findings are in line with the literature, showing that participants experienced anxiety and fear.

Depressive symptoms were observed in some of the participants in the current study. Similarly, a study conducted to investigate SARS at Hong Kong compared the psychological adjustment of participants before and after the outbreak. It was found that the outbreak of SARS led to an increase in depression and emotional

distress (Yu et al., 2005). In various studies conducted to investigate the SARS outbreak, participants' depression scores were high (Cheng et al., 2004; Fang et al., 2004). Also, in studies conducted on COVID -19, it was found that such crises can cause various problems such as depression in individuals (Kang et al., 2020; Xiang et al., 2020). From the literature, the onset of COVID -19 increases the depressive symptoms of individuals (Kendler et al., 2020; Shevlin et al., 2020; Qiu et al., 2020; Wang et al., 2020b). Although depression has many symptoms, it is a depressive disorder characterized by generally depressed mood, apathy toward activities, disturbances in eating and sleeping patterns, and sadness. In general, depression can be viewed as a reaction to negative experiences. The onset of COVID -19 is a sudden and rapidly developing life event. It is normal for people to exhibit depressive reactions such as low mood, anhedonia, insomnia, sleepiness, and increased appetite. To put it more clearly, depressive symptoms are reactions to restore harmony lost in life.Another finding is that participants felt angry and nervous. Anger is an effective response to life-threatening situations or stressful events. Anger is an emotion directly related to survival response and threat perception (Anderson & Bushman, 2002). Anger is not only an emotion that stems from helplessness, weakness, and inadequacy, but it is also a healthy emotion that alerts individuals to potential danger and trauma. A study conducted with users of Weibo (a social networking site in China) found that people's emotional indicators were negative, and in particular, their anger levels increased significantly during the outbreak of COVID -19. The reason for the increase in anger level is that people did not find the strategies and measures taken satisfactory, and sharing false information about the outbreak is another factor that increases anger (Li et al., 2020a). In addition, individuals under isolation measures may experience boredom, disappointment and anger (Li et al., 2020b).According to another finding of the study, some of the participants developed obsessions. Obsessions do not occur randomly, and they are generally triggered by various external events (Banerjee, 2020a; Fineberg et al., 2020; Shafran et al., 2020). Obsessions are repetitive and persistent thoughts, impulses, or fantasies that sometimes arise unintentionally, are experienced inappropriately, and cause significant anxiety and distress. Compulsion, on the other hand, is repetitive behaviors (e.g. washing hands, organizing, checking) or mental actions (e.g. praying, counting, repeating words quietly) that appear as a reaction to obsession and must be applied strictly (APA, 2013). Health hazards and outbreaks lead to the development of obsessions. Especially those with obsessive-compulsive disorder are more affected by these conditions (Banerjee, 2020b; Fineberg et al., 2020; Shafran et al., 2020). Hand and respiratory hygiene and social distance are the main strategies recommended by WHO for the COVID-19 outbreak. Hand washing, which is considered as one of the safest measures against the outbreak, has increased the demand for disinfectants, soaps, and disposable gloves. Almost all media sources draw attention to hygiene (Banerjee, 2020a). The threat of virus-related contagion may trigger individuals' obsessions, and it is appropriate to provide specific information about the outbreak to people prone to obsessive-compulsive disorder (Fineberg et al., 2020).

Research shows the increase in obsessions during outbreaks of SARS and MERS. When strategies developed to counter outbreaks involve repetitive behaviors, they risk reinforcing obsessive-compulsive disorders (Mak et al., 2009). During the COVID -19 outbreak, several common factors may have contributed to the increase in OCD. Situations such as increased hand washing, suggesting a specific time to wash hands, and being advised to wash hands properly lead to this behavior being viewed as a ritual. Various situations can trigger and reinforce obsessions and compulsions, such as distrust when coming home from outside, the need to keep hands clean, the family's strict hygiene measures, constantly emerging information about the virus and triggering thoughts of infection, increased repetitive behaviors and exaggerated measures, and stockpiles of masks, soaps, disinfectants that can lead to piling and panic (Shafran et al., 2020). Because of the uncertainties surrounding obsessions, a clinical guide to managing obsessions in the pandemic COVID -19 has even been published (Fineberg et al., 2020). According to learning principles, obsessions are conditioned stimuli and produce anxiety. Compensatory strategies such as avoidance and repetition are used to reduce this generated anxiety. These strategies constrict the individual's living space and negatively affect his or her functionality (Salzman & Thaler, 1981; Sungur, 2006). Findings indicate that obsessive-compulsive behaviors are on the rise. The news about hygiene may have contributed to the development of the obsessions by causing individuals to take excessive hygiene measures, as there was no vaccine available at the time of data collection.

Some of the participants in the study expressed the COVID-19 outbreak as a traumatic experience. Traumatic experiences are a highly compelling experience that renders individuals' coping mechanisms dysfunctional, causes feelings of helplessness, and creates a shock effect on their perception of themselves and their environment (Ruppert, 2008). People are highly affected by loss, violence, war, repression, and disasters

(Horesh & Brown, 2020). Although the COVID-19 outbreak is stated not to meet some criteria of the ICD 11 regarding a traumatic event, some studies show that the risk of post-traumatic stress symptoms increases after traumatic events such as COVID-19 (Galovski & Lyons 2004; Shevlin et al., 2020). A study on the SARS outbreak indicates that 35% of hospitalized patients experienced moderate anxiety and depression, and post-traumatic stress disorder (Cheng et al., 2020). In addition, it is argued that COVID-19 is a new mass trauma, and various types of trauma (sexual assault, war, natural disaster, etc.) should be handled comprehensively. Therefore, it is reported that the definition and consequences of trauma need to be reconstructed (Horesh & Brown, 2020). Covid-19 may cause traumatic experiences in individuals due to inadequacy, feelings of helplessness, and stress. These experiences need to be handled and evaluated with a different methodology.

Data exhibited some symptoms of panic. Panic is defined as a sudden, "very intense fear" accompanied by increasing or hasty attempts to ensure the person's safety (Beck et al., 2005). Stressful life events may occur prior to the development of panic disorder. An increasing number of cases day by day and their rapid spread can increase panic, especially in vulnerable people (Islam et al., 2020). COVID -19 outbreak poses a serious threat to people's physical health and life. It also triggers a variety of psychological problems such as panic disorder, anxiety and depression (Qiu et al., 2020). A study conducted in Bangladesh found that 79.6% of the participants suffered from panic symptoms. The research highlights that individuals with low levels of education may show less panic due to their limited knowledge about the pandemic, which should be further investigated (Islam et al., 2020). Participants might show panic symptoms due to the sudden onset and spread of the outbreak, uncertainty about precautions to be taken and treatment methods.

The pandemic COVID -19 affects the mental health of all segments of society. It causes anxiety in both infected and uninfected people and sometimes requires advanced psychological interventions (Duan & Zhu, 2020). Reaction to a pandemic is equated with paranoia, causing many people to question their mental health and resilience (Ho et al., 2020). In a study conducted in the UK, participants indicated that fear of COVID -19 also plays a role in the development and maintenance of paranoia. Specifically, it is hypothesised that COVD-19 induced stress may trigger paranoia. Therefore, the response to paranoia will increase when individuals are exposed to news related to the topic. In addition, social factors such as low political confidence, isolation, and decreased social support are associated with COVID -19 anxiety and may increase paranoia (Lopes et al., 2020). In a case of schizophrenia in Germany, it was reported that COVID -19 induces a psychotic phase by reinforcing paranoid experiences, unrealistic expectations, and fears (Fischer et al., 2020). In another study conducted in India, 37% of participants reported experiencing the paranoia of COVID -19 (Roy et al., 2020). In the present study, it was found that the participants had paranoid thoughts, which suggests that this unsafe environment where the participants were in severe anxiety and fear could trigger this situation.

Another finding of the study was that participants were concerned about the future. The personal future is the area of planning, goal setting, and implementation. Generally, people have a positive or negative attitude when they think about the future. Therefore, thinking about the future triggers either hope or fear in the individual. The perspective of the future creates an open space for different cognitive processes and emotional attitudes, depending on how many positive or more negative events are expected in this area. When negative experiences occur in the individual's environment (such as global conflict, pollution, death of family members, social alienation, sociopolitical events, war, and terminal illness), this can contribute to the individual's anxiety about the future (Zaleski, 1996). Anxiety is a state of mental tension and creates future anxiety in the individual (Taylor, 2019). In a study conducted with university students in Bangladesh, it was found that COVID -19 anxiety had a significant effect on the future work force and career anxiety of university students. Due to the occurrence of an uncertain situation like COVID -19 people tend to worry about their future. This level of anxiety increases further when the fear of death and livelihood is added to it. Outbursts such as COVID -19 discourage university students who are preparing to enter the job market soon (Mahmud et al., 2020). In the present study, all participants were university students. The data of the study were collected in the first week of April when anxiety was high and uncertainty and isolation measures were highest. The uncertainty of how long the pandemic would last and the many unknowns could cause university students to be fearful of the future.

Participants pointed to the increase in domestic violence and marital conflict. One of the effects of the new coronavirus is the increase in domestic violence, which can be described as a new public health crisis. According to the literature, domestic violence increases during times when families spend more time together,

such as New Year's Eve and summer vacations. During the pandemic, people called for a lot of help for marital conflicts and violence. Even the United Nations called for action to combat domestic violence worldwide (Taub, 2020). The world is under a lot of stress because of the outbreak of COVID -19. The impact on individual and family life is evident (Lebow, 2020a). It has also been speculated that COVID -19 will trigger a baby boom, or conversely, that divorces will increase (Lebow, 2020b; Matchan, 2020). The COVID -19 pandemic has many undesirable consequences. One of them is that children and women are more exposed to the risk of domestic violence (End Violence against Children, 2020). Research shows that homicides increase in several countries during periods of severe restraint (Ingala Smith, 2020). However, it does not seem possible to distinguish whether the increase in domestic violence and homicide is a real increase or an increase due to media attention. It is also important to note that violent incidents are a very small percentage of actual incidents (Bradbury-Jones & Isham, 2020). Previous experience shows that spousal violence and sexual violence can increase during major disasters and crises (New Zealand Family Violence Clearinghouse [NZFVC], 2020). Domestic violence in Australia has been found to increase by 5% and searches for help with domestic violence in Google searches have increased by 75% (Kagi, 2020; Poate, 2020). Reports show that domestic violence has increased significantly in America, China, Italy, France, Spain and Brazil (Campbell, 2020). Domestic violence has increased especially after natural disasters. The rapid increase in stress, changes in daily routines, controlling behaviors, unemployment, and decreased social support are cited as risk factors for the increase in domestic violence (Zahran et al., 2009). During the pandemic COVID -19, family members spent more time together, which caused previously repressed issues to surface and trigger family conflict. In addition, the stressful environment created by the pandemic may have led to the emergence of these problems in the family by triggering them.

Participants of the study stated that they had experienced feelings of frustration. Due to traumatic and stressful experiences, individuals may experience frustration, hurt, and disappointment (Mooney, 2007). The pandemic process is a period of intense restrictions. The study data were collected in the first week of April when there was a severe restriction. Especially, supplying only essential needs, closure of universities, the transition to online education, and a decrease in social activities and interaction may increase the feelings of possible frustration in individuals.

People are exposed to various physical and mental stimuli during their lives. These stimuli can, of course, affect the individual's adaptation. Individuals also often struggle to cope and relax with these difficult events (Werden, 2002). During the COVID -19 pandemic, individuals used various coping strategies to reduce the stress caused by the outbreak. Those affected indicated that they primarily engaged in physical activity, exercise, speech therapy, virtual support groups, and religious and spiritual practices (Shechter, 2020). One study showed that participants used various coping strategies to reduce the stress caused by the onset of the disease, such as reading and writing, interacting with people on the Internet, TV -watching movies, playing video games, cooking, paying attention to hygiene and cleaning, talking on the phone, exercising and meditating, eating more, and drinking more alcohol (Asmundson et al., 2020). Coping represents behavioral, cognitive, and emotional efforts to cope with stressful situations (Lazarus, 1999; Folkman & Lazarus, 1984; Terry, 1994). In the study, people were found to use different coping methods to reduce the emotional impact of COVID -19. Life events, especially outbursts such as COVID -19, can often be stressful. Individuals develop different responses to cope with stressful situations. In order to reduce the stress caused by COVID -19, participants will access various coping strategies with an emotional, cognitive, and behavioral focus.

As a result of the measures and restrictions imposed COVID -19 , individuals have more time for themselves and their families. Participants indicated that the pandemic process helped them to become aware of some positive (importance of humanity/nature, family and health) and negative (mental exhaustion, boredom) situations. Consciousness, as a concept associated with 'awareness', is generally associated with human beings (especially those who are psychologically developed and mature) (Appelbaum, 1973). Psychological Mindedness broadly encompasses awareness and understanding of psychological processes such as thoughts, emotions, and behaviors. Some definitions of psychological consciousness focus on self-awareness. Consciousness encompasses an individual's thoughts, feelings, and behaviors toward themselves and their environment (Beitel, Ferrer & Cecero, 2005). Since the pandemic, the too much uncertainty and restrictions imposed have caused various negative feelings, thoughts, and behaviors. People find more time to think about certain situations (family, health, environment, etc.) that individuals hardly care about in their daily routine.

During crises and disasters, the media plays a crucial role in informing the public. Social media is a very effective tool to influence people's perceptions (Eisenman et al., 2007; Rossmann et al., 2018). They provide an opportunity to quickly disseminate information to both experts and the general public (Ophir, 2018). In a study conducted with physicians and medical students, 61% of participants reported learning about COVID -19 through social media (Malecki et al., 2020). According to a study conducted in China, the use of social media and TV increased during the outbreak and they were the main sources of information. However, some individuals indicated that they did not want to hear negative news about the coronavirus. WHO uses the COVID -19 infodemic to define the spread of information about the virus, and this step was a good attempt to help spread accurate information about the virus and reduce the spread of panic (Hua & Shaw, 2020). Participants in this study indicated that most of the information they received through social media, TV, and other means of communication remained negative in their minds. In line with the current findings, it can be said that measures should be taken to properly inform people and reduce the panic situation during this type of outbreak.

The last finding is that people had different expectations from mental health professionals. Seeking help and support from professional (formal resource) or non-professional (informal resource) people to get rid of problems they cannot cope with. The ability of individuals to seek professional help when needed plays an important role in improving their mental health (Husaini et al., 1994). Health emergencies in the community can affect the health, safety and welfare of both the individual and the community. The outbreak of COVID -19 has alarming effects on the health, emotional and social functioning of individuals and communities (Pfefferbaum & North, 2020). Most people are quite resilient and do not succumb to psychopathology during sudden natural disasters and crises. However, some may develop psychopathology when exposed to life-threatening situations such as natural disasters, technological accidents, weapons of mass destruction, or viral infections (APA, 2013). Considering that most COVID -19 cases involve health workers with little or no mental health training, assessment and intervention for psychosocial problems in such settings are imperative (Pfefferbaum et al., 2012). It can be said that during the outbreak affecting the entire society, people have been severely affected psychologically and their expectations from mental health professionals have increased as a natural consequence.

5. Strength, Limitation, Implications and Future Research

This study provides some important insights into the psychological problems faced by university students during the pandemic, their strategies for coping with these problems, and their expectations of mental health professionals in this process. On the other hand, the results of this study may not be applicable to all university students in Turkey due to the methodology used. In this sense, it is recommended that more comprehensive quantitative and mixed methods studies be conducted for mental health professionals in order to develop more effective intervention strategies, especially in such epidemics that affect society. For example, some researchers (Tanhan et al., 2021; Doyumğaç et al, 2021) have recently used the 'Online Photovoice (OPV) method', an effective and rich research method that reaches diverse participants and achieves meaningful and significant results by reducing the amount of researcher and participant time (Tanhan & Strack, 2020) to understand the psychological impact of COVID -19. Therefore, we strongly recommend that future researchers use innovative qualitative research methods such as OPV to investigate the same or similar topics compared to traditional quantitative methods, as OPV allows participants to express their own experiences with as little manipulation as possible. Finally, mental health professionals are expected to address the religious, spiritual, and social aspects of people in addition to the issues that require direct psychotherapeutic intervention. Therefore, in such crises where existential goals tend to be challenged, they should not hesitate to use the individual's religious/spiritual/social values for their well-being. These can even be discussed in a therapeutic setting if clients are willing to bring such issues there. In summary, we recommend that they continue to develop as culturally attentive professionals in these areas.

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Logistic Regression Approach in Classifying the Effectiveness of Online Education

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ABSTRACT

The developments and changes that have accompanied the Covid 19 pandemic have affected the educational world and all sectors. Educational institutions around the world have implemented emergency and online educational practises to ensure continuity of education as opposed to the planned distance education activities that were implemented for continuity of education. Due to the Covid 19 pandemic, face-to-face classes have been held in universities across the world for about a year in many disciplines through various platforms. In this process, determining the effectiveness of distance education practises in universities for students is critical for programmes to achieve their goals. This study aims to highlight the variables and effects that influence university students' decisions regarding the efficiency of online instruction. To this end, 821 university students were surveyed. Their willingness and attachment to online education, socioeconomic level, and gender were tested using logit regression analysis to build a model that predicts university students' decision about the efficiency of online education. Age, gender, high school graduation, willingness to Online Education, and attachment to Online Education are among the variables in the logit regression model that significantly predict university students' decision about whether they consider online education to be efficient or not. When analysing the result of classifying students whether they consider online education efficient or not using the logit regression model, 291 of the 409 students in the group who consider education efficient were classified correctly and 118 of them were classified inaccurately, with the rate of correct classification being 71.1%.

Keywords:
Logistic Regression, Educational Efficiency, Readiness to Online Education, Connectedness in Online Education

1. Introduction

Education is one of the most critical components in the center of the world. The developments and changes experienced affect every field as well as the education world. The Covid-19 pandemic, which the world has been grappling with for more than a year, and its impact have led to changes and new formations in education. While all the countries had to adapt to this new formation, they were also involved with their new ideas designed and put into practice. As a matter of course, the realities experienced by students, who are the most important actors in the education world, and their efforts to adapt to the process should not be denied.

Covid-19 case, which was seen in Wuhan, China, for the first time in the world in December 2019, spread from wholesale food markets in Wuhan and affected the whole world in a short time (WHO, 2020). Most educational institutions worldwide cancelled face-to-face education in March 2020 and switched to distance

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learning and teaching to contain the spread of Covid-19 (Di Pietro et al., 2020). With the closure of schools worldwide, more than 1 billion students faced the risk of being deprived of education. Therefore, countries have initiated distance education programs. With the closure of schools in approximately 188 countries as of April 2020, alternative ways of providing continuing education have been sought, primarily via technologies such as the internet, television, and radio (UNICEF, 2020a). With the Covid-19 pandemic, the education system was determined to be vulnerable to potential threats, and the introduction of online emergency distance learning applications as a response to the global education crisis came into question (Bozkurt & Sharma, 2020). Due to the ineffectiveness of traditional methods in the Covid 19 process, schools and universities worldwide have adopted online courses and practices as an alternative means of continuing education (Adnan & Anwar, 2020).

Concepts of social and physical distance require individuals to stay away from each other and stay home to prevent the virus from spreading. Hence, face-to-face learning activities in schools and classrooms have been replaced by an online learning system (Girik Allo, 2020). Online learning is a type of learning that provides education in line with electronic technologies and is carried out through courses and specific programs. It is an increasingly widespread learning environment inspiring world societies. It makes education flexible and possible for everyone to participate in education with potential opportunities. In this way, it prevents time and space limitations (Salamat et al., 2018). Besides, with the Covid-19 pandemic, alternative teaching methods have started to be considered worldwide. Thus, web-based learning, e-learning, or online learning have become quite popular. The use of desktop and laptop computers or smartphones and internet access has become the essential components of online learning methods. The fact that it has mainly become prevalent among students worldwide indicates that online learning will continue to be relevant in the upcoming years (Radha et al., 2020).

In the Covid-19 period, it is also a crucial issue how ready students and society are for online learning, which has gained more place in our lives with inexperienced new applications. Readiness to online learning affects efficiency, as well. Chung, Subramaniam, and Christ Dass (2020) revealed in their research with university students in Malaysia that students were either less or moderately ready for online learning and stated that because of internet connection problems and their inability to understand the course contents led to problems. Similarly, Mohallik and Suparno Sahoo (2020) in their research with trainee teachers continuing their education at college found that trainee teachers were willing to learn via digital devices and had financial support to access online learning; however, they had problems with power supply and internet connection. They concluded that inadequate internet access has negative effects on online learning. Li and Lalani (2020) expressed in their research that students without reliable internet access or technology had difficulty participating in digital learning, and that this gap existed both between countries and between different income groups within countries. While 95% of students in Switzerland, Norway and Austria have a computer they can use for schoolwork, this rate is only 34% in Indonesia, according to the OECD (Organization for Economic Co-Operation and Development). Dikbaş Torun (2020) stated in her research that students' willingness to use applications in online learning is a crucial factor. She also stated that knowing students' readiness levels and their direct and indirect effects would provide a planning guide for decision makers and practitioners of online programs for better learning and students' success in online learning. Moreover, she emphasized that the impact of students' readiness levels for online learning on their learning progress, outcomes, and academic achievement is also very important to achieve the main goals of education and online learning.

With Covid-19, students' getting used to using computers and the internet also demonstrates that they have adopted online learning compared to traditional face-to-face learning. Starting as a necessity, the online learning model has spread worldwide, and countries have started to include online learning methods in their programs. Students' engagement in online learning varies in line with the time they spend in online learning environments. Junco (2011) expresses learning engagement as students' time and effort in creating learning outcomes. Ergün and Koçak Usluel (2015) stated that it was necessary to ensure student engagement in online learning environments so students not to get bored with the environment, participate effectively in the environment, and achieve the desired learning outcomes. Brownlee (2020) stated that at the beginning of the pandemic in the United States of America (the USA), some institutions had the necessary technological infrastructure to provide online courses to students, making participation in the course easier.

However, he underlined the importance of developing steady program strategies as the same conditions were not valid in all institutions. Fleming (2021) drew attention to the digital divide in online learning. He stated that parents' lack of skills or time to help students use online platforms and troubleshoot when necessary also significantly affected them. He pointed out that problems experienced by students studying in disadvantaged regions while using online platforms caused students to participate less in lessons.

Individuals' readiness and connectedness to online learning have gained more place in our lives, especially with the pandemic. Together with this, it is also necessary to examine the effect of online learning on educational efficiency. Singh, Rylander, and Mims (2012) mentioned the impact of online learning on educational efficiency in their research and stated that online learning was more effective than offline learning in terms of academic efficiency. Nguyen (2015) emphasized in his study that students' individual characteristics, teaching style, material use, assessment approaches, learning styles, and learning skills were influential on the effectiveness of online education. Margolis and Fisher (2002) stated in their research that online learning environments were gender-neutral, and everyone had equal access rights. Gunn et al., (2003) expressed that despite women's predispositions and their success in using technology, online learning could have the same asymmetric gender and power dynamics as traditional face-to-face learning environments, and male students could exhibit dominant behaviors. Rivera (2016) underlined that socioeconomic status and family income positively or negatively impacted learning, whether in a face-to-face or online environment. UNICEF (2020b) data also demonstrate inequalities in access to quality and qualified education between the rich and poor and students in urban and rural areas, based on their ability to access Internet and T.V. platforms. Aucejo et al., (2020) stated in their research during the pandemic process that children of low-income families faced more excellent health and economic shocks than their wealthier peers.

The covid-19 pandemic, which entered our lives in December 2019 and affected many fields, including education, paved the way for new ideas and formations to occur. Educational practices, carried out face to face in classrooms, have been conducted on different platforms worldwide for about a year. The concept of online learning has become the talk of the town and is accepted by all. Not only students but also families have gained new experiences in the process. Technological equipment, internet infrastructure services and ownership of technological devices are the critical factors for online learning process. It is quite apparent that the economic implications of the pandemic cannot be ignored. The importance of online learning has increased with Covid-19, which changes every individual's learning style from pre-school to higher education.

Along with online learning, the concepts of readiness and connectedness in online learning are also fundamental. Economic conditions, family and social structure characteristics are among the factors affecting the readiness of learners. Besides today's educational understanding, where high-level thinking skills are tried to be sharpened, the inclusion of the pandemic in our lives has affected our capacity of education and, in particular, the capacity of online education. In the last year, it has been seen in more detail that readiness, which's present impact on even face-to-face education is great, has even a greater impact on online education. Regardless of the level of learning, it is clear that readiness affects learning and the efficiency received from education. In the online learning process, which entered our lives more with the pandemic, students' connectedness to online learning also greatly affected the efficiency of education. Students' enthusiasm for online learning, attendance status, and connectedness to the online education process have become integral components of online education. Technological infrastructure support, having the necessary environment and opportunities, and the attitude developed towards the process of getting involved in online learning are very effective in the progress of the process.

For this reason, the concepts of online readiness and online connectedness have become important concepts that take place in distance education practices carried out together with the pandemic. Along with the social structure, the socio-economic status of families and their having the necessary equipment play a significant role in the effectiveness of online learning. Since the research conducted varies based on gender and students' grade, at the point of efficiency obtained from online education, it was regarded necessary to study different variables with this research. In particular, the perspectives and experiences of university students who are in the last stage of pre-profession and about to complete their education regarding online learning are crucial.

This research aims to reveal the variables affecting university students' decisions about the efficiency of online education. In line with this purpose, an answer to the following question will be sought: "Do university students' readiness to online education, their connectedness in online education, socio-economic levels, grades, and gender predict their decisions of finding online education efficient or not?"

2. Methodology

2.1.Research Model

The study is correlational research because the research aims to reveal the variables affecting university students' decisions about the efficiency of online education. Correlational research involves measuring two or more variables and examining their correlation without any variable manipulation. (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2008).

2.2. Research Sample

The study group of the research consists of 821 university students. The students' average age is 21, and 619 of them are females while 202 are males. These students participated in the study from 12 different universities in Turkey. One hundred fifteen participants are freshman, 279 sophomores, 268 junior, and 159 senior students. Data were collected voluntarily within the framework of the criterion of the participants being university students.

2.3. Data Collection Tools and Procedure

In the study, Online Learning Readiness Scale, Online Student Connectedness Survey, and demographic information form were used, and the students were asked whether they found the online education conducted by their universities efficient or not. The independent variables in this study are as follows: university students' readiness to online education, their connectedness in online education, socio-economic levels, grades, and gender. The dependent (predicted, criteria) variable is the efficiency of online education.

The Online Learning Readiness Scale was developed by Hung et al. (2010) and adapted to Turkish by Yurdugül and Sırakaya (2013). The scale, including the sub-dimensions of computer/internet self-efficacy, self-directed learning, learner control, motivation for learning, and online communication self-efficacy, comprises a total of 18 items. It is a 5-point Likert type scale, responded as “1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.” The internal consistency coefficient of the Turkish form of the scale was found to be 0.85. When examining the Cronbach's alpha values of the sub-dimensions of the scale, computer/internet self-efficacy is 0.92, self-directed learning is 0.84, learner control is 0.85, motivation for learning is 0.80, and online communication self-efficacy is 0.91. Also, confirmatory factor analysis of the scale was conducted. As a result of the confirmatory factor analysis, there is no item with factor load values below 0.30. Hence, no item was excluded from the scale. Accordingly, when the confirmatory factor analysis results are taken into account, the fit values of the scale are as follows: RMSEA=0,085; CMIN/DF (X2/sd)=3,850; GFI=,935; CFI=,947; NFI=,915, and in the light of this result, it was observed that the fit values of the model were at acceptable levels.

Online Student Connectedness Survey, prepared by Bolliger and İnan (2012), was used to measure the online student connectedness levels of students studying online. It is a 5-point Likert type scale, responded as “1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.” The scale, which the researchers organized as 25 items in its final form, consists of four factors regarding the level of student connectedness. These are "Comfort", "Community", "Facilitation" and "Interaction and Collaboration". Five items in the "Interaction and Collaboration" factor were created by making small changes on the factor items developed by Walker and Fraser (2005) (as cited in Bolliger & İnan, 2012). High scores to be obtained from scale factors indicate that relevant factor level is observed at a high level in students. Cronbach's alpha values of the sub-dimensions of the scale are as follows: 0.97 for comfort, 0.96 for the community, 0.94 for facilitation, and 0.97 for interaction and collaboration. The total internal consistency coefficient of the scale was found to be 0.98.

In the demographic information form prepared by the researchers, there are questions regarding the student's grade, university and department, gender, socio-economic status, and whether they find online education efficient.

2.4. Data Analysis

Demographic information form, The Online Learning Readiness Scale, and Online Student Connectedness Survey were uploaded online and delivered to university students via social media. University students were asked to respond voluntarily to the scale forms, which were structured and shared through online Forms.

"Binary Logistic Regression Analysis" was used to determine whether university students' readiness to online education, their connectedness in online education, socio-economic levels, and gender predict their decisions to find online education efficient or not. Binary variables are referred to as "Bernoulli variables" (Tabachnick & Fidel, 1996) with only two possible responses, such as "yes/no, dead/alive, true/false, negative/positive." The dependent variable in logistic regression is binary; it has a value of "1(θ) in the likelihood of success" and a value of "0(1- θ) in the likelihood of failure."

"The binary logistic regression model" is given by:

$$P(Y_j = 1) = \frac{e^{\beta_0+\beta_1 X_{j1}+\ldots+\beta_k X_{jk}}}{1+e^{\beta_0+\beta_1 X_{j1}+\ldots+\beta_k X_{jk}}}$$

"P (Yj =1) j." refers to the probability of the unit being in or selecting the first category. Before beginning the logit regression analysis, the mentioned assumptions were tested: absence of multicollinearity, linearity, predictive variables standard errors, VIF values, tolerance, error independence, the number of participants in multivariate statistical outliers and categories. Following that, using logit regression analysis in SPSS® statistical software, the regression model developed to estimate whether or not university students find online education efficient was analyzed.

3. Findings

Basic logistic information, including all variables predicting whether or not to find online education efficient such as university students' readiness to online education, their connectedness in online education, socio-economic levels, grades, and genders, are presented in Table 1.

Table 1. *Case Processing Summary*

Unweighted Cases		N	%
Selected Cases	Included in Analysis	821	100,0
	Missing Cases	0	,0
	Total	821	100,0
Unselected Cases		0	,0
Total		821	100,0

Table 1 shows, there are no missing data concerning cases to be analysed in the developed regression model to estimate whether university students find online education effective or not. "Omnibus Tests of Model Coefficients" based on the "traditional chi-square method" were used to test the coefficients' significance in the logit regression model developed (Table 2).

Table 2. *Omnibus Tests of Model Coefficients*

		Chi-square	df	Sig.
Step 1	Step	245,936	9	,000
	Block	245,936	9	,000
	Model	245,936	9	,000

Table 2 shows that the logit regression model coefficients used to predict whether university students find online education efficient or not are significantly meaningful for a significance level of 0,01. Additionally, the model was created using the "enter method," which is a procedure in which all variables are entered in a single step and the x^2 values of "step," "block," and "model" are all equal.

Furthermore, to determine the coefficients' statistical significance, the "Hosmer and Lemeshow Test" was used to ensure that the regression model was compatible with the data. The H0 hypothesis, in this test, is the statement: "The developed model accurately represents the data." H1 hypothesis, on the contrary, is the statement: "The developed model does not accurately represent the data."

Table 3. *Hosmer and Lemeshow Test*

Step	Chi-square	df	Sig.
1	12,408	8	,134

When Table 3 is examined, the logit regression model developed at the significance level of 0,01 accurately represents the data. Otherwise, "at the level of significance of 0,01, there is no difference between the values estimated by the model and the values observed." Finally, Table 4 provides summary information about the model.

Table 4. *Model Summary*

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	892,200	,259	,345

The value of "-2 Log-Likelihood" in Table 4 indicates how strong the model's decisions can be. This value is as close to zero as possible, indicating that the model is a better fit. The "Cox & Snell R^2" value is interpreted in the same way that "R^2" is in Linear Regression statistics. According to "Cox & Snell R^2" value (see Table 4), the predictor variables explained 25.9% variation by model in the decision of whether students find online education effective or not. The "Cox & Snell R^2" value never takes the value "1," making interpretation difficult. The "Nagelkerke R^2" statistic was designed to take values between "0" and "1" for the "Cox & Snell R^2" statistic. According to the "Nagelkerke R^2" value in Table 4, the predictor variables explained 34.5% variation by model in the decision of whether students find online education effective or not.

Table 5 presents the analysis results on the estimation of their decisions of whether students found online education effective or not, using the binary logit regression model, the properties of which were reported in the preceding paragraphs.

Tablo 5. *Classification Table*

Observed		Predicted		
		Online Education is Efficient	Online Education is not Efficient	Percentage Correct
Step 1	Online Education is Efficient	291	118	71,1
	Online Education is not Efficient	114	298	72,3
	Overall Percentage			71,7

Examining Table 5, the logistic regression model developed accurately predicts whether students found online education effective or not, with an accuracy rate of 71,7%. Furthermore, the binary logistic regression model classified correctly 71,1% of those who found online education efficient. The classification accuracy of students who did not find online education efficient is relatively higher than the prediction accuracy of those who did find it efficient. The binary logistic regression model classified correctly 72,3% of the students who did not find online education efficient.

With respect to the binary logit regression model developed to estimate university students' decisions about whether or not they find online education efficient, Table 6 shows the coefficients of the independent

variables in the regression model, the standard errors of the coefficients, "Wald Statistics," the significance values, and the exponentiated coefficients ((Exp (B)), Odds Rates) to reveal their statistical significance in terms of the amount of variance affecting the dependent (response) variable.

Table 6. *Variables in the Equation*

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	SES(0=High SES)			3.530	2	.171	
	SES(1=Low SES	-.191	.301	.400	1	.527	.826
	SES(2=Moderate SES)	-.486	.321	2.293	1	.130	.615
	Age	-.131	.036	12.859	1	.000	.877
	Gender (0=Male, 1=Female)	-.427	.194	4.869	1	.027	.652
	OLRStotal	-.031	.010	10.227	1	.001	.969
	OSCStotal	-.055	.006	78.595	1	.000	.947
	Grade (0=4.Grade)			17.587	3	.001	
	Grade(1=1.Grade)	-.574	.305	3.542	1	.060	.563
	Grade(2=2.Grade)	-1.019	.246	17.156	1	.000	.361
	Grade(3=3.Grade)	-.533	.238	5.038	1	.025	.587
	Constant	9.844	1.120	77.288	1	.000	18842.019

In Table 6, the value of “Beta (B)” represents the relevant independent variable's (predictor) coefficient in the established logistic equation. For instance, a one-unit increase in "Connectedness in Online Education" will cause a decrease of "0.55" in the logarithm of the likelihood ratio, provided that other independent variables remain constant. The “Wald Statistic”, which is similar to the t-test in linear regression, is used to determine the significance of coefficients. The “t values” square is equal to the “Wald Statistics,” which examines the statistical significance of the term of constant and predictor variable coefficients. As shown in Table 6, the coefficients of some independent variables are not significantly meaningful at the 0.05 significance level. The “Sig” column displays the statistically significant levels of “Wald Statistics.” The Beta (B) values are indicated as the original coefficients. The Beta (B) values’ sign (“positive or negative”) represents the relationship direction. A coefficient with a positive sign raises the estimated likelihood, whereas a coefficient with a negative sign lowers it. On the other hand, negative values indicate that the probability (odds) value is lower than 1.0 and the odds value is lower than .50. Original coefficients of logit regression are convenient for determining the relationship directions; although, they are less beneficial for deciding the size of the relationship (Allison, 2001).

Table 6 shows the Beta(B) exponential coefficients values as Exp(B). The exponentiation of the B coefficient is an odds ratio fort he predictors. These values represent the logarithm of the original coefficients. An exponential coefficient value greater than 1,00 demonstrates a “positive relationship”, while a coefficient value below 1,00 represents a “negative relationship”. That means the following is how Exp(B) values are commented: If Exp(B) value is above 1.00, the likelihood ratio for the event’s accuring increases as the predictor variable increases.

On the contrary, if Exp(B) value is less than 1,00, the event's likelihood decreases as the predictor variable increases. The greatness of the change in the probability value is indicated by exponential coefficients, which provide a percentage representation of the variation in the response (dependent) variable “[(Exponential Coefficient-1).100].” Accordingly, as can be seen, that one (1) unit increase in the “Connectedness in Online Education” variable causes a 5.3% [(0.947-1).100] decrease in the odds of not finding education efficient; because the category coded as 1 is the category of finding inefficient. It is seen that one (1) unit increase in the “age” variable causes a 12.3% [(0.877-1).100] decrease in the odds of not finding education efficient. Alternatively, in other words, a one-unit increase in “Connectedness in Online Education,” on the condition that all independent variables are constant, will cause the likelihood of not finding education efficient to decrease by “0.947”. Furthermore, the “Exp(B)” values are shown in Table 6 for each level of the categorical predictor variables indicate how many times they will raise or lower the probability ratio of being in that classification. For instance, female students' likelihood of not finding their education efficient is 0.652 times less than male students.

Given the preceding explanations, it is probable to conclude that the attributes variables added in the regression model to predict university students' decisions about whether online education is efficient or not

are “Readiness to Online Education” and “Connectedness in Online Education,” “Age,” “Gender,” and “Grade.”

4. Conclusion and Discussion

When analyzing the result of classifying the students who thought the online instruction was efficient or not with the binary logit regression model, 291 of the 409 students in the group who thought the instruction was efficient were classified correctly and 118 of them were classified incorrectly, with the rate of correct classification being 71.1%. Of the 412 students who perceived the online instruction to be inefficient, 298 were classified accurately, 114 were classified inaccurately, and the accurate classification rate was 72.3%. The overall accurate classification rate for the planned model is 71.7%.When examining "students' readiness level for online education", one of the predictors of university students' decision whether to consider online education efficient or not, it is found that one (1) unit increase in the variable "readiness to Online Education" leads to a 3.1% [(0.969-1),100] decrease in the probability of not considering education efficient. Horzum, Demir Kaymak and Guengoeren (2015) in their research found that the level of students' readiness affects their motivation and thus has a positive impact on the efficiency of education. Kayaoğlu and Dağ Akbaş (2016) in their research found that students' motivation for online learning helps them to adapt to learning. Wang, Zhu, Chen, and Yan (2009) emphasised that readiness for online learning has a significant impact on students' performance. Similarly, Tuntirojanawong (2013) in her study found that students' readiness is related to the concepts of access to technology, motivation, and time and influences students' learning styles and desires.Similarly, when examining the "degree of students' connectedness to online education", which is one of the predictors of whether students perceive online education as efficient or not. It is found that one (1) unit increase in the variable "connectedness in Online Education" leads to a 5.3% [(0.947-1).100] decrease in the probability of not perceiving education as efficient. Erguen and Koçak Usluel (2015) stated that it is crucial for students to effectively engage in online learning environments without getting bored in the learning environment and to ensure students' connectedness in order to achieve the desired learning outcomes. In the studies conducted by Topal (2020) and Zareie and Navimipour (2016), it was found that connectedness and learning motivation was crucial to ensure learner satisfaction and create a meaningful impact. Cronhjort, Filipsson, and Weurlander (2017) also mentioned the effect of connectedness on learning power in their research and emphasized that choosing different practices in the learning environment would increase the success rate. Sadera, Robertson, Song, and Midon (2009) determined in their research that students' online connectedness positively affected their perceived success.

One (1) unit increase in the "age variable," which is one of the predictors of the decision of university students to find online education efficient or not, leads to a 12.3% [(0.877-1).100] decrease in the odds of not finding education efficient. Chyung (2007) determined that older students found education more efficient than younger students and participated more in discussions during the lesson. In their research, Gaumer Erickson and Noonan (2010) determined that adults over a certain age increasingly preferred online education methods. Li and Lalani (2020) stated that a structured framework was needed to increase online learning effectiveness so that significantly younger children could fully benefit from online learning.

When examining gender, one of the categorical predictors’ variables of university students' decisions to find online education efficient or not, the probability ratio of female students not finding online education efficient is 0.652 times less than that of male students. Tsay, Kofinasb, and Luo (2018) found out in their research that female students participated in online learning activities more than male ones. In the research of Wilson and Allen (2011), the results indicated that female students participated in online education more than male students. In the research of Wagner, Garippo, and Lovaas (2011), it was revealed that males did not perform as effectively as female students in online lessons.

When grade levels are taken into account, the likelihood of not finding online education efficient is 0.361 times fewer for sophomores and 0.587 times fewer for junior students than senior students. At this point, the fact that students completing most of their education face to face till the senior year go through with the last year of their university life away from their social environment can be interpreted as influential on their decisions about the efficiency of online education.

Finally, the variable of socio-economic level, which is one of the categorical predictors of university students' decisions about whether they find online education efficient or not, was not found to significantly affect

students' decisions about online efficiency. Although it has been underlined that socio-economic status has a positive or negative effect on face-to-face or online learning (Rivera, 2016), it does not significantly affect decisions about the efficiency of education. In interpreting this situation, it should be taken into account that the students who participated in the research belonged to the group that continued with online education regardless of their socioeconomic status; in other words, they belonged to the group that did not stay away from online education because of their socioeconomic status. In terms of future research, it is considered important to reach students who have limited or no access to online education due to the low socioeconomic level of their families.When the results of the study were examined as a whole, it was concluded that among the variables included in the binary logistic regression model that accounts for university students' decisions about whether or not to consider online instruction effective, age, gender, grade, readiness for online instruction, and connectedness to online instruction significantly predicted students' decisions. Considering these variables, it is found that, especially in order of importance, connectedness with Online Education and willingness to Online Education have a significant impact on students' decision whether they find online education efficient or not. Therefore, practises to increase students' sense of community in areas such as "comfort", "community", "facilitation", and "interaction and collaboration", which are sub-dimensions of online connectedness, as well as encouraging interaction among students by instructors, providing regular feedback, and increasing interaction and collaboration will help change students' decisions regarding the effectiveness of education.Determining the skills required for distance learning at the university to increase student readiness, conducting special studies for students who consider themselves incompetent in the use of the Internet and computers so that they can improve in subjects in which they consider themselves deficient, and using incentive methods to increase participation in these studies will, in turn, help change students' decisions about the effectiveness of education. Future research is considered useful to examine the reciprocal effects in relation to instructors and students by examining instructors' willingness to learn online and their attachment to online education.

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The COVID-19 Pandemic: The Experiences of Children Aged 11-14 Years in Turkey

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ABSTRACT

To prevent the spread of COVID-19, many countries imposed curfews, suspended classes, and switched to distance learning applications. In line with these developments, this study explored the daily life experiences, thoughts and feelings, support needs, and metaphors about staying home during this time of children aged 11-14 years in Turkey. The phenomenological method, one of the qualitative research designs, was used in the study. Categories and themes were formed from the data obtained through interviews with a total of 14 children, eight male and six female, from different cities in Turkey using an online application during April and May 2020. The themes formed from the children's statements were "daily life experience during the Corona period", "thoughts and feelings about staying home", "support needs" and "metaphors about the pandemic process". Children indicated academic and leisure activities for their daily life on Corona days. They indicated that they felt it was necessary to stay home, but feelings such as longing, anxiety, and fear were intense, and some of the children needed emotional, academic, and economic support. In assessing their metaphors, the categories of space, animal, property, and situation, and these metaphors the children emphasized staying at home involuntarily, protection from the illness, and sedentary life.

Keywords:
children, COVID-19, staying home, curfews, Turkey

1. Introduction

Threatening human health and the world economy on a global scale, the global pandemic COVID-19 may develop feelings of intense fear, panic, and depression in individuals. It is a serious threat affecting individuals' behavior (Jiao et al., 2020). The effects of COVID-19 on children are not different from its effects on adults. In their study conducted with children aged 3-18 at the beginning of COVID-19, Jiao et al. (2020) reported that children showed reactions such as fear of asking questions about the pandemic, clinging to their caregivers, diverting attention, and irritability. Fear of asking questions about the pandemic and fear of something happening to their loved ones may lead to a decrease in sleep quality, separation anxiety, physical discomfort, and agitation (Jiao et al., 2020). Separation from caregivers due to COVID-19 may cause various concerns such as separation anxiety and feelings such as deep sadness. For these reasons, monitoring the psychological state of children is important in this context (Liu et al.2020). Even if the people who care for them are with them, uncertainty during the pandemic and the fear of what will happen to them can lead to behavioral consequences such as severe anger (Dalton et al., 2020).

The local studies put forth that Turkish children also experience some difficulties. Especially in curfew period, children express the need for mental health support (Kaplan, Kürümlüoğlugil, & Bütün, 2021). Although Turkish children' fear of COVID-19 is found under the average scores, children with a higher level of fear of

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COVID-19 have a higher level of social anxiety (Şıngır, Ayvaz, & Tonga, 2021). Other studies also reveal that children experience loneliness (Bulucu Büyüksoy, Özdil, & Çatıker, 2021), anger, sleeping problems (Bulucu Büyüksoy, Özdil, & Çatıker, 2021; İlbasmış et al., 2021; Öztürk et al., 2021) and anxiety (İlbasmış et al., 2021). Having relatives infected by COVID-19 affects children' level of psychological resilience and hope adversely (Söner & Gültekin, 2021).

Ferguson et al. (2020) argued that school and college closures could also be among the preventive measures taken in addition to the those taken to reduce the rate of the spread of pandemic among population during COVID -19 (isolation of suspected cases at home, domestic quarantine of those living in the same house with suspected cases, and social distancing of the elderly and others at risk of becoming seriously ill from the pandemic). Considering that the World Health Organization recommends at least 60 minutes of physical activity per day for children aged 5-17 years, closing schools during COVID-19 and isolating children at home put them at risk for possible future physical illness and may negatively impact their mental well-being (Editorial, 2020; Ferguson et al., 2020).

In the early adolescence period, which includes the 11-14 age period, peer relationships increase, and emotional, intellectual, and behavioral exchanges gain importance for the child's development. Independence from the parents and time spent with peers affect identity formation (Bee & Boyd, 2009; Santrock, 2010). Based on this, it is believed that these developmental experiences of children in early adolescence who spend the COVID-19 pandemic at home may differ. In this context, this study aimed to examine what children (11-14 years old) experience when staying home on corona days. Exploring what children experience at home with their family members or other contexts they deal with when they do not go to school during the pandemic will shed light on future studies on their feelings, thoughts, and psychological situations.

1.1.Developments about Children During the Pandemic in Turkey

The first case of COVID-19 in Turkey was reported on March 10, 2020. On March 16, 2020, the Presidency of the Republic of Turkish announced the closure of elementary, middle, and high schools and universities (Presidency of the Republic of Turkey, 2020a). To reduce the spread of COVID-19, the use of masks in public places became mandatory, and intercity travel was banned in 31 cities. A curfew was imposed for citizens under 20 and over 65 on April 3, 2020 (Presidency of the Republic of Turkey, 2020b).

The decision to relax restrictions for citizens under 20 and over 65 for certain periods on a given day of the week was announced on May 4, 2020 (Presidency of the Republic of Turkey, 2020c). Furthermore, it was announced that the normalization process has started and the measures taken were lifted as of June 1 (Official Gazette of the Presidency of the Republic of Turkey, 2020). However, it was decided that the activities of educational institutions (except day care centers) would not start until August. Distance education processes were started through EBA TV (Education Informatic Network) in August, but the opening of the schools was gradual. For certain grades, school operations began on certain days of the week on September 21, 2020, but, it was announced that the schools that were closed on 16 November would continue their instruction via distance learning from November 23 (MoNE, 2020a).

1.2.Purpose of the Present Study

This study aimed to explore what children aged 11-14 years experience staying home on corona days due to the COVID-19 pandemic. The answers to the following questions were sought:

- How do children aged 11-14 years spend their days during the COVID-19 Pandemic?
- What are the feelings and thoughts of children aged 11-14 years during the COVID-19 Pandemic?
- What kind of support is needed for children aged 11-14 years during the COVID-19 Pandemic?
- What are the metaphors children aged 11-14 years produced regarding the COVID-19 Pandemic process?

2. Methodology

To examine the experiences of children aged 11-14 years during corona days, this study employed the phenomenological method, one of the qualitative research designs. Creswell (2018) stated that this method integrates and describes how the phenomenon, which is the subject of the study, is experienced by the

participants. He emphasized that the results may be valuable to therapists, teachers, healthcare professionals, and politicians.

2.1.Research Sample

Participants were selected using widely-used convenience sampling, one of the purposive sampling methods (Creswell, 2018). The participants were aged between 11-14 years old. A total of 14 children, eight boys and six girls, were interviewed. Eight of the 14 participants lived in the major cities (Bursa, Istanbul, Mersin, Samsun). All of the participants were middle school students. Six of the participants were in 6th grade, three were in 7th grade, and five were in 8th grade. Table 1 provides information about the gender, age, grade level, and cities where participants lived.

Table 1. *Information on Participants' Gender, Age, Grade Level, and the Cities They Lived in*

Participant number	Gender	Age	Grade	City
P 1	Male	14	8	Çorum
P 2	Male	12	6	Bursa
P 3	Male	14	8	Siirt
P 4	Female	12	6	Amasya
P 5	Female	14	8	Osmaniye
P 6	Female	12	7	Amasya
P 7	Female	11	6	Mersin
P 8	Female	12	6	Samsun
P 9	Male	11	6	İstanbul
P 10	Male	14	8	Amasya
P 11	Male	13	7	Bursa
P 12	Female	14	8	Samsun
P 13	Male	12	6	İstanbul
P 14	Male	12	7	Hakkari

Note: *Istanbul, Bursa, Samsun, and Mersin are among the metropolitan cities in Turkey. Amasya, Çorum, Hakkari and Siirt are non-metropolitan cities. Metropolitan cities in Turkey have a population of over 750,000. Non-metropolitan cities have a population of less than 750,000.*

2.2. Data Collection Tools and Procedure

The researchers used a semi-structured interview form to determine children's experiences. In addition to demographic information, this form included four study questions developed to examine participants' daily lives during the pandemic period, their family relationships, their feelings and thoughts about the pandemic, and metaphors about the pandemic period.

First, the Ethics committee approval of the study was obtained. Informed consent of the participants and their parents were also obtained before the interviews. Then, the researchers conducted the interviews using the participants' cell phones via video calls over WhatsApp during April and May, 2020. During these interviews, voice recordings of the interviews were taken, and then these voice recordings were written down by the researchers. Afterwards, they were developed to be used in the data analysis process. The duration of the interviews varied between 25-30 minutes on average.

2.3. Data Analysis

Content analysis was used in the study to analyze the views of the participating children. In line with Creswell's (2018) recommendations first, key phrases were listed, and then meaning clusters were formed by using these phrases. Meaning clusters are merged together to form the subcategories. In this context, themes, categories, and subcategories were developed using the data obtained from children's views. After this process, the researchers shared their findings with a field expert to ensure the reliability of the present study. In addition, to increase the external validity of the study, quotes from children are presented in each category.

2.4. Ethics Commitee Approval

Ethical Committee Approval is required by applying to Amasya University Social Sciences Ethical Committee in the present study. Ethical Commitee Approval's information are presented below:

- Date of decision: 25.12.2020
- The number of the approval document: E-30640013-108.01-

3. Findings

After examining the results, four themes were formed, namely "daily life experience during the during the COVID-19 pandemic", "thoughts and feelings regarding staying home during the COVID-19 pandemic", "support needs during the COVID-19 pandemic", and "metaphors about the COVID-19 pandemic". Each theme and its subcategories are explained below.

3.1.Daily Life Experiences During the COVID-19 Pandemic

The categories formed for a daily life experience during the COVID-19 pandemic were "academic activities" and "leisure activities".

Academic Activities: All of the children expressed views on academic activities in their daily life experience during the corona process. Most of the children talked about "online course follow-up" and "individual study" regarding the academic activities, whereas some of them told that they individually followed the lectures on TV and one participant said that she did her homework with her parents. The lessons watched on television were EBA broadcasts made by the Ministry of National Education (MoNE). Some example statements about these are presented below.

> *P13: "My friends watch EBA, I watch EBA's replays or we are doing the Morpa campus thing. Since accessing EBA is a little difficult, our teachers did something like that to us. … I enter the class. Our class starts at 10:30 in the morning. We have face-to-face lessons with the teachers as a class; the lessons take a little longer."*

> *P1: "I get up in the morning, well … I watch a little TV, then I get up, I start studying, I get up, I play on the phone because there is nothing to do at home, then I sit down again, I solve tests, it gets dark, I watch a movie."*

Leisure Activities: Regarding leisure time activities, all of the students said they spend their time individually. In addition, most of them spend time with their parents and siblings, whereas a small part of them spend time with their grandparents and friends.

Based on the participants' experiences regarding individual leisure time, it was revealed that students had more experience with watching TV or movies, reading books, spending time on computers and phones.

> *P5: "… I already wake up late in the morning, like 12 o'clock, then I spend time on the phone or computer for about an hour, then I study and read for 2-3 hours, then we usually eat and watch TV or something. It passes like this … "*

> *P 11: "… Well, I play with the phone after studying, I tidy my room, for example, then I play with the phone a little bit more, then I start my lessons again, then I get to the computer or something at home … I watch some videos from there, then I do my lessons again ..."*

> *P8: "… I mean, I study, when I take a break I spend time on the phone. Well, I have a book, I'm trying to finish it … hmmm, it's a science fiction book. Our teacher gave us homework, we have to finish it. Yes, it is a normal book, I love reading books, especially science fiction interests me."*

Participants mentioned the following leisure activities only once: going out to the yard, reading the Qur'an, painting, watching research videos, resting, making dessert, tidying up his/her room, playing ball, listening to music, and learning how to cook.

> *P13: "These days are actually open for stuff, hmmm open for scientific research. We can research these things more, I usually watch channels such as "Barış Özcan" or I research. I research from universal sources. The time passes lively like this … Well, I try to learn a lot during the days when I stay home, I constantly check things, I try to learn how to cook and so on."*

> *P6: "I try to learn a lot during the days I stay home, I constantly check things, try to learn how to cook, and so on."*

P3: "Sir, I get up at 1 o'clock. I study from 1 to 4, and from 4 to 5 prep school teachers teach online. After that, I read one Quran chapter. Then, I break my fast, and I study until sahur time late into the night."

Half of the children who talked about leisure time activities spent with their mother mentioned chatting and cooking together. A few of them played board games and watched movies together. One child talked about role-playing and online games.

P1:"We sit, we talk, we cook or something with my mother …"

P9: "… together with my mother we make dessertst and such, we cook, we play games and such… "

Similar activities were also revealed in the time spent with the fathers.

P11:" … hmmm what else? … We play ball with my father on the balcony. He goes in goal, I shoot … "

P13:" We watch a lot of movies with my father, we always watch movies. We look at things together, we read. We look at stuff on social media. We spend more, I mean, effective time with my father …"

P11 talked about playing games with both parents as follows: *"We play online games with my parents …"*

P12:" … We usually sit together with the people at home after breaking up the fast … I mean, we usually prefer to sit down and watch a movie, but we sometimes chat, too …"

P10: "Hmmm, watching movies, board games, and similar activities … No, I mean, we do every activity as a family. "

A participant who spend time with her mother but emphasizes the workload on her mother expressed her feelings and thoughts as follows:

P13: "… My mom works a lot at home. I mean the housework. I don't know how to explain but she tries to help a lot with our schoolwork, too because we are two kids at home and they think we have a lot of time and teachers give a lot of homework … That's why this is a bit difficult time for my mom. That's why we can't do much with my mother. But if we do, I usually have a lot of fun solving tests with my mother, she always teaches me something, we have a lot of fun with my mother while solving tests, and then, as I said, we watch movies. Our most effective activity is watching movies. Then we chat about the movie…"

Similarly, there were participants who stated that they could not spend time with their father from time to time because of his workload.

P8: "I don't spend much time with my dad, so I mean, I don't know, I don't spend much time with him, but I can go to chat with him when I get bored. Since he usually has his students, he has to do live classes and such … "

Leisure activities spent with siblings include watching movies, chatting, playing computer games, and riddle games. I few of them watched videos and played with toys together. One child talked about cooking together, and another about reading a book. Another child played hide and seek, whereas another played football.

P4: There are intelligence games at home, sometimes we play them with my brother …

P7: We usually sit with my sister, watch TV with her … We sit down and watch TV in the same way with my brother, together.

P5: I help my sister when she makes cake, cookies or something in the evenings, then sometimes we watch TV series with my sister …

P14: … (in the garden) We play football, only football …

P9: We play online games with my sister on the phone or play with our toys. We play hide-and-seek (at home) or something …

Regarding the leisure time activities spent with grandparents, a child mentioned chatting and watching TV.

P2: … With my grandmother. Hmmm, I chat with her while she is cleaning. Then with my grandfather, he tells me his memories while we are watching TV together. Memories of his childhood. That's it.

Regarding the leisure time activities spent with friends, some of the children mentioned chatting over the phone. One child talked about playing online games and another talked about playing football.

> *P12: … Hmmm, I have a group of friends. We sometimes talk on the Zoom … We are in different schools, I mean, we were at the same schools last year, so we have familiar friends or something, so it's not bad, we generally talk about school or something …*

> *P13: … We do a group chat and she comes with her tablet. We found a drawing game together, we guess what we draw, we play it all together, we become a pretty crowded group, we are 5-6 people or something. My brother also comes to join us, we have fun. We watch TV series …*

3.2. Thoughts and Feelings Regarding Staying Home during the COVID-19 Pandemic

Statements about the "feeling' and "thought'" categories regarding staying home during the Covid-19 pandemic are presented below.

Thoughts: Under the thought category, a small portion of the children "thought that it is a problem-free process", a few of them stated that "it is a process requiring obligation". One participant said, "it is an advantage for himself but it is boring for others", whereas another said, "there is more time to rest". Sample views on children's thoughts are presented below.

P3, who considered staying home as an advantage for himself but boring for others, said, "For our age, for my age, it is an advantage for the LGS (high-school entrance exam in Turkey), but others may get bored at home. It's a bit bad for them". P4 believed staying home was a trouble-free time and said, "Actually, staying home is not that unusual in my opinion. We were usually. So, it was not very difficult, but of course I also miss being outside …". P8 said, "I mean, staying at home, hmmm, I mean, everyone has to stay at home. I even get upset when I see some people not staying at home. Of course, everyone has to stay at home to stop this disease. Well, I think that's normal, I am someone who does not go out much in my normal daily life. Of course, people want to oxygenate, they want to go out, they want to walk around, but staying home does not bother me too much, it does not feel too strange …"

Feelings: According to children's views, all of the children felt longing, fear, and anxiety during this pandemic process. Most of them had the feeling of relaxation, and some of them were bored. Furthermore, a few of them experienced sadness.

The children talked about the feeling of longing in terms of longing for friends, other family members, school and teachers, and extra-curricular activities.

> *P11: I miss my friends. I miss my distant relatives … I miss playing games… Calling my friends home and playing here on the phone or tablet, watching movies. For example, last year or something, we always went to each other's house during Ramadan and broke our fast together, now we have corona and we can't do it …*

> *P7: I miss my friends very much. I miss my friends the most anyway. My sister has not been coming to our house for a long time, I miss her.*

> *P13: I missed riding my bike, I noticed that. I saw a bike down while I was looking from above … I felt that longing … going out with my friends is one of the things that I miss the most, it's even in number one … I usually go to shopping malls when I go out. Actually, I always go to shopping malls. It's even more enjoyable when I go with my friends, and we do more activities together…When these days are over, I want to go to the theatre, I want to go to the cinema.*

Regarding the feeling of fear, children mostly talked about their worries about their own health or the health of their loved ones. In addition, there were concerns about the interruption in their academic achievement and social relationships.

> *P7: Yeah, I am actually that I will get it, too myself because if I get it myself, it will infect everyone. For example, I have baby nieces and nephews. If they are infected, it will be bad. For instance, we will not be at home as we are now … Everybody will be in a closed place for 14-20 days, and nobody will be able to see them. I am very afraid of this. God forbid if my mother has corona, for example, I will never be able to see her. I'm very attached to my mother and father. I mean, I love them so much …*

P6: … The postponement of LGS …and the virus harming Turkey a lot.

P8, on the other hand, shared her fear that her relationship with her friends would weaken. She said, "When I cannot talk to my friends too much, I fear that our social relationship will weaken …"

Regarding the feeling of relaxation, the participants generally mentioned that engaging in academic and leisure activities relaxed them.

P10: "I can spare more time for myself, it really makes me happy and besides that, I spend more time with my family than before".

P4: "I mean, not much, but there are online lessons as you know. That is a little good. It made me happy because I can see my teachers from there. I can't see my friends or anything, but I can hear their voices and I understand the lessons the teachers teach better from there…"

3.3.Support Needs During the COVID-19 Pandemic

Some of the participants stated that they did not need any support during the Covid-19 pandemic process. On the other hand, some of the children stated that they "needed emotional support" during this process, and a few stated that they "needed academic support". While one child "needed financial support", another "needed support to learn a hobby".

Some of the participants stated that their families met all their needs. Therefore, they did not need support. *P10: No, I mean, whatever I need is getting done …*

Sharing that his father needs economic help, P2 said, *"My father is upset and I am sorry that my father is upset. If their job was reopened, if they could work bearing in mind social distancing …"*

Regarding the emotional support that can be provided for people staying home, P11 said, *"Hmmm, a kind of support for people to stay home all the time. Staying home… "*. In his previous statements, the same participant emphazised the importance of staying home and said, *"… I think the best way is to stay home. Otherwise, it would have spread more, the deaths would be even more. Then, the country would be in a very difficult situation. Everyone is separated from their relatives and loved ones, but this is the best because the corona would have killed. That's why it's best to stay home."*

In addition, some of the children emphasized the support they could have gotten from their families.

P4: … Umm, I could have gotten support from my friends or mom or dad. Hmm, I don't know, they can help me pass the time, comfort me ...

P7: During this period, I definitely would have liked to get support from my family first because if I don't tell them anything, if I don't tell them I'm afraid, my psychology will be messed up after all. My parents are also afraid. She says what would happen if my psychology gets messed up. She says if you feel bad, come and say to me. Yeah, that's it. I would have liked to get support from my family.

Regarding her desire to meet and spend time with her relatives because she had been longing for them, P1 said, "… I just wish my sisters (cousins) were here …" (crying). P8 stated that she needed emotional and academic support, and said, *"I mean, I don't know, because I want to talk to my friends more, I don't know, I wish there was a person who could replace my friends. I don't quite understand my classes; it would be good support for me if there is someone to teach. I don't know; this support would be better, I don't understand my lessons anymore."*

Furthermore, regarding the academic support he needed, P1 stated, *"I need something, a private teacher … I am getting private math lessons; I am getting it now. I need in Turkish republic history, and I can't do much in English …"*

Stating that he could not do his hobby due to the pandemic, P13 said, *"To be able to improve my cartoon stuff and to do animation. I want to get support for these. Because I draw a lot of cartoons and I love to draw cartoons. One day I enrolled in an animation course and I was going to start animating my cartoons. Everything was done, then they quarantined a few people, but at that time it was only a few… The next week the course was closed, then the school was closed, then the ban was imposed and I couldn't do anything so I would like to get support in animation …"*

3.4.Metaphors about the COVID-19 Pandemic

According to the children's' statements, their metaphor categories about the COVID-19 pandemic process were the categories of animal, place, object, and situation.

Animal: Some of the children compared the COVID-19 pandemic process they went through to an animal. These categories were then divided into sub-categories, namely sloth, pet, turtle, and parrot.

Comparing the process to a turtle who takes shelter in its shell to avoid damage, P11 said "*You know, turtles take shelter in their shells to avoid damage, just like that … They stay inside their shells to avoid harm from outside. Well … we stay home to avoid the corona effect."* P1 expressed the restriction of his movement area with the following sentences: *"Ma'am, I feel like a lazy animal … I mean, I have been home for so long that I am too lazy to go from the living room to the salon."* P13 compared the process to the imprisonment of a parrot and said, *"Hmmm … Parrot. The animal I can compare most right now is a parrot because it is such a free animal for me. After all, in our country and in others they are confined for commercial purposes, and their freedom of movement is severely restricted, but they are not as tightly confined as a budgie. Of course, because people know their condition, they allow them out of their cages. It is just like this situation. The worst thing a parrot could ever have in her life is similar to the worst thing we go through now."* Comparing the process to pets, P5 said, *"Actually, I compare this thing, I mean staying home, to pets. Like a cat, a dog. More like a cat. After all, we adopt them, then they stay home and can't go out in any way. Well, we are always at home right now and we can't do anything. Actually, I understand them better now."*

Place: Some of the children compared this process to places such as cages, prisons, and hospitals. Among them, cage was the most used metaphor.

> *P4: "For example, while birds are normally free, people put them in cages like they are microbes. So, it's like they're imprisoned in the house. I mean, while flying freely in nature, people put them in a cage. I think, just like the microbe put us home …".*
>
> *P8: "I mean, it made me very happy to come home from school, for example when we went to school, but since we are always at home, we couldn't go out too much, so the house is a cage now. It feels like it is a place where we should always stay inside and never communicate with the outside … "*

Comparing this process to a prison, P3 reported the following view, *"… so we are like in prison … I mean, it's boring. We can't spend time outside and we get bored at home …"*

> *P2, on the other hand, states that staying at home is important to protect people against the disease in this process and said, "Home? It isn't a prison but something else … I mean … I feel it as a safe space where we can be protected, I can think of home as a healthy space. So we would die if we went out, but if we stayed at home, we would be healthy. It could be a hospital …"*

Object: Few of the participants compared this process to an object and gave a kitchen cabinet, table, and household items as examples. P7 talked about people not getting out just like kitchen items do not get out the kitchen cabinet. P7 explained, "If I were to compare it, I would definitely compare it to a kitchen cabinet. I'm sorry I compared it to a kitchen cabinet but there is a lot of stuff in the cabinet and those things don't get out much. I would definitely compare it to a kitchen cabinet." P12 pointed out the similarity of household objects being stuck in the house: "I think that's a very normal thing for all objects … because they are stuck in the house, they are not alive either, but they are all in the same situation."

Situation: P9 defined staying at home during the pandemic process *as "… restriction of freedoms for a certain time, restriction of everything desired (crying) …"* Based on her affective mood, it was seen that P9 was quite unhappy about this situation and expressed longing feelings for her.

4. Conclusion and Discussion

The COVID-19 pandemic significantly affected all societies and all age groups and caused changes in their lives. Daily life has become quite different with many measures such as house confinement, curfew, suspension of work for employees or working at home, and suspension of schools (Wang, et.al, 2020). In this study, children's experiences aged 11-14 years regarding changes in their daily lives were examined.

In line with the study findings, the themes of "daily life experience during the during the COVID-19 pandemic", "thoughts and feelings regarding staying home during the COVID-19 pandemic", "support needs during the COVID-19 pandemic" and "metaphors about the COVID-19 pandemic" were formed. For the theme of "daily life experience during the COVID-19 pandemic", the categories of academic activities and leisure activities were formed. According to the academic activities category statements, the children spend most of their time participating in online lessons and watching lessons on TV. Most countries closed their educational institutions due to the spread of COVID-19, and approximately 1.5 billion students have been away from schools during this process (UNESCO, 2021). In Turkey, television broadcasts in distance education (TRT-EBA) was one of the most important tools used at the beginning of the epidemic. However, with the progress of the pandemic, the lessons bağan to be actively carried out via http://www.eba.gov.tr (MoNE, 2020b).

While very few of the children stated that they follow their lessons only from the TV, some of them said they participate in online lessons. Almost all children used technology as an important tool to access information. Apart from the lessons, most of the children reported that they study additionally. The fact that only about half of the children participating in the interview reported having participated in online education may be a result of the restart of the systematic introduction of online education, as it was a work in progress at the beginning of the pandemic period, and it may be an indicator of the profound inequality of opportunity in education caused by access to technology during the period COVID-19 (Anderson, 2020; Arık, 2020).

According to the leisure activities category statements, children stated that they mostly spend their time with technology such as watching television, watching movies, and using computers and phones. Some of the children also emphasized watching TV and playing online games with their father or siblings.

In this context, it can be interpreted that children in the early adolescence period spend most of their time using online networks and technology during the pandemic process. Similar to the present study's findings, literature revealed that children connect with their peers and teachers via social media applications, cell phones, computer applications and games instead of face-to-face interaction and communication (Bhamani et al., 2020; Dunton et al. 2020).

In this study, some children engaged in activities such as cooking, baking dessert, and chatting at home with their mothers, some engaged in activities such as playing board games, watching TV with all family members and a small proportion of them played hide and seek and football at home. Other studies have found that children engaged in activities similar to those in the present study during the pandemic COVID-19 (Dunton et al., 2000; Farantika et al., 2020).

Engaging in activities like cooking and chatting with their mother suggest that children develop new routines to spend more quality time with their families. Farantika et al. (2020) stated that parents' planning "fun, effective and creative" activities at home is related to their desire to spend more time at home and more meaningful time with their children, as children cannot perform physical and social activities outside during the pandemic process. Wang et al. (2020) stated that parents are the best and closest sources of support for children during the curfews. In cases such as the pandemic period, when parents and children are together at home, it is recommended to organize activities with the family tp support the parent-child relationship and the development of the child (WHO, 2019).

In this study, some of the children also expressed activities such as painting, tidying up their room, reading the Qur'an (religious ritual), and going out to the yard. On the other hand, regarding their leisure activities with their friends, some children spent time chatting over the phone, whereas one child played online games and another played football. In this context, it can be said that the need to have close relationships and share with friends (Bee & Boyd, 2009) is partially fulfilled by technology in terms of emotional-social development witnessed during pre-adolescence.

When asked about their feelings and thoughts about the COVID-19 pandemic process, only a few children expressed their opinions. A few of the children "thought that it is a problem-free process", and a few of them stated that "it is a process requiring obligation". One participant said, "it is an advantage for himself but it is boring for others", whereas another said, "there is more time to rest". Some stated that they did not have any difficulty particularly because they did not normally spend too much time outside of school. However,

regarding children's feelings about the COVID-19 pandemic, all of the children felt a longing, fear, and anxiety. Most of them had the feeling of relaxation, and some of them were bored. Moreover, some of them have felt sadness. Among the feelings of fear and anxiety, the fear that something might happen to them and their loved ones was prominent. One of the children stated that she worried if she would be as close to her friends as she used to be. According to the researchers, children experience fear and anxiety during the COVID-19 pandemic due to contagion, disappointment, and change in daily routine (de Figueiredo et al., 2021). Similar to the findings of the present study, researchers have found that children are afraid that something will happen to them or their relatives and social isolation continues in this process (de Miranda et al., 2020; Filipova et al., 2020).

Regarding the feeling of longing, this study put forth that most of the children had a longing for activities such as spending time with their friends, playing games, and cycling. Some of them missed their family members and teachers they could not meet. Filipova et al. (2020) conducted interviews with children aged 10-16 years. The participants in their study stated that their daily routines were always the same/monotonous at home during the COVID-19 pandemic, they could not go out and were bored because they could not do physical activities as before. In this study, most of the children stated that they experienced a sense of relaxation and that participating in academic and leisure activities, in general, relaxed them. Some of the children explained these activities by sharing the activities they did at home with their families. Similarly, Idoiaga et al. (2020) expressed that children's emotional interactions with their parents at home and their social sharing such as playing games together contributed to children experiencing feelings such as relaxation and happiness during the pandemic process.

When asked about the support they need, some of the participating children stated that they did not have any needs because their families met all their needs. In addition, a few of them expressed their emotional support needs and mentioned that people staying home during this process was an important need. They also talked about the need to spend time at home and consolation, express their fears to their family, the need to see relatives and the need for friendship. During the period of COVID-19, it was emphasized that especially children and young people might feel uncertainty, anxiety, boredom, grief, and isolation and that the emotional support of their parents is especially important to cope with such feelings (Gambin et al., 2020; Idoiaga et al., 2020). Furthermore, raising awareness of children and young people about the pandemic process by their parents in the light of accurate information is another important factor (WHO, 2019).

Academic support is another important theme that was highlighted by two of the children. According to the statements on this topic, the children indicated that they had difficulty understanding the lessons. Especially in the early months of the pandemic period, the unprepared transition to distance learning caused difficulties for both students and teachers. It was observed that there were some problems related to teaching. In examining the problems faced by teachers during distance education, Arslan and Şumuer (2020) found that many factors negatively affected teaching, such as equipment problems, lack of interaction with peer and the difficulty in participating in class, as well as the influence of other people in the environment in which the child is located.

In this study, one participant pointed out the need for economic support. During the period COVID-19, global unemployment gradually increased and working poverty among the employed also gradually increased (ILO, 2020). Based on these statements, it is believed that this need expressed by a participant will continue to increase in the near future. It is inevitable that this will lead to negative economic and psychological impacts on both working or unemployed people and their families (Mimoun et al., 2020).

According to the participants' metaphors regarding staying home during the period COVID-19, the metaphors were focused on the category of space. Some children in particular compared this process to living in a cage. In addition to the metaphors related to space, such as being in a cage and prison, metaphors such as being like a domesticated parrot and cat and the restriction of freedoms also explained a common need and emphasized the staying at home involuntarily due to COVID-19. In addition to metaphors about space such as the hospital, the turtle metaphor can also be considered a metaphor that emphasizes the need for protection. The metaphors about objects emphasize limited actions and inactions during this time. These metaphors produced by the children provide a general framework for their experiences during this process. Being unexpectedly and unwantedly forced to stay home has significant effects on the physical, mental, social, and psychological

developmental domains of adolescents ages of 11-14. According to studies, the pandemic COVID-19 is expressed by people with metaphors such as the invisible enemy, the invisible danger, or the mystery (Aykutalp & Karakurt, 2020).

5. Recommendations

The present study was conducted in Turkey in the first months of the pandemic COVID-19 and includes a limited number of experiences obtained from the interviews with children in early adolescence. Since the process of COVID-19 pandemic is believed to be a long-term process and experiences vary between countries in this process, the study is limited in this regard. As this study examined the experiences of children aged 11-14 years in the first few months of the first wave, a repeating the study during the second wave when the pandemic is much more advanced will reveal different experiences.

In addition, although the sample size for qualitative studies is not very large, the number of samples can be increased in future studies. The experiences of people living in cities or metropolitan areas can be studied in more detail.

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Predictiveness of Covid-19 Anxiety and Emotion Regulation on Sleep Quality: The Moderator Effect of Gender

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ABSTRACT

Prior research indicates that anxiety and emotion regulation are related to sleep quality. This study extends the body of research by investigating how people in different gender groups are affected by the coronavirus disease 2019 (Covid-19) anxiety and emotion regulation in terms of sleep quality. The present study examined gender as a potential moderating variable on the associations of Covid-19 anxiety and emotion regulation with sleep quality. University students were recruited via e-mail to participate in a brief online survey. Data were collected using the Pittsburgh Sleep Quality Index, Fear of COVID-19, and Emotion Management Skills Scale. The current study used SPSS PROCESS, an SPSS macro developed by Hayes. Results indicated that Covid-19 anxiety was related to poor sleep quality and emotion regulation was related to good sleep quality. Gender was a significant moderator for the relationship between Covid-19 anxiety and sleep quality, but not emotion regulation and sleep quality. The female gender presented a positive association between Covid-19 anxiety and poor sleep quality in comparison to the male gender. The relationship between emotion regulation and good sleep quality was found to be significant and positive for both genders. In the pandemic, Covid-19 anxiety should be reduced and people should have skills to manage their emotions. Otherwise, they will experience serious sleep problems.

Keywords:
Sleep quality, Covid-19 anxiety, emotion regulation.

1. Introduction

Coronavirus disease 2019 (Covid-19) is an acute respiratory illness (Paules et al., 2020), which has been plaguing the world since December 2019. As of July 14, 2020, a total of 12,964,809 Covid-19 cases have been confirmed with 570,288 deaths; Covid-19 cases were reported in 216 countries (WHO, 2020a). Thus, WHO declared the Covid-19 as a Public Health Emergency of International Concern and as a pandemic (WHO, 2020b).

There is still no effective treatment available against this virus, which causes serious respiratory diseases and even death (Majedi & Majedi, 2020). For this reason, the most important struggle with the virus is trying to prevent it from spreading. Since the most common way of transmission is being in close contact with other people, many countries have developed policies to prevent large gatherings of people. However, these policies have started to adversely affect mental health. As a matter of fact, it has been observed that people adopt unhealthy behaviors as a means of preventing the disease. For example, in Turkey, a man (aged 45) drank ethyl alcohol and disinfectant in order to protect himself against the new type of coronavirus, but he later died in the hospital (NTV, 2020). In France, a doctor committed suicide after their coronavirus test came back positive (Haberturk, 2020). Many serious cases like these and studies show that people are experiencing severe Covid-19 anxiety (Bigalke et al., 2020). Anxiety disorders are the most common class of mental disorders (Kessler et al., 2005). Several studies show that mental health problems occurred during the severe

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acute respiratory syndrome epidemic (McAlonan et al., 2007) and the Middle East respiratory syndrome (Lee et al., 2018) as well. Post-epidemic studies investigated that average citizens also had psychological symptoms such as anxiety, depression, shame, stigma, and grief (International Medical Corps [IMC], 2014; Kamara et al., 2017). Based on the above research evidence and news, we speculate that the psychological condition of the public may also be affected during the Covid-19 outbreak.

It is inevitable that Covid-19 anxiety would cause many negative situations in individuals' lives. It is already clear that there are many physical, psychological, and behavioral problems related to anxiety (Rajeswari & SanjeevaReddy, 2020). Anxiety is one of the most common psychological disorders and creates a great burden both on the affected ones and the society (Mann et al., 2012). One of these problems is sleep disturbance. Indeed 60%–70% of patients with anxiety complain of initiating and maintaining sleep (Sutton, 2014). According to a meta-analysis study involving 177 studies, psychiatric patients with anxiety disorders experience significantly reduced total sleep time, sleep efficiency, and prolonged sleep delay (Kyle et al., 2014). Since the positive association between anxiety and poor sleep quality is clear (Adams & Kisler, 2013), we have reasons to speculate that Covid-19 anxiety is positively related to sleep disorders.

H1. Covid-19 anxiety is a positive predictor of poor sleep quality.

The quality of sleep can be affected not only by anxiety but by all negative emotions in general. However, the sleep of those who can functionally manage these negative emotions may not be affected much by this situation (O'Leary et al., 2017). Emotion regulation is a process that enables us to adjust the intensity, timing, and way of experiencing emotions and expressing them (Gross, 1998). People cannot control stress factors at all times, but effective emotion regulation strategies help control stress's impact on sleep. Racine et al. (2013) found that women who sleep less or more than an average of 6–8 hours of sleep duration have reduced emotion regulation capacity. Tavernier and Willoughby (2015) found that emotional regulation is associated with sleep problems in a longitudinal study of university students. Briefly, the relationship between emotion regulation and sleep quality has been shown in both adults (Mauss et al., 2013), adolescents (Baum et al., 2014), and children 7–17 years old (Vriend et al., 2013).

H2. Emotion regulation is a negative predictor of poor sleep quality.

It is stated in studies that both anxiety and the ability to manage emotions differ in terms of gender. Although women are generally more successful in managing emotions, it is stated that the difference varies according to the subject (Goubet & Chrysikou, 2019). On the contrary, there is also a study showing that women fail to use appropriate strategies for emotion regulation (Lafrance et al., 2014). In addition, it has been observed that men use the suppression method whereas women use the reappraisal method more intensely for emotion regulation (Spaapen et al., 2014). Consequently, considering the research results, managing emotions differs according to gender.

It is noteworthy that there is a difference in anxiety in terms of gender as in emotion regulation. Females are more vulnerable to stress and pain than males, so they might experience greater sadness and anxiety (Chaplin et al., 2008). Prevalence rates of anxiety were higher in women than men for each anxiety disorder, including panic disorder, generalized anxiety disorder, and post-traumatic stress disorder (PTSD) (McLean et al., 2011). University students—especially female students—significantly suffered more from stress and anxiety (Bayram & Bilgel, 2008; Mahmoud et al., 2012). Moreover, some researchers observed a higher prevalence rate of depression among female students (Liu et al., 2019; Tung et al., 2018). However, other researchers insisted that male students were more likely to experience depressive disorders than female students (Al-Qaisy, 2011). Since female and male students are affected by anxiety in different ways, we can speculate that the relationship between Covid-19 anxiety and sleep quality is moderated by gender.

H3. The relationship of Covid-19 anxiety and emotion regulation with sleep quality is moderated by gender.

Figure 1 depicts the full research model of the relationship between Covid-19 anxiety and emotion regulation and sleep quality moderated by gender, respectively.

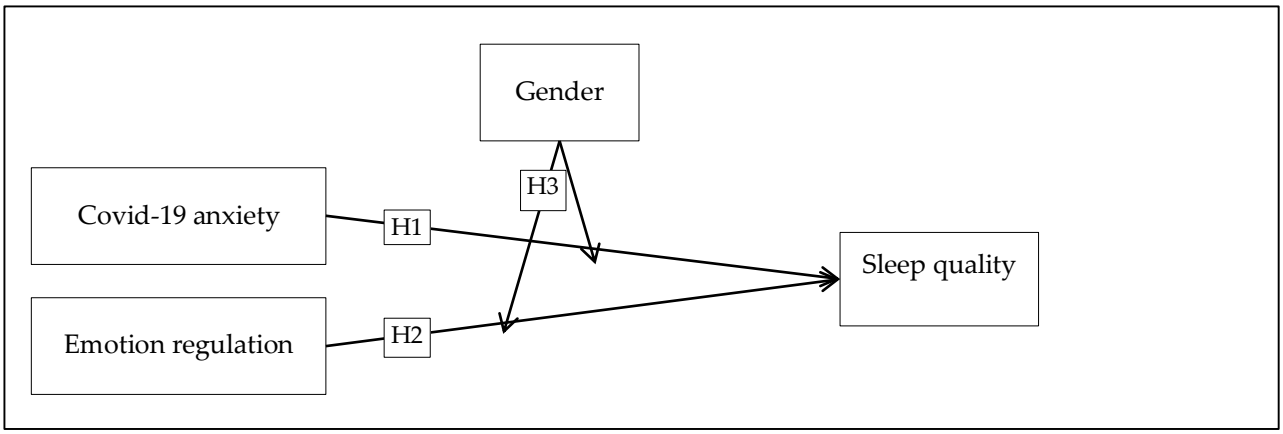

Figure 1. *Research Model of the Relationship between Variables*

1.1. Importance of the Study

When the literature was examined for the purpose of this study, it was observed that there are studies showing the relationship of sleep problems with emotion regulation (Pickett et al., 2016) and anxiety (Dixon et al., 2018). There are also studies showing that emotion management skills (Masumoto et al., 2016) and anxiety levels (Gregory et al., 2011) differ according to gender. However, we could not find any study showing how the relationship of sleep problems with Covid-19 anxiety and emotion management differs in terms of gender. This study is expected to provide an explanation for this gap in the literature. Based on these data, the priorities for helping women and men who have Covid-19 anxiety and insufficient ability to manage emotions will be determined. As a result, the findings of this study are expected to offer new ideas for both researchers and practitioners.

2. Methodology

2.1. Research Model

The purpose of this study is to analyze the predictive role of Covid-19 and emotion regulation on sleep quality and the moderator role of gender in this relationship. This study was designed according to predictive correlational design, which is a quantitative method. The purpose of a predictive correlational design is to identify variables that will predict an outcome. In this form of research, the investigator identifies one or more predictor variables and a criterion (outcome) variable (Creswell, 2012).

2.2. Research Sample

One hundred and forty-two university students, who are studying at seven different undergraduate degree programs, completed the survey. Among them, 81% (N = 116) were female. Participants were asked about their biological sex; however, biological sex and gender roles overlap to a large extent in Turkey. Participants' mean age is 20.77 (SD = 2.44). All participants—except two—lived with their families during the pandemic lockdown process. The convenience sampling method was used in the selection of research participants, the convenience sampling method was used in the selection of research participants, which often helps in selecting participants who are readily and easily available. Convenience sampling tends to be a favored sampling technique as it is inexpensive and an easy option compared to other sampling techniques (Taherdoost, 2016). The prepared online form was sent to the volunteer academicians, who also shared the link to the online research form with the student groups who attended their classes.

2.3. Data Collection Tools

2.3.1. Sleep Quality: The Turkish version of the Pittsburgh Sleep Quality Index (PSQI - PUKI in Turkish) scale was used to assess the subject's sleep quality over the last month (Ağargün, Kara & Anlar, 1996). The clinical and clinimetric features of PSQI were evaluated over a 12-month period with healthy, depressed, and sleep-disordered patients. The clinical and clinimetric properties of PSQI indicate that it can be used both in clinical practice and in psychiatric research. The PSQI scale contains seven components (subjective sleep quality, sleep duration, sleep latency, habitual sleep efficiency, use of sleep medications, sleep disturbance, and daytime dysfunction), and the score for each component ranges from 0 to 3 points. The

global PSQI score ranges from 0 to 21, with higher scores indicating more severe sleep disorder (Buysse et al., 1989). The Turkish version of PSQI has been demonstrated to be reliable (α=.77) and valid, and a global PSQI score greater than 5 points indicates poor sleep quality.

2.3.2. Covid-19 Anxiety: We used Turkish version of Fear of COVID-19 scale to assess subject's anxiety symptoms (Satıcı et al., 2020). The scale developed by Ahorsu et al. (2020) is a unidimensional seven-item, five-point Likert scale. Turkish version has an acceptable reliability (α=.77) and validity value. The increase in the score obtained from the scale shows that the fear of COVID-19 of the individual also increases. The reliability coefficient in this study sample was calculated as .84.

2.3.3. Emotion regulation: The Emotion Management Skills Scale developed by Çeçen (2006) was used. The scale consists of 28 items, eight of which are positive and 20 of which are negative and five sub-dimensions. While scoring the scale, negative items are scored by inverting. The scores that can be obtained from the scale are between 28 and 140. According to the reliability analysis, α (Cronbach Alpha) coefficient was found as .78. The increase in the score obtained from the scale shows that the emotion management skills of the individual also increase. The reliability coefficient in this study sample was calculated as .74.

2.4. Data Collection Procedure and Analysis

The data collection booklet containing the form created to determine demographic features of participants and the measurement tools was created by the researcher. Before participants responded to the paper questionnaire, we asked them to fill out a consent form explaining the purpose of the survey, right of participants to refuse or withdraw, and guarantees of voluntary participation and anonymity. The data collection booklet was converted to an online survey form. The faculty members randomly sent this question list to students. The survey took an average of 20 min to complete.

To test the hypothetical model of this study, we identified descriptive statistics, conducted correlation analysis using SPSS Process 3.5 (Hayes, 2018), and then used the bootstrapping method to estimate the harmonization effects of this model. After repeating the boot processes 5000 times, we reported a significant moderator effect when the 95% confidence interval excludes zero. We estimated the relationship of Covid-19 anxiety and emotion regulation with sleep quality, and then we determined whether gender moderates these relationships.

3. Findings

Prior to testing the hypotheses descriptive statistics of participants' Covid-19 anxiety levels, emotion regulation, and sleep disturbance were calculated. Means, standard deviations (SD), skewness–kurtosis, and correlations between study variables are included in Table 1.

Table 1. *Descriptive Statistics and Correlations for All Variables*

	Poor sleep quality	Covid-19[a] anxiety	Emotion regulation
1. Poor sleep quality	-	-	-
2. Covid-19[a] anxiety	.22**	-	-
3. Emotion regulation.	−.30**	−.11	-
Mean	7.07	15.98	90.87
SD[b]	3.93	5.46	12.28
Skewness	.85	.39	−.50
Kurtosis	.80	−.37	.41

**p ≤ 0.01; [a]coronavirus disease 2019; [b]standard deviation

As seen in Table 1, poor sleep quality, which is the dependent variable of the study, is significantly related to the independent variable Covid-19 anxiety and the ability to manage emotions. Besides, skewness and kurtosis values of the data are between −1, +1, and it seems to have a normal distribution (Tabachnick & Fidell, 2013), which shows that it is suitable for performing parametric tests. In addition, it was observed that the dependent variable was related to the independent variables and there was no high level of correlation between the independent variables. This finding means that the data are suitable for structural equation model (SEM) analysis.

In line with the first and second hypotheses of the study, linear regression analysis was performed to determine whether Covid-19 anxiety and emotion regulation were significant predictors of poor sleep quality. Because independent variables were not significantly correlated, it was not necessary to test for the existence of multicollinearity. Results of the regression analyses are presented in Table 2.

Table 2. *Results of Regression Analyses Predicting the Role of Covid-19 Anxiety and Emotion Regulation on Poor Sleep Quality*

Variables	B	SE	Beta (β)	t	p	R^2	F
Constant	12.03	2.257	-	5.330	0.000	12	9.867**
Covid-19[a] anxiety	.120	.050	.193	2.415	0.017	-	-
Emotion regulation	−.076	.022	−.274	−3.426	0.001	-	-

**p ≤ 0.01, Dependent variable: Poor sleep quality; [a]coronavirus disease 2019

As seen in Table 2, Covid-19 anxiety and emotion regulation were found to be significant predictors of poor sleep quality. Results provided support for H1 and H2. Covid-19 anxiety emerged as a significant predictor of sleep quality (β = .19, p = .011), such that as Covid-19 anxiety increased, poor sleep quality increased. Similarly, emotion regulation significantly predicted sleep quality (β = −.27, p = .001), such that as emotion regulation increased, poor sleep quality decreased. The two variables together explain the 12% variance of sleep quality.

In line with H3 of the study, the Hayes model was used to examine the moderator role of gender in the predictive relationship of Covid-19 anxiety and emotion regulation on sleep quality (Hayes, 2018). Results related to the model are presented in Tables 3 and 4.

Table 3. *Interaction between Covid-19 Anxiety and Gender on Poor Sleep Quality*

Model	β	Se	t	p	95% CI[a]		R^2	F
					Lower	Upper		
Constant	8.230	1.735	4.741	.000	4.798	11.662	.08	4.225*
Covid-19[b]	−.093	.118	−.787	.432	−.328	.141		
Gender	-−4.430	2.002	−2.212	.028	−8.389	−.471		
Int	.292	.132	2.220	.028	.032	.553		
Conditional effect								
Male	−.093	.118	−.787	.432	−.328	.141	-	-
Female	.199	.057	3.467	.000	.085	.313	-	-

* p ≤ 0.05, Dependent variable: Poor sleep quality; [a]95% confidence interval; [b]coronavirus disease 2019

The interaction between Covid-19 anxiety and gender predicted poor sleep quality [β = .29, 95% CI (.03,.55), p = .02, R^2 = .08]. To understand the nature of the interaction, we tested the simple slopes for males and females. An examination of the conditional effects of Covid-19 anxiety on poor sleep quality showed that the simple slopes were significantly different than zero for females (β = .20, t = 3.46, p = .00), but not for males (β = −.09, t = −.78, p = .43, see Figure 2). If 95% CI contains "0," it indicates "statistical non-significance." (Lee, 2016). This finding means that while the sleep quality of women with Covid-19 anxiety is significantly reduced, men with Covid anxiety do not have sleep problems.

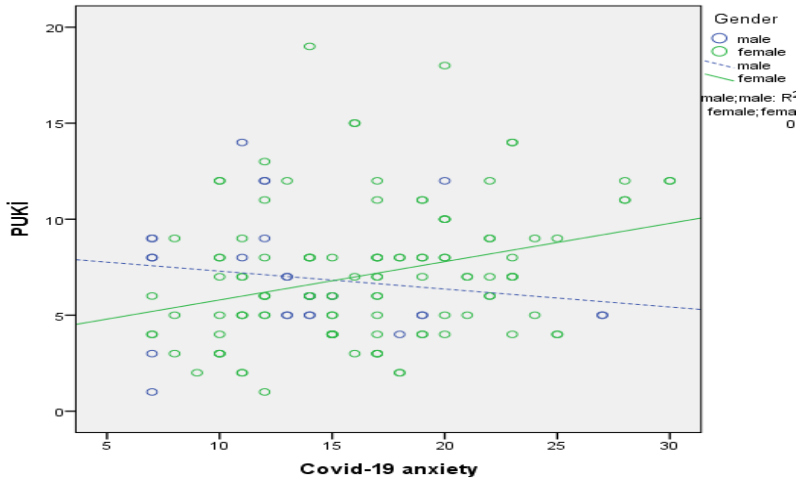

Figure 2. *Moderation Effect of Gender on the Relationship between Covid-19 Anxiety and Poor Sleep Quality*

Table 4. *Interaction between Emotion Regulation and Gender on Poor Sleep Quality*

Model	*β*	Se	t	p	95% CI[a]		R^2	F
					Lower	Upper		
Constant	22.352	5.175	4.319	.000	12.119	32.586		
Em. reg.[b]	−.171	.057	−2.996	.003	−.283	−.058	.11	5.499*
Gender	−9.243	5.631	−1.641	.103	−20.378	1.891		
Int	.105	.062	1.693	.092	−.017	.227		
Conditional effect								
Male	−.171	.057	−2.996	.003	−.283	−.058		
Female	−.066	.024	−2.735	.007	−.113	−.018		

*p ≤ 0.05, Dependent variable: Poor sleep quality; [a]95% confidence interval; [b]emotion regulation

The interaction between emotion regulation and gender did not predict poor sleep quality [β = .10, 95% CI (−.01,.22), p = .09, R^2 = .11]. To understand the nature of the interaction, we tested the simple slopes for males and females. An examination of the conditional effects of emotion regulation on poor sleep quality showed that the simple slopes were significantly different than zero for females (β = −.06, t = −2.73, p = .00) and for males (β = −.17, t = −2.99, p = .00, see Figure 3). This finding shows that the sleep quality of both women and men with poor emotion regulation skills significantly decreases.

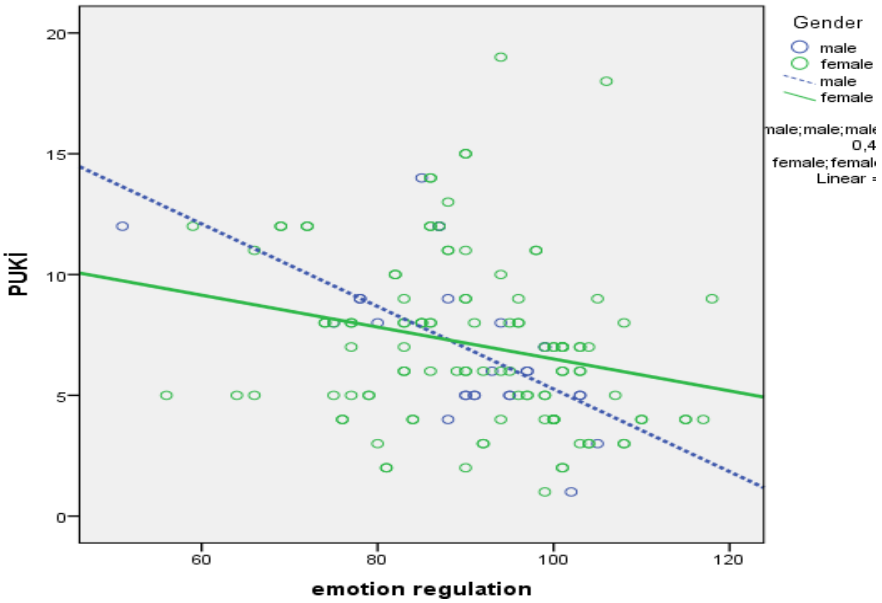

Figure 3. *Moderation Effect of Gender on the Relationship between Emotion Regulation and Poor Sleep Quality*

4. Conclusion and Discussion

The aim of this study is to determine the predictive effect of Covid-19 anxiety and emotion regulation on the sleep quality of university students. Another aim is to examine whether gender has a moderator role in this relationship. When the findings of the research were examined; it was observed that there was a significant decrease in the sleep quality of participants with high Covid-19 anxiety whereas a significant increase in sleep quality was observed in participants with high emotion regulation.

In this study, the Covid-19 anxiety scores of the participants were above average. A survey of more than 50,000 people in China during the Covid-19 epidemic showed that about 35% of the respondents experienced psychological distress (Qiu et al., 2020). This indicates that people in the Covid-19 epidemic process experienced severe anxiety about Covid-19. In fact, anxiety should be considered normal up to a certain point, which can be seen as the body's normal protective response to stress caused by the outbreak (Maunder et al., 2003). However, it seems that the truth is not so, because participants with high Covid-19 anxiety have poorer sleep quality. The first hypothesis of the study—"Covid-19 anxiety is a positive predictor of poor sleep quality" was confirmed.

In support of this finding, it is stated that general anxiety disorder and poor sleep quality are common among people in China where the Covid-19 outbreak started (Huang & Zhao, 2020). In a study with health professionals, almost half of the participants reported that their anxiety levels were high and they experienced insomnia (Lai et al., 2020). In a study conducted in Wuhan, where the epidemic first started, it was found that those with high PTSD values had worse subjective sleep quality (Liu et al., 2020), with people wondering whether the Covid-19 virus will be transmitted to them. Moreover, both fear of illness and uncertainty about the treatment of the disease (Majedi & Majedi, 2020) may often engage people's minds, which negatively affects people's inclination to fall asleep, wake up, and sleep well.

One of the most important contributions of this study to the literature is the third hypothesis. The third hypothesis—the relationship of Covid-19 anxiety and emotion regulation with sleep quality is moderated by gender—has been confirmed. While the quality of sleep of women with high Covid-19 anxiety significantly decreased, it was observed that this relationship was not significant for men.

In studies about anxiety in adolescents (Derdikman-Eiron et al., 2011), university students (Iqbal et al., 2015), and the general public (McLean et al., 2011), it was observed that women have higher anxiety levels and more stress disorders (Liu et al., 2020).

In addition, it was observed that women have more frequent problems with sleep disorders. Zhang and Wing (2006) found that women are 1.41 times more likely to suffer from insomnia. While 45% of adult women had sleep problems, this rate was found to be 30% for adult men (Madrid-Valero et al., 2017). In a study with adolescents, poor sleep quality was observed in 63% of women and 45% of men (Galland et al., 2017). When the results of the research are evaluated together, it is noteworthy that women experience higher anxiety and poorer sleep quality than men.

The second hypothesis of the research claims that those with low emotion regulation skills have poor sleep quality and this hypothesis has been confirmed; there are research findings that support this. For example, it was found that people from different cultures with emotional dysfunctionality experienced poor sleep quality (Kirwan et al., 2019).

Similarly, in studies with married couples in their 30s (Latif et al., 2019) and with individuals in the 18–65 age group (Vantieghem et al., 2016), it was observed that people using the reappraisal emotion regulation strategy had good sleep quality, but those using the suppression strategy had poor sleep quality. In the pandemic process, people experienced many negative emotions and tried various methods of coping with this (Gaeta et al., 2021). However, for those who cannot regulate these feelings in a healthy way, the intensity of emotions may further increase. The sleep quality of people who experience negative emotions also decreases (Rehman et al., 2018).

Another important contribution of this study to the literature was to test the moderator role of gender in the relationship between emotion regulations and sleep quality. However, this part of the third hypothesis has not been confirmed. For both genders, people with emotion regulation dysfunction were found to have poor

sleep quality. The results of the study on this subject in the literature differ from each other. For example, studies show that women experience emotions more intensively (Williams & Barry, 2003), express their emotions more frequently (Mendes et al., 2003), and use a wide variety of emotion regulation strategies (Garnefski et al., 2004).

Although it is stated that women work harder on emotion regulation (McRae et al., 2008) and use more strategies, such as reappraisal, it has also been observed that emotion regulation does not differ in terms of gender (Smrtnik-Vitulić & Prosen, 2016). For example, Debrot et al. (2012) aimed to investigate interpersonal emotion regulation processes in romantic relationships, emphasizing only minor and somewhat inconsistent gender differences between partners. Similarly, van Middendorp et al. (2005) could not find any gender differences in emotion regulation, as well as difficulties in experiencing and explaining emotions. As a result, it can be said that gender is not a moderator between emotion regulation and sleep quality and this relationship exists for both genders.

As a result, it has been observed that people intensely experience Covid-19 anxiety, which results in a decrease in sleep quality. Thus, adequate support should be provided to reduce Covid-19 anxiety, especially to women. In addition, those who have emotion regulation dysfunction should gain skills in this regard in the case of both genders. In this way, sleep quality can be expected to increase.

5. Limitations and Recommendations

This study has several strengths and limitations. It fills the gap in the literature by explaining the moderator role of gender in the relationship of sleep quality with Covid-19 anxiety and emotion regulation. The limitation is that the study was conducted on university students only. Later studies on this subject can be carried out on different age and culture groups.

The findings of the study also offer suggestions for mental health professionals.It has been observed that people intensely experience Covid-19 anxiety, which results in a decrease in sleep quality. Thus, adequate support should be provided to reduce Covid-19 anxiety, especially to women. In addition, those who have emotion regulation dysfunction should gain skills in this regard to increase sleep quality in the case of both genders. Especially during the pandemic period, individuals can be trained to manage their emotions in a healthy way and reduce anxiety.

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The Impacts of Propensity to Worry and Fear of COVID-19 on Mental Health of University Students

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ABSTRACT

Epidemics and pandemics are difficult periods for the affected community, specifically in the proliferation of mental health issues. In such adverse times, factors of psychological vulnerability such as propensity to worry and low emotional stability might have a detrimental effect on the mental health of the individuals. To investigate the impact of such factors on mental health, this study examined the impacts of propensity to worry and fear of COVID-19 on anxiety depending on the individuals' levels of emotional stability. As a means of such investigation, this study was conducted based on quantitative data, and the research sample was selected using a convenient sampling method. Participants included 304 university students (71.6% were women and 28.4% were men; MAge = 22.37 ± 3.04) and responded to the Penn State Worry Questionnaire, Fear of COVID-19 Scale, Symptom Checklist-90 Revised, and 10-Item Personality Inventory. The moderated mediation analysis using PROCESS macro (Model 14) was performed to examine the study hypotheses. Results revealed that propensity to worry was associated with anxiety symptoms. Fear of COVID-19 mediated this link and emotional stability moderated the relationship between propensity to worry and anxiety. The findings showed that trait worry, trait emotional stability, and fear of COVID-19 are determinants of anxiety symptoms, suggesting that such factors are important in understanding these issues.

Keywords:
Propensity to worry, fear of COVID-19, emotional stability, anxiety, moderated mediation

1. Introduction

Regarded as a "once-in-a-century" pandemic that originated in Wuhan, China, in December 2019, the SARS-CoV-2 outbreak spread rapidly around the world (Gates, 2020). In March, the World Health Organization declared the outbreak as a global pandemic and, as of April 14, reported over 131 million confirmed cases with more than 2.5 million deaths worldwide (European Centre for Disease Prevention and Control, 2020). Because of such rapid spread and higher mortality rates (4.2% globally), the current pandemic is more serious compared with SARS and MERS (Sim, 2020).

Epidemics and pandemics are difficult periods for individuals in so many ways, specifically in the proliferation of mental health issues (Chong et al., 2004). The current pandemic also witnessed the rise in mental health problems including fear of illness (Dai et al., 2020), anger and psychological distress (Bo et al., 2020; Brooks et al., 2020), frustration and boredom (Reynolds et al., 2008), suicide (Bhuiyan et al., 2020), sleep disturbance (Ho et al., 2020), and depression and post-traumatic stress disorder (Arpaci et al., 2020). Another common psychological response to such intense periods is anxiety, a negative emotion that is typically accompanied by unpleasant feelings of fear and worry (Shete & Garkal, 2015). Further, a growing body of research reported the increase in anxiety symptoms across the world throughout the current pandemic (Bendau et al., 2020; Cameron et al., 2020; Han et al., 2020; Hyland et al., 2020; Kılınçel et al., 2020; Nickell et al., 2004; Roy et al., 2020; Spence, 2020; Tsang et al., 2004).

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Epidemiological research suggests that pandemics have long been associated with worry over infection (Alcabes, 2010). As one of the strong correlates (e.g., Parmentier et al., 2019) and predictors of anxiety (e.g., Swee, Olino, & Heimberg, 2019), worry refers to negative thoughts due to the anticipation of a future threat (Korte et al., 2016). Although it is considered as a central feature of emotional disorders such as anxiety and obsessive–compulsive disorder (Goodwin et al., 2017), it is also understood as a non-clinical trait that is associated with negative life outcomes (Matthews et al., 2002; Penney et al., 2015; Raes, 2010; Shoal et al., 2005; Xie et al., 2019). Moreover, studies highlighted that high trait worry exacerbates the severity of psychological responses to stressors and traumatic events (e.g., Spinhoven et al., 2015). In this regard, individuals with higher levels of trait worry are more prone to experience anxiety symptoms compared with low worriers.

Similar to worry, fear of COVID-19 was prominent among individuals throughout the current pandemic. Fear refers to an emotional state that is elicited by perceived dangerous stimuli (de Hoog et al., 2008). Considering the number of confirmed cases, death tolls, and overcrowded intensive care units caused by the pandemic, individuals naturally began experiencing fear (Smirni et al., 2020). Moreover, such fear has evolved into the development of mental problems, such as sleep disturbance (Deng et al., 2020), social isolation and social connectedness (Brooks et al., 2020), and especially anxiety symptoms (Cameron et al., 2020).

Although research regarding the fear of COVID-19 is in its early phases, a growing body of research suggested that the impact of such fear on mental health is affected by psychological vulnerability factors (Lee et al., 2020). Literature demonstrated that emotional stability is one of those fear-related vulnerability factors that might affect the severity of the anxiety symptoms that individuals might experience during a pandemic (Taylor, 2019). By definition, emotional stability is a personality trait that includes the capacities to regulate emotions, control impulses, and cope with life challenges (Costa & McCrae, 2008). Pandemic research highlighted that low emotional stability is associated with coronaphobia (Lee et al., 2020) and fear of contagion (Di Crosta et al., 2020). As such, and similar to high trait worry, low trait emotional stability is associated with increased levels of anxiety (Hamama-Raz et al., 2016; Harris et al., 2010; Ho et al., 2013). Taken together, emotional stability is a potential trait that might affect the impact of fear of COVID-19 on anxiety symptoms.

1.1. Present Study

In light of the findings discussed previously, higher levels of trait worry and fear of COVID-19 are related to higher levels of anxiety symptoms. Thus, in this study, it was proposed that (a) propensity to worry is positively related to fear of COVID-19 and anxiety symptoms and negatively correlated to emotional stability; (b) fear of COVID-19 mediates the relationship between propensity to worry and anxiety symptoms; and (c) emotional stability moderates the relationship between fear of COVID-19 and anxiety symptoms. In examining such hypotheses, this study will provide insights on the underlying mechanism of psychological vulnerability factors (i.e., worry and emotional stability), fear of COVID-19, and university students' increased levels of anxiety symptoms. Considering university students as one of the vulnerable populations strongly affected by the COVID-19 outbreak (Kaparounaki et al., 2020), such study will be useful to promote better mental health in universities during global crises.

2. Methodology

2.1. Research Model

This study was a correlational research in the quantitative realm. In essence, some studies in educational settings often use survey research methods and employ test scores and self-report questionnaires to describe the data (descriptive approach) or confirm the proposed hypothesis and research models (analytical approach) (Cohen et al., 2018). To test the research hypotheses, the current study used an analytical approach to examine the mediator role of fear of COVID-19 and the moderator role of emotional stability in the relationship between propensity to worry and anxiety during COVID-19 crisis.

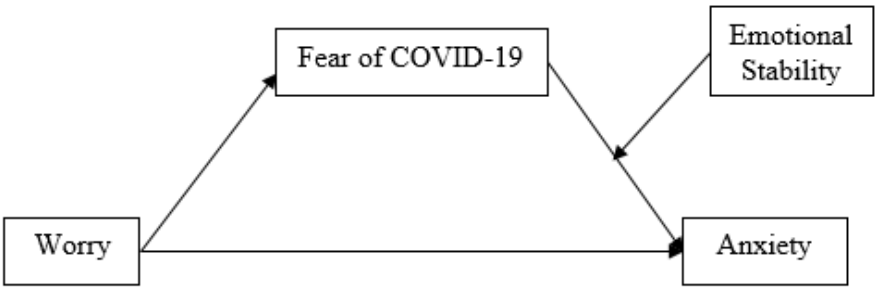

Figure 1. *Proposed Research Model*

2.2. Research Sample

Participants were selected from a public university located in the Northeast of Turkey using online Google Forms, and students who had no access to the Internet were not included in the study. In selecting the participants, a convenient sampling method was used to prevent the loss of time, money, and labor as the COVID-19 pandemic demanded urgent investigations regarding the mental health of university students. In evaluating the adequate sample size, five observations for each parameter were determined as recommended by Bentler and Chou (1987). In this regard, the research sample consisted of 304 individuals (71.6% were women and 28.4% were men; M_{Age} = 22.37 ± 3.04), and the sample size was adequate to conduct and properly analyze the research data (5 × 34 = 170 < 304).

2.3. Data Collection Tools

Penn-State Worry Questionnaire: This is a 15-item self-report questionnaire in which the items are rated using a 6-point rating scale from 1 (*never*) to 6 (*almost always*) and developed to measure individuals' propensity to worry (Meyer, Miller, Metzger, & Borkovec, 1990). Seven items from the questionnaire were selected based on the relevance to the purpose of this study, and example items included the following statements: "When I am under pressure, I worry a lot." and "Once I start worrying, I can't stop." Yılmaz et al. (2008) adapted the Turkish version of the questionnaire and provided adequate psychometric properties.

Fear of COVID-19 Scale: FCV-19S is a new scale to assess the severity of the individuals' fear of COVID-19 and consists of 7 items in which the participants are asked to indicate their levels of agreement with the statements using a 5-point rating scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Example items included the following statement: "It makes me uncomfortable to think about coronavirus-19" (Ahorsu et al., 2020). A total score is calculated by adding up the item scores. Satici and colleagues (2020) adapted the Turkish version of the questionnaire and provided adequate psychometric qualities.

Symptom Checklist-90-Revised Anxiety Subscale: SCL-90-R is a well-established self-report questionnaire and consists of 90 items to evaluate the psychological symptoms of individuals (Derogatis et al., 1973). Subjects rate each item on a 5-point rating scale from 0 (*not at all*) to 4 (*very much*). The anxiety subscale includes 10 items to measure anxiety symptoms, and example items include "nervousness or shakiness inside." Dağ (1991) validated the Turkish version of the questionnaire, which demonstrated satisfactory psychometric qualities.

Ten Item Personality Inventory: TIPI is a short form inventory and was developed to assess personality traits with the Big Five Inventory (Gosling, Rentfrow, & Swann, 2003). The inventory consists 10 items which are self-descriptive statements answered on a 7-point rating scale from 1 (*disagree strongly*) to 7 (*agree strongly*). The questionnaire comprised five subscales (extraversion, conscientiousness, openness to experience, agreeableness, and emotional stability), and each subscale is assessed by two items. Atak (2013) validated the Turkish version of the questionnaire and provided adequate psychometric qualities.

2.4. Analysis of Data

Prior to the main analyses, descriptive statistics were screened. The normal distribution, skewness, and kurtosis statistics for each variable were examined, and the analyses supported the assumption of normality as the values were between −1 and +1 (Hair et al., 2007). Moderated mediation analysis was conducted employing PROCESS macro (Model 14; Hayes, 2018) to evaluate the indirect effect of worry on anxiety varies as a function of emotional stability. In the analysis, anxiety was entered into the moderated mediation model

as the outcome variable, propensity to worry as the predictor variable, fear of COVID-19 as the mediator variable, and emotional stability as the moderator variable of the relationship between propensity to worry and anxiety. The 95% bias-corrected confidence interval (CI) with 5000 bootstrap samples was generated using the bias-corrected bootstrapping method, and the CI that does not cross zero was considered for the evidence of statistically significant mediation (Preacher & Hayes, 2008).

2.5. Research Ethics

The study procedure was approved by the University Ethics Committee (10/07/2020, 92662996-044/E.20325) and carried out in accordance with the Declaration of Helsinki. Participants responded to the consent form and online questionnaires on a webpage survey after they were gained information about anonymity, and confidentiality of the personal information.

3. Findings

3.1. Descriptive Statistics and Correlation Analyses

Before the main analyses, descriptive statistics for the main study variables were analyzed. Skewness and kurtosis statistics values demonstrated that no severe violations of normal hypotheses were encountered (e.g., skewness from 0.97 to −0.02 and kurtosis from 0.81 to −0.67) (West, Finch, & Curran, 1995). Table 1 indicates the descriptive statistics.

Table 1. *Descriptive Statistics*

	Min	Max	M	SD	Skewness		Kurtosis	
					Stat	SE	Stat	SE
1. Fear of COVID-19	7.00	33.00	17.02	5.63	0.24	0.14	-0.42	0.28
2. Worry	7.00	35.00	17.43	6.79	0.33	0.14	-0.67	0.28
3. Anxiety	0.00	40.00	9.60	9.29	0.97	0.14	0.81	0.28
4. Emotional Stability	2.00	14.00	8.50	2.52	-0.02	0.14	-0.08	0.28

Pearson product-moment correlation analyses were performed between the main study variables, and results showed that propensity to worry was positively linked to fear of COVID-19 and anxiety and negatively correlated to emotional stability, coefficients from $r = 0.51$ to $r = -0.19$.

Table 2. *Correlation Statistics*

	1	2	3	4
1.Fear of COVID-19	1			
2.Worry	.51**	1		
3.Anxiety	.41**	.51**	1	
4.Emotional Stability	-.20**	-.41**	-.39**	1

Note.**$p < 0.01$

3.2. Moderated Mediation Analyses

Model 14 of PROCESS macro was used to examine the relationship between propensity to worry and anxiety, the mediator role of fear of COVID-19, and the moderator role of emotional stability. In the mediation analyses, the direct effect of worry on anxiety was significant (*coeff* = 0.44, $p < 0.001$, 95% CI 0.27, 0.59). Furthermore, propensity to worry significantly and positively predicted fear of COVID-19 (*coeff* = 0.42, $p < 0.001$, 95% CI 0.34, 0.50), and fear of COVID-19 positively predicted anxiety symptoms (*coeff* = 0.32, $p < 0.01$, 95% CI 0.13, 0.49). In the moderated mediation analyses, an interaction effect between fear of COVID-19 and emotional stability on anxiety symptoms was significant (*coeff* = −0.05, $p < 0.05$, 95% CI −0.10, −0.01). As shown in Table 3, the indirect effect was significant for the groups of low, medium, and high levels of emotional stability (low = 0.19, standard error (SE) = 0.05, 95% CI 0.08, 0.30; medium = 0.13, SE = 0.04, 95% CI 0.06, 0.21; high = 0.07, SE = 0.04, 95% CI 0.01, 0.16). However, the magnitude of the relationship was higher for the low emotional stability group. The index of moderated mediation was significant, conveying that indirect effects in the model were significantly different for the levels of emotional stability (index = −0.02, Boot SE = 0.01, 95% Boot CI −0.04, −0.01).

Table 3. *Unstandardized Coefficients for the Conditional Process Model*

		B	SE	t
Outcome: Fear of COVID-19 (Mediator)				
Predictor: Worry		.42	.04	10.28***
Outcome: Anxiety				
Predictor: Worry		.44	.08	5.40***
Fear of COVID-19 (Mediator)		.32	.09	3.48**
Emotional Stability (Moderator)		-.81	.19	-4.23***
Interaction: Fear of COVID-19 × Emotional S.		-.05	.03	-2.04*
Conditional indirect effects of worry on anxiety				
	Coeff	BootSE	BootLLCI	BootULCI
M- 1SD	.19	.05	.08	.30
M	.13	.04	.06	.21
M+1SD	.07	.04	.01	.16
Index of moderated mediation	-.02	.01	-.04	-.01

Note. *p<.05. **p<.01. ***p<.001

4. Discussion and Conclusion

This study explores whether (a) propensity to worry is positively related to fear of COVID-19 and anxiety symptoms and negatively correlated to emotional stability; (b) fear of COVID-19 mediates the relationship between propensity to worry and anxiety; and (c) emotional stability moderates the relationship between fear of COVID-19 and anxiety symptoms. Thus, present study reveals three important results: (a) increased levels of propensity to worry are related to greater levels of COVID-19 related fear, greater levels of anxiety symptoms, and decreased levels of emotional stability; (b) higher levels of trait worry are linked with heightened COVID-19 fear, which, in turn, can be associated with increased levels of anxiety symptoms conveying the mediator role of fear of COVID-19; and (c) fear of COVID-19 is linked with enhanced levels of anxiety symptoms among individuals who report lower levels of emotional stability implying the moderator role of emotional stability.

Concerning the first hypothesis, participants who reported higher levels of propensity to worry also reported greater levels of fear of COVID-19 and anxiety symptoms and lower levels of emotional stability. Such findings are indeed congruent with the findings regarding the impact of propensity to worry on anxiety symptoms during pandemics. Although no study previously explored such a relationship, in a similar study, Baiano and colleagues (2020) reported that high worriers demonstrated a significant increase in anxiety sensitivity and fear of mental health compared with low worriers between pre- and post-lockdown. Furthermore, previous studies are also congruent with the findings of the present study. For instance, numerous studies reported that COVID-19-related fear is associated with higher levels of anxiety (Belen, 2020a; Belen, 2020b; Tsang et al., 2004).

This study demonstrated the mediator role of COVID-19-related fear in the relationship between propensity to worry and anxiety. The findings showed that propensity to worry directly contributes to increased levels of anxiety conveying the higher risk of the individuals with worry proneness to the mental health problems throughout the pandemic. In addition to the direct impact, higher levels of trait worry impacted higher levels of COVID-19-related fear, which, in turn, contributed to increased levels of anxiety symptoms. In other words, trait worry can affect increased anxiety symptoms through fear of COVID-19. These findings are congruent with the literature. For instance, previous studies highlighted that trait worry predicted the strength of fear acquisition in a sample of healthy individuals (Joos et al., 2012). Current pandemic studies also revealed that COVID-19-related worries could facilitate mental health problems such as loneliness and sleep problems (Grossman et al., 2020). Furthermore, several studies demonstrated that fear of COVID-19 affected anxiety symptoms worldwide (e.g., Cameron et al., 2020; Roy et al., 2020).

This study also found that propensity to worry impacts heightened anxiety symptoms through fear of COVID-19 among individuals who report especially lower levels of emotional stability. Such findings are congruent with the literature. For instance, trait emotional stability was found linked with higher levels of coronaphobia (Lee et al., 2020), and fear of contagion (Di Crosta et al., 2020), and increased levels of anxiety (Hamama-Raz

et al., 2016; Harris et al., 2010; Ho et al., 2013). Taken together, emotional stability is a potential trait that might affect the impact of fear of COVID-19 on anxiety symptoms.

Limitations for this study included using a cross-sectional design and employing self-report measures. Future studies may use a diverse sample in selecting participants from different countries, employing a longitudinal study design, and use a mix of self-report and behavioral measures in assessing the main study variables.

Despite these limitations, the findings add knowledge to the current literature in a few ways. First, this study suggests that fear of COVID-19 is a key factor in the relationship between propensity to worry and anxiety during the current global crisis. Next, a detailed investigation of such relationship implied that trait emotional stability influences the strength of the relationship between propensity to worry and anxiety symptoms at its different levels. Lastly, this study reveals that trait worry impacts anxiety through fear of COVID-19 dependent on the participants' levels of trait emotional stability.

5. Implications and Recommendations

The results of this study have specific theoretical and empirical implications for the mental health of university students, one of the vulnerable populations strongly affected by the COVID-19 pandemic and associated lockdowns (Kaparounaki et al., 2020). First, the results of this study identify the constellation of predictive factors (psychological vulnerability) to understand university students' maladaptive responses to COVID-19. With further studies, understanding the causal role of such factors on mental health might contribute to important avenues of future research. Second, this study may have further implications as it may aid to identify potential key targets for interventions to reduce anxiety levels of university students during global emergencies such as the COVID-19 outbreak. Considering the scarcity of research addressing interventions to lessen the effect of the COVID-19 pandemic, the results of this study are fruitful and recommend interventions to reduce worry and fear of COVID-19 and include elements of emotional stability for students to have better mental health. Furthermore, such factors should be addressed in academic institutions, including but not limited to university counselors, lecturers, and university staff as the resumption of face-to-face classes in universities is on the horizon. Thus, all parties (lecturers as gatekeepers) in universities need to pay more attention to the mental health of the students and provide mental health services (e.g., hotline, online, and one-on-one consultations) to reduce worry and fear of COVID-19.

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Metaphorical Perceptions About Being A Teacher in Turkey During The Pandemic Period

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ABSTRACT

In this study which aims to uncover and examine the metaphorical meanings that teachers have attributed to the concept of teaching during the pandemic period, phenomenological method that is a qualitative research design was used. The study group of the research consists of the teachers working in public primary, secondary and high schools in a city in the Western Black Sea Region during the spring semester of the 2020-2021 academic year. The teachers participating in this study were selected on a voluntary basis. In order to collect the data, a semi-structured interview form used in qualitative research method was used as a data collection tool. Content analysis that consisted of such procedures as coding, finding themes, organizing the data according to code and themes was used in the analysis of the data. Based on these perceptions, 278 metaphors were obtained related to the concept of ''being a teacher in Turkey during the pandemic period''. The related metaphors were grouped under 12 categories by the researchers. When they were examined, it emerged that the preferred metaphors usually reflected a negative structure.

Keywords:[2]
Pandemic Period, Covid-19, Metaphor, Teacher

1. Introduction

The entire world remains in the grip of a health crisis caused by the coronavirus, with a mega-crisis composed of a combination of political, economic, social, ecological, national, planetary crises with multiple components, interactions, and uncertainties (Morin, 2020). The COVID-19 pandemic continues to have negative effects on business, education, health, and tourism worldwide. The COVID-19 pandemic has led to a devastating bifurcation of the world, affecting all areas of human life including all levels of the education system. Teaching is among the most affected areas (Pragholapati 2020; Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabir & Iosifidis, 2020; Aarab, 2021).

Some of the measures taken by many countries to prevent or reduce the spread of infectious disease are physical distancing, quarantine, home isolation, and school closures. Students, parents, and teachers around the world have felt the unexpected ripple effect of the COVID-19 pandemic as schools have been closed to deal with the global pandemic. As of July 2020, 98.6% of students worldwide were affected by the outbreak, representing 1,725 billion children and youth from pre-school to tertiary education in 200 countries (Murphy, 2020; Sintema, 2020; Weeden & Cornwell 2020; Petrie, 2020; Sobaih, Hasanein & Elnasr, 2020; United Nations, 2020). As of 2020, the Covid-19 health crisis has affected 91.3% of students on the planet, or about 1.6 billion students whose schools have been closed in 188 countries (UNESCO, 2020).

A year after the start of the COVID-19 pandemic, nearly half of the world's students are still affected by the partial or total closure of schools, and more than 100 million children are unable to reach the minimum literacy level due to the crisis. Indeed, it is essential to make continuing education a priority to prevent a catastrophe

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that will last for generations. UNESCO supports countries in their efforts to reduce the immediate impact of school closures, particularly on the most vulnerable and disadvantaged communities, and to facilitate the continuity of education for all through distance education. To mobilize and promote pedagogical continuity, UNESCO has established the World Education Coalition, which now has 160 members, around three main themes: gender, connection, and teachers. (https://fr.unesco.org/covid19/educationresponse).

COVID-19 has brought about changes in the education system that affect teachers in various ways. The fragile and unstable contexts of the pandemic will certainly be more challenging for educators and learners. While most countries in the world are experiencing an unprecedented total or partial lockdown that has led to the immediate closure of universities and schools, the COVID-19 pandemic has also allowed paving the way for digital learning and teaching (Dhawan, 2020). As such, teachers and students had to instantly learn how to adapt to distance education. This also applies to teacher education. The need to adapt rapidly to new contexts of online teaching and learning has revealed how teacher education and training institutions, teacher educators, and practicing teachers face and experience challenges and opportunities. Also, the COVID-19 pandemic has led to unprecedented action in the field of education (Dhawan, 2020; Flores & Gago 2020; Nasri et al. 2020; Quezada, Talbot & Quezada-Parker 2020; Wrase, 2020; Samta, Marie & Anviti, 2021).

Other effects of the Covid-19 pandemic on education include problems in accessing technology-based learning, postponement of school and exam schedules, inability to conduct teacher training, deprivation of regular nutrition opportunities at school for children and youth in disadvantaged communities, and the burden on parents and caregivers of distance education or home education decreased social interaction and social isolation (Chang & Satako, 2020). During the pandemic, neither parents nor teachers were ready to cope with the various challenges imposed on them by the changes (Wildemann & Hosenfeld, 2020). Whether face-to-face or through distance education, supporting teachers as one of the most important stakeholders of education and strengthening their motivation gained more importance in this process. UNESCO (2020) frequently recommends that teachers be recognized and supported in the critical role they play in overcoming the Covid-19 pandemic. Because, although teachers are at the forefront of ensuring the continuity of learning in this process, it is stated that they face pressure to use some distance education methods and tools without consulting the teachers and providing them with the necessary training opportunities. In such cases, teachers should be informed, supported, and protected first (As cited in Can, 2020).

Considering Turkey in this period, it is seen that teachers, who are the key stakeholders of education processes, are also directly affected by these developments. While thinking about the well-being of themselves, their relatives, and students during the pandemic, they also sought ways to maintain their teaching processes as efficiently as possible (Tohum Foundation Report, 2021). In a study conducted by Çelik and Ayyüce-Şahin (2020), public school teachers stated that they had difficulties in accessing digital platforms for distance education in this process, and they did not have enough knowledge and skills to use the EBA system. Besides, in the researches conducted by Eğitim-Bir-Sen (2020) and Saygı (2021), some teachers do not teach online, and because of this, students cannot access educational activities. It has been observed that some teachers have problems such as not having personal computers, not being able to use appropriate methods and techniques for their purposes. As a matter of fact, teachers leave the teaching profession because they cannot cope with the difficulties they encounter in the profession (Price, Mansfield, & McConney, 2012).

When the studies related to education in Turkey during the pandemic period were examined in the literature, studies such as the difficulties experienced by teachers in distance education, teachers' online course-distance education experiences during the covid-19 pandemic, and the views of teachers on distance education were encountered (Tumen, 2020; Uyar, 2020; Kavuk and Demirtaş, 2021; Altıntaş- Yüksel, 2021). Yet, no study has been found on how teachers, as the main actors of education, perceive being a teacher in this process. However, we have been faced with a phenomenon that concerns the whole world, and this situation does not have a reality that is the same for everyone. As Edmund Husserl stated, according to phenomenology, which tries to understand how the reality that we accept as given in daily life without questioning is constructed by our consciousness (Srubar, 2005: 557), it is very important to reveal how teachers perceive this period in terms of solving the problems that may be experienced. Indeed, teachers have the most important influence on learning and play a primary role on their students (Giroux, 1981; Bernard, 2007). In this sense, it is known that individuals, and therefore teachers, having more positive emotions than negative emotions may mean that their subjective well-being is at a high level. Teachers' high level of subjective well-being contributes to them

in both individual and social life whereas the low level may make their lives unhappy and prevent their functionality (Diener, 2000; Diener, 2006; Diener & Ryan, 2009).

In this regard, it is thought that this study will be a pioneering study in the field and examining the perceptions of being a teacher during the pandemic period in Turkey will make the study unique by filling an important gap in the literature. This study, which aims to reveal the perceptions of teachers about teaching during the pandemic period through metaphors, will provide information to teachers, teacher educators, curriculum and education policy development experts about how the profession is perceived in times of crisis. Additionally, by identifying the difficulties that may arise with the determination of the ways teachers interpret the world they live in during the crisis period, it is thought that this research will contribute to the field in terms of offering solutions to these problems so that education can continue in crisis periods properly. In order to reveal the metaphors of teachers about being a teacher in Turkey during the pandemic period, answers were sought to the following questions;

- What are the metaphors that teachers have regarding the concept of "teaching in Turkey during the pandemic period"?
- Under which conceptual categories can these metaphors be grouped in terms of their common features?

2. Methodology

2.1.Research Model

In this study which aims to uncover and examine the metaphorical meanings that teachers have attributed to the concept of teaching during the pandemic period, phenomenological method that is a qualitative research design was used. Phenomenology focuses on the cases that we are aware of but do not have an in-depth and detailed understanding. It forms an appropriate research basis for studies aimed at investigating the cases that are not entirely unknown to us, but also of which we do not understand the whole meaning. In phenomenological studies, it is usually aimed to reveal and interpret individual perceptions of a case (Yıldırım & Şimşek, 2008). In such studies, the researchers try to obtain new information about the facts that we are aware of or are not by conducting close and long-lasting interviews with the individuals and groups that they will examine (Gürbüz & Şahin, 2015).

2.2. Research Group

The study group of the research consists of the teachers working in public primary, secondary and high schools in a city in the Western Black Sea Region during the spring semester of the 2020-2021 academic year. The teachers participating in this study were selected on a voluntary basis. The online link of the semi-structured interview form was sent to the teachers' e-mail addresses. The teachers who wanted to participate in the research voluntarily were recruited into the study group. The participants consisted of a total of 415 teachers working in primary school (*N*=156) middle school (*N*=139) and high school (*N*=120). While female teachers made up 61.3% of the study group, male teachers corresponded to 39.7%. At the time of the study, 37.6% of the teachers were working in primary school, 33.5% in middle school and 28.8% in high school, respectively.

2.3. Data Collection Procedure

In order to collect the data, a semi-structured interview form used in qualitative research method was used as a data collection tool. The interview form was developed as a draft by the study group, and then this draft form was finalized with the expert opinion. In the semi-structured interview form, questions (gender, school level) were asked to reveal the demographic status of the teachers, and they were asked to fill in the blanks in the sentence, ''*Being a teacher in Turkey during the pandemic period is like ..... because ....* ''. Even if the metaphor produced by the participants could be the same, the explanations after ''*because*'' were carefully examined since the reason might be different. The responses obtained from this form ultimately constituted the data of the research.

In the current study, data were collected online from the teachers working in public pre-schools, primary schools, middle schools and high schools in a city in the Western Black Sea Region during the spring semester

of the 2020-2021 academic year. The semi-structured metaphor form was delivered to the participants online, and they submitted the form back in the same way after having filled in it. The total of 415 forms were analyzed after those which were not fully filled or filled out were eliminated. Within the scope of the study, 415 teachers expressed their opinions on the subject.

2.4. Data Analysis

Content analysis that consisted of such procedures as coding, finding themes, organizing the data according to code and themes was used in the analysis of the data. As Yıldırım and Şimşek (2016) stated, the main purpose of content analysis is to reach concepts and relations that can explain the collected data. The metaphors developed by the teachers were analyzed in four stages: Coding and sorting, determining a sample metaphor, categorizing, ensuring the validity and reliability (Saban, 2008).

Coding and sorting

A temporary list of the metaphors created by the teachers was developed. Accordingly, firstly it was noted whether the teachers expressed a certain metaphor clearly; after that, the metaphors presented by each participant were coded, and then the forms that did not contain any metaphors or were left blank were separated, thus, 35 forms were eliminated and excluded from the scope of the research. The metaphors and reasons were coded with the signs indicating the type of the school where the teachers were working, the gender and the number given by the researcher. In this three-element coding, the first letter indicated the type of institution in which the teacher was working (*P*: primary school; *M*: middle school, *H*: high school), the second letter showed the gender of the teacher (*F*: female; *M*: male), and the numbers accounted for the participant number. (eg., *PF35*, *MM7*, *HM39*)

Determining a sample metaphor

After the dismissal of the invalid forms, a total of 415 forms were taken into the analysis stage. As a result of the analysis of these forms, 278 metaphors were obtained for the concept of *being a teacher in Turkey during the pandemic period*. At this stage, these metaphors were again sorted in alphabetical order, and several sample metaphor expressions were selected from the participant compositions representing each metaphor upon reviewing the raw data a second time. Thus, the sample metaphor list which was assumed to precisely represent each of the metaphors developed for the concept of *being a teacher in Turkey during the pandemic period* was formed.

Categorizing

The metaphors created by the teachers were examined in terms of their common features regarding the concept of *being a teacher in Turkey during the pandemic period*. During this stage, it was analyzed how each metaphor conceptualized this concept by taking the sample metaphor list into account. For this purpose, each metaphor produced by the teachers was analyzed in terms of the criteria such as (1) the subject of the metaphor, (2) the source of the metaphor and (3) the relationship between the subject and the source of the metaphor. Afterwards, the researcher associated these metaphors with a certain theme related to the abovementioned concept, and a total of 12 different conceptual categories emerged.

Validity and reliability

Validity and reliability are the two most important criteria for ensuring (or increasing) the credibility of research results. "Reporting the collected data in detail and explaining how the researcher has come to the conclusions are among the important criteria of validity in a qualitative study" (Yıldırım & Şimşek, 2008). Specific to this study, two important procedures were carried out by the researcher in order to ensure the validity of the study findings:

(1) The data analysis was explained in detail. (2) For each of the 278 metaphors related to the concept of *being a teacher in Turkey during the pandemic period*, the sample metaphor image that was assumed to represent it best was developed, and all of these metaphor images were included in the findings section. In order to ensure the reliability of the research, the metaphors given under 12 conceptual categories regarding the abovementioned concept, the expert opinion was applied on such conceptual categories. For this purpose, 2 faculty members with knowledge and experience in qualitative research were given two category lists:

(a) A list in which the metaphors related to the concept of *being a teacher in Turkey during the pandemic period* was sorted in alphabetical order and

(b) A list including the names and features of 12 conceptual categories related to the concept above.

The experts were asked to use both lists and match the sample metaphor images from the first list with the conceptual categories in the second list. Then the matchings done by the experts were compared with the researcher's own categories. The reliability of the research was calculated using Miles and Huberman's (1994:64) formula (Reliability = Consensus / Consensus + Dissensus X 100) by determining the numbers of consensus and dissensus in the comparisons. The percentage of the consensus between the two groups was calculated as 89%. Since it is deemed sufficient to have a consensus of 70% or higher, it was decided that the reliability was achieved in terms of data analysis, and the codes that were compatible in the coding made by researcher and the expert faculty members emerged the themes.

2.5. Ethical

This research was examined in the Ethics Committee of Human Studies in Social Sciences at Bolu Abant Izzet Baysal University and was found ethically appropriate.

3. Findings

Based on the perceptions of the teachers, 278 metaphors related to the concept of *being a teacher in Turkey during the pandemic period* were finalized. These metaphors were grouped under 12 categories by the researcher, which are shown below, respectively.

1. Uncertainty
2. Exclusion
3. Worthlessness
4. Despair & Pessimism
5. Having difficulty
6. Dissatisfaction
7. Desperation
8. Sacrifice, Dedication & Struggle
9. Role-Play
10. Patience
11. Discovering & Creating Opportunities
12. Hope

Uncertainty

In this category, there are 49 metaphors produced by 95 teachers, and they are presented in Table 1 below.

Table 1. *The category of Uncertainty*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1.	Adventure film	1	26.	Magic	1
2.	Babysitter	2	27.	Maze	6
3.	Back-flowing stream	1	28.	Mehter anthem	1
4.	Bat	2	29.	Mine field	2
5.	Battle	1	30.	Mole	1
6.	Beating the air	2	31.	Nomadic life	2
7.	Bottomless well	6	32.	Outer space	5
8.	Bucket water	1	33.	Panic attack	1
9.	Cleaning	1	34.	Ping-pong ball	1
10.	Computer game	2	35.	Playing blind man’s bluff	1
11.	Contacting with aliens	1	36.	Prison	1
12.	Dance with Azrael	1	37.	Radio broadcast	1
13.	Dervish	1	38.	Rain in the desert	1
14.	Deserted forest	1	39.	Raining	1

15.	Driving	3	40.	Road	2
16.	Family	1	41.	Running on the parkour	2
17.	Fishing in the desert	1	42.	Surprise egg	1
18.	Game show	1	43.	Swimming in rough sea	12
19.	Getting lost in the desert	2	44.	Tale	1
20.	Getting out of the swamp	5	45.	Tramp	1
21.	Going out without an umbrella	3	46.	Uncertain weather	1
22.	Going through the tunnel	3	47.	Walking in the dark	1
23.	Guest	1	48.	Whirligig	2
24.	Holiday	1	49.	Wind	2
25.	Journey	1	**Total**		**95**

Table 1 contains the metaphors that make up the category of *uncertainty* and information about the number of teachers who developed each metaphor. As could be seen from the Table, the most frequently used metaphor in this category is *swimming in rough sea* (*N*=12). Below are the examples of the logical basis of the metaphors produced for this category described by the teachers.

> *Swimming in rough sea: Because you say you're right on shore, a wave hits and you go back to where you have started (PM15).*
>
> *Swimming in rough sea: Because swimming among giant waves can put us in unfamiliar vortexes (MF78).*
>
> *Bottomless well: Because it is not known what happens at the end of the well, the bottom of which is not visible. Water can come out, stone can come out or sand can come out (HM51).*
>
> *Ping-pong ball: Because you never know where the ping-pong ball is going by looking at its consecutive bouncing (HF19).*
>
> *Surprise egg: Because you never know when and what to come across (MM127).*
>
> *Computer game: Because you can't tell when the game have started and ended (PF144).*
>
> *Outer space: Because you don't know what you're going to come across; shuttles, the black hole or outer space may appear (PM49).*
>
> *Going out without an umbrella: Because when you go out without an umbrella, there could be a lot of sun. It could rain, snow, hail as well (MF97).*
>
> *Playing blind man's bluff: Because sometimes you say everything's fine, then your eyes open, and you're a long way from where you think you really are (HF37).*
>
> *Deserted forest: Because when walking in the deserted forest, you could be exposed to the dangers at any time anywhere and unexpectedly. There may be instantaneous developments because the situations change constantly (MM103).*

Exclusion

In this category, there are 15 metaphors produced by 11 teachers, and these metaphors are shown in Table 2.

Table 2. *The category of exclusion*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1.	Dart board	1	7.	Refugee	1
2.	Immigrant	2	8.	Scapegoat	1
3.	Leaf in the water	1	9.	Shadow-show	2
4.	Loneliness	1	10.	Suspended student	1
5.	Neglected Flower	1	11.	Warrior	1
6.	Orphan kid	3	**Total**		**15**

When Table 2 is examined, it is seen that the most widely used metaphors by the teachers in this category is *orphan kid* (*N*=3). Below are the examples of the logical basis of the metaphors developed by the teachers.

> *Orphan kid: Because you are battered, excluded and ignored like orphan kids. Only your father, your government, is with you. It is with you with all its means (PF2).*

Refugee: Because you are literally treated as if you have brought a virus into the country (MF11).

Neglected flower: Because you are not consulted on anything (HM9).

Worthlessness

In this category, there are 20 metaphors produced by 26 teachers, and these metaphors are illustrated in Table 3 below.

Table 3. *The category of worthlessness*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1.	Air	1	11.	Michelangelo	1
2.	Ball	2	12.	Motherhood	3
3.	Beating the air	1	13.	Needle in haystack	1
4.	Being invisible	1	14.	Privileged group	1
5.	Falling into the swamp	2	15.	Scapegoat	1
6.	Faucet	1	16.	Spare tire	1
7.	Fruit tree	1	17.	Speaking to the space	1
8.	Getting a free salary	2	18.	Walking in the space	2
9.	Lack of options	1	19.	Whipping boy	1
10.	Little boy of the family	1	20.	Worker	1
			Total		**26**

The metaphors in the Table above developed by the teachers fall under the category of *worthlessness.* As seen in the Table 3, the most frequently used metaphor produced by the teachers in this category is *motherhood* (*N*=3). The examples of the logical basis of the metaphors produced for this category described by the teachers are given below.

Air: Because it is necessary for everyone, but its worth is unknown because it is free (HF82).

Fruit tree: Because you do your duty properly, and you are still criticized by everyone. They do not understand its value (PF35).

Motherhood: Because no matter how hard you work, people don't realize your sacrifice (MM62).

Despair and Pessimism

In this category consisting of metaphors produced in line with the opinions of teachers, there are 18 metaphors produced by 24 teachers. They are presented in Table 4 below.

Table 4. *The category of despair & pessimism*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1	A bird without wings	2	10.	Insensitivity	1
2.	A child in the Middle East	1	11.	Looking for a forest in the desert	1
3.	A fish out of water	2	12.	Passing kidney stone	1
4.	Camping	1	13.	Sailing	1
5.	Captivity	1	14.	Seagull	1
6.	Child	1	15.	Sinking ship	2
7.	Cicada	1	16.	Swimming/rowing against the current	3
8.	Crew	1	17.	The Sahara	1
9.	House cleaning	2	18.	Vicious circle	1
			Total		**24**

Table 4 shows the metaphors that make up the category of *despair & pessimism* and the number of the teachers who developed each metaphor. As seen in the Table, the most frequently expressed metaphor by the teachers in this category is *swimming / rowing against the current* (*N*=3). Below are the examples of logical basis stated by the teachers for developing the metaphors.

Sinking ship: No matter how hard the crew on the sinking ship tries, there's nothing you can do about it, the ship still sinks (PM8).

Swimming/rowing against the current: Because no matter how hard you try, you will not be able to get efficiency due to the financial incapability of the student (HM5).

Seagull: Because the seagull that is submerged in mud tries to fly out of the mud, fights for its life not to die, but its destiny is certain (MF3).

Having difficulty

In this category consisting of metaphors produced in line with the opinions of teachers, there are 44 metaphors produced by 58 teachers. These metaphors are presented in Table 5 below.

Table 5. *The category of having difficulty*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1	A camel through a needle's eye	2	23.	Jabber	2
2.	A remote with low battery	1	24.	Judge	1
3.	Acrobat	1	25.	Keeping a watch	1
4.	Angry bull	1	26.	Lemonade	1
5.	Ball	1	27.	Looking for/finding a needle	3
6.	Barbell	1	28.	Mine field	3
7.	Being an audience	1	29.	Mountain top	1
8.	Being online all the time	1	30.	Non-interaction	1
9.	Being thirsty in the desert	1	31.	Not leaving a mark	1
10.	Bird with a broken wing	1	32.	Panic attack	1
11.	Breathing in water	1	33.	Pedestrian in traffic	1
12.	Bumpy road	1	34.	Porter	1
13.	Captain of the ship	2	35.	Pressure	1
14.	Compulsory service	1	36.	Puzzle board	2
15.	Computer game	1	37.	Rag doll magic	1
16.	Dancing	1	38.	Speeding up	2
17.	Dehydration	1	39.	Straw and handle	1
18.	Deserted island	1	40.	Studying science and math	1
19.	Driving in traffic	4	41.	Thorny rose	1
20.	Hapless bedouin	1	42.	Tide	1
21.	Hide-and-seek	2	43.	Unarmed warrior	1
22.	Holiday	1	44.	Use of technology	2
			Total		**58**

When the metaphors that constitute the category of *having difficulty* and the number of teachers who developed each metaphor are examined, it is seen that the most frequently used metaphor by the teachers in this category is *driving in traffic* (*N*=4). The examples of the logical basis of the preferred metaphors described by the teachers are shown below.

Rag doll magic: Because from time to time, it is not clear where to get pinned. We continue to get hurt and having difficulty after every needle (PM57).

Tide: Because between the teaching I've done so far and the aftermath, you always come and go, and gasp (MF40).

Hide-and-seek: Because hide-and-seek is difficult to play, but it is much more difficult to play hide-and-seek with eyes closed (PF32).

A camel through a needle's eye: Because the needle eye is narrow and difficult to pass through for a camel (HF85).

Looking for/finding a needle: Because it is very difficult to look for needles in the dark; the needle can sting and hurt you (HF108).

Dissatisfaction

In this category consisting of metaphors produced in line with the opinions of teachers, there are 17 metaphors produced by 23 teachers. Below are the related metaphors presented in Table 6.

Table 6. *The category of dissatisfaction*

Metaphor Number	Metaphor	Metaphor Number	Metaphor	*f*
1	Candle with diminishing light	10.	Referee	3
2.	Cat playing with its tail	11.	Robot	2
3.	Chronic disease	12.	Serdengecti*	1
4.	Deserted island	13.	Silence	1
5.	Dog	14.	Thirst	1
6.	Night humidity	15.	Uncontrolled power	1
7.	Objecting judge	16.	Waterfall	1
8.	Paid worker	17.	Whistle in the wind	2
9.	Play dough	**Total**		**23**

Serdengecti is a term used in the Ottoman army for the soldiers among The Raiders who are volunteers to rush forward into the opponent army as first attackers and burrow through the seized castles.*

Table 6 shows the metaphors that make up the category of *dissatisfaction* and the number of the teachers having developed each metaphor. As seen in the Table, the most frequently used metaphor by the teachers in this category is *referee* (*N*=3). Below are the examples of logical basis stated by the teachers for developing the metaphors.

Robot: Because we have become a robot in online education; unfortunately, we do not go outside of the coding. (HF107)

Referee: Because the referee cannot satisfy the winning or the defeated teams. No one is satisfied; the parent, the student or the administrator. I mean, no one. (MF79).

Play dough: Because the parents criticize in a way, the managers criticize in other way and the ministry in another way, but no one asks if the teachers themselves are satisfied (PF23).

Desperation

In this category including the metaphors asserted by teachers, there are 18 metaphors produced by 19 teachers. Below are the related metaphors presented in Table 7.

Table 7. *The category of desperation*

Metaphor Number	Metaphor	Metaphor Number	Metaphor
1.	Bringing sea to Ankara	10.	Popping candy
2.	Desperation	11.	Swamp
3.	Diet	12.	Swimming in the desert
4.	Drowning	13.	Terminal cancer
5.	Earthquake	14.	Turbulence
6.	Electronic ankle monitor	15.	Unable to breathe
7.	Evaporation	16.	Unable to swim
8.	Fainting	17.	Unable to walk
9.	Jalapeno	18.	Uprooted tree
		Total	

** **Ankara** is the capital city of Turkey located in the Central Anatolia which is terrestrial.*

The metaphors above developed by the teachers belong to the category of *desperation.* As seen in the Table, the most frequently used metaphor in this category is *swamp* (*N*=2). The examples of the rationales of the related metaphors described by the teachers are presented below.

Jalapeno: Because it looks good, but you can't cure its pain (HM114).

Swamp: Because you'll never get out of the swamp (PF59).

Electronic ankle monitor: Because after you are handcuffed with ankle monitor, you desperately wait at home for time to run out (MM132).

Sacrifice, Dedication and Struggle

There are 50 metaphors expressed by 85 teachers in this category which was developed in line with the teachers' views. Below are the related metaphors presented in Table 8.

Table 8. *The category of sacrifice, dedication & struggle*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1	A hair shirt	3	26.	Lace	2
2.	Acrobat	1	27.	Light	1
3.	Anatolian woman	1	28.	Magical touch	2
4.	Ant	2	29.	Master	3
5.	Bee	2	30.	Migratory bird	2
6.	Behind mountain Kaf	1	31.	Mountaineer	3
7.	Being a parent	1 1	32.	Octopus	2
8.	Being madly in love	1	33.	Orphan child	2
9.	Bird with a broken wing	1	34.	Pancu in Beşiktaş*	1
10.	Captive	1	35.	Planting trees in the desert	1
11.	Challenging journey	1	36.	Rout	1
12.	Chameleon	1	37.	Seed	1
13.	Cleaning the couch grass	1	38.	Sharing	1
14.	Closeout	1	39.	Shuttle relay race	1
15.	Expert	1	40.	Student	2
16.	Facing up	1	41.	Superhero	2
17.	Fear	1	42.	Survivor	1
18.	Ferris wheel	1	43.	Teaspoon	1
19.	Flapping	2	44.	Technology	1
20.	Friend	1	45.	The musicians in the movie of *Titanic*	1
21.	Garden	1	46.	Torch	2
22.	Getting honey from flowers	1	47.	Turtle	1
23.	Getting out of the swamp	4	48.	Umbrella	2
24.	Holiday	1	49.	Walking on a bumpy road	3
25.	Journey to the impossible	3	50.	War of Independence	1
			Total		**85**

**Pancu is a former football player having played in Beşiktaş in Turkey. Once he was playing for Beşiktaş, he went in goal in an important match instead of the goalkeeper who was sent off the match having a red card. He played a crucial role in the victory of the team*

Table 8 shows the data about the metaphors that constitute the category of *sacrifice, dedication & struggl*e and the number of teachers who develop each metaphor. When the Table is examined, it is seen that the most frequently used metaphor by the teachers in this category is *being a parent* (*N*=12). Below are the examples of the rationales described by the teachers for their preference of the metaphor.

> *Being a parent: Because you want to spend time with your children, but you need to endure the risk and the responsibility (PM13).*
>
> *Ant: Because the lessons, housework, cooking, meetings and parent messages...you don't stop at anything (MF82).*
>
> *A hair shirt: Because it is the teachers who face all kinds of situations at the forefront (HM77)*
>
> *Superhero: Because home, school, means catching up with everything within four walls (PF7).*
>
> *Torch: Because we teachers walk with the torch and guide the way, whether it is bright or dark (MF19).*

Role-play

In this category consisting of metaphors expressed by the teachers, there are 18 metaphors produced by 26 teachers. Below are the related metaphors presented in Table 9.

Table 9. *The category of role-play*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1	Acrobat	1	10.	Hernia of the loins	1
2.	Acrobatics	1	11.	Hide-and-seek	1
3.	Artist	4	12.	Monkey	1
4.	Being invisible	2	13.	Movie script	3
5.	Chameleon	2	14.	Retirement	1
6.	Clown	1	15.	Shadow-show	1
7.	Elephant	1	16.	Singing on the stage	1
8.	Eraser	1	17.	Theater	1
9.	Fairy	1	18.	Theater player	1
			Total		**26**

The metaphors above developed by the teachers belong to the category of *role-play.* As seen in the Table, the most frequently used metaphor in this category is *artist* (*N*=4). The examples of the logical basis for the related metaphors described by the teachers are presented below.

Artist: Because, like an artist, you're always in every role (HF49).

Acrobatics: Because when you're on the ropes, you take on every role to stay balanced (MF9).

Monkey: Because you need to wear the cap and bells all the time so that the students can follow the classes (PF82).

Hernia of the loins: When you have the hernia, you stand up straight and pretend to be healthy. Because you are the comfortable one who is paid without working hard, according to the society (MM50).

Patience

There are 8 metaphors expressed by 13 teachers in this category which was developed in line with the teachers' views. These metaphors are shown in Table 10 below.

Table 10. *The category of patience*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1.	An employee in dargah	1	5.	Flower	1
2.	Being a mother	2	6.	Majnun	2
3.	Being patience itself	3	7.	Sunflower	1
4.	Fishing with a hook	1	8.	Tailoring	2
			Total		**13**

**Dargah is an islamic monastery.*

The metaphors above developed by the teachers belong to the category of *patience.* As seen in the Table, the most frequently used metaphor in this category is *being patience itself* (*N*=3). The examples of the rationales of the related metaphors described by the teachers are presented below.

Majnun: Just as Majnun endured challenges and remained patient for his Leyla, the teacher has been patient with many things like him during this period (HF103).

Tailoring: Just as the tailor manipulates the fabric with millimeters in patience, the teacher has been patient with many small things during this period (MF24).

Being patience itself: Because it's really a matter of patience to give the same answer to the same questions that are constantly asked (PF151).

Discovering and Creating Opportunities

In this category of metaphors expressed by the teachers, there are 17 metaphors produced by 21 teachers. These metaphors are shown in Table 11 below.

Table 11. *The category of discovering & creating opportunities*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1	A garden inside the house	1	10.	New planet	1
2.	Having a look at a book	1	11.	Robinson	1
3.	Inspector Gatgate	1	12.	Sandglass	1
4.	Journey	3	13.	Student	1
5.	Learning to ride a bike	1	14.	Swedish pocket knife	1
6.	Lifting dumbbells	1	15.	Tasting	1
7.	Mirror	2	16.	Technology	2
8.	Moving house	1	17.	World map	1
9.	Nasreddin Hodja	1			
			Total		**21**

Table 11 shows the data about the metaphors that constitute the category of *discovering & creating opportunities* and the number of teachers who developed each metaphor. When the Table is examined, it is seen that the most frequently used metaphor by the teachers in this category is *journey* (*N*=3). Below are the examples of the rationales described by the teachers for their preference of the metaphor.

Robinson: Because you try and discover new things (HM2).

A garden inside the house: Because every corner of the house has been rediscovered and utilized (PM96).

Student: Because during this period we have learned and discovered new things on the computer, just like students have. (MF135).

Hope

In this category consisting of metaphors expressed by the teachers, there are 8 metaphors produced by 10 teachers. Below are the related metaphors presented in Table 12.

Table 12. *The category of hope*

Metaphor Number	Metaphor	*f*	Metaphor Number	Metaphor	*f*
1	A stream flowing unsteadily	1	5.	Ice-cream at the poles	1
2.	Boats out of watermelon rinds	1	6.	Lighthouse	3
3.	Cliff-hanger	1	7.	Sunflower field	1
4.	Hope	1	8.	The Sun	1
			Total		**10**

Table 11 shows the data about the metaphors that constitute the category of *hope* and the number of teachers who developed each metaphor. When the Table is examined, it is seen that the most frequently used metaphor by the teachers in this category is *lighthouse* (*N*=3). The rationales of the metaphors expressed by the teachers are presented below.

Hope: Because one can't live without hope (PM66).

A stream flowing unsteadily: Because the stream flows and finds its way to one day (MF107).

Sunflower field: Because no matter the conditions are, the flowers always turn their faces to the Sun (PM1).

Lighthouse: Because the lighthouse will get you to the port safely (HF33).

4. Discussion and Conclusion

This study was conducted in order to reveal the perceptions of the teachers about *being a teacher in Turkey during the pandemic period*. Based on these perceptions, 278 metaphors were obtained related to the concept of ''*being a teacher in Turkey during the pandemic period*''. The related metaphors were grouped under 12 categories by the researchers. When they were examined, it emerged that the preferred metaphors usually reflected a negative structure. According to this finding, it could be said that the teachers have been negatively affected by the pandemic period. When the determined categories, that is, the categories of *uncertainty, exclusion, worthlessness, despair & pessimism, having difficulty, dissatisfaction, desperation, sacrifice, dedication & struggle, role-*

play, patience, discovering & creating opportunities and *hope* and the metaphors collected under these categories are examined, it could be considered that the teachers have been in constant uncertainty and obscurity, that they feel worthless, that their hopes for the future have ran out, that they are in great pessimism and Also, they have found it very difficult to perform the profession and they have felt dissatisfied with the situation and conditions they are in, that they feel helpless. However, it is also seen that they have struggled a lot by sacrificing despite the difficulty of the conditions, and this difficult process have taught a number of teachers to be patient, and actually, there have been great opportunities to learn new things. Although the research carried out in the field of education during the Covid-19 pandemic in Turkey are very low in numbers, the findings of this study are in the same line with some studies in the literature. In this pandemic period, teachers, schools, families and children's burdens have increased due to technology-assisted education (Iivari et al., 2020). For example, one study has showed that many teachers, unable to adapt to the process, tend to quit their jobs due to increased workloads and inefficiency of the distance education model, and almost half of the public-school teachers in the U.S who have quit their jobs early and voluntarily since March, 2020 have showed Covid-19 and the concomitant stress as the main reasons for their leave (Alkan & Onur-Andaç, 2021). During the Covid-19 pandemic, many teachers have faced distance learning tools that they have perhaps never used before to carry out the teaching or support their students. Other than the face-to-face communication they are accustomed to professionally, teachers have had to support the learning and success of their students with different methods and tools; on the other hand, they have had to cope with the social and psychological difficulties that the pandemic has created in their own lives (Çetinkaya-Aydın, 2020). As a matter of fact, it could be said that although many efforts have been made in the field of health to cope with Covid-19 and lead people to the new normal, the studies in education are not such effective (Hossain, 2020). In this context, teachers have already stated that distance education practices applied during this period cannot replace face-to-face education, and there are many problems concerning the teachers and students (Atreya & Acharya, 2020). Everyone was caught unprepared by the changes in education during the pandemic period (Papagiannidis et al., 2020). As in the *role-play* theme of this study, the teachers in Turkey have played various key roles during the pandemic. For example, constant communication with the students and parents, monitoring and supporting the students' academic development as well as their social and emotional state, giving them house duties and offering feedback according to their readiness levels, and preventing the students' learning deficits through the synchronous online lessons are the most important of these roles.

In addition to this, such responsibilities of the teachers as taking charge in video shooting of asynchronous classes, production of the materials such as medical masks, visors and overalls that have been needed more in the process, volunteering within the scope of local social responsibility studies in the supply and delivery of basic needs of the individuals aged 65 and over who have had curfew restrictions are the most remarkable roles among them (Gençoğlu, & Çiftçi, 2020). The teachers with limited skills and competence to provide online education have faced difficulties in conducting this process effectively on their own and had to cope with a much more workload, demands and expectations. The pandemic period has created extra stress for the teachers (Çetinkaya-Aydın, 2020). Even under normal circumstances, along with the fact that the educators who have no previous experience of distance education have gone through this process can cause some problems (Kayaduman & Demirel, 2019), it is understandable that the teachers have problems in this unusual period. As found in many studies (Dilekçi & Limon, 2020; Hatun, Dicle & Demirci, 2020; Pitcher, 2021; Ho et al., 2020; Illuminated, 2020; World Economic Forum, 2020) the teachers have been negatively affected by this period psychologically like other people; that's why, the changes in education cannot be achieved without including teachers' views in the process in the time of crisis like this. (Mulenga & Marban, 2020). The pandemic brings social attitudes such as anxiety, fear and panic into the forefront in individuals (Lee & Burke, 2020). However, regarding sacrificing that is one of the findings of this study, the teachers in Turkey have played a major role in the successful management of the process by making great efforts (MEB, 2020). Despite these negative sides, a study conducted by the OECD with a total of 330 education employees and stakeholders from 98 countries whose schools have been closed has found that the important option is to provide the teachers with professional support (77.9%) and ensure the well-being of the teachers (77.6%) (OECD, 2020).

5. Recommendations

This study is limited to the question of the teachers working in official primary, secondary and high schools in a city in the Western Black Sea Region in the spring semester of the 2020-2021 academic year and the

metaphorical perception of related concept. Therefore, for the future studies, this topic could be reinvestigated by having a wider sampling, including the teachers working in different regions in the study and using different instruments for the data collection. Focus group discussions and interviews could be conducted in order to investigate the causes of the teachers' metaphorical perceptions in detail. Teachers could be trained at pre-service or in-service in such issues as tolerance to uncertainties, crisis management, problem solving skills, psychological capital and endurance etc. Projects could be implemented to support the teachers psychologically during and after the Covid-19 pandemic. Psychological support that will increase the well-being of the teachers could be provided by the Ministry. As Çetinkaya-Aydın (2020) has stated, what the process of crisis and its aftermath will mean to the teachers, and how the issues in this process will affect them professionally and personally will depend largely on the policies and measures to be followed at the central management level and institutional level. Therefore, policy makers and employees of central organization could carry out the necessary studies on what kind of programs to implement in case of pandemics or different disasters.

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The Relationship between the Attitude Towards Socioscientific Issues and Views on COVID-19 and Vaccine

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ABSTRACT

With the pandemic, conspiracy theories about the COVID-19 began to spread rapidly in the virtual environment. It is not difficult for these conspiracy theories to replace scientific knowledge, particularly those with low scientific literacy. This study aimed to examine whether there is a relationship between university students' attitudes towards socioscientific issues (viz. their views on conspiracy theories) and their views on the COVID-19 process and vaccination. 1275 university students from different universities studying at various departments participated in the study. "The Attitude Scale towards Socioscientific Issues" developed by Topcu (2010) and the "COVID-19 process and Vaccination Questionnaire" developed by the researchers consisting of 20 questions were used as data collection tools in the study. In analysing the data obtained from the application, the continuous variables with two categories were analysed using the independent groups' t-test since the research data showed normal distribution and provided the preconditions. A one-way ANOVA test was used in the analysis of continuous variables with more than two categories. The chi-square test was used in the analysis of categorical variables, and a multinominal logistic regression was performed when examining the relationship between main variables and categorical variables. As a result of the analysis, it was observed that students with a high attitude towards socioscientific issues were more scientifically oriented to conspiracy theories, the existence of the COVID-19 and its origin, and their ideas about vaccination were more positive. In the post-pandemic period, a restructuring of science education in which socioscientific issues are concentrated upon to increase health literacy and scientific literacy arguably appears urgent.

Keywords:
Socioscientific issues, COVID-19 process and vaccination, scientific literacy, science education

1. Introduction

We live in an age where data and opinions on any topic can instantly turn into conspiracy theories involving misinformation. This era in which individuals disagree about the facts and act according to personal beliefs and emotions rather than in light of tested and validated information in making decisions is called *Post-Truth* (Sinatra & Lombardi, 2020). It becomes increasingly difficult to distinguish between correct information and false information in this age (Wineburg & McGrew, 2017). The main reason is the internet and social media content that has no limit or control. From students to academics, everyone immediately questions a subject they do not know about and check it through Google. The best example of this is the COVID-19 pandemic we are experiencing right now. Although the problem has become a real life-or-death issue, the environment created by the pandemic has spawned plentiful misinformation and conspiracy theories. Three of the top 10 Google search trends of 2020 are related to the *coronavirus, coronavirus symptoms, and current coronavirus numbers*. When we include *Zoom* and *Google Classroom as the terms in the search trends,* which are educational environments resorted to the most due to the situation caused by the corona pandemic, the first five of the top

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ten of the Google search trends of 2020 are all the concepts pertaining to the pandemic (Google, 2021). This situation is an indicator that *Socioscientific Issues* have the power to affect the scientific content and social life. In the face of this pandemic that leaves people desperate, the world of science immediately took action, measures were announced to protect people from the consequences of the pandemic, and vaccine development studies, which are an effective way to get rid of the issue, have been initiated. Science affects society and directs the production of Scientia, addressing social needs (Sadler & Zeidler, 2005). With the pandemic, misinformation, disinformation, and malinformation that can change people's decisions, which in return will negatively affect their health, have spread rapidly on the internet. This situation is likely due to political, economic, or cultural agendas (Waisbord, 2018). While fighting the pandemic, we are also fighting infodemics (Pennycook et al., 2020). Misinterpretation of information and rejection of scientific evidence is a characteristic of the Post-Truth era (Kienhues et al., 2020). It is crucial to raise scientifically literate individuals to be victorious in this war with infodemics at the same time as the pandemic itself (Kienhues et al., 2020; Saribas & Cetinkaya, 2021). Scientific literacy is also the ability to correctly and effectively interpret and construct science-based ideas in popular media (Cavagnetto, 2010).

In the post-truth era, it is deemed important to make a critical evaluation of online scientific information (Sinatra & Lombardi, 2020). In school settings, students and teachers favour precision in science; they do not like uncertainty. The main problem here is not that science is not understood but that the inherent ambiguity of science cannot be understood (Durnali & Ayyildiz, 2019). Uncertainty advances science. Therefore, explaining what uncertainty is becomes very important for science education (Kampourakis, 2018). Especially for science under construction, uncertainty, which is natural to exist when a/the solution is being sought as part of the process, increases, and the environment is left to misinformation and conspiracy theories, mostly owing to the inability to understand the ambiguity (Nguyen & Catalan-Matamoros, 2020). Therefore, learners must understand what uncertainty means in science (Kienhues et al., 2020). Uncertainty affects individuals' decisions about health problems, as can be seen from the pandemic we are currently experiencing. Thereupon, it is necessary to focus on explaining the nature and effects of uncertainty in science to improve individuals' understanding of science (Kampourakis & McCain, 2019). Students' ability to cope with such uncertainties they encounter depends on their ability to solve problems (Chen, 2020; Yilmaz, 2021). Traditional science classes emphasise the final state of particular knowledge, namely its results. However, students are given little opportunity to evaluate how this knowledge has been developed (Chen et al., 2019). The traditional school tends to present science as positivist knowledge and an unshakable truth that is unaffected by sociocultural factors. Since scientific knowledge is taught as a series of unshakable facts, individuals perceive science as a magic wand that will solve all problems when touched. It should be realised that this is not the case; scientific knowledge is powerful for generating a solution but cannot change everything at once (Christensen, 2009). Socioscientific issues provide a context in which a sceptical outlook can be developed on everyday scientific claims or data that can help understand the complexity of a topic (Lee et al., 2020). Raising scientifically literate individuals can easily become possible within the framework of real socioscientific issues (Zeidler, 2014).

Socioscientific issues are critical for individuals to gain scientific literacy (Hofstein et al., 2011; Karisan & Zeidler, 2017; Powell, 2021), and they provide scientific explanations for current issues (Sadler et al., 2011). It then turns out to be critical to have socially important and scientifically based topics such as epidemics as part of science education content (Yahaya et al., 2015). To date, studies have shown that the implementation of the curriculum guided by socioscientific issues, including health problems at many levels from primary school to university, has produced positive results, encouraging students' interest and participation in science learning (Arnold, 2018; Ekborg et al., 2013; Lee et al., 2013). There seems to be a similarity in the measures taken against COVID-19 and the influenza pandemic from 1918-1919. In the influenza pandemic, masks were used, public gatherings were banned, schools were closed, hygiene rules were recommended, and efforts were made to develop a failed vaccine. But it was herd immunity that ultimately ended the epidemic (Reiss, 2020). Instead of vaccination, which is one of the most important and successful public health interventions for the prevention of infectious diseases (Andre et al., 2008; Salerno et al., 2019), if we are to wait for the COVID-19 outbreak to end with herd immunity, we may need to tolerate millions of deaths. To successfully deal with the present pandemic or a different epidemic that is likely to occur later (Karpudewan & Chan, 2020), we need to be aware that we have no other way than to refer to science. For this, it is necessary to raise society's awareness, especially that of students, and to increase scientific literacy. Although research shows that societies have high confidence in science and believe that science brings great benefits to the world, we can

say that many people still do not acknowledge the role of science when it comes to socioscientific issues such as climate change and vaccination (Dillon & Avraamidou, 2020). Furthermore, a situation of rejecting arises. In today's science and technology-centred society, we encounter more socioscientific issues affecting our daily lives. Therefore, it has been emphasised for a long time that it is fundamental for science educators and policymakers to investigate further and understand individuals' attitudes towards socioscientific issues (Chang & Chiu, 2008).

Socioscientific issues consist of socially important real-world problems based on science, as evident from the pandemic we are experiencing now (Tyrrell & Calinger, 2020). It will be possible for individuals to realise that these real-world problems inherently have a problematic nature awaiting to be solved. To understand the content of socioscientific issues, they need to do more research and questioning on these issues (Sadler et al., 2007). Socioscientific issues are essential to gain a critical science literacy vision that prepares individuals for responsible citizenship in the society they live in (Sjöström & Eilks, 2018). Scientific literate individuals with this vision are expected to make conscious decisions about world problems, which include socioscientific content that society constantly faces (Zeidler & Lewis, 2003). It is of utmost importance to prepare students for the decision-making processes to be carried out on socioscientific issues. The importance of this was found in the educational recommendations made by organisations such as the *American Science Development Association (AAAS)* and the *National Research Council (NRC)* (Kolstø, 2001). Studies have also emphasised that the gradual implementation of socioscientific issues activities in the classroom improves students' decision-making based on scientific evidence (Karpudewan & Chan, 2020). The importance of socioscientific issues for science education has been accepted in many countries, and such issues have taken place in primary and high school programs to create this decision-making situation as desired (Topcu, 2019). Socioscientific issues in Turkey, with the updates realised by the Ministry of Education in 2013 and 2018, began to take part in training programs. It is seen that socioscientific issues programs increase students' subject area knowledge and critical thinking ability levels (Topcu, 2019). Based on the fact that socioscientific issues are effective on students (in terms of having accurate information about current world problems and making "healthy" decisions), in this study, university students' attitudes towards socioscientific issues and their views on the COVID-19 process and vaccination were comparatively examined.

2. Methodology

This study aimed to determine how the views of students in higher education on socioscientific issues affect their perspectives on the COVID-19 process and vaccination studies. The research process is designed as a case study. Case studies aim to conduct a detailed and in-depth analysis of complex events, which are up-to-date, in which the researcher has little or no control, and which take into account dynamic interactions (Creswell & Poth, 2018; Yin, 2018).

2.1. The Study Design

Data were collected in a cross-sectional process in the study. The research data were obtained over three months through an internet-based scale and questionnaire applications. In this context, the participants' opinions on socioscientific issues, COVID-19, and vaccination were collected. Within the scope of the research, attention has been paid to gathering opinions from people in many different higher education programs to ensure data diversity and to generalise the obtained data to a wider universe.

2.2. Ethical Considerations

In the research, maximum attention was paid to ethical rules, and all practices were carried out in this direction. Before the application, the informed consent form was sent, and those who wanted to participate voluntarily contributed to the application. There was no room for any situation that would disrupt or adversely affect the participants' mood, psychological conditions, or social relations throughout the application. All of the collected data were kept confidential and were not used for other than this scientific study. This research has the ethics committee document issued number 4, dated 25.12.2020, with decision number 32 obtained from the Ethical Board of Kastamonu University.

2.3. The Study Group

The stratified sampling type was chosen among the random sampling types whilst determining the study group of the research. The reason for choosing this sampling is that too many higher education programs were involved in the study and the number of students in these departments was not equal or varied for departments (McMillan & Schumacher, 2009). A total of 1322 people participated in the study. However, 1275 people remained among these participants due to the cleaning of the data belonging to the participants that did not complete the questionnaire or the scale and that of the data which had deficiencies and extreme values during the analysis of normality distribution. The working group has generally been gathered under two categories. The first category includes science, engineering, and medical sciences. Sections included in this category are faculty of education (science and mathematics teaching), faculty of science and literature, faculty of engineering and architecture, faculty of economics and administrative sciences, faculty of health sciences, faculty of medicine, faculty of pharmacy, and faculty of nursing and health vocational schools. The second category includes social sciences and humanities. Sections included in this category are as follows: faculty of education (preschool, classroom, social studies, Turkish, music, painting, special education, and foreign languages teaching), faculty of fine arts, faculty of theology, faculty of communication, faculty of tourism, faculty of sports sciences, faculty of applied sciences, and faculties of social sciences. In addition, the information about participants, i.e., gender, grade level, and others, is divided into five different categories, and detailed demographic data are presented in the findings section below.

2.4. Data Collection Tools

Two different data collection tools were used in the research process. As the first data collection tool, the *Attitudes towards Socioscientific Issues Scale* developed by Topcu (2010), consisting of 30 items and three dimensions (Interest and usefulness of SSI, liking of SSI, anxiety towards SSI), was used to determine the attitudes of the participants towards socioscientific issues. Necessary permissions have been obtained from the owner for the use of the scale. Scale items were grouped between 1-5 and graded between *Strongly Disagree and Strongly Agree* opinions. The lowest score that can be obtained from the scale is 30, and the highest score is 150. The second data collection tool is a questionnaire with 20 questions and *Yes*/*No* options developed by the researchers to determine the views on the Covid 19 process and vaccination studies. The questionnaire questions are divided into direct and indirect questions directed to see the views on being vaccinated.

2.5. Statistical Analysis of Data

IBM SPSS v25.0 for Windows and IBM SPSS AMOS v24.0 for Windows programs were utilised while analysing the application data. In the study, the general significance level was determined as $p<.05$, and in applying the zero-order correlation, it was considered $p<.01$. Independent groups t-test was used to analyse continuous variables, which have two categories because the research data show a normal distribution and meet the preconditions. A one-way ANOVA test was performed in the analysis of continuous variables with more than two categories. In addition, effect sizes and 95% confidence intervals were calculated. The chi-square test was used in the analysis of categorical variables, and a multinominal logistic regression was performed when examining the relationship between main variables and categorical variables. Finally, the results obtained were summarised using the structural equation model.

2.6. Reliability and Validity Applications

For all data collection tools used in the study, expert opinions were first consulted, and their use was ensured in line with expert opinions. As a result of the application for the scale of attitude towards socioscientific issues, which is the first data collection tool within the scope of reliability applications, Cronbach's Alpha reliability coefficient was found as .88. In social sciences, this value is quite good and acceptable (Ayyildiz & Yilmaz, 2021; Flick, 2009). Similarly, expert opinion was received for the questionnaire to obtain views on the COVID-19 process and vaccination. Sentences with semantical problems were arranged, and questions serving a similar purpose were combined. At the same time, checks were made by language experts and then it reached its final version. Confirmatory factor analysis was performed to check the construct validity of the attitude scale to determine validity. As a result of confirmatory factor analysis, the following were found; *NFI*=.90; *CFI*=.92; X^2_{min}/df=2.33; *RMSEA*=.07; *RMR*=.07. These results show that the scale provides the construct validity and the goodness of fit index values are at a good level (Cokluk et al., 2014). The results obtained are consistent

with the original findings of the scale. Expert opinion was consulted as in the reliability phase, and necessary corrections were made in light of the feedback received to ensure the content and appearance validity of the other data collection tool used in the study (Tabachnick & Fidell, 2007).

3. Findings

The findings obtained as a result of the research were examined gradually. Firstly, it was examined whether the opinions of the participants differed under various categories. Table 1 presents participants opinions on socio-scientific issues, and Table 2 presents their views on the COVID-19 process and vaccination obtained by the questionnaire.

Table 1. *Demographic Variables of the Participants for Socio-scientific Issues*

Variables	Sub-variables	N	Mean	Sum of Squares		df	Mean Square	F	*p*	η^2
Gender	Female	953	3.08	Between Groups	115.274	1	115.274	1158.73	.000	.476
	Male	322	3.77	Within Groups	126.641	1273	.099			
	Total	1275	3.26	Total	241.915	1274				
Grade Level	1st grade	407	2.77	Between Groups	191.767	3	63.922	1620.12	.000	.792
	2nd grade	224	3.19	Within Groups	50.148	1271	.039			
	3rd grade	377	3.43	Total	241.915	1274				
	4th grade	267	3.82							
	Total	1275	3.26							
Science Area	Science, Engineering and Medical	626	3.60	Between Groups	141.819	1	141.819	1803.63	.000	.586
	Social and Humanities	649	2.93	Within Groups	100.095	1273	.079			
	Total	1275	3.26	Total	241.915	1274				
Knowledgeable about Socioscientific Issues	Yes	826	3.50	Between Groups	142.476	1	142.476	1823.96	.000	.588
	No	449	2.80	Within Groups	99.438	1273	.078			
	Total	1275	3.26	Total	241.915	1274				
Knowledgeable about COVID-19	Yes	994	3.43	Between Groups	130.054	1	130.054	1480.03	.000	.537
	No	281	2.66	Within Groups	111.861	1273	.088			
	Total	1275	3.26	Total	241.915	1274				

F: F-Value for Independent t-test and ANOVA. η^2= Effect size coefficient.

When Table 1 is examined, the gender variable [$F_{(1-1273)}$=1158.73, p<.05, η^2=.476], grade level [$F_{(3-1271)}$=1620.12, p<.05, η^2=.792], science area [$F_{(1-1273)}$=1803.63, p<.05, η^2=.586], knowledge of socioscientific issues [$F_{(1-1273)}$=1823.96, p<. 05, η^2=.588], and knowledge of COVID-19 [$F_{(1-1273)}$=1480.03, p<.05, η^2=.537] were found to be significantly different.

Table 2. *Demographic Variables of the Participants for COVID-19 Vaccine Questionnaire*

Variables	Sub-variables	N	Mean	Sum of Squares		Df	Mean Square	F	*p*	η^2
Gender	Female	953	.56	Between Groups	9.056	1	9.056	961.29	.000	.430
	Male	322	.75	Within Groups	11.993	1273	.009			
	Total	1275	.61	Total	21.048	1274				
Grade Level	1st grade	407	.46	Between Groups	17.294	3	5.765	1951.26	.000	.821
	2nd grade	224	.60	Within Groups	3.755	1271	.003			
	3rd grade	377	.67	Total	21.048	1274				
	4th grade	267	.76							
	Total	1275	.61							
Science Area	Science, Engineering and Medical	626	.71	Between Groups	12.780	1	12.780	1967.72	.000	.607
	Social and Humanities	649	.51	Within Groups	8.268	1273	.006			
	Total	1275	.61	Total	21.048	1274				
Knowledgeable about Socioscientific Issues	Yes	826	.69	Between Groups	14.077	1	14.077	2570.72	.000	.668
	No	449	.47	Within Groups	6.971	1273	.005			
	Total	1275	.61	Total	21.048	1274				
Knowledgeable about COVID-19	Yes	994	.66	Between Groups	13.114	1	13.114	2104.05	.000	.623
	No	281	.42	Within Groups	7.934	1273	.006			
	Total	1275	.61	Total	21.048	1274				

F: F-Value for Independent t-test and ANOVA. η^2= Effect size coefficient.

When Table 2 is examined, the gender variable [$F_{(1\text{-}1273)}$=961.29, p<.05, η^2=.430], grade level [$F_{(3\text{-}1271)}$=1951.26, p<.05, η^2=.821], science area [$F_{(1\text{-}1273)}$=1967.72, p<.05, η^2=.607], knowledge of socioscientific issues [$F_{(1\text{-}1273)}$=2570.72, p<.05, η^2=.668], and knowledge of COVID-19 [$F_{(1\text{-}1273)}$=2104.05, p<.05, η^2=.623] variables were found to be significantly different.

Table 3. *Zero-Order Correlations for All Variables*

Variables	1	2	3	4	5	6	7
1. Gender	-						
2. Grade level	.73**	-					
3. Science area	.59**	.88**	-				
4. Knowledgeable about socioscientific issues	.43**	.84**	.72**	-			
5. Knowledgeable about COVID-19	.31**	.65**	.52**	.72**	-		
6. Overall mean for socioscientific issues	.69**	.88**	.76**	.76**	.73**	-	
7. Overall mean of COVID-19 vaccine tendency to be hit	.65**	.89**	.77**	.81**	.78**	.98**	-

**Correlation is significant at the 0.01 level - **p<.01

When the correlation values for the variables are examined, it is seen that all variables have positive correlations with each other. The highest correlation was between *Overall Mean for Socioscientific Issues* and *Overall Mean of COVID-19 Vaccine Tendency to be Hit;* this value was calculated as ($r_{7\text{-}6}$= .98). In addition, these two variables have high relationships with their class levels ($r_{7\text{-}2}$=.89), ($r_{6\text{-}2}$=.88). The lowest correlation was between *Knowledgeable about COVID-19* and *Gender*; this value was calculated as ($r_{5\text{-}1}$=.31). These results show

that the variables participating in the study have consistent relationships with each other. Table 4 below contains the questions and results from the questionnaire that directly reflect the thoughts about getting the COVID-19 vaccine.

Table 4. *COVID-19 Vaccine Questions about the thoughts of Being Shot*

Conspiracy Belief and Attitude Items	**Q8- If a vaccine with an effect of more than 90% is found, would you be vaccinated?**					
		Yes	**No**	**β**	***p***	**Odds Ratio (95% CI)**
Q4- Do you think the COVID-19 virus is a natural virus or an artificial virus produced in a laboratory environment? Tick "Yes" if you think it is natural, "No" if you think it is artificial.	Natural	840 (65.9)	98 (7.7)	3.257	.000	25.962 (16.934-39.803)
	Man-made	88 (6.9)	249 (19.5)			
Q5-What do your closest friends think about question 4? Tick "Yes" if they think it is natural, "No" if they think it is artificial.	Yes	853 (66.9)	188 (14.7)	1.260	.000	3.524 (2.199-5.647)
	No	75 (5.9)	159 (12.5)			
Q1-Do you believe in the existence of the SARS-CoV-2 virus?	Yes	910 (71.4)	319 (25.0)	1.581	.001	4.858 (1.865-12.657)
	No	18 (1.4)	28 (2.2)			
Q2-Do people you know and who are close to you believe in the presence of the SARS-CoV-2 virus?	Yes	709 (55.6)	186 (14.6)	.881	.001	.414 (.251-.685)
	No	219 (17.2)	161 (12.6)			
Q9-Will your best friend get vaccinated if a vaccine with an effect of more than 90% is found?	Yes	818 (64.2)	154 (12.1)	1.155	.000	3.174 (2.046-4.923)
	No	110 (8.6)	193 (15.1)			
Q10-Does the possibility of having a side effect of the COVID-19 vaccine change your opinion of being vaccinated?	Yes	738 (57.9)	172 (13.5)	-.977	.000	2.657 (1.584-4.458)
	No	190 (14.9)	175 (13.7)			
Q12-Do you have a chronic illness?	Yes	92 (7.2)	44 (3.5)	.595	.044	.551 (.309-.985)
	No	836 (65.6)	303 (23.8)			
Q13-Have you become ill with COVID-19 disease?	Yes	91 (7.1)	127 (10.0)	.930	.000	.395 (.244-.638)
	No	837 (65.6)	220 (17.3)			
Q14-Have any of your relatives caught COVID-19 disease?	Yes	530 (41.6)	43 (3.4)	1.304	.000	3.686 (2.319-5.858)
	No	398 (31.2)	304 (23.8)			

β: Beta coefficient. For categorical variables, we used chi-squared tests. CI: Confidence interval (95%). For Odds Ratio Value, we used multinomial regression analysis. The first reference category is: Man-made; The second reference category is: No.

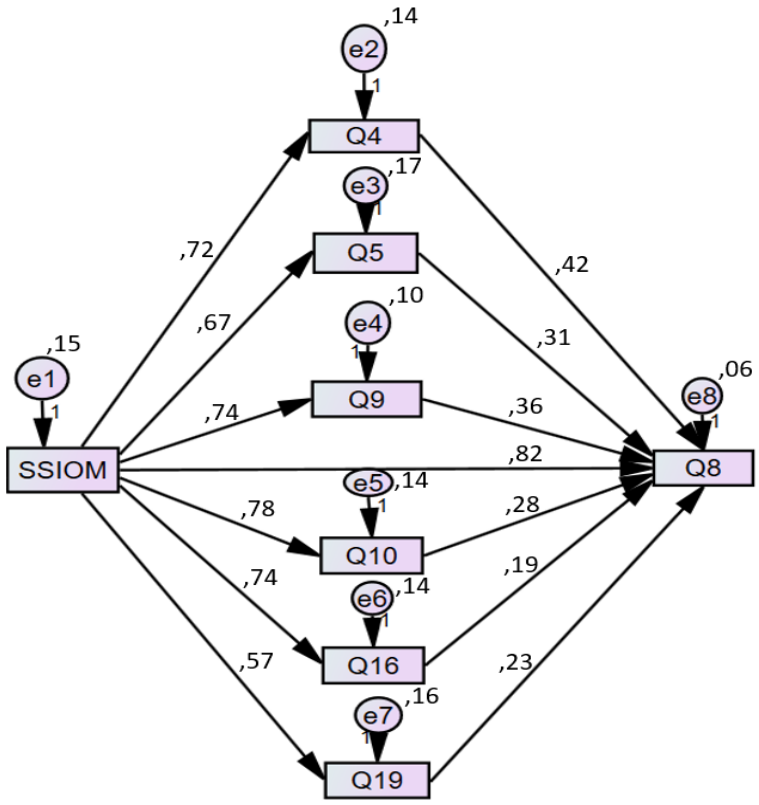
When Table 4 is examined, it is seen that all questions that are directly related to the COVID-19 vaccine are meaningful. In addition, when the β coefficients and confidence intervals are examined, it is seen that the effect levels of Q4, Q1, Q14, Q5, and Q9 are high. It can be stated that the Q10 coded problem has a negative charge value; thus, the direction of thinking follows the pattern from "yes" to "no". Table 5 below contains the questionnaire questions and results that indirectly reflect the thoughts about being shot with the COVID-19 vaccine.

Table 5. *Questions Indirectly Related to the Thoughts of Being Shot with the COVID-19 Vaccine*

Conspiracy Belief and Attitude Items	Q8- If a vaccine with an effect of more than 90% is found, would you be vaccinated?					
		Yes	No	β	*p*	Odds Ratio (95% CI)
Q3-How did the COVID-19 outbreak affect your belief in science? Tick "Yes" if it affected positively, "No" if negatively.	Positive	709 (55.6)	186 (14.6)	.790	.002	.454 (.275-.748)
	Negative	219 (17.2)	161 (12.6)			
Q6-Do you believe you will find an effective vaccine for COVID-19?	Yes	840 (65.9)	98 (7.7)	3.226	.000	25.186 (16.451-38.560)
	No	88 (6.9)	249 (19.5)			
Q7-Does your best friend believe he/she will find an effective vaccine for COVID-19?	Yes	853 (66.9)	188 (14.7)	1.327	.000	3.768 (2.317-6.130)
	No	75 (5.9)	159 (12.5)			
Q11-Have you ever had a flu shot before?	Yes	530 (41.6)	43 (3.4)	1.294	.000	3.646 (2.272-5.849)
	No	398 (31.2)	304 (23.8)			
Q15-Would you like to be a subject in COVID-19 vaccine studies?	Yes	336 (26.4)	97 (7.6)	.223	.304	.800 (.523-1.224)
	No	592 (46.4)	250 (19.6)			
Q16-Could new scientific data about the COVID-19 vaccine change your mind on being shot?	Yes	753 (59.1)	265 (20.8)	.449	.043	1.566 (1.249-2.469)
	No	175 (13.7)	82 (6.4)			
Q17-Would you describe yourself as an anti-vaxxer?	Yes	91 (7.1)	127 (10.0)	.960	.000	.383 (.237-.618)
	No	837 (65.6)	220 (17.3)			
Q18-Do you plan to get the COVID-19 vaccine and continue your education?	Yes	818 (64.2)	154 (12.1)	1.073	.000	2.924 (1.898-4.506)
	No	110 (8.6)	193 (15.1)			
Q19-Do you trust COVID-19 vaccines?	Yes	738 (57.9)	172 (13.5)	1.044	.000	2.839 (1.681-4.795)
	No	190 (14.9)	175 (13.7)			
Q20-Do you support the COVID-19 vaccine studies developed in your country?	Yes	791 (62.0)	307 (24.1)	.592	.042	.553 (.284-.886)
	No	137 (10.7)	40 (3.1)			

β: Beta coefficient. For categorical variables, we used chi-squared tests. CI: Confidence interval (95%). For Odds Ratio Value, we used multinomial regression analysis. The first reference category is: Negative; The second reference category is: No.

When Table 5 above is examined, it is seen that the questions with indirect relation to the shooting of the COVID-19 vaccine are meaningful; only Q15 is meaningless. In addition, when β coefficients and confidence intervals are examined, it is seen that the effect levels of Q6, Q7, Q11, Q18, and Q19 are high. Figure 1 below presents the structural equation model that summarises the research process and shows the relationships between variables.



Regression Weights		β	S.E.	C.R.	P
Q4	<--- SSIOM	,720	,142	29,623	***
Q5	<--- SSIOM	,667	,174	25,478	***
Q8	<--- SSIOM	,823	,062	4,648	***
Q9	<--- SSIOM	,738	,100	35,911	***
Q10	<--- SSIOM	,777	,141	32,830	***
Q16	<--- SSIOM	,740	,144	30,878	***
Q19	<--- SSIOM	,567	,162	21,884	***
Q8	<--- Q4	,422	,018	20,963	***
Q8	<--- Q5	,311	,014	9,948	***
Q8	<--- Q9	,361	,029	8,624	***
Q8	<--- Q10	,284	,019	9,916	***
Q8	<--- Q16	,191	,019	9,122	***
Q8	<--- Q19	,233	,018	5,805	***

Goodness of Fit Indices	Value	Relevance
X^2_{min}/df	2.89	Good fit
p	.00	-
RMSEA	.06	Good fit
NFI	.92	Good fit
NNFI	.93	Good fit
CFI	.91	Good fit
RMR	.07	Good fit
SRMR	.06	Good fit
AGFI	.92	Good fit
GFI	.94	Good fit

SSIOM: Socioscientific Issues Overall Mean. Q4, Q5, Q8, Q9, Q10, Q16, Q19: COVID-19 Vaccine Items. β: Beta coefficient. S.E: Standart Error. C.R.: T-Value>1.96 for *p*<.05

Figure 1. *Structural Equation Model Summarising the Research Process*

When Figure 1 above is examined, trends towards socioscientific issues seem to have a positive and direct effect on the idea of being shot with the COVID-19 vaccine (β=82, *p*=.00). On the other hand, the tendency of the participants with high attitude level to be vaccinated (β=.58, *p*=.00), when compared to the individuals with medium (β=-.37, *p*=.00) and low (β=-.40, *p*=.00) attitude, was found positive and higher. This is an expected situation because the tendencies towards socioscientific issues create a situation that affects the preferences of individuals during the decision-making process. Within the scope of the research, some thoughts (Q4, Q5, Q9, Q10, Q16, Q19) that affect the participants' preferences (Q8) to be shot with the COVID-19 vaccine were examined as a mediator variable, and their effects on the process were observed. It is understood from the β coefficients that there is a high level of positive significance between the views on socioscientific issues and the mediator variables (β=.57-.78). Similarly, there is a positive and significant relationship between mediator variables and the thought of being shot with the COVID-19 vaccine (β=.19-.42). The results show that participant views can be influenced by mediator variables and can change views on vaccination. When the construct validity results for the research model are examined, it is seen that the index values of the model's goodness of fit are quite good.

4. Conclusion and Discussion

Socioscientific issues consist of real-world problems with scientific content and carry importance that has a societal dimension (Karisan & Turksever, 2017; Tyrrell & Calinger, 2020). Health issues are also considered significant for the future of humanity and are a component of socioscientific issues directly related to education (Arnold, 2018). Within this framework, health literacy is important to cope with health issues such as epidemics successfully. Gaining health literacy can be achieved in the context of science education, which integrates scientific literacy and socioscientific issues in itself (Dillon, 2012; Roth, 2014; Zeyer, 2012). The role of science education in health education is to help students make informed decisions about their future lives and health. However, health education has been neglected in science education in schools and science education research of academics (Zeyer & Dillon, 2014). In our research, we attempted to study the perspectives and attitudes of university students that emerged with the COVID-19 pandemic, such as the thoughts about the existence of SARS-CoV-2, beliefs in conspiracy theories claiming the virus is originally

artificial, being against vaccination, which is proved to be the prominent means to stay safe during the pandemic (Andre et al., 2008; Salerno et al., 2019), and the attitudes towards socioscientific issues by checking if there is a relationship between the topics mentioned above.

When we look at the general vaccine acceptance rate of the students participating in our research, 78.2% say that they are thinking of being vaccinated. Although this indicates a higher level than what Lazarus et al. (2021) shared in their study that analysed the acceptance of COVID-19 vaccination levels (namely 71.5%) in 19 countries, bearing in mind that the participants were university students and that they were inclined to be vaccinated proved 90% effectiveness or more; this finding suggests a low level of vaccination acceptance. Harapan et al. (2020) found that the vaccination rate increased to 93.3% in the case of a 95% effective vaccine, while the desire to be vaccinated fell to 67% if the vaccine was 50% effective in the same study. In our study, a detailed examination of the socioscientific issue attitudes of the students according to their department and grade levels, vaccination behaviours and the origin of the virus was carried out. According to our results, it was seen that the socioscientific issue attitudes, vaccination behaviours, and thoughts about the origin of the virus were more favourable to scientific literacy than the students studying in the departments grouped as science, engineering, and medical. Likewise, it was concluded that the students in the fourth grade approached the situations mentioned above more scientifically than the students in the other grades. We can say that this situation is because the students studying in the science fields receive an integrated science education of the socioscientific issues and thanks to the science-oriented education they receive at the university. Our study found that as students' attitudes towards socioscientific issues increased, their opinions about vaccination were positive.

Both in the pre-COVID-19 vaccine hesitations studies (Piedrahita-Valdés et al., 2021; Sarathchandra et al., 2018) and the studies conducted in the COVID-19 process (Čavojová et al., 2020a), it was concluded that people with high scientific logic had a more positive attitude towards vaccination. The similarity between the results of our study and other studies is that socioscientific issues are critical for individuals to gain scientific literacy (Hofstein et al., 2011) and help them to provide a scientific explanation for current issues such as the epidemic of public health (Sadler et al., 2011). One of the important findings of our study is that believing in conspiracy theories that have spread rapidly since the beginning of the COVID-19 process (ones saying that the coronavirus is not real and that it is a laboratory-developed virus etc.) is highly correlated with attitudes towards socioscientific issues. According to our results, students with a high attitude towards socioscientific issues think that the virus's origin is natural. Another finding is that the vaccination behaviour of students who think that the source of the virus is natural is more positive. It is observed that the vaccination behaviours of the students who think that the virus is of laboratory origin are low. This finding corresponds to the results of other studies (e.g., Salali & Uysal, 2020). This type of behaviour can be explained as individuals who believe in conspiracy theories or false scientific claims may be more prone to accepting new misinformation (e.g. side effects of the vaccine). Hence, they exhibit anti-vaccine behaviour (Čavojová et al., 2020b; Kose et al., 2020; Lobato et al., 2014).

Discussion of the side effects of the vaccine, which is the subject of discussion every day on social media and TV programs during the pandemic process, and the discussion of new scientific data on the virus and the vaccine, affect individuals' decisions about their health (Lyu et al., 2020). That said, it is very important to raise scientifically literate individuals to be victorious in the fight against infodemics (Pennycook et al., 2020) simultaneously in the fight with the pandemic (Kienhues et al., 2020). Following the results of our study, since the vaccination has side effects and new scientific data comes into play that might interfere with the idea of being vaccinated, the participants accentuated that they would change their views on getting the vaccination. It is known that scientific literacy can correctly and effectively interpret and construct science-based ideas in popular media (Cavagnetto, 2010; Sinatra & Lombardi, 2020). It is emphasised that an integrated science education of socioscientific issues is important for scientific literacy development (Sjöström & Eilks, 2018). An important finding of our study is that there is a high level of positive significance between students who have a high attitude towards socioscientific issues, side effects, and new scientific data changing the idea of vaccination. In other words, students with high attitudes towards socioscientific issues can scientifically interpret new data on epidemics and vaccines and make their decisions accordingly. It is the main function of scientists to take the necessary measures to prevent the spread of the epidemic in cases such as epidemics that directly affect public health and develop vaccines, which are the best method known to be protected from the

epidemic. However, in addition to developing vaccines, another important issue is to win the fight against infodemics, such as conspiracy theories about the epidemic and possible vaccine oppositions. It is challenging to achieve this after health problems such as epidemics occur. Therefore, we should be aware that there is a higher probability of a more dangerous outbreak than the COVID-19 pandemic itself, which we are currently being exposed to (Karpudewan & Chan, 2020). We need to realise the urgent need to increase scientific literacy among the general public and school-age children in particular (Powell, 2021).

As a result, the findings of our study overlap with previous studies, and it is seen that the attitude towards the socioscientific issues is effective in preventing conspiracy theories, combating vaccine opposition, and gaining health literacy and scientific literacy. More emphasis should be placed on teaching socioscientific issues integrated into science education to improve scientific literacy.

5. Practical Implications

The highlights obtained within the scope of the research as to implications are listed below:

- University students' views on socioscientific issues and the COVID-19 process may differ in terms of several variables. The research results showed that male students are more inclined, class level and the field of science are determining factors. It was found out that students in upper classes and those in the field of science have a higher attitude.
- It can be stated that the level of interest in socioscientific issues and decision-making mechanisms in the COVID-19 process has a logical and positive relationship.
- It is seen that most participants will develop a positive attitude towards a vaccine with an effect of more than 90%. In contrast, it is seen that they are hesitant or unwilling to be a test subject in the vaccination process or contribute to it.
- It can be said that the participants have confidence in vaccination studies and science and are in a hopeful wait. However, the side effects of vaccines, the tendency to be a subject, to believe in lies and false information, can have a negative effect on COVID-19 vaccines and vaccination ideas.

6. Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendix-1

COVID-19 process and Vaccination Questionnaire

1. Do you believe in the existence of the SARS-CoV-2 virus?
2. Do people you know and who are close to you believe in the presence of the COVID-19 virus?
3. How did the COVID-19 outbreak affect your belief in science? Tick "Yes" if positively, "No" if negatively.
4. Do you think the COVID-19 virus is a natural virus or an artificial virus produced in a laboratory environment? Tick "Yes" if you think it is natural, "No" if you think it is artificial.
5. What do your closest friends think about question 4? Tick "Yes" if they think it is natural, "No" if they think it is artificial.
6. Do you believe you will find an effective vaccine for COVID-19?
7. Does your best friend believe he/she will find an effective vaccine for COVID-19?
8. If a vaccine with an effect of more than 90% is found, would you be vaccinated?
9. Will your best friend get vaccinated if a vaccine with an effect of more than 90% is found?
10. Does the possibility of having a side effect of the COVID-19 vaccine change your opinion of being vaccinated?
11. Have you ever had a flu shot before?
12. Do you have a chronic illness?
13. Have you become ill with COVID-19 disease?
14. Have any of your relatives caught COVID-19 disease?
15. Would you like to be a subject in COVID-19 vaccine studies?
16. Could new scientific data about the COVID-19 vaccine change your mind on being shot?
17. Would you describe yourself as an anti-vaxxer?
18. Do you plan to get the COVID-19 vaccine and continue your education?
19. Do you trust COVID-19 vaccines?
20. Do you support the COVID-19 vaccine studies developed in your country?

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Beyond COVID-19 Pandemic: Changes in Interaction Pattern between Children and Caregivers

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ABSTRACT

We are going through hard times that remind us that good health is the most important thing in life. The COVID-19 pandemic has immensely affected everybody. Measures taken by all countries, including Turkey, to prevent the spread of the coronavirus have deprived students (from preschool to university) of face-to-face education. While the pandemic has had a profound impact on parents and educators, children's lives have been stuck between the "new normal" and the pandemic. This paper investigated how children and their parents experienced the pandemic, how they interacted, and managed educational activities at home. This was a case study, which is a qualitative research method. The sample consisted of 15 families with different sociocultural and socioeconomic status (SES) living in five cities in four regions of Turkey. Data were collected through video-audio recordings, observation notes, and e-interviews. Data were analyzed using second-cycle coding and inductive content analysis. The COVID-19 pandemic caused economic problems, especially in low- and middle-SES families. Economic problems and mental stress impeded the marital interaction patterns of couples, negatively affecting children the most. Upper-SES parents received support from teachers for homeschooling, but other parents faced numerous setbacks and made numerous errors during home-based education, causing parents despair and concern for their children's future. Of all participants, the children of the parents with COVID-19 related health problems were affected by outbreak measures the most. These results can help raise all stakeholders' awareness of the current situation. Given that the COVID-19 pandemic may continue for the foreseeable future, it is believed that the suggestions made to parents and educators for homeschooling can help mitigate the future impacts of the pandemic, especially on preschoolers.

Keywords:
COVID-19 outbreak; impacts of pandemic; children; caregivers; interactions

1. Introduction

Coronavirus disease 2019 (COVID-19) is a global health problem that has dealt an unprecedented blow to social and educational life. All governments took preventive measures, such as lockdowns, travel restrictions, and closures (institutions and workplaces), to prevent the spread of the virus (The World Bank, 2020). However, those measures adversely affected individual and social life. The Turkish authorities announced its first confirmed case of COVID-19 on March 11, 2020, and a day later ordered the closure of schools until March 30. Parents were closely following the developments and expecting schools to reopen soon. However, the number of cases increased worldwide, and a cure was nowhere in sight; therefore, the authorities extended the school closures. The pandemic has had a severe impact on education, so much so that more than 90% of students worldwide have missed out on education due to school closures since 9 April 2020 (UNESCO, 2020a). The pandemic has replaced face-to-face education with an amalgam of distance education and homeschooling (Wrase, 2020). However, the Turkish authorities has forgotten to the fact that schools provide students not only with educational materials but also with the opportunity to interact with teachers and peers and receive psychological counseling. The authorities developed distance learning curricula for some grades and gave

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specific tasks and instructions to teachers and parents but did not design any distance learning curricula for preschoolers until October. Therefore, stakeholders (parents, children, and teachers) were in no way prepared for the challenges of the pandemic (OECD, 2020a). In particular, parents have been left to their own devices to overcome the adverse economic and social impacts of the pandemic (Wang et al., 2020). Lower and middle-SES families have suffered job and income losses more acutely due to the pandemic, and their children have been at a higher risk of experiencing educational inequality due to school closures (OECD, 2020b).

Children of parents with financial stress have increased odds of malnutrition, poor housing, sanitation problems, insufficient play, or educational opportunities (Brooks et al., 2020). Vulnerable children are more likely to be adversely affected by the pandemic because it increases the number of household stress factors (parental anxiety, lack of support, and reduced access to financial resources and healthy food) and reduces the number of protective factors (school facilities, and access to playgrounds, routine activities, and child protection systems, etc.) (Cluver et al., 2020). The widespread school closures have made countless children and adolescents homebound for months, creating a ripple effect into other aspects of life, such as family income, quality of the home environment, parent-child interaction, etc. Children and parents have gone through a rough patch during the school closures because most of them managed distance learning with little to no supervision and support from schools and teachers (UNESCO, 2020b; Courtney et al., 2020). In other words, during the lockdown education has been mostly dependent on parents' knowledge, experience, availability, and accessibility.

Parents with low academic self-efficacy have difficultly helping their children with their education, resulting in periodic learning loss (UNESCO, 2020c; Ghosh et al., 2020). While the children of affluent families usually do not experience this learning loss, they can even gain different learning outcomes depending on their relationships with their families and peer communities (Clark et al., 2020). Educational inequality is likely to increase during the current period of confinement unless disadvantaged children and their families are given additional support (Van Lancker & Parolin, 2020). Each day of confinement imbued with challenges further deepens stress and inequality in underprivileged children (OECD, 2020c). Returning to school after the pandemic will inevitably pose new challenges, such as adapting to school and concentrating on learning. It will take a deliberate social effort to get children back to school. Moreover, vulnerable children who already have difficulty participating in learning due to health problems or stress factors will need additional support (Griffith , 2020; Jiao et al., 2020).

Parents play a critical role in early childhood education (0-8 years of age) and even a more critical role in cases where children have no access to school or gain little to no benefit from online and TV learning. Therefore, parent-child activities at home can promote learning and development. Regardless of socioeconomic status (SES), spending quality time at home contributes to family relations and children's social-emotional (e.g., respect, empathy, collaboration) and cognitive (e.g., early literacy) development (Uscianowski et al., 2020; Isitan et al., 2018; Zippert & Rittle-Johnson, 2020). However, low-SES parents are likely to do fewer activities with their children because they are likely to experience more problems, helplessness, and lack of control in times of crisis.

Early childhood education helps reduce social inequality and negative experiences in the long-term. However, unsupervised parents may feel pressured to create a school-like environment at home (Cornelissen et al. 2018, Havnes & Mogstad, 2015). This pressure may lead to mental and emotional health problems in parents, who already try to cope with the stress, anxiety, uncertainty brought about by the lockdowns, social distancing, school closures, domestic problems, and work or income losses during the COVID-19 pandemic. For example, there is a strong correlation between socioeconomic deprivation and mental illness, even in early childhood (McDaid et al., 2017; OECD, 2018). The pandemic has increased the level of anxiety among family members (Karademir et al., 2020) and the severity of symptoms of mental illness among children under 25 years of age (Young Minds, 2020). The outbreaks in the past showed that preventive measures, especially long-term lockdowns and school closures, put children at risk for mental illness. For example, confinement during the 2002–2004 SARS outbreak in Canada and China resulted in increased anxiety, depression, and post-traumatic stress disorder (Hawryluck et al., 2004; Robertson et al., 2004; Sprang & Silman, 2013;). Despite limited data at this point, we can argue that the COVID-19 pandemic has significant impacts on the domestic life and mental health of individuals with different SES.

This paper investigated how families with different SES experienced the COVID-19 pandemic at home, what parent-child interaction was like, and what kind of educational activities they performed. This study evaluated the topic longitudinally to propose solutions to pandemic-related problems and close the gap between the ideal and the real family environment. The main research question was, "How has the COVID-19 pandemic affected families with different SES?" The study sought answers to the following subquestions:

1. How does the home environment affect parents and their children during the COVID-19?
2. How does the COVID-19 affect parents and their family relationships?
3. How does the COVID-19 affect children?

2. Method

2.1. Research Model

This paper focused on parent-child interaction during the COVID-19. The study adopted a multiple-case embedded design (a form of a case study) to analyze what each family experienced during the pandemic and present the results comparatively and holistically (Yin, 2017)..

2.2. Participants

The study was conducted between April and July 2020. The sample consisted of 27 parents (14 mothers and 13 fathers; mean 34.7 years of age) and 15 children (six girls and nine boys; mean 59.06 months of age) from five cities in four different regions of Turkey. Participants were recruited using maximum heterogeneity sampling, a purposive sampling method used to draw a sample from the population to explore different dimensions of a research problem or common phenomena of interest among diverse situations with specific dimensions (Yildirim & Simsek, 2008). The significance of data is its heterogeneity (Patton, 2002). The sample diversity was based on SES and environmental conditions (see Table 1).

Table 1. Characteristics of families

Families		Age	Gender	Number of children / in Household	Annual income	District / House type	Education	Proffession	Employment status
Family 1 Married	Mother 1	26 yrs		2/4	$ 5.845***	Town / Apartment	Associate's d.	Housewife	-
	Father 1	32 yrs					Bachelor's d.	Teacher	Part time
	Child 1	54 mns	Female				Pre-school ed.	-	-
Family 2 Married	Mother 2	30 yrs		3/6*	$ 2.950***	City / Apartment	High sch d.	Housewife	-
	Father 2	36 yrs					High sch d.	Cook	Laid off
	Child 2	69 mns	Male				None	-	-
Family 3 Married	Mother 3	27 yrs		1/3	$ 16.500	City / Detached house	Bachelor's d.	Pharmacist	Full time
	Father 3	31 yrs					Bachelor's d.	Lawyer	Part time
	Child 3	59 mns	Female				Pre-school ed.	-	-
Family 4 Married	Mother 4	38 yrs		4/8**	$ 5.800***	Countryside / Detached house	Sec. school d.	Housewife	-
	Father 4	44 yrs					Associate's d.	Farmer	Full time
	Child 4	49 mns	Male				None		-
Family 5 Widowed	Mother 5	32 yrs		4/5	$ 2.100***	City / Apartment	Sec. school d.	Worker	Laid off
	Child 5	55 mns	Male				None	-	-
Family 6 Married	Mother 6	30 yrs		2/4	$ 12.800	City / Apartment	Bachelor's d.	Teacher	Part time
	Father 6	37 yrs					High sch d.	Nurse	Full time
	Child 6	58 mns	Female				Pre-school ed.	-	-
Family 7 Married	Mother 7	33 yrs		3/5	$ 3.250***	City / Apartment	High sch d.	Cook	Laid off
	Father 7	40 yrs					High sch d.	Waiter	Laid off
	Child 7	70 mns	Male				Pre-school ed.	-	-
Family 8 Single	Father 8	38 yrs		1/4**	$ 13.350	City / Apartment	Graduate d.	Lecturer	Part time
	Child 8	64 mns	Female				Pre-school ed.	-	-
Family 9 Married	Mother 9	28 yrs		2/5*	$ 9.750***	City / Apartment	Associate's d.	Paramedic	Full time
	Father 9	29 yrs					Associate's d.	Paramedic	Full time
	Child 9	52 mns	Male				Pre-school ed.		-
Family 10 Married	Mother 10	31 yrs		2/5*	$ 30.000	Town / Apartment	Bachelor's d.	Doctor	Full time
	Father 10	36 yrs					Bachelor's d.	Doctor	Full time
	Child 10	63 mns	Male				Pre-school ed.	-	-
Family 11 Married	Mother 11	40 yrs		6/10**	$ 5.250***	Countryside / Detached house	Sec. school d.	Housewife	-
	Father 11	48 yrs					High sch d.	Farmer	Full time
	Child 11	57 mns	Female				None	-	-

Family 12 Married	Mother 12 Father 12 Child 12	34 yrs 39 yrs 48 mns	 Male	3/5	$3.750***	Town / Apartment	Sec. sch d. High sch d. None	Worker Florist -	Laid off Part time -
Family 13 Married	Mother 13 Father 13 Child 13	26 yrs 29 yrs 66 mns	 Male	1/3	$ 3.050***	City / Detached house	Associate's d. Associate's d. Pre-school ed.	Worker Hairdresser -	Laid off Part time -
Family 14 Single	Mother 14 Child 14	31 yrs 72 mns	 Male	1/3*	$ 10.975	City / Apartment	Bachelor's d. Pre-school ed.	Air hostess -	Part time -
Family 15 Married	Mother 15 Father 15 Child 15	35 yrs 45 yrs 50 mns	 Female	2/5*	$ 6.100***	City / Apartment	Associate's d. High sch d. None	Housewife Driver -	- Part time -

* Living with a grandmother, grandfather, or caregiver, ** Living with grandparents, *** Less than the annual level of poverty for a family of four: $ 10.500

Parents had a master's (n = 1) bachelor's (n=7), associate's (n=7), high-school (n=8), or elementary school (n=4) degree. Their annual income ranged from $2.100 to $30.000. Most families (n =11) were living in apartments. Nine children (60%) had had early childhood education before.

2.3. Data Collection Tools and Procedures

Data triangulation (video-recordings, field notes, and semi-structured interviews on Skype) was used to ensure validity and reliability.

Video recordings: Parents videotaped their daily lives and interactions with their children at home during the COVID-19 for 45 minutes a week for 14 weeks (45 minutes*14 weeks = 830 minutes) (April 20 - July 26, 2020).

Parent–Child Interactions: Five female teachers were recruited for the study. They made unannounced home visits and videotaped participants' daily lives and interactions for 14 weeks (except for the days of quarantine and video-recordings by parents) and then gave their video-recordings and field notes to the researcher. The data were used to monitor changes in parent-child interaction.

Interviews: Parents (N = 27) were interviewed at least twice to figure out the unobservable changes in their lives, relationships, and behaviors. The interviews were conducted using a semi-structured interview form to triangulate, elaborate, and relate the data. The goal was to approach the subject of interest from different angles, understand the changes in parents' perspectives, and interpret how children were affected by changing conditions (Patton, 2002). Providing participants with the opportunity to express their feelings and thoughts allowed to the researcher better understand what families went through during the COVID-19. The interview form consisted of easy-to-understand, open-ended, unbiased, one-dimensional, and logical questions (Merriam, 2013).

2.4. Data Analysis

The data were coded and classified into themes, subthemes, and categories (Glaser & Strauss, 2009) and then analyzed using second-cycle coding and inductive content analysis.. In the first cycle, two research assistants and the researcher coded some of the data separately and then compared their codes. They discussed the codes and developed new themes and categories to make them conceptually dense and free from biases and assumptions. In the second cycle, they used constant comparison to code the remaining data (Corbin & Strauss, 2014). They used NVIVO 8 to develop themes and subthemes and then interpreted and expressed the findings. Lastly, they calculated interrater reliability using the formula [Reliability = (number of agreements) / (number of agreements + number of disagreements)*100] suggested by Miles and Huberman (1994). The interrater reliability for all video-recordings and interviews was .85 and .88, respectively, indicating acceptable reliability.

3. Findings

Themes, subthemes, categories, and codes were presented in Tables for the research questions. Direct quotations were used to provide an accurate and coherent picture of participants' views and allow readers to analyze and interpret the findings. Table 2 presents the results concerning the effects of the home environment and family characteristics on participants during the COVID-19.

Table 2: *Effects of the Home Environment and Family Characteristics on Participants During COVID-19*

Theme	Subtheme	Category	Code	Inferences from video recordings and observations (14 Weeks)
Home environment	Type of residence	Apartment	Inhibiting (N=6)	Most families living in apartments experience problems due to too little space, which inhibits their lives, and the problem gets even bigger as all family members are stuck at home during the pandemic.
		Detached house	Useful (N=4)	Some families live in detached houses with front or back yards. Detached houses are more spacious, and so, family members can become more mobile, which helps mitigate the adverse effects of the pandemic.
	Positive home environment	Characteristics	Democratic (N=7)	Democratic parents understand and respect their children's needs. You can clearly see that. They do different activities to break the monotony of the lockdown and, they are consistent in their behaviors.
			Warmth and kindness (N=5)	Parents who are teachers and those with a bachelor's or master's degree higher use pedagogical approaches more often in their relationships with their children. These are warm and kind households, where parents play collaborative games with their children.
			Respect (N=4)	Parents and children in democratic households respect each other and bond more. They try to get over their negative experiences peacefully.
			Conveniences (N=4)	Some houses have more conveniences (yard, space, toys, etc.) than others.
		Changes	Measures-Habits (N=7)	Families living in households with a positive atmosphere have changed their habits drastically to cope with stress, which has affected all family members. They have paid more attention to COVID-19 measures.
		Communication	Two-way horizontal communication (N=8)	Communication is the key to democratic households. They patiently listen to and empathize with each other to meet each other's needs.
			Constructive and understanding attitude (N=7)	Families living in households with a positive atmosphere during the pandemic have many constructive attitudes, such as appreciating being together, listening to one another, understanding what the other needs, adapting, and respecting each other.
			Praise-appreciation (N=6)	Parents who can maintain supportive communication say nice things to their kids to reward them for their desired behavior.
		Type of problem-solving	Tolerance and talking (N=7)	Most families living in households with a favorable climate talk to or just tolerate each other to solve problems. In that way, they solve their problems more quickly and effectively.
			Patience (N=6)	COVID-19 has brought with it a lot of problems. Parents with a positive household climate are more patient in the face of mental stress and negative experiences and behaviors outside or at home.
			Explaining (N=4)	Families with communication skills and democratic attitudes try to explain the causes and consequences of things that happen at home. Parents who make clear and consistent explanations are better at convincing their children.
	Negative home environment	Characteristics	Strict (N=8)	Some parents with a traditional parenting style are too strict. They use different negative approaches, such as the second type of penalty, if their kids do not or do not want to obey the rules.
			Oppressive - authoritarian (N=7)	Some parents give in to the difficult living conditions and mental pressure caused by the pandemic and adopt an authoritarian attitude. Child-parent interaction is limited in those families. The kids have anti-social behavior and difficulty interacting with their parents.
			Indifference (N=6)	In some families with a negative home environment, kids have unmet needs, and communication between family members is poor. The kids are generally ignored, and so, they feel lonely.
		Changes	Measures-Habits (N=8)	All families had to take specific measures as they were afraid of contracting the virus. However, families with a negative home environment did not care much about the measures. They changed some of their habits about hygiene but did not do much about it.

			Measures and habits were of secondary importance because of their basic needs, like food, housing, and money.
	Communication	Poor communication (N=8)	Communication is extremely poor, and kids are mistreated in many families experiencing stress because of the pandemic.
		One-way vertical communication (N=7)	Some parents with stress due to the pandemic use a one-way, indirect, and authoritarian type of communication with their kids, making it difficult for them to express their feelings and thoughts.
	Type of problem-solving	Constant warning-criticism (N=8)	Parents were easily irritated by their children, especially in households with confirmed or probable COVID-19 cases. They kept criticizing their kids, and so, some of those kids refused to participate in activities.
		Unconstructive attitude (N=6)	Some adults have developed negative attitudes because of the increasing number of cases, fear of contracting the virus, and economic problems. Family members with problems treated each other in an unconstructive and inflexible way.
		Blaming others (N=4)	Family members with a lot of problems blame others, although it does very little to help them solve their problems.
Peer interaction	Negative	Phone call (N=12)	During the COVID-19, children in almost all families mostly talk to their friends on the phone.
		Video call (N=9)	In households with Internet access, parents encourage their kids to video call their friends and relatives. The kids talk about things in detail and the things that they miss.
	Positive	Face-to-face communication (N=6)	Children living in detached homes or the countryside are they are less affected by the negative effects of peer interaction affected by the pandemic. They get to meet their friends and play outdoor games with them.

Most participants lived in apartments. Detached houses with yards were better than apartments during the pandemic because the latter were suffocating and inhibiting, which even affected the peer-interaction among children. In democratic, constructive, and warm households, family members were more tolerant of one another. However, some parents lost their jobs or moved to part-time or full-time employment, getting them into a situation where they had a hard time meeting even their most basic needs. Economic problems led to mental stress, which negatively affected the home environment. The following are some quotes from participants about the situation:

> *"Before COVID-19, my wife and I were working very hard for our kids. We didn't make much, but we were making ends meet. But then we got laid off, which has been devastating to our family. All businesses are shut down; there is just no job available..." (Father 7)*

> *"My husband got killed in the Syrian civil war. Five of us just fled Syria...I had hardly got a job, and my 12-year-old daughter was taking care of her younger siblings. I don't have a job now, I got laid off because of the pandemic. We have no food to eat, I just don't know what to do."(Mother 5).*

> *"I live with my mom and kid. With the pandemic, my working hours and income have changed. We're going through a tough time... I'm at a high risk of contracting covid-19 at work, so I don't feel safe at all, and that's why I go home only once a month, which makes me so sad" (Mother 14)*

As the quotes above illustrate, the pandemic significantly affected people's mental health and home life in different ways (communication, problem-solving styles, attitudes, behaviors, etc.). The COVID-19 pandemic greatly affected parents trying to strike a balance between protecting their children and providing for them (see Table 3).

Table 3: *Parents during the COVID-19*

Theme	Subtheme	Category	Code	Inferences from video recordings and observations (14 Weeks)
Parents	Emotional Characteristics	Positive	Cautious (N=7)	As expected, most parents stick to the measures during the COVID-19. Most of them understand the seriousness of the situation and change their habits, and their behavior suggests that they care most about health.
			Diligent (N=6)	Despite all challenges, some parents hold on to life and do their best for their children. They put aside worry and turn challenges into opportunities and focus on their kids' needs and try to spend as much time with them as possible.
			Participatory-Collaborative (N=5)	Some parents communicate with their children horizontally and play games with them and treat them like peers. While doing that, they exhibit cooperative behavior and try to be part of the games.
			Hopeful (N=5)	Most families no longer have their old lives. But some are hopeful, despite all the odds. Those parents try to create a happy home environment and play games with their kids that appeal to them.
			Eager (N=5)	Some parents are more eager to take some time off from daily chores and spend quality time with their kids. They come up with different materials to do some exploration-based activities with their kids.
			Responsible–Conscious (N=5)	Educated parents with pedagogical knowledge learn more about their approach to their children and get along better with their children. They try to keep negativity away from children.
			Vigorous (N=4)	Despite the pandemic, few parents still have energy under their belts for their kids. They are more cheerful and enthusiastic and spend quality time with their kids and prefer to play active games with them.
		Negative	Nervous-worried (N=15)	All parents are worried. Educated parents do different activities with their kids to reduce anxiety, whereas parents with high anxiety levels have trouble communicating with their kids. This creates a negative emotional atmosphere. Those parents spend little time with their kids and have a hard time getting along with them.
			Bored (N=12)	Many of the parents who have been entirely cut off from social life are bored with the pandemic. Most parents fed up with the pandemic are intolerant and stressed out, so they go to work or just go out despite the risks.
			Reluctant (N=10)	Fed up with the pandemic, most parents participate in their kids' games only half-heartedly and have a hard time meeting their needs.
			Fear (N=8)	Many parents are scared of getting infected with COVID-19 or infecting other family members, like grandparents living with them. That fear is more prevalent in parents who work in crowded places.
			Tense (N=7)	Parents affected more by the pandemic have a hard time containing their agitation, affecting their family relations. They mostly have detached and one-way communication with their kids.
	Everyday life	Household chores	Cleaning and nutrition (N=11)	All parents but those with a full-time job can do house chores, like cleaning and feeding. Few conscious parents turn these challenging times into opportunities and help their kids adopt and practice health-promoting behavior.
		Change	New normal-Habits (N=15)	Everybody has had to get used to the "new normal." Some parents (healthcare professionals) have been very much affected by it, whereas others have adjusted more quickly. Some cautious parents have changed their habits about hygiene measures and put them to use at home together with their kids.
			Working life (N=13)	Most parents' working life has changed because of the pandemic. While healthcare professionals work full-time, civil servants have moved to flexible shifts. Most blue-collar parents have either moved from full time to part-time shifts due to preventive measures or have been laid off on the pretext of economic downturn because of COVID-19.
	Needs	Parents	Educational information - counseling (N=9)	Many parents caught off guard by the pandemic seemed to face numerous problems during the study period. Some parents need counseling, information, and support for the educational activities they do with their kids at home. Some parents feel lonely and helpless during homeschooling because they have difficulty communicating with teachers.
			Socioemotional (N=8)	Most parents are bored at home during the lockdown, but others play games with family members to have fun. However, those who can't cope with mental stress have a hard time getting along with their family members during the lockdowns.

The pandemic significantly affected the financial and everyday lives of parents. Most parents who were civil servants managed to avoid financial problems and adjust to the "new normal" more quickly than blue-collar ones. Civil servant parents strictly followed the safety measures to protect their families against COVID-19, spent more quality time with their children, provided more emotional support to them, and attended to their physical needs more. They were also more hopeful about the future than those with emotional stress.

On top of the pandemic, all parents faced financial challenges (bills, credit card debts, installments, shopping, and housing). Therefore, some parents, especially blue-collar ones, focused on their own needs and were more judgmental and authoritarian at home, resulting in communication issues (vertical and closed communication). The more unresolved financial problems they had, the more pessimistic, tired, weary, and helpless they were. Some parents, especially healthcare professionals, tested positive for COVID-19, and therefore, they were mentally, emotionally, and physically exhausted. Some couples were on the brink of divorce due to emotional and psychological stressors (neglect, alienation, and unfulfillment). Parents who could not meet their socioemotional needs succumbed to the adverse effects of the pandemic and ended up treating their children poorly and failed to meet their needs. Many parents were unable to meet their children's educational needs and receive support from teachers in that regard. Therefore, their children failed to take advantage of their time at home during the lockdown. The following are some quotes from participants about the situation:

> *"... I just can't spend as much time with my kids as I used to. I have a lot of debt to pay. Sometimes I just go out and wander the streets to find a job, but there is just none; the pandemic has affected everybody…Back at home, I take my anger out of my wife and kids, it's just very hard" (Father 2).*

> *"…We are in the ambulance 24/7, we don't have any time to eat and rest. On top of that, we are treated as outcasts; people don't get near us…The kids stay with their grandmother, and we can't visit them; everything's just turned upside down. The schools are closed, and we don't have any time for our kids; they fall behind on their education." (Mother 9)*

> *"My husband's job is at stake, and I got fired. We've just been surrounded by anger, stress, and fear…I have a lot of debt to pay, but we almost have no income. You see, the living conditions here are not too good, and our relationship has taken a turn for the worse, my husband doesn't want to come home anymore…He's depressed, and now he doesn't care about us as much as he used to, we're on the brink of divorce." (Mother 12)*

The interviews showed that parents put up a psychological fight under challenging circumstances. On the other hand, the pandemic affected children's mental health, everyday-life activities, relationships, and education and reshaped their needs (see Table 4).

Table 4: *Children During the COVID-19*

Theme	Subtheme	Category	Code	Inferences from video recordings and observations (14 Weeks)
Children	Emotional state	Positive	Curiosity (N=8)	Most kids are curious about the situation they are in and the activities they are to do with their parents. They especially look forward to the activity of "unusual culinary," or science activities.
			Satisfaction (N=7)	All kids, but those treated poorly by their authoritarian parents, are happy to spend more time with their parents. They seem to be happy to be spending time with their parents, whether quality time or not.
			Inquiry (N=7)	Democratic, patient, and kind parents spend quality time with their kids and do engaging activities with them. This gets the kids to ask questions about things. They make conversations with their parents to learn more about things.
			Self-confidence (N=7)	In households with a positive vibe, parents are more supportive of their kids, and the kids are more confident. They are actively engaged in both everyday life and other activities and are not afraid of making mistakes.
			Responsibility (N=6)	The children of conscious parents have a higher sense of responsibility. Those kids can complete their tasks, help with household chores, and understand their family's situation.
		Negative	Fear (N=9)	Lonely children with unmet needs are afraid of their parents. Besides, parents who are healthcare professionals are at higher risk of contracting COVID-19, so their kids are more afraid of contracting COVID-19 than other kids.
			Irresponsibility (N=9)	Children of negligent, judgmental, and authoritarian parents sometimes avoid cooperating and display problematic behaviors. They do not complete their

			tasks, do not listen to their parents, do not want to do chores, and they react improperly.
		Getting bored (N=8)	Children living in apartments with too few toys and materials and those living in houses with no interesting and high-quality activities are more bored than others.
		Short temper-aggression (N=7)	Children of oppressive and judgmental parents with poor communication skills have developed behavioral problems. Besides, children stuck at home for a long time because of the pandemic are irritable and aggressive.
		Loneliness (N=7)	Children of negligent parents have difficulty interacting, and so, they do educational activities on their own. And some of them ignored by their parents mostly play alone. They don't want to share their toys with their parents and just want to continue playing alone.
		Spoilt (N=3)	Some parents have very little time for their kids because of work, but they try to do whatever they want, and so, they end up spoiling them. Those parents find it difficult to get their kids to complete tasks and activities.
		Psychophysiological disorders (N=2)	In households with low interaction due to the pandemic, children display inappropriate behaviors. The unconstructive, negative, and tense domestic atmosphere affects those children adversely, and they display such unhealthy behaviors as sucking fingers, wetting themselves, tics, etc.
Everyday life	Play	Digital games (N=9)	Parents have difficulty communicating with their kids in households affected by the pandemic. Family members use technological devices, almost as if addicted to them. Parents have a hard time coming up with games and so let their kids play video games on their computers, tablets, or smartphones. The kids end up having too much screen time.
		Unstructured-free-games (N=9)	During the day, most children play games that appeal to their interests. Especially the children of authoritarian, reluctant, or negligent parents often play that kind of game.
		Structured games (N=8)	Most only children with play dough, blocks, puzzles, or miniature toys play structured games.
		Structured-Rule-based games (N=7)	In households with board games, family members (siblings and parents) play rule-based games. Those who can afford, buy such games. Besides, some parents play traditional rule-based games with their kids (sitting down and standing up, warm-cold, red hands, etc.)
		Action-based games (N=6)	Most children living in homes with conveniences (front-or back-yard, spacious rooms, etc.) played action-based games with or without materials. However, those living in houses with few facilities and conveniences do not play action-based games. Besides, when they want to play such games at home, their parents just tell them not to.
		Playing together-Collaborative games (N=6)	Parents who can communicate with their children are more likely to participate in their games. They talk a lot during the games, and the kids display social skills and help their parents with collaborative games.
		Exploration-based games (N=5)	Children living in houses with conveniences play exploration-based games, mostly in the front- or back-yard, and those with eager parents play exploration-based games, mostly in the kitchen.
		Solo games (N=5)	Children of negligent parents prefer to play alone. They do not play any other games.
		Role-based games (N=4)	Children of teacher parents or kids with at least one sibling play role-based games. They role-play and make impressions and try to involve their parents and siblings in their games.
		Puppetry (N=3)	There are puppets or miniature human-animal toys in some households. Those parents enjoy doing puppetry with their children. Some of the kids use those puppets for interactive reading activities.
		Creative game (N=2)	Some parents encourage their kids to turn materials into toys, like magnets, magnifiers, mirrors, balloons, cardboard boxes, straws, fruit and vegetables, aluminum foil, waste bins, packaging, etc. This makes the kids more curious and interested.
	Routines and habits	Using mass media (N=11)	Most kids cannot meet and play games with their friends during the COVID-19, and so, they end up spending most of their time on tablets and smartphones.
		Nutrition (N=10)	Parents who are at home during the lockdown feed their kids regularly, But children with working parents and those who are being taken care of by close relatives or caregivers don't have a regular diet.
		Cleaning (N=9)	Like their parents, most children have changed their cleaning habits. They wash their faces and hands more often, avoid contact, and use wet wipes and masks to protect against the virus.

		Reading hour (N=5)	Kids with caring and conscious parents regularly read every day. Parents buy them stories and children's books.
		Tidying the room and sorting out the toys (N=5)	Some parents help their kids develop a sense of responsibility. Those children tidy up their rooms and sort out their toys without their parents telling them to do so.
		Reminders (N=3)	Conscious and careful parents hang up reminders (images, posters, cards, etc.) to teach their kids the right habits and remind them of the hygiene and dietary measures.
Education	Face-to-face education at home	Art (N=10)	Most kids do art activities with different materials. They interact more with their parents when they also take part in the activities. Authoritarian parents choose the type and materials of art activities. Democratic parents encourage their kids to express themselves in more creative ways.
		Preparation for reading and writing (N=7)	In households with a positive climate, most children do activities (listening-speaking, puzzle, holding the pen correctly, drawing, painting, cutting, folding, kneading, pasting, cleaning, etc.) that help them develop hand-eye coordination and spatial, attention-estimation, and self-care skills.
		Turkish (N=6)	In households fostering family interaction, most children do reading activities, impressions, storytelling, or story-completion.
		Math (N=5)	Kids use basic math skills (matching, classification, comparison, counting, ranking) in many games and activities during the day. While parents in households with a negative climate do not realize this, only the enthusiastic and conscious ones are involved in their kids' math activities.
		Music (N=5)	Some cheerful and energetic parents sing and dance with their kids and do music activities to have a good time and make them feel less stressed.
		Science (N=3)	Kids do science activities in exploration-based games. Those living in detached houses learn new science concepts and develop new skills in their houses' yards. The eager and interested parents who can't get out do science activities in the kitchen with their kids.
	Distance education	Smartphone (N=14)	Parents sometimes give their smartphones to their children. Conscious parents and those whose children go to private schools make sure that they involve their kids in educational activities. But the less educated and negligent parents give their kids their smartphones to keep them busy and get some time to rest.
		Computer -Internet (N=7)	In households with Internet access, parents search for online educational content and make sure that their kids get used to distance education. Indifferent parents neither limit nor monitor their kids' Internet use. Kids in households with no Internet or computer mostly watch TV.
		Tablet (N=6)	Some parents upload educational materials recommended by Ministry of National Educaiton (MoNE) into their tablets for their kids. Negligent parents let their kids play games and watch videos on their tablets for extended periods of time.
Needs	Child	Game (N=13)	Almost all kids end up playing a few games over and over again. But most kids need engaging games in which they can express their thoughts and feelings, do research and observation to quench their curiosity, learn new things, and interact with objects and people. The pandemic has drastically changed how parents and children look at games. The children have become more addicted to digital games and got more used to playing alone.
		Physiological (N=10)	During the lockdown, some parents got to spend time at home with their kids and meet their physiological needs (balanced nutrition, sleep, etc.) as much as they could. However, healthcare professionals working full-time, caregivers, negligent parents, and parents facing financial problems could not fully meet their children's physiological needs.
		Educational (N=10)	Aside from kids with conscious parents (N = 5), those who have to spend time at home with their parents or caregivers during the lockdown face educational problems. Their parents can't meet their academic needs and can't help them develop cognitive skills.
		Psychomotor (N=9)	Only six families have conveniences at home. The remaining don't have enough space at home. Therefore, their kids are deprived of physical activities that could help them get their energy and stress out of their system and develop basic motor skills.
		Socioemotional (N=7)	Most kids in households with a negative climate can't develop socioemotional skills. Problematic interaction causes agitation, fear, sadness, and anger in some of them. Kids who have been away from their parents and loved ones for a long time are deprived of warmth, affection, and a sense of safety and so feel guilty and lonely.

Developing positive behavior (N=6)	During the quarantine, most families can't meet their needs, resulting in anxiety, agitation, and emotional and behavioral problems both in parents and children. Especially, the quarantine has caused irritability, selfishness, fear, boredom, pessimism, and even psychophysiological disorders, and so kids need help to change their misbehaviors into more appropriate and constructive ones.

Democratic parents had satisfied, curious, self-confident, and responsible children. The positive home environment provided children with the opportunity to play exciting games with their parents, carry out everyday activities, and adopt the right habits. Caring and educated parents paid more attention to their children's needs and participated in their math or science activities. In households with a negative atmosphere, parents were not very supportive of their children, making them fearful, bored, aggressive, selfish, and irresponsible. Children in households with high levels of anxiety and stress experienced adaptation and behavioral problems. Some parents observed psychophysiological disorders in their children, such as eating disorders, tics, wetting themselves, and thumb-sucking. Parents who had to work full time during the pandemic hired caregivers to meet their children's physiological, socioemotional, and educational needs. However, those children experienced emotional and behavioral problems because caregivers failed to meet their needs. Lastly, informed parents received support from teachers to meet their children's educational needs. With the guidance of teachers, they chose effective activities for their children. On the other hand, negligent parents did not seek any support from teachers and just allowed their children to have excessive screen time. The following are some quotes from parents about the situation:

> *"…My husband and I are always in the hospital; we haven't seen our kids for months…We're completely burnt out. The kids have a caregiver, but we just don't know what they do, what they eat, and whatnot. We sometimes facetime, and they always look tired, I don't think they've been eating well. They have different routines now. We know that they spend too much time watching TV or have too much screen time…but we can't go home to see them because we don't want to infect them with the virus…, they are already too scared of it anyway, the pandemic has been a blow to our life, we would like to be with our kids, but we just had to hire a caregiver…The kids are on distance education, and we're in constant contact with their teachers, who recommend different activities." (Mother 10)*

> *"…We have a large family, and so, we have too many expenses, which is a huge pressure. I didn't know what to do after I got laid off. I know I'm more stressed out and have a hard time managing my anger. My wife and I are always arguing,… my younger kid is sometimes very scared, he's wetting himself again,…we talked to his teachers, but she wasn't of much help." (Father 2)*

These all statements showed that the COVID-19 pandemic affected families much more significantly than previously thought.

4. Discussion

The COVID-19 pandemic has severely deteriorated the health systems of countries and the expectations, lifestyles, and economic conditions of people. Almost all governments have taken drastic measures to prevent the spread of the virus. Millions of people stayed home for weeks, and all schools and non-essential workplaces were shut down. Despite all preventive measures, the virus caused the deaths of hundreds of thousands of people [79,232,555 confirmed cases and 1,754,493 deaths as of 27 December 2020 (WHO)] and an unprecedented global socioeconomic crisis. This paper focused on 15 families with different SES during the COVID-19 pandemic in Turkey. The goal was to shed light on their fight against the pandemic and its impact on their children aged 48-72 months. The longitudinal observations, video recordings, and interviews at the onset of the pandemic allowed us to look into the impact of the pandemic on the parent-child relationship.

The impact of physical conditions

The adverse psychological and social consequences of the COVID-19 pandemic depend on the living conditions. Low-SES families live in apartments with too little space to play, exercise, or just move around. On the other hand, middle- and higher-SES families live in detached houses with yards, where they can grow things, play outdoor games, and do exploration-based activities (Lambert et al., 2019; Moore et al., 2020). The prolonged home confinement has drastically changed the routines, interaction styles, and everyday life

activities of families living in urban areas (Brooks et al., 2020). Most of our participants could not adapt to the "new normal," which negatively affected their children. Especially those living in apartments developed sedentary behaviors, such as increases in sitting, screen time, and unhealthy eating (Moore et al., 2020). On the other hand, children living with their parents in the countryside were mentally and physically healthier because they were more active and spent more time with their friends/relatives than their counterparts living in apartments in cities who could only audio- or video-called their friends/relatives (Yeasmin et al., 2020; Anwar et al., 2020; Ranscombe, 2020).

Unhealthy home environments: parents and children

The interviews pointed to more severe problems. During the COVID-19 pandemic, parents faced numerous stress factors (safety, financial hardship, emotional problems, and children's educational and physical needs) and had difficulty interacting with their children. The lockdown disrupted children's daily activities, interaction styles, eating habits, and sleep patterns. Recent studies have shown that quarantine causes mental stress in children, such as anxiety, depression, lethargy, impaired social interaction, and loss of appetite (Jiao et al., 2020). Children are more sedentary, have more screen time on digital devices, and experience more eating and sleeping problems than before the COVID-19 pandemic (Moore et al., 2020; Ghosh et al., 2020; Graell, 2020; Guan et al., 2020). In households with a negative atmosphere, children were more likely to be scared, bored, lonely, aggressive, and spoiled, exhibit negative psychophysiological behaviors, and play digital, unstructured, or structured games alone. Although there are some differences in prevalence rates, these results are consistent with recent studies of Chinese children who showed higher levels of anxiety and depressive symptoms during quarantine (Xie et al., 2020). Mental and behavioral problems have been more prevalent among parents and children, respectively, since the beginning of the pandemic (Fisher et al., 2020). According to the video-recordings and observations, fathers of households with financial problems did not have the opportunity to be involved in their children's lives, whereas mothers with a high school and associate degree were involved in educational activities as much as they could. Gassman-Pines et al. (2020) and Romero et al. (2020) also show that setting "to do" lists for children, talking to them about the pandemic, limiting their media exposure, and engaging them in family activities are effective strategies. Children living in a positive household climate and receiving mental and educational support from teachers are less likely to be affected by the negative consequences of crisis (Larsen et al., 2020). However, the interviews showed that low-SES parents had too little knowledge and experience to guide their children, and therefore, felt lonely. On 12 October 2020, the Turkish authorities launched a campaign for early childhood education and introduced a television- and computer-based project called "The World's Greatest Kindergarten without Walls." (Ministry of National Education [MoNE], 2020). However, the decline in math and literacy skills in lower-SES students (may not be the case for higher-SES students) even during mid-term breaks is estimated to be equivalent to several months' worth of academic achievement (Alexander et al., 2007). Therefore, seven months (from March to October) of poverty, malnutrition, depression, and trauma with no education will definitely have significant consequences on children (Cantillon et al., 2017). What is more, the existing learning gap between low- and high-SES students is likely to widen further (Clark et al., 2020) because, as our results also indicate, low-SES families have less access to resources (playgrounds, electronic devices, Internet, etc.) (TEDMEM, 2020; Van Lancker & Parolin, 2020).

Low-SES families face some other problems. Increased fear of COVID-19, frustration, boredom, social isolation, financial losses, and the lack of knowledge, education, and personal space negatively affect family relationships (Brooks et al., 2020). Most participants had difficulty adjusting to the "new normal" and taking preventive measures despite the risk of infection. This shows that the debilitating economic effects of the coronavirus are likely to make families more vulnerable to external risks regarding healthcare, nutrition, and education. Moreover, the combination of the public health crisis, social isolation, and economic recession is likely to make mental problems more prevalent and worse in the entire population (Wang et al., 2020). All these factors prevent parents from providing adequate care to their children (Lundberg & Wuermli, 2012). Health professionals cannot spend time with their children because they have been working under adverse conditions and staying in quarantine for a long time (Courtney et al., 2020). Like a few parents, health professionals felt lonely, tense, sad, and helpless because they had to work during the pandemic and, therefore, were at risk of contracting or transmitting COVID-19. Most of them already tested positive for COVID-19. Some parents (almost all healthcare professionals, teachers, taxi drivers, and waiters) who tested

positive for COVID-19 during the study experienced anxiety and depression during their time away from their children and families (Dubey et al., 2020). This had such a dramatic effect that few parents who had survived previous crises succumbed to the pandemic and found themselves on the brink of divorce. Research shows that people facing adverse living conditions combined with economic and parenting stress are more likely to experience mental problems and disruption in social relationships (Kim & Moon, 2005; Waddoups et al., 2019). The pandemic was nerve-wracking and stressful for all participants. Some parents faced a period of destitution because they lost their jobs. Such parents became unconstructive, oppressive, judgmental, and authoritarian because they had difficulty maintaining democratic family relationships. They adopted a one-way communication style and blamed others. On the other hand, tolerant and easy-going parents formed constructive and warm relationships with other family members and talked to them to solve problems. Children living in stress-inducing households with oppressive, authoritarian, nervous, and overprotective parents are more likely to develop maladaptive behaviors (Gewirtz et al., 2008; Cobham et al., 2016). This shows that the sociological and economic situation directly affects parental attitude (Han & Lee, 2018). Some parents faced new stress factors and experienced economic, emotional, and social losses as with the disruption of education due to the pandemic. Blue-collar parents, especially immigrants, living in large cities in other countries also face financial problems shortly after moving from full-time to part-time employment or being laid off. They find themselves in a situation where they cannot even meet their basic needs (Gassman-Pines et al., 2020). It was the same for the immigrant family in this study, living in an overcrowded house with awful conditions. Those parents had four children, the oldest of whom was 12 years old. They had a hard time meeting their children's nutrition, health, and education needs since they were laid off due to the pandemic (WHO, 2020a). The more stressors parents experience (unemployment, physical and mental problems, death of loved ones, etc.), the more vulnerable their children are to emotional problems (Courtney et al., 2020). It seems that the dramatic rise in unemployment and poverty due to the pandemic, as in previous economic crises, will significantly affect early childhood nutrition, care, and development.

Healthy home environments: parents and children

Some families turned the pandemic into an opportunity and worked hard to keep family relationships strong and connected. Those parents were diligent, hopeful, and eager and had no financial problems during the pandemic. On the other hand, millions of families worldwide face economic and family problems due to the pandemic (Brooks et al., 2020). Families who can go through the pandemic without financial concerns are definitely more likely to use this period to improve their relationships with family members (Prime et al., 2020). Democratic parents spent more quality time with their children during the pandemic. They were more constructive and open to their children, communicated with them horizontally (two-way), used praise and encouragement to motivate them, and treated them like peers. Positive parent-child interaction makes children more resilient in times of crises (Gewirtz et al., 2008). Parents with a pedagogical formation or bachelor's or master's degree responded in a calmer way to their children's misbehavior and diverted their attention to engaging games and activities.Some families were living in spacious houses with conveniences. They used those conveniences to mitigate the adverse effects of the lockdown (Moore et al., 2020). Some parents, who were aware of the seriousness of the pandemic, made minor modifications to their houses to teach or remind their children of preventive measures and help them adopt the new dietary and hygiene habits. Using short and clear messages to teach children rules is an effective method (Jiao et al., 2020; Chinnappan et al., 2020).

The pandemic causes undesirable behavior in nearly four in ten children (Wang, Pan et al., 2020). One in seven parents (n = 1011) reported behavioral problems in their children since the pandemic (Patrick et al., 2020). Some parents are more sensitive, supportive, kind, and understanding of their children during the quarantine. They empathize with their children and talk to them and play reading and interactive games to replace their undesired behavior with the desired one (Gassman-Pines et al., 2020). They do not allow their children to have excessive screen time (up to 2.5 hours per day), as recommended by the MoNE and WHO, and instead divert their attention to exploration-based creative activities. Positive parental attitude under challenging circumstances is a significant predictor of children's wellbeing (Gassman-Pines et al., 2020; Patrick et al., 2020; Romero et al., 2020).

During the COVID-19 pandemic, children in many households were left to their own devices to do, mostly ineffective, arts and reading-writing activities, despite the fact that different types of activities help children

make decisions and act independently (Szabo et al., 2020). In households with a positive atmosphere, parents played collaboration-based games and performed drama-based activities with their children. Some parents even sang songs, danced, and made music with their children. Such simple activities help family members break the monotony and bond under challenging circumstances (Ghosh et al., 2020). Some parents regularly video called friends and relatives and encouraged their children to play outdoors (yard, picnic areas, etc.) (WHO, 2019). Children with young and vigorous parents living in detached houses did exploration-based science and math activities in their yards during the quarantine. There is a positive correlation between parental involvement in activities and children's wellbeing (Moore et al., 2020). Therefore, children who perform outdoor activities with their parents are likely to be less affected by the pandemic and develop more healthy behaviors (Wang et al., 2020).

In households where children used smart devices and the Internet in moderation, parents reached out to teachers for psychological support and guidance and helped their children develop coping mechanisms to deal with stress and make sense of their own experiences. Households with a positive climate are more conducive to developing socioemotional, physiological, educational, and psychomotor skills.

5. Limitations and Future Directions

The results of our study should be interpreted in the context of certain limitations. The study had some limitations. First, it collected longitudinal data but focused only on how 15 families with different SES experienced the COVID-19 pandemic in Turkey. Therefore, the results provide no insight into what policies authorities should implement to mitigate the adverse effects of the pandemic on the general population. Persons and institutions of power should take research on unemployment, uncertainty, and negative health conditions into account to take precautions against the adverse consequences of the pandemic. However, an essential contribution of this study is that it sheds light on the private worlds of families who have faced and are still facing the challenges of the pandemic. The results agree with qualitative and quantitative studies showing that children's mental wellbeing during a crisis is affected by parents' practices and family environment. Last, the sample was not large enough to perform subgroup analyses; however, given the current situation, it was impossible to collect large-scale data.

The results and limitations provide hints for future research. According to World Bank forecasts (2020), the global economic recession will continue throughout 2021, even if the pandemic is taken under control, suggesting that new crises are to come. Future studies should design intervention programs/activities for families facing crises. The sample consisted of families with different SES, which manifested itself in the results. Future studies should focus on large samples of subpopulations that are most and least vulnerable to crises.

6. Conclusions

The COVID-19 pandemic has brought expectations, relationships, and dreams to a halt and affected families with different SES unusually. The pandemic has profound emotional and financial effects on low- and middle-SES families, whereas it provides higher-SES families with an opportunity to improve themselves. The results show that pressure directly affects parental attitude, which affects the quality of the home environment. The risks and trauma to which children are exposed for an extended period of time during the quarantine test their resilience. Emotional stress and other problems children face are closely related to parents and the home environment. In other words, positive parent-child interaction has protective effects. The following are recommendations based on the results:

a. Parents should communicate openly and effectively with their children to help them manage their fear and anxiety.
b. Parents should play collaboration-based games to help their children cope with loneliness.
c. Parents should design creative activities to meet their children’s physical and social needs.
d. Parents should use democratic communication patterns and respect their children’s needs and interests to help them cope with anxiety, fear, and stress.
e. Parents should focus more on their children’s socioemotional concerns than their academic performance.

f. Routine life (eating, sleeping, cleaning, etc.) is of paramount importance for children's development.
g. Parents should collaborate with psychological counselors and early childhood educators to design creative activities to help family members cope with stress.
h. Parents should help their children look beyond the current impasse and focus on the future.
i. Teachers should recognize families' needs and help them access educational resources as quickly as possible in times of crisis.

Despite all its devastating effects, the COVID-19 pandemic has provided some families with the opportunity to restore their self-belief and confidence. Parents who use this opportunity can help their children look beyond the current impasse and focus on the future. We are all responsible for teaching children how to manage their emotions and cope with fear and anxiety in the face of the ups and downs of life.

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Investigation of Burnout Levels of School Administrators and Teachers in the COVID-19 Epidemic Process

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ABSTRACT

Due to the COVID -19 epidemic in the world, the change in the working conditions of individuals has started to cause a change in the level of burnout. Teachers are also one of the occupational groups whose working conditions have changed the most during the epidemic and their burnout level has also changed. Therefore, the aim of this study was to determine the impact of the epidemic COVID -19 on the burnout level of teachers and to examine it in relation to different variables. The study was designed using descriptive survey design which is one of the quantitative research approaches. The sample of the study was determined using simple random sampling method. The sample consists of 573 school administrators and teachers working in public and private elementary and secondary schools in Gaziosmanpaşa district of Istanbul in the school year 2020-2021. In this study, Maslach Burnout Scale was used as a data collection tool. The data were analyzed statistically using frequency, percentage and arithmetic mean to analyze the data. The t-test was used to determine the relationship between the burnout level of the participants and the variables of gender, marital status, and education level. One-way analysis of variance (ANOVA) was used to examine the relationship between participants' burnout levels and the variables of occupational seniority, age, school type, job title, and status. Post-hoc Tukey analysis was conducted to identify the groups with differences. The examination of the obtained scores shows that the participants are at a high level of burnout during the outbreak COVID -19. According to the research findings, although there was no significant relationship between burnout level and gender, job title, marital status, education level and school type, it was found that there was a significant relationship between job seniority, age and job status.

Keywords:
COVID-19, Pandemic, Burn out, Distance Education, Teacher

1. Introduction

In the 21st century, where change and development are rapidly continuous in every field, the globalised world's perception brings change, transformation, innovation, and competition. While it is difficult to keep up with this competition, change, transformation and innovation are also tiring processes. In all organizations, the state of being worn out by the managers or their social environment for the sake of material image and anxiety creates boredom and weariness in the employees. It makes them lose their professional satisfaction and motivation. The COVID-19 epidemic, which affects the whole world, affects many economic, social, cultural

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and psychological areas, increasing the anxiety, boredom and weariness experienced by the employees in the current system. The virus, which was first seen in the world in December 2019 and named SARS-CoV-2, quickly caused a global public health crisis in a short time. Undoubtedly, education has been the most affected by the COVID-19 epidemic process caused by the coronavirus disease, which was first seen in Turkey on March 11, 2020. Balcı (2020) states that the most common effect of the epidemic is the compulsory closure of educational institutions and because of that there will be employment problems for qualified people in the future.

School administrators and teachers, who work devotedly in the system, believe in themselves and are ambassadors of change, have become one of the occupational groups that feel the job stress the most in schools, which are the largest structures that contain dynamism. The transformation of school administrators and teachers into individuals who took action was observed during the epidemic process. Karakoese (2021) notes that in the distance education process, where the uncertainty of the process and any explanation is like a riddle, school administrators and teachers made great efforts to adapt the face-to-face instruction program to distance education with limited opportunities and passed an admirable test of success. In addition, school administrators led the effort to inform stakeholders of the decisions made, to communicate with teachers and parents, and to increase the effectiveness of distance education.Due to the pandemic, countries have begun to give great importance to information technologies in education. Governments have taken rapid steps towards digital transformation in education and implemented approaches to distance education, teaching and assessment to ensure effective teaching and learning in an imperative environment. Although online education opportunities have increased so that education is not interrupted, more work needs to be done to reduce student inequality (Reville, 2020). Online distance learning has become a necessity accepted as an immediate response to crises (Karakoese, 2021). It has been shown that the job satisfaction of school administrators and teachers who are expected to meet the expectations and all the tasks associated with the transition to distance education and the subsequent hybrid education model from March 16, 2020 in Turkey has decreased and they have become unresponsive to their job. The lack of appreciation of teachers by their superiors, educational policies that ignore the teaching profession and do not give initiative to school administrators, socio-economic status of those involved, lack of resources, deficiencies in school organization, closed school climate, distance education as a new experience, constant contact with parents and students, and lack of health and safety precautions are factors that also play a part in this burnout.It is known that COVID-19 has caused radical changes in education systems and its impact on health. The crisis it created in the field of education has reached an unpredictable and unprecedented dimension. The COVID-19 outbreak has also led to fundamental changes in the education system of most countries (Karaköse, 2020). Since the beginning of the epidemic, schools, universities and educational institutions in many countries have been partially or entirely closed. It is known that educational institutions, which were closed within the scope of the measures and restrictions taken by national governments to prevent and reduce the worldwide spread of the coronavirus disease, deeply affect teachers, school administrators and students, who are the basic building blocks of education. The epidemic has been the trigger of the greatest possible education crisis in the history of humanity (Karakose, 2020). Teachers constitute the supporting pillars of the education system (Aydın, Toptaş, Kaysılı, Tanrıverdi, Güngören, & Topçu, 2021). The way teachers perceive the profession, their professional sensitivity increases or decreases in parallel with time and conditions. It is thought that what has been experienced in the epidemic for more than a year and the implementation of many changes in social, cultural and technological aspects in education cause teachers to experience more stress, boredom, fatigue, conflict, domination and burnout. Approximately 63 million teachers worldwide have been affected by the COVID-19 pandemic (UNESCO, 2020). School administrators and teachers, who are stuck between illness, online lessons, pressure, anxiety, social life and living conditions, have disrupted their work and life balance. It is inevitable that school administrators and teachers, who are physically, mentally and spiritually depressed, cannot display the characteristics of healthy individuals.

In many countries of the world, all stakeholders of education, especially teachers, students, administrators, parents, have experienced a complex process due to the restriction strategies adopted and imposed by governments (Karaköse, 2021). Although some scientific studies examine the effects of the COVID-19 pandemic on education, most researchers do not include data on burnout. For this reason, there is a need for research on the physical, psychological, economic and sociocultural effects of the COVID-19 epidemic on school administrators and teachers, who are the cornerstones of education and training. Scientific researchers

about these unclear issues should be supported. There is a need for research on the teaching and learning needs of school administrators and teachers during the crisis periods of scientific research on the epidemic's effects. In this study, the primary purpose was to determine the effects of the practices carried out from the day the COVID-19 virus was first detected to the continuous period on school administrators and teachers and to examine them according to some variables. To convey the physical, mental and spiritual results of the experiences of school administrators and teachers in this process, the study results with school administrators and teachers who were in the field during the epidemic were used. For this reason, it was created to shed light on the implementation and discussion issues in the education system from 2020, which is under the influence of the coronavirus epidemic, and to present the results by summarising them in a common perspective. It is expected that the study will reveal the extent of burnout of school administrators and teachers during the period of distance education and support the measures that can be taken to enable them to work more efficiently and effectively.

2. Methodology

2.1.Research Model

This study was designed according to the screening design, which is one of the quantitative research approaches, as it aims to investigate the burnout of school administrators and teachers during the pandemic COVID -19. Karasar (2005) defines the scanning model as the method of uncovering the existing situation as it is. In this study, the descriptive scanning method was used as it aimed at revealing the existing situation. As a result of the study, the data on burnout of school administrators and teachers during the epidemic COVID -19 were presented descriptively.

2.2. Research Sample

The research population consists of school administrators and teachers working in public/private primary and secondary schools in Istanbul and affiliated with the Ministry of National Education. The research sample consists of 573 school administrators and teachers working in public and private primary and secondary education institutions affiliated to the Ministry of National Education in the Gaziosmanpaşa district of Istanbul in the 2020-2021 academic year. A simple random sampling method was used for the study. In the simple random sampling method, every unit in the universe is likely to participate in the research (McMillan & Schumacher, 2006; Neuman, 2006). In the determination of the research participants, their representation of the universe was taken into account. The data on the school, administrators, and teachers that make up the study sample are presented below.

Table 1. *Number of Schools Considered in the Study Universe*

Instituion Type	Public	Private	Total
Primary	23	9	32
Secondary	18	10	28
Primary/Secondary together	5	0	5
Imam Hatip Secondary School	3/13	0	3/13
High School	19	19	38
Total	68/78	38	106/116

There are different school types and levels in the research universe. The schools determined by the simple random sampling method from these schools were included in the sample, and the research data were obtained through the school administrators and teachers working in these schools. Demographic data of the research participants are given in Table 2.

A large part of the research participants, such as 72%, consists of women. In addition, most of the participants are married, and their education level is at the undergraduate level. According to professional seniority, it was determined that the participants mostly had 6-10 years of experience and 21 years or more of experience. According to the age variable, the majority of the participants are between the ages of 30-39 (44%). Research participants mainly consist of teachers working in primary schools, and these teachers are generally in the status of permanent teachers.

Table 2. *Demographic Data of Participants*

Demographic Factors		*f*	%
Gender	Female	413	72
	Male	160	28
Marital Status	Married	348	61
	Single	225	39
Education Level	Undergraduate	495	86
	Master's degree	78	14
Professional Seniority	0-5 years	112	19
	6-10 years	148	26
	11-15 years	106	18
	16-20 years	89	16
	21+ years	118	21
Age	21-29	110	19
	30-39	251	44
	40-49	149	26
	50+	63	11
School Type	Primary	322	56
	Secondary	182	32
	High School	69	12
Title	School Administrators	61	11
	Teacher	512	89
Status	Regular	422	74
	Contracted	37	6
	Paid	114	20
Total (n)		573	100

2.3. Data Collection Tools and Procedure

The Burnout Scale developed by Maslach (1982) was used to collect the research data. The scale used in the research consists of two parts. There is the personal information form in the first part, and in the second part, there is the burnout scale consisting of 20 items. The scale has three sub-dimensions as emotional exhaustion, depersonalization and personal accomplishment. The reliability coefficients of the scale were calculated according to the Kuder-Richardson formula. According to the results of this analysis, the emotional exhaustion sub-dimension is 0.89, the depersonalization sub-dimension is 0.71, and the personal accomplishment sub-dimension is at the reliability level of 0.72. These values show that the scale provides validity.

2.4. Data Analysis

The analysis of the data obtained in the research was carried out using a data analysis program for the social sciences. First, the Kolmogrow Smirnow test was applied to check the normality of the distribution of the data. It was found that the data obtained from the entire scale met the normality assumptions at the .05 level. In addition, the skewness and kurtosis values were obtained (skewness= -.127 and kurtosis= -.162). The fact that these values ranged from +1.5 to -1.5 indicates that the data had a normal distribution (Tabachnick, Fidell, & Ullman, 2007). For this reason, the lowest value, highest value, arithmetic mean, and standard deviation were calculated to represent the descriptive values for the study. Then, simple linear correlation was applied to determine the relationship between burnout level of school administrators and teachers and different variables. In other analyzes, parametric tests were used because the entire scale met normality assumptions. The T-test was used for bivariate data and one-way analysis of variance (ANOVA) for data with more than two variables.

3. Findings

The research examined the relationships between gender, age, marital status, professional seniority, school type, professional title and status variables, and burnout. In this section, the findings obtained as a result of the statistical analyses related to the research's purpose are given. First, the descriptive values of the scores of the school administrators and teachers participating in the study on the burnout scale were analyzed. The

lowest, highest, and mean scores for the sub-dimensions of the scale and the overall scale can be found in Table 3.

Table 3. *Descriptive Values of the Scale*

Scale Dimensions	N	The Lowest Value	The Highest Value	$\overline{X}$	Std.
Emotional Exhaustion	573	8	40	2,817	,782
Depersonalization	573	4	20	1,926	,732
Personal Accomplishment	573	4	20	2,242	,633
Total	573	28	80	2,907	,611

All of the research participants scored the statements on the scale of determining burnout levels. According to the results obtained from the data analysis, the lowest value obtained from the whole burnout level determination scale is 28 and the highest value is 80. When examining the sub-dimensions of the Burnout Level Scale, the lowest value in the Emotional Exhaustion sub-dimension is 8, the highest value is 40, the lowest value in the Depersonalization sub-dimension is 4, the highest value is 20, and the lowest value in the Personal Performance sub-dimension is. 5, the highest value is 25. Looking at these values shows that the participants have a high level of burnout.

Table 4. *T-test Findings Regarding the Examination of the Relationship Between the Burnout Levels of the Participants and the Gender Variable*

	Groups	N	X	ss	t	p
Emotional Exhaustion	Female	413	2,844	,777	1,314	,189
	Male	160	2,748	,793		
Depersonalization	Female	413	1,911	,737	-,817	,414
	Male	160	1,967	,738		
Personal Accomplishment	Female	413	2,245	,638	,193	,847
	Male	160	2,234	,623		
Total	Female	413	2,924	,616	1,038	,300
	Male	160	2,865	,598		

p<0,05

According to the research results, it was found that there was no significant difference between the group averages and the gender variable. This was the result of the t-test that was conducted to determine if there was a significant difference between the burnout level of the participants and the gender variable.

Table 5. *T-test Findings Regarding the Examination of the Relationship Between the Burnout Levels of the Participants and the Marital Status Variable*

	Groups	N	X	ss	t	p
Emotional Exhaustion	Single	225	2,825	,827	,187	,852
	Married	348	2,812	,753		
Depersonalization	Single	225	1,960	,760	,869	,385
	Married	348	1,905	,722		
Personal Accomplishment	Single	225	2,248	,692	,191	,848
	Married	348	2,238	,593		
Total	Single	225	2,915	,668	,245	,806
	Married	348	2,902	,571		

p<0,05

According to the research results, it was determined that there was no significant difference between the group averages and the marital status variable as a result of the t-test conducted to determine whether there was a significant difference between the burnout level of the participants and the marital status variable.

Table 6. *T-test results regarding the study of the relationship between the Burnout Levels of the participants and the variable of the Educational Status*

	Groups	*N*	X	ss	t	p
Emotional Exhaustion	Undergraduate	495	2,828	,782	,877	,381
	Master's D.	78	2,745	,783		
Depersonalization	Undergraduate	495	1,929	,735	,253	,800
	Master's D.	78	1,907	,753		
Personal accomplishment	Undergraduate	495	2,258	,652	1,476	,140
	Master's D.	78	2,144	,489		
Total	Undergraduate	495	2,915	,618	,751	,453
	Master's D.	78	2,859	,566		

p<0,05

According to the research results, it was found that there was no significant difference between the group averages and the educational status variable. This was the result of the t-test that was conducted to determine if there was a significant difference between the burnout level of the participants and the education status variable.

Table 7. *ANOVA Analysis Findings Related to Examining the Relationship Between the Burnout Levels of the Participants and the Variable of Professional Seniority*

	Groups	*N*	X	ss	F	p
Emotional Exhaustion	0-5 years	112	2,578	,770	6,071	,000*
	6-10 years	148	3,022	,821		
	11-15 years	106	2,785	,799		
	16-20 years	89	2,919	,716		
	21+ years	118	2,739	,707		
Depersonalization	0-5 years	112	1,772	,672	2,964	,019*
	6-10 years	148	2,077	,833		
	11-15 years	106	1,945	,751		
	16-20 years	89	1,876	,709		
	21+ years	118	1,904	,647		
Personal Accomplishment	0-5 years	112	2,183	,710	2,960	,019*
	6-10 years	148	2,353	,680		
	11-15 years	106	2,325	,610		
	16-20 years	89	2,126	,568		
	21+ years	118	2,173	,535		
Total	0-5 years	112	2,745	,631	5,931	,000*
	6-10 years	148	3,087	,657		
	11-15 years	106	2,942	,574		
	16-20 years	89	2,861	,579		
	21+ years	118	2,840	,531		

*p<0,05

According to the research findings, as a result of the one-way analysis of variance (ANOVA) conducted to determine whether there is a significant difference between the participants' burnout level and the variable of professional seniority, it was found that there is a significant difference between the group averages and the variable of professional seniority. Post-hoc Tukey analysis was performed to determine the groups where the difference occurred. It was determined that the significant difference was between the 6-10 year group and the 0-5 year group in the emotional exhaustion and depersonalization sub-dimensions, and between the 6-10 year group and the 16-20 year group in the personal accomplishment sub-dimension. In general, a significant difference was found between the 6-10 year group and the 0-5 year group. According to the analysis results, the increase in professional seniority causes an increase in the level of burnout.

Table 8. *ANOVA Analysis Findings Regarding the Relationship Between the Burnout Levels of the Participants and the Age Variable*

	Groups	*N*	X	ss	F	p
Emotional Exhaustion	21-29	110	2,809	,832	,770	,511
	30-39	251	2,867	,810		
	40-49	149	2,781	,707		
	50+	63	2,720	,752		
Depersonalization	21-29	110	1,990	,738	1,676	,171
	30-39	251	1,974	,795		
	40-49	149	1,832	,643		
	50+	63	1,849	,690		
Personal Accomplishment	21-29	110	2,254	,725	4,145	,006*
	30-39	251	2,328	,654		
	40-49	149	2,167	,515		
	50+	63	2,055	,584		
Total	21-29	110	2,972	,656	2,940	,033*
	30-39	251	2,962	,632		
	40-49	149	2,816	,539		
	50+	63	2,793	,575		

*p<0,05

According to the research findings, as a result of the one-way analysis of variance (ANOVA) conducted to determine whether there is a significant difference between the participants' burnout level and the age variable, it was found that there is a significant difference between the group averages and the age variable in the personal achievement sub-dimension and the general dimension. According to the results of the post hoc Tukey analysis conducted to determine the groups in which the difference occurred, it was found that the significant difference was found between the age group 30-39 and the age group 50 years and older in the sub-dimension personal achievement and between the age group 21-29 and the age group 50 years and older in the general dimension. The results of the analysis show that with increasing age the level of burnout decreases.

Table 9. *ANOVA Analysis Findings Related to Examining the Relationship Between the Burnout Levels of the Participants and the Variable of School Type*

	Groups	*N*	X	ss	F	p
Emotional Exhaustion	Primary	322	2,805	,779	,108	,897
	Secondary	182	2,839	,835		
	High School	69	2,815	,651		
Depersonalization	Primary	322	1,931	,742	,017	,983
	Secondary	182	1,920	,756		
	High School	69	1,920	,671		
Personal Accomplishment	Primary	322	2,232	,630	,094	,910
	Secondary	182	2,258	,683		
	High School	69	2,246	,504		
Total	Primary	322	2,907	,596	,019	,981
	Secondary	182	2,912	,673		
	High School	69	2,896	,505		

p<0,05

According to the research findings, as a result of the one-way analysis of variance (ANOVA) conducted to determine if there is a significant difference between the participants' burnout level and the school type variable, it was found that there is no significant difference between the group averages and the school type variable.

Table 10. *T-test Analysis Findings Related to Examining the Relationship Between the Burnout Levels of the Participants and the Variable of Professional Title*

	Groups	*N*	**X**	**ss**	**F**	**p**
Emotional Exhaustion	School Administrators	61	2,684	,720	-1,405	,161
	Teacher	512	2,833	,788		
Depersonalization	School Administrators	61	1,864	,709	-,693	,488
	Teacher	512	1,934	,741		
Personal Accomplishment	School Administrators	61	2,102	,525	-1,830	,068
	Teacher	512	2,259	,643		
Total	School Administrators	61	2,787	,514	-1,628	,104
	Teacher	512	2,922	,620		

p<0,05

According to the research results, it was determined that there was no significant difference between the group averages and the occupational title variable as a result of the t-test conducted to determine whether there was a significant difference between the burnout level of the participants and the occupational title variable.

Table 11. *ANOVA Analysis Findings Related to Examining the Relationship Between the Burnout Levels of the Participants and the Status Variable*

	Groups	*N*	X	ss	F	p
Emotional Exhaustion	Regular	422	2,925	,758	16,125	,000*
	Contracted	37	2,520	,706		
	Paid	114	2,513	,796		
Depersonalization	Regular	422	1,991	,749	7,301	,001*
	Contracted	37	1,898	,734		
	Paid	114	1,697	,648		
Personal Accomplishment	Regular	422	2,322	,614	13,461	,000*
	Contracted	37	2,047	,488		
	Paid	114	2,008	,676		
Total	Regular	422	2,986	,589	14,091	,000*
	Contracted	37	2,733	,598		
	Paid	114	2,672	,628		

*p<.05

According to the research findings, as a result of the one-way analysis of variance (ANOVA) conducted to determine whether there is a significant difference between the participants' burnout level and the status variable, it was found that there is a significant difference between the group means and the status variable in all sub-dimensions and the total scale. According to the results of the post hoc Tukey analysis conducted to determine the groups where the difference occurred, it was found that there was a significant difference between the regular group and the paid group in all sub-dimensions and the total scale.

4. Conclusion and Discussion

As a result of this study conducted to determine the burnout level of school administrators and teachers during the COVID -19 epidemic process and to evaluate them according to different variables, it was found that the burnout level of school administrators and teachers did not change according to gender, marital status, educational level, job title, and school type. In addition, it was found that professional seniority, age, and status of school administrators and teachers had an impact on burnout levels. As the seniority of school administrators and teachers increased, the level of burnout also increased. However, in contrast to this finding, burnout levels were found to decrease as the age of school administrators and teachers increased. This could be related to the fact that teachers whose retirement is approaching experience less work stress. Looking at the status of teachers among themselves, it was found that regular teachers experienced more burnout than those with contract and paid teacher status. Çiçek, Tanhan, and Tanrıverdi (2020) found in their study that young and female teachers had high levels of depression and anxiety during the epidemic period. Kırmızıguel (2020) in his study states that with the disruption of face-to-face teaching, teachers' communication and interaction

with students has changed and teachers are struggling to keep up with this change. It is believed that the uncertainties experienced, the increase in anxiety and the changes lead to an increase in the level of burnout among teachers and school administrators.In addition to the burnout scale, some participants also added their views on the COVID-19 process. One of the participating teachers stated that the uncertainty of this process was the most frustrating thing for her. Another participant teacher says that this process is a significant loss in education. One of the teachers stated that "we are exhausted and devalued, we do not have much responsibility, we do not have much support" and noted that the level of burnout increased in this process. On the other hand, a school administrator states that "teachers are worn out at least as much as health workers, this should be realized" and says that teachers experience burnout because they work hard in this process. Another teacher noted that teachers were left alone during this process, and they needed psychological support. One of the participants noted that the statements made create disappointment along with expectations. One teacher commented that she did not feel safe because of the behavior of school and education administrators. A participant, who is a school administrator, says that taking sudden decisions during the epidemic makes them tired and stressed. One teacher stated that he was not enthusiastic and worked inefficiently in the distance education process. One of the teachers aid that in this process, they were very worn out because they took care of the parents and the students and had to take care of them outside of class hours. A teacher explains his burnout as "I am completely fed up, we had difficulties in face-to-face education, now we are having more difficulties". The participant, who stated that the process was tiring and had difficulty keeping up with the changing schedules, also stated that he had difficulty inkeeping up with the changing schedules and had difficulty working due to the workload. A teacher stated that the responsibility of students, lessons and parents is too much and trying to please them wears out a lot. One participant said that he was psychologically affected because he could not socialize during the pandemic process. According to these participants' views, besides school administrators and teachers, students and parents also experience burnout.Teachers have been found to be exhausted due to the increase in their workload and responsibilities, confusion over the concept of overtime, and inability to keep up with changing decisions.. Akyavuz and Çakın (2020) determined the main reason for the problems in schools as the communication problem in their study on the opinions of school administrators during the pandemic. He states that school administrators provide psychological support to teachers, reduce uncertainties, and not break communication. It is thought that these studies conducted by school administrators will effectively reduce the level of burnout as they will reduce anxiety and eliminate uncertainties. Because, as Karabay, Korumaz & Kocabaş (2021) stated, the effectiveness of the communication process of school administrators shows a moderate positive relationship with teachers' psychological capital. On the other hand, psychological capital shows a moderately negative relationship with teachers' burnout levels (Tösten, Arslantaş & Şahin, 2017). For this reason, the effectiveness of the communication process of school administrators can contribute to the decrease of burnout levels by increasing the psychological capital of teachers.

Studies show that employees in different occupational groups experience burnout. Karaköse and Malkoç (2021) concluded in their research that medical professionals experience personal stress, anxiety and fear. Talaee et al. (2020) also stated that health workers have a high level of burnout in their study investigating work burnout. Studies on the impact of the pandemic COVID -19 on burnout have been conducted mainly with health professionals. In their study examining the impact of the pandemic on education, Bozkurt et al (2020) state that education has been severely affected and disrupted. Moreover, there is role conflict and overload due to social injustice and inequalities, leading to trauma and anxiety. For this reason, he recommends suspending teaching and using alternative assessment and evaluation methods. Toquere (2020) in his study examining the changes in higher education caused by the pandemic states that the impact is yet to be determined but it is effective in changing policies in higher education.Batubara (2020) also states that there are problems in online education because the teaching staff is not competent in using communication and technology. The fact that educators cannot accompany students in using technology may cause them to feel professionally inadequate and alienated. This situation can be considered as one of the reasons that cause burnout. Rulandari (2020) states that the compulsory distance education process significantly affects students, parents and teachers, and it is necessary to cooperate to overcome the difficulties experienced.

According to the research results, it has been revealed that the COVID-19 epidemic has affected many areas, and one of the most affected areas is education. Changes in working conditions and environments have deeply affected educators. Reasons such as not having the experience of providing online education, the conflict

between the role of educator and family member, and lack of technological infrastructure have caused school administrators and teachers to experience professional problems and increase their burnout levels. It is believed that providing the necessary technological infrastructure, reducing uncertain decision-making, and providing psychological support can be effective in reducing the level of burnout among school administrators and teachers. According to the research findings, the job seniority of school administrators and teachers affects their level of burnout. Since it is known that employees with higher seniority are more likely to suffer from burnout, their anxiety can be reduced by placing employees with higher seniority in studies that allow them to work with employees with lower seniority. Moreover, the burnout level of employees varies according to their job status. Specifically, it is expected that anxiety will be reduced by eliminating the status difference between teachers.

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Coronavirus Stress and Resilience: Exploring the Role of Hope and Meaning in in Life Undergraduate Students

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ABSTRACT

The aim of the present study was to investigate whether meaning in life and hope mediate the association between coronavirus stress and resilience in university students. The participants were 376 (68% female) undergraduate students attending a public university in Turkey. The age of the students ranged from 18 to 38 years (Mage = 20.67, SD = 3.62). The results of the present study suggest that the meaning of life and hope attenuate the negative effects of stress on hope and resilience. Specifically, hope emerged as an important mechanism for the relationship between meaning in life and resilience. These findings provide insights into the relationships between coronavirus stress, hope, sense of life, and resilience in young adults during the period COVID -19. Hope and sense of life may function as protective factors to promote mental health and well-being by increasing an individual's ability to recover from stressful situations with high motivation and in creative ways. The purpose of the present study was to examine whether meaning in life and hope mediate the relationship between coronavirus stress and resilience in university students. The participants were 376 (68% female) students attending a public university in Turkey. The age of the students ranged from 18 to 38 years (Mage = 20.67, SD = 3.62). The results of the study showed that the meaning of life and hope mitigated the negative effects of stress on hope and resilience. Specifically, hope was found to be an important mechanism for the relationship between meaning in life and resilience. These findings shed light on the relationships between coronavirus stress, hope, sense of life, and resilience in young adults during COVID -19. Hope and sense of life may act as protective factors to promote mental health and well-being by increasing individuals' ability to recover from stressful situations with high motivation and in creative ways.

Keywords:
Resilience, hope, meaning in life, meaningful life, positive psychology.

1. Introduction

The pandemic of coronavirus disease-19 (COVID -19), which has been a very real threat to human welfare and health for about two years, has swept the world. Coronavirus (COVID -19), which emerged in China in the last months of 2019 and has spread around the world, affects people and societies in many ways. The first case in our country was observed on March 11. This epidemic was declared a pandemic by WHO on March 16, 2020 (WHO, 2020). The number of countries and people affected by this virus is increasing day by day. The fact that this virus is spreading rapidly and threatening the whole world is causing great concern to people. Moreover, the suppression approach (Huang, Allie, Gnanasegaran & Bomanji, 2020) of restricting movement as much as possible by forcing the masses to stay at home for a while to slow down the outbreak (Huang et

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al., 2020) causes stress. Stress is associated with unpredictable and uncontrollable life events that people face (Cohen, Kamarck & Mermelstein, 1983). It is a state of tension related to an individual's anxiety, uncertainty, and constant need for security (Stranks, 2005).Previous studies have reported that stress is negatively correlated with resilience (Hou et al., 2017; Liu et al., 2016; Pengilly & Dowd, 2000). A high accumulation of stress decreases a person's ability to build resilience (Ong, Bergeman, Bisconti, & Wallace, 2006; Tugade & Frederickson, 2007). Resilience is an individual's ability to recover and adapt to the changing situation in the face of negative life events (Miceli, 2012) and to protect mental health despite being in a difficult situation (Herrman et al., 2011). Thus, resilience is not only the resistance to stressful events (Wang, 2000), but also the ability to return or recover from stress (Arslan, 2015). It assigns a definite positive value to risk factors that can be viewed as threats that increase the likelihood of negative outcomes or decrease the likelihood of positive outcomes (Masten, 2001). Resilience demonstrates the importance of acting on people's strengths (Seligman & Csikszentmihalyi, 2000). When individuals remain determined after a negative experience (Mowbray, 2011), maintain normal functioning, and sustain the developmental process by using the necessary biological, psychological, and social resources to counteract the negative effects of the stress, this increases resilience (Fletcher & Sarkar, 2013; Ungar & Perry, 2012).Hope provides a balance against both personal and interpersonal events that cause anxiety during periods of uncertainty (Folkman, 2010). Hope is thus a variable closely related to stress and resilience because it has the potential to be the mediator between both. Hope as a person's psychological power is a cognitive process that helps people develop positive expectations to achieve desired goals and perceive that these goals can be accomplished (Lazarus, 1993; Irving, Snyder, & Crowson, 1998; Snyder et al., 1991). According to the hope theory, hope is a cognitive and motivational structure that reflects individuals' perceptions of their capacities (Snyder, 2002). The structure of hope reflects an individual's perception of the ability to conceptualize their goals, develop strategies to achieve these goals, and maintain the motivation to use these strategies (Snyder et al., 2003). Highly hopeful individuals consider stressful situations as challenging rather than threatening and generally evaluate situations positively (Rubin, 2001; Snyder et al., 2000). They emphasized the importance of hopeful thinking in preventing problems and increasing resilience. A longitudinal study by Ciarrochi, Heaven & Davies (2007) found that hope predicted self-esteem, positive attribution style, and emotional well-being. These results suggest that hope is an important construct that might help to explore the impact of stress and meaning in life on resilience during the coronavirus pandemic.

The meaning of life is a concept that refers to whether human life fits into a consistent pattern in a cosmic sense and whether a person's life is meaningful in a worldly sense (Yalom, 1980). "Meaning in life" is the subject of interest in positive psychology, which depicts how and with what individuals experience meaning in their lives (Martela & Steger, 2016). Seligman (2002) has described a meaningful life as an individual's dedication to a goal that is more important than themselves, emphasizing that individuals whose lives are meaningful have longer well-being compared to those who take a hedonistic approach. Research has shown that meaning is significantly associated with well-being (e.g., positive affect, life satisfaction, and happiness; Steger, Oishi, & Kashdan, 2009), personality and coping styles (Steger, Kashdan, Sullivan, & Lorentz, 2008), and psychological distress (Edwards & Holden, 2001; Korte, Cappeliez, Bohlmeijer, Westerhof, Cappeliez, & Smit, 2012). Considering the existential approach of positive psychology, meaning is key to individuals' mental health and well-being (Frankl, 1985; Wong, 2016), and meaning in life helps people overcome challenges by increasing resilience (Wong, & McDonald, 2002). People who experience adverse events can protect their mental health by striving for meaning in life (Du, Li, Chi, Zhao, & Zhao, 2017). Therefore, meaning in life is an important mechanism that can promote resilience and positive development in individuals (Arslan, Yılmaz, & Wong, 2020; Wong, 2012) and may help to understand the relationship between coronavirus stress and resilience in college students.This study aimed to investigate the direct and indirect association between coronavirus stress, meaning in life, hope, and resilience among Turkish young adults within the context sketched above. Based on the preceding rationale and extant literature, we hypothesized that (i) meaning in life and hope would mediate the association between coronavirus stress and resilience and (ii) hope would mediate the association between meaning in life and resilience.

2. Methodology

2.1. Participants

The current research was carried out utilizing a cross-sectional mediation design. The independent variable of the study was coronavirus stress, and the dependent variable was resilience. Meaning in life and hope were determined as mediators. Participants included 376 (68% female) undergraduate students attending a public university in a small urban city in Turkey. Students ranged in age bet

ween 18 and 38 years (Mage = 20.67, SD = 3.62). They reported their socioeconomic status (SES) as follows: Low SES= 10.4%, Medium SES= 78.5%, and Upper SES= 11.2%. All participants were informed that participation in the study was voluntary, the survey was confidential, and they could quit the survey at any time if they did not want to continue. After signing an electronic assent form, an online survey including study measures and democratic items was administered to students who volunteered to participate in the study.

2.2. Measures

2.2.1. Coronavirus Stress

Coronavirus Stress Scale (CSS) is a 5-item self-report questionnaire developed to assess stress from the coronavirus pandemic (Arslan et al., 2020). The CSS included eight items rated on a 5-point Likert scale ranging from 0 = never to 4 = very often (e.g., "In the past month, how often have you felt like you could not control the important things in your life because of the coronavirus?"). Research has shown that the scale has high reliability in the Turkish sample (Arslan et al., 2020).

2.2.2. Hope

The Dispositional Hope Scale (DHS; Snyder et al., 1991) was used to assess hope. The DHS includes 12 items and two dimensions; agency and pathways. Four of these items are filler items, and each dimension includes four items. All items are rated using a 7-point Likert type scale ranging from 1 = definitely false to 8 = definitely true. The Turkish version of DHS provided good levels of reliability and validity (Tarhan, & Bacanlı, 2015).

2.2.3. Resilience

The Resilience Measure (BM; Arslan, 2020) was used to assess the resilience of adults. The scale is 5–item self–reported measure (e.g., “I think I'm good at dealing with stressful events”), which are scored using a 5-point Likert scale ranging from 1= strongly disagree to 5= strongly agree. The RM demonstrated good reliability and validity among Turkish adults (Arslan, 2020).

2.2.4. Meaning in Life

Meaning in life was assessed using Meaningful Living Measure (MLM; Arslan, 2020) that is a 6-item self-report scale (e.g., “As a whole, I find my life meaningful”). All scale items are scored using a 7-point Likert type scale ranging from strongly disagree (1) to strongly agree (7). Previous research has revealed that the MLM had strong internal reliability estimates with the Turkish sample (Arslan, 2020).

2.3. Data analyses

Before testing the proposed mediation models, preliminary analyses were conducted to examine the descriptive statistics, normality assumption, and correlation coefficients among the study variables. Normality was examined using kurtosis and skewness values and their cutoff values (Kline, 2011). A Pearson product-moment correlation analysis was then conducted to examine the relationships between the study variables. Several mediation models were then tested to analyse the mediating role of hope and meaning in life in relation to stress and resilience using the macro PROCESS (Model 6) for SPSS version 3.4 (Hayes, 2018). Model results were interpreted using standardised path estimate values (β) and squared-multiple correlations (R2): .01-.059 = small, .06-.139 = moderate, and ≥ .14 = large (Cohen, 1988). Additionally, the bootstrap method was explored with 10,000 replicate samples to estimate 95% confidence intervals (CI) for indirect effects (Hayes, 2018; Preacher & Hayes, 2008). All analyses were conducted using SPSS version 25.

3. Findings

3.1. Preliminary Analyses

Table 1. *Descriptive statistics for the study variables*

	Total sample							Female		Male	
Scales	α	Min.	Max.	*M*	*SD*	g_1	g_2	*M*	*SD*	*M*	*SD*
1. Coronavirus stress	.78	0	20	11.97	3.69	–.16	.32	12.70	3.34	10.47	3.90
2. Resilience	.81	5	25	16.85	3.87	–.31	.07	16.35	3.74	17.90	3.46
3. Meaning in life	.92	10	42	30.90	7.54	–.85	–.02	30.68	7.16	31.36	8.33
4. Hope	.95	14	62	44.99	10.34	–.64	–.04	44.26	9.80	46.52	11.34

Note. g_1 = skewness, g_2 = kurtosis. SES = Self-reported socioeconomic status

Findings of the preliminary analysis revealed that skewness values were between –.85 and –.16, and kurtosis values ranged from –.04 to .32 (skewness and kurtosis scores < |1|), suggesting that all variables of the study had relatively normal distribution (Field, 2009; Tabachnick & Fidell, 2013). Internal reliability estimates with the present sample were adequate–to–strong, ranging between .78 and .95, as shown in Table 1. Subsequently, correlation analysis results indicated that stress was negatively and largely associated with resilience (r= –.50, p<.001) and moderately correlated with meaning in life (r= –.27, p<.001) and hope (r= –.31, p<.001). Resilience had also moderate-large and positive correlations with meaning in life (r= .41, p<.001) and hope (r= .54, p<.001).

Table 2. *Unstandardized coefficients for the mediation model*

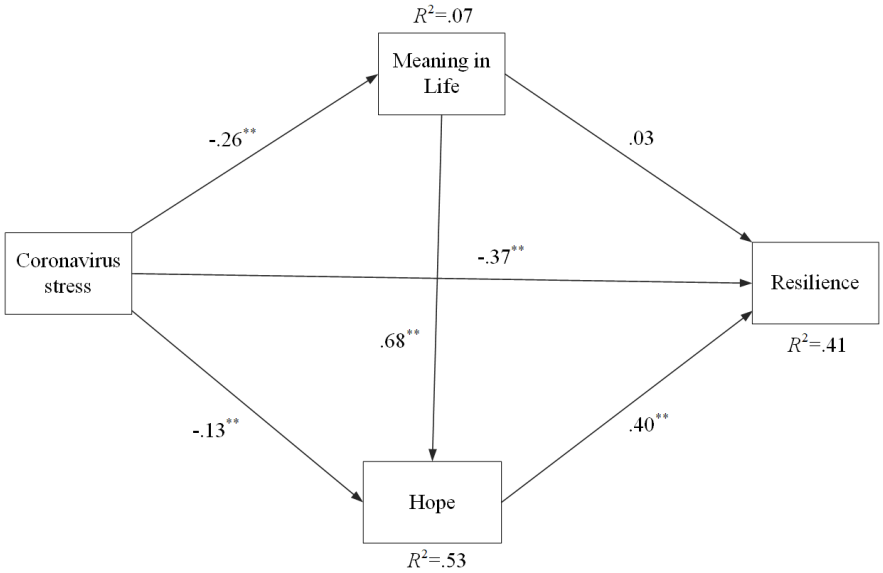
		Consequent												
		M_1 (Meaning in life)				M_2 (Hope)				Y_1 (Resilience)				
Antecedent		Coeff.	*SE*	*t*	*p*		Coeff.	*SE*	*t*	*p*		Coeff.	*SE*	*t*	*p*
X (Stress)	a_1	-.53	.10	–5.15	<.001	a_2	–37	.10	–3.56	<.001	*c*'	–.37	.04	–8.84	.004
M_1 (Meaning in life)		–	–	–	–	d_{21}	.93	.04	18.66	<.001	b_1	.02	.03	.54	.589
M_2 (hope)		–	–	–	–	–	–	–	–	–	b_2	.14	.02	7.02	<.001
Constant	i_{M1}	37.27	1.29	28.76	<.001	i_{M2}	20.70	2.23	9.25	<.001	i_y	17.31	.99	14.38	<.001
		R^2 = .07					R^2 = .53					R^2 = .41			
		F = 26.44; p < .001					F = 211.39; p < .001					F = 88.42; p < .001			

Note. SE = standard error. Coeff = unstandardized coefficient. *X* = independent variable; *M* = mediator variables; *Y* = outcomes or dependent variables

In addition, a series of univariate analysis of variance was performed to investigate the differential effects of gender on stress, resilience, meaning in life, and hope. Findings of this analysis provided a significant main effect of gender for stress (F = 40.88, p < .001, R2 = .07), resilience (F = 23.46 p < .001, R2 = .04), and hope (F = 3.97, p < .05, R2 = .01). Females reported higher levels of stress (M= 11.97, SD= 3.69) and lower levels of resilience (M= 16.35, SD= 3.74) and hope (M= 44.26, SD= 9.80) than male, as shown in Table 1.

3.2. Primary Analyses

Several mediation models were conducted to investigate whether meaning in life and hope mediated the association between stress and resilience in the context of the COVID-19 pandemic. Findings of the first model indicated that coronavirus stress had a significant predictive effect on resilience (β= –.42, p<.001) and meaning in life (β= –.26, p<.001), and meaning in life partially mediated the association between stress and resilience (β= .31, p<.001; indirect effect= –.08). Stress and meaning in life together accounted for 34% of the variance in resilience. The second model was then performed to examine the mediating effect of hope in the association of stress with resilience. Results from the model showed that stress significantly predicted resilience (β= –.37, p<.001) and hope (β= –.31, p<.001), and hope partially mediated the association between stress and resilience (β= .43, p<.001; indirect effect= –.13). Stress explained 9% of the variance in hope, and stress and hope together accounted for 41% of the variance in resilience.



Note. **p<.001.

Figure 1. *Proposed Model Indicating the Standardized Associations Between Variables*

Next, we examined the mediating effect of hope and meaning in life on the relationship between stress and resilience. Model results indicated that stress had a significant predictive effect on hope (β= -.13, p .001) and sense of life (β= -.26, p .001), and sense of life partially mediated the relationship between stress and hope (β= .68, p .001; indirect effect= -.18). Stress accounted for 7% of the variance in sense of life, and stress and sense of life together accounted for 53% of the variance in hope. In addition, stress was a significant predictor of resilience (β= -.37, p .001), and hope mediated the relationship between these variables (β= .40, p .001). However, meaning in life did not mediate the relationship between stress and resilience (β= .03, p= .58). Specifically, meaning of life had a significant indirect effect via hope, and hope fully mediated the relationship between meaning of life and resilience, as shown in Figure 1. Meaning in life also had a significant effect on resilience through hope in the context of stress. All variables together explained 41% of the variance in resilience among adults.

4. Conclusion and Discussion

he current study investigates whether meaning in life and hope mediate the relationship between coronavirus stress and resilience. According to the literature, it is necessary to focus on protective and mitigating factors of stress during the coronavirus pandemic. Understanding protective and mitigating factors has a positive impact on the well-being of individuals. The results of the study confirmed that the meaning of life and hope mitigate the negative effects of stress on hope and resilience.

First, the results of the current study showed that coronavirus stress has a predictive effect on resilience and meaning of life. According to some authors, resilience refers to a dynamic developmental process associated with maintaining positive adaptation under life-threatening conditions (Luthar et al., 2000; Masten, 1999).

Coronavirus disease continues to affect many societies in unprecedented ways. The process of pandemic is a difficult and complex process that people have difficulty understanding. Previous research has shown that stress and fear of coronavirus predict common mental health problems such as psychological distress, poor physical health (Shigemura et. al., 2020), depression, and anxiety (Arslan & Yıldırım, 2020; Montano & Acebes, 2020). Also, Karataş and Tagay (2021) pointed out that there is a negative and significant relationship between resilience and COVID -19 anxiety in Turkish adults. These conditions are a source of stress and anxiety for everyone. Therefore, it is important for the well-being and mental health of individuals to deal with and adapt to the stress experienced in this process in a healthy way (Rosenberg, 2020). He results of the present study suggest that meaning in life attenuates the negative effects of coronavirus stress on hope and resilience. Meaning is one of the most important components for coping with difficult times in life. In this regard, it is important to develop an existential source of flexibility, such as a sense of meaning and purpose (Kim, et al., 2005). According to Steger (2009), meaning in life expresses an individual's belief that his or her life is important, purposeful, and valuable. Previous research has shown that meaning in life is positively related to psychological well-being and mental health (Alandete, 2015), life satisfaction, and happiness (Karataş, Uzun & Tagay, 2021; Steger, Oishi, & Kashdan, 2009). According to Wong & McDonald (2002), meaning helps people cope with challenges by increasing resilience. Park et al. (2008) emphasized that individuals first evaluate a particular situation in their lives and determine whether it is consistent with their global or situational sense. If the situation is found to be consistent with one of these two meanings, the effect of stress decreases. Ryland and Greenfield (1991) found that there is a negative correlation between meaning and stress in life. Halama and Bakošová (2009) found that the level of meaning in life is a moderator in the relationship between perceived stress and coping. Frankl (1996) found that meaning in life has a positive effect on the ability to cope with difficult life situations. Previous research has shown that meaning of life, resilience, and mental health are positively related during the Covid 19 pandemic. According to this study, the ability to cope with difficulties, have a sense of purpose, and have hope can mitigate the effects of Covid-19 stress (Arslan, Yıldırım & Wong, 2020; Trzebiński, Cabański and Czarnecka, 2020; Yıldırım, Arslan & Oezaslan, 2020).

Moreover, the results of the current study showed that coronavirus stress predicted resilience and mediated hope significantly and hope partially in the relationship between stress and resilience. Specifically, hope was found to be an important mechanism in the link between meaning in life and resilience. Consistent with these findings, Folkman (2008) found that hope is particularly effective in coping with long-term stressful situations. Moreover, uncertainties about when something will happen, what it will be, or what the outcome will be cause more stress in people, and hope is an important coping factor in this process. Kirmani et al. (2015) and Collins (2009) found that there is a significant positive correlation between hope and resilience. People with high levels of hope are able to respond constructively to difficult conditions and their levels of resilience are higher. It is found that people with high levels of hope also have higher levels of resilience to stressful life events and overcome the stressful process more easily. Hope is an emotion that makes it easier for individuals to cope with difficult life circumstances. Wong (1993) stated that one of the most important sources of increasing stress resilience is for individuals to find meaning in their lives and have a high level of hope. Only in this way can individuals cope with stressful situations more easily and become more resilient. In the current study, it was shown that meaning in life predicts the level of resilience with the effect of hope higher (Wong, 1993). Blasco-Belled et al. (2020) showed that hope positively influences life satisfaction during the pandemic, and hope in overcoming the pandemic promotes people's belief in winning the battle against COVID -19. It is found that individuals who perceive their lives as meaningful and have high levels of hope are more resistant to stress. Overall, these findings suggest that life meaning and hope are important factors that promote resilience in young adults during the coronavirus pandemic.

The coronavirus disease has caused an increase in stress levels in people due to fear of infection, death, social distance, and isolation. The fact that there is still no solution for dealing with the global epidemic adds to this stress. This makes it all the more important to find out which variables will influence people's level of stress in the process.

4.1. Implications and Limitations

COVID -19 outbreaks show how quickly the world can change dramatically. In this context, the adaptation of individuals and society to this process is very important for both physical and mental health. The results of the current study show that the level of individual resilience is important for coping with these stressful times

and that the meaning of life with the effect of hope positively influences resilience in the time of coronavirus stress. Resilience is a multidimensional and complex entity and is a relatively new area of research. Therefore, activities that promote levels of hope and meaning in life may improve resilience and mental health in people. Studies aimed at increasing individuals' resilience levels can be organized through training on hope and meaning in life. At this point, mental health providers could plan and implement prevention and intervention programs aimed at increasing levels of hope and meaning in life, which in turn promotes resilience. Since activities with a theme of meaning and hope could have positive effects, especially in terms of coping with coronavirus stress and increasing resilience, the use of these concepts could be effective in managing the process. Overall, this study provides insight into the relationships between coronavirus stress, hope, sense of purpose, and resilience in young adults during the period COVID -19. Hope and sense of purpose could act as protective factors to promote mental health and well-being by increasing an individual's ability to recover from stressful situations with high motivation and in creative ways.

The results of this study should also be considered in light of some methodological limitations. First, the data were collected from college students based on self-report. Therefore, future research should examine the relationship between variables using other methods of data collection (e.g., quantitative). Second, the participant group included students who were predominantly female and attended a public college in a small town in Turkey. Considering this limitation, further studies could be conducted with different and large samples (e.g., adolescents, middle adults). The cross-sectional approach is considered as another limitation of the study, and longitudinal research is warranted to investigate the causal relationship among the variables in the study.

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Parental Views on the Lives of Preschool Children in the Covid-19 Pandemic Process*

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ABSTRACT

This study aims to investigate the parental views of pre-school children during the Covid 19 pandemic and is conducted using a basic qualitative research design from qualitative research methods. In the study, parents of children attending pre-school institution were identified through criterion sampling techniques from non-selective sampling methods. The study prepared a semi-structured interview form for parents with children attending pre-school institution as an instrument for data collection. The data from the semi-structured interview form was collected through online interviews with parents whose children attend the pre-school facility. As a result of the study, parents indicated that during the pre-school children's pandemic process, there were more activities with family members at home, the children spent more time with technological devices, terms such as pandemic, diseases, and viruses were frequently used in their daily conversations, and their negative, boring, and aggressive behaviors increased. It was also noted that children were sleeping and waking up later during this time, thus changing their sleep patterns. Another finding observed by the parents was that irregular eating habits increased in the children's eating behavior. It was observed by the parents that children were washing their hands more frequently than before the pandemic. Another finding of the study was that children spoke with longing about their school life due to the disruption of personal instruction in schools.

Keywords:
Covid-19, pandemic, coronavirus outbreak, parents, pre-school education

1. Introduction

The process of the Covid-19 pandemic has brought about some necessary changes in the lives of adults and children in our country and around the world In this process of changing the daily routines of children, online education has been quickly incorporated into the educational process.These sudden changes have brought about physical, mental and social effects on children. This period should not be left to chance, since the pre-school period, of which we carry the traces throughout our lives, is of great importance for us to grow up as healthy individuals. In this period, the developmental support of children, both in school and in the social and family spheres, will make a positive contribution to their whole lives. For this reason, the changes and developments in pre-school education, which is of crucial importance, will undoubtedly leave important traces in children's lives.

* This study was presented as a summary in the 2. International Conference on Covid-19 Studies (2020).

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The first step of education, which has a significant place in human life, is pre-school education that is planned and organized within a certain program. Preschool education is of great importance because it forms the basis of education that people will receive throughout their lives (Katrancı, 2018). The pre-school education period covers the period between the birth of the child and the age of six. Pre-school education can be defined as a systematic and planned education process given in a pre-school institution and the child's family or in alternative programs in this period. The education given to the child should support all development areas (cognitive, language, motor, social and sensory development and self-care skills), should be suitable for his developmental characteristics and individual differences, and should offer a rich stimulating environment (Kuru Turaşlı, 2018). During this period, the development of children should be supported by professionals who provide a supportive environment and stimulating environment for almost all development areas (Koçyiğit, 2016). The richer the environment is in terms of stimuli, the faster the child develops and learns (MEB, 2013). Development is rapid in the pre-school period and some factors that affect development. These are the innate characteristics of the child and the environmental factors. The environmental factors also vary according to the type of development. However, the family is the first factor among the environmental factors that influence development (Kandır & Alpan, 2008). Recently, a pandemic has caused some changes in the lives of adults and children in our country as in the whole world

The coronavirus (Covid-19), which emerged in late 2019 in the city of Wuhan, the capital of China's Hubei region, has become a global pandemic declared by the World Health Organization (WHO). Covid-19 pandemic has become a global social problem that has affected the whole world in a short period of time and made people change their behavior, lifestyle and habits (Zeybekoğlu Akbaş & Dursun, 2020). The Covid-19 pandemic, which has fundamentally changed our age and life and profoundly affected our country as well as the whole world, has affected many sectors and social fields in different ways and has also significantly affected the field of education (Kırmızıgul, 2020).

Preschool child is a play child as of the period. During this period, activities are included in which children gain their spiritual, social, motor and mental skills. The change in children's daily routines due to the current pandemic can bring their spiritual, social, motor and mental development to a standstill. Exaggerated behaviors of parents in this period cause children to be affected psychologically (Ercan et al. 2020). Systematic examinations of the impact of pandemics reveal that sleep quality and duration, and reduced levels of physical and outdoor activities can and do inhibit child development from reaching its full potential in times of crisis (O'Sullivan et al., 2021). In addition, in a study conducted by Xiang, Zhang, and Kuwahara (2020) in a group of children and adolescents (6-17 years old) in Shanghai, China, it was determined that there was a significant decrease in physical activity and an increase in screen exposure of individuals during the Covid-19 pandemic.

Children are not indifferent to the effects of the pandemic COVID -19. They not only suffer from anxiety, insecurity, physical and social isolation, but also stay away from school for long periods of time. It is very important to properly understand children's reactions and emotions in order to address their needs (Jiao et al. 2020). If we look at the studies that have been conducted to investigate the reactions of preschool children during the pandemic period, we can see that they not only show some behaviors that are inconsistent with their age and developmental stage, such as general reluctance, difficulty in concentrating while playing, using the bottle, thumb sucking, and toilet accidents, but also difficulty in separating from their parents (Imran, Zeshan, & Pervaiz, 2020). It is very important to increase the diversity of observations on this topic so that we can see the impact of the current situation on children. However, studies on parents and children trying to cope with the quarantine process and their various problems seem to be insufficient (Griffith, 2020).

Studies to improve understanding of the impact of epidemics such as COVID-19 and pandemics on children's mental health and development can help guide strategies to prevent harm to children's growth and promote positive development (Araújo, Veloso, Souza et al., 2020). The long-term stay of children at home during Covid-19 has made it necessary to reveal the existing situation in terms of their psychological, physical and social lives (Direktör, 2021). The positive-negative effects of the Covid-19 pandemic on children in the pre-school period will reveal an important situation that should be determined against the situations that may be encountered in the future (Yüksek Usta and Gökcan, 2020). It is thought by Yüksek Usta and Gökmen (2020) that teachers' knowledge of pre-school children's perception of the epidemic process will guide them against problems that parents and educators may experience in the future.

Parents are the people closest to their children when it comes to observing the effects and changes on children of the curfew and social desistance practices that were implemented with the goal of protecting public health during the Covid 19 pandemic. In addition, parental support for their children through the suspension of face-to-face education and the continuation of education through online platforms came to the fore. It is very important to increase the diversity of observations made on this topic to see the impact of the current situation on children.

The purpose of this study was to examine parents' views of preschool children's experiences during the Covid 19 pandemic. The study sought answers to the following questions: the impact of the pandemic on children's daily lives, their communication with family members; changes in children's behavior, play, night sleep, feeding, cleaning and hygiene behaviors, and school routines; activities parents engage in with their children; and resource choices in preferred activities were explored.

2. Methodology

This section provides information about the research model, study group, data collection instruments, data collection, and data analysis.

2.1. Research Model

This study, which aims to examine the views of parents about the experiences of pre-school children during the Covid-19 pandemic process, was conducted with a basic qualitative research design. Researchers using the qualitative research method want to examine the subject in detail and reach alternative perspectives (Büyüköztürk, Çakmak Kılıç, Akgün, Karadeniz & Demirel, 2012). Basic qualitative research aims to understand how participants describe their experiences, how they construct their world, and what meanings they attach to their experiences, in keeping with the nature of qualitative research (Merriam, 2009). Basic qualitative research is often used in research and educational studies (Merriam, 2002; Kahlke, 2014) that do not wish to fully commit to a particular methodology. In this study, the basic qualitative design was preferred because it aims to understand preschoolers' experiences during the Covid 19 pandemic in line with their parents' views.

2.2. Research Group

The study group of the research consists of the parents of 5-6 years old children attending preschool institutions in Konya city center during the 2019-2020 school year (N= 287). In the study, the parents of the children attending the preschool institution were identified by the random sampling method, which is one of the non-random sampling methods. The random sampling method can be described as collecting data from a sample that is easily accessible to the researcher (Büyüköztürk, Çakmak Kılıç, Akgün, Karadeniz & Demirel, 2012).

2.3. Data Collection Tools

The data collection instrument in the study was a semi-structured interview questionnaire for parents with children who had attended preschool institutions until the pandemic. According to Taşdemir (2019), one of the most effective methods of data collection in educational research is the interview. Interviews are usually conducted face-to-face, but can also be conducted using audio and video tools such as telephone and videophone. According to Buran (2015), in a semi-structured interview, the researcher determines the main themes of the topic to be explored and asks approximately the same questions to each participant. Flexibility can be shown during the interview depending on the situation.

Before the semi-structured interview form was prepared, a literature review was conducted on the subject. In line with the information obtained, the subject of the study consisted of twelve question items that are generally thought to represent the subject. To increase the validity of the semi-structured interview form in the study, the interview form was broached to a faculty member from the Measurement and Evaluation department and two faculty members from the Preschool Education department. In line with the experts' opinions, arrangements were made in the question statements and two questions were removed from the form as they did not reflect the content of the study. The semi-structured interview form was completed as

ten questions and applied to fifteen parents as a pilot study. In line with the data and feedback obtained from the pilot applications, it was seen that there was no problem in the expressions of the question items. The data of the semi-structured interview form were obtained through online interviews with parents of children attending pre-school education institutions. According to Demir (2017), the application of the semi-structured interview method in studies can be carried out by using the ways such as face-to-face, using telephone, computer, internet etc.

2.4. Data Analysis

In our study, the data were collected via telephone, computer, and internet using the semi-structured parent interview form voluntarily. The obtained data were analyzed by descriptive analysis method. According to the descriptive analysis method, the data obtained can be summarized and interpreted according to predetermined themes Yıldırım & Şimşek (2018). While descriptive analysis is used to process data that does not require analysis thoroughly, content analysis requires a closer examination of the data obtained and reaching the concepts and themes that explain this data (Yıldırım & Şimşek, 2018). In the study, the data obtained from the parents' opinions were first coded and then categories and themes were determined. A code (P1, P2, P3) was determined for each parent participating in the study, and sample sentences regarding the parents' views were stated. In the study, questions aimed at determining the views of parents on different issues were prepared and expert opinion was obtained from field experts. Within the scope of reliability, the data obtained from the parents were coded and compared by two different researchers. Miles and Huberman's (1994) (Δ=Ϲ ÷ (Ϲ + ð)×100) formula was used in the study. According to the formula "Confidence coefficient = Code with consensus ÷ (Code with consensus + Code with disagreement) x 100", the consensus among encoders should be at least 80%. A consensus in percent of 93% was achieved in the study (45/48x100 = 0.93).

3.Findings

The study includes information obtained from parents about the experiences of preschool children during the Covid 19 pandemic. The data obtained from parents' views on how the pandemic process affected the daily lives of the children in the study are presented in Table 1.

Table 1. *Parent Views Regarding the Effect of the Pandemic Process on the Daily Life of Children*

		Code	f	Participant's Views
Theme	Daily Life of Children	Activities with family members	208	*We do the activities and homework sent by our teacher [P24].*
		Time spent with technological devices	172	*He misses his friends,* TRT-kids [P79].
		Time spent at home	115	*My child spends her/his pandemic days by cycling in the garden of our house, he is happy with it [P177].*
		Pandemic in colloquial language	86	*He always asks when the pandemic will end [P282].*

When the views of the parents on this question were examined, it was found that the following answers were given. "At first it was nice to be at home, but then the children began to show nervous, impatient behavior" [P187]. "My child is unhappy and misses his friends a lot" [P136]. "He does what he wants and does not listen to his family members" [P118]. "He always wants his friends to come home" [P64]. From the results of the study, the preschool children engaged in activities with their family members in their daily lives during the pandemic, they talked about current issues such as pandemic, diseases and viruses during the pandemic in their daily conversations with their children, and their negative, shy and aggressive behaviors increased. The data collected in the study on how the pandemic affects children's communication with their family members are presented in Table 2.

When Table 2 was examined, 202 parents stated that their children spent more time with their mothers during the pandemic, and 123 parents indicated positive situations in their communication with family members. In comparison, 41 parents said that their negative communication with family members increased. The parents' statements on the subject are as follows: "His jealousy towards his brother grew. They fight all the time, but they are always together"[P12]. "They use computers more due to online education"[P22].

"They spend time with all of us, and their requests never end"[P53]. "They had the opportunity to spend time with their grandparents and eat at the same table"[P177]. "He spends time with his siblings and me but he is not satisfied at all, he is extremely grumpy and he does not want anything, he is reluctant"[P247]. Based on this information, parents stated that there was an increase in children's communication with family members during the pandemic period. It was also noted that communication problems were observed in children.

Table 2. *Parent Views Regarding the Effect of the Pandemic Process on the Communication of Children with Family Members*

		Code	f	Participant's Views
Theme	Children's Communication with Family Members	Time spent with siblings	202	*He is playing with his brother in the garden of our house [P78].*
		Positive communication	123	*Sibling rivalry has subsided. He couldn't regard his brother as a playmate because he was spending time with his friends. Staying at home showed my child that he can play with the younger ones [P111].*
		Negative communication	41	*Difficulties in communication with us increased. He is already a broth of a boy, he became jealous and more irritable [P25].*

The data obtained from the views of parents regarding the question of how the pandemic process affects children's behaviors in the study are presented in Table 3.

Table 3. *Parent Views Regarding the Effect of the Pandemic Process on Children's Behavior*

		Code	f	Participant's Views
Theme	Children's Behaviors	Behaviors based on cooperation	108	*He is very happy now because his mother is not working, he is not as anxious as before, but he sometimes has aggressive behavior [P35].*
		Aggressive behaviors	99	*He developed resistence to the warnings. He's having a hard time keeping up with the rules, I guess he just doesn't make sense anymore. He ignores the warnings and no longer feels guilty. He damages things and toys [*P12].
		Bored behaviors	57	*He is constantly unhappy. He always says he is bored even if he plays* [P156].
		Controlled, appropriate behaviors	53	*He rarely has shy, grumpy, unhappy behaviors, he says he misses him school very much, I think it is so because of controlled, appropriate behaviors [*P92].

When Table 3 was examined, 108 parents indicated that their children exhibited cooperative behavior toward family members during the pandemic, 99 parents indicated that their children's aggressive behavior increased, 57 parents observed an increase in their children's shy behavior, and 53 parents indicated that their children exhibited controlled and appropriate behavior. Parents expressed their own views. "Capriciousness has begun, but he is not dissatisfied with everything. We spent a lot of time outside before the pandemic, so he's bored and reminiscing about the places he used to go. He wonders when we will return to normality."[P10] "There are moments when he understands the situation, but there are also times when he says he's fed up and rebels"[P24]. "He is happier when he can do physical activities that he loves"[P147]. "Our regular sleeping rhythm is disturbed, we attribute this situation to the change in conditions"[P164]. "He can not get rid of his energy because he can not move enough because he is a very active child[P186]". "My child is bored at home, his emotionality has increased[P286]". The data obtained from the parents' views on how the pandemic process affects the children's games in the study are presented in Table 4.

When Table 4 was examined, 166 parents indicated that they observed no difference in their children's games during the pandemic, 92 parents used symbols about their school environment and friends, 52 parents indicated that their children took on roles such as doctors, nurses, and medical professionals, 47 parents indicated that their children talked about pandemics, diseases, and viruses, and 27 parents indicated that their children exhibited violent behavior in their games.The parents' statements on the subject are as follows: "My child used to love activities, paper and pencil, now he does notlike them" [P187]. "He dreams and tells about things that are not real and when we ask him, he says he was dreaming" [P247].

Table 4. *Parent Views Regarding the Effect of the Pandemic Process on Children's Games*

		Code	f	Participant's Views
Theme	Children's Games	No difference	166	*He continues in the same way as before the pandemic [P163].*
		Symbold about school environment and friends	92	*During the game, they take care to play similar to their school games [P24].*
		Healthcare professional	52	*He didn't play much, now he plays house (evcilik oyunu) with his older sister and brother. He likes playing hospital game most with his brother and sister. He becomes a doctor and heals them [P177].*
		Health terms	47	*He plays all kinds of games. He sometimes builds a virus killing robot with his legos [P282].*
		Tendency to violence	27	*I observed that he sometimes hit his brother and his friends in his games [P56].*

The data obtained from the views of parents regarding the question of how the pandemic process affects children's regular sleep patterns in the study are presented in Table 5.

Table 5. *Parent Views Regarding the Effect of the Pandemic Process on Children's Regular Sleep Patterns*

		Code	f	Participant's Views
Theme	Children's Regular Sleep Pattern	Sleeping late	187	*My son used to go to sleep earlier, but during this period, he goes to sleep at midnight and wakes up early in the morning* [P127*].*
		No difference in regular sleep patterns	99	*There has not been much change in this process. They sleep at 12 o'clock, not 10 o'clock* [P111*].*
		Decrease in night sleep	55	*My child's sleep at night has decreased. The reason for this is that this process coincided with the month of Ramadan, the regular sleep pattern differed, we are together at suhoor* [P177].

When Table 5 was examined, 187 parents reported that their children slept longer during the pandemic, 99 parents observed no difference in their regular sleep patterns, and 55 parents reported that their nighttime sleep decreased. The data obtained from parents' views on how the pandemic process affected children's feeding behavior are presented in Table 6.

Table 6. *Parent Views Regarding the Effect of the Pandemic Process on Children's Nutritional Behavior*

		Code	f	Participant's Views
Theme	Children's Nutritional Behaviors	No difference	132	*The diet continues the same as before the pandemic [P86].*
		Well-balanced and healthy diet	89	*I pay attention to his nutrition; we take care that he consumes well-balanced and healthy foods because he is in the development phase [P134].*
		Snacking tendency	85	*My child always wanted to eat something and started to eat junk food more. We are painting or doing any activity, and the activity ends... We are watching TV, he gets bored and starts to wrap himself in snacks, but he is consuming more than before the pandemic, although he is aware that he should not exaggerate [P10].*
		Decreasing appetite	83	*He was already a boy with poor appetite, and this situation increased [P151].*
		Unhealthy nutrition	17	*Since we are staying at the grandmother's, he constantly asks for a snack and a coke. Unfortunately, I'm not sure if they give snacks or not [P164].*

When Table 6 was examined, 132 parents indicated that there was no difference in their children's dietary behavior during the pandemic, 89 parents indicated that their children ate a balanced and healthy diet, 85 parents indicated that their children often wanted to eat, 83 parents observed a decrease in their child's appetite, 49 parents indicated that their child suffered from anorexia, and 17 parents indicated that they consumed sugary and carbonated foods more frequently.The parents' statements on the subject are as follows: "He eats healthier foods" [P22]. "Since we are staying at the grandmother's, he constantly wants a

snack and a coke. Unfortunately, I'm not sure if they give snacks or not" [P164]. In the study, the data obtained from the parents' views on how the pandemic process affects children's behavior, such as hand washing, cleaning, hygiene, personal care, etc. are presented in Table 7.

Table 7. *Parent Views Regarding the Effect of the Pandemic Process on Children's Hygiene and Personal Care Behaviors*

		Code	f	Participant's Views
Theme	Children's Self-Care Behaviors	Handwashing frequently	175	*Because of our warnings and the advertisements he saw, he washes his hands longer. If he forgot to wash his hands, the only thing he did when he was warned was to wash his hands without any objection [P12].*
		Meticulousness	135	*Children are more careful than before due to the pandemic, and they are more meticulous about washing their hands [P45].*
		Warnings about cleaning	128	*He warns his father as soon as he enters and says there is a virus, you touched dirty places and he gives cologne to his father [P282].*
		Observing difference	83	*The pandemic did not make a difference in my child's cleaning habits. [P49].*
		Refrain from using hands	27	*They do not want to touch the surrounding furniture, elevator, stair railings [P134].*

When Table 7 was examined, 175 parents indicated that their children washed their hands more frequently during the pandemic, 135 parents were more diligent about cleaning and personal hygiene, 128 parents warned family members about their children's cleaning and personal hygiene, and 83 parents observed no difference in their children's cleaning and personal hygiene behaviors. 27 parents indicated that their child was afraid to use their hands because they feared contamination or viral transmission.The parents' statements on the subject are as follows: "We got into the habit of washing by counting to 20" [P105]. "My child prefers to use disinfectant rather than washing his hands all the time" [P5]. "My child warns me to change my clothes when I come home from work" [P12]. In the study, the data obtained from the parents' views on how children talk about their school life during the pandemic process are presented in Table 8.

Table 8. *Expressions of Children about School Life During the Pandemic Process*

		Code	f	Participant's Views
Theme	Children's School Life	Missing the school	188	*He says he misses his school so much, and he hopes the pandemic will be over as soon as possible [*P33*].*
		Missing friends/teacher	187	*When the school is closed, he misses his teacher and friends [P129]. During the pandemic, my child felt the absence of a teacher the most because he loves him very much [P67].*
		The satisfaction of not going to school	46	*He always had a reluctance towards school, and he is pleased that he did not go to school due to the pandemic [P75].*
		Desensitization to school	38	*I never heard him talk about his school and his friends, I guess he does not miss it [P54].*

When Table 8 was examined, it was seen that 188 parents stated that children missed their school life during the pandemic process, 187 parents stated that children missed their friends/teachers, 46 parents stated that children were happy with not going to school, and 38 parents stated that children did not talk about their school life. In the study, the data obtained from the parents' opinions regarding the question of what kind of activities you do with your children during the pandemic process are presented in Table 9.

When Table 9 was examined, 239 parents reported that they did housework with their children during the pandemic, 228 parents reported that they played various games, 189 parents did small muscle exercises, 155 parents did reading activities, 153 parents did music and painting activities, and 112 parents did experimental activities.The parents' statements on the subject are as follows: "We usually try to do all the activities" [P44]. "We bought training kits, and we make them every day at certain times" [P247]. "I have to do different activities with my children, and I look for different activities that attract the attention of the children and try to do as much as I can with them" [P83]. "My daughter likes more artistic activities while my son wants us to spend time with more active activities like playing football" [P21].

Table 9. *Parent Views Regarding the Activities of Children with Their Parents During the Pandemic Process*

		Code	f	Participant's Views
Theme	Activities Children Did with Their Parents	Chores	229	*Since our house has a garden, we do activities such as watering the flowers and trees, we clean the garden [P285].*
		Various games	228	*We take care to play all the games that are suitable for our child's development level and are happy to play [P135].*
		Activities to support fine motor skills	189	*We play with playdough every day, and he plays very fondly [P3].*
		Reading Activities	155	*We definitely read from the storybooks that he determined, then he tells me [P69].*
		Art Activities	153	*We paint with crayons and finger paints, it's a lot of fun [P142].*
		Experimental activities	112	*We are doing experiments that we follow on social media with children. They are incredibly interested [P37].*

In the study, the data obtained from the parents' views on what kind of resources parents used in the activities chosen for children during the pandemic process are presented in Table 10.

Table 10. *Resources Used by Parents During the Pandemic Process*

		Code	f	Participant's Views
Theme	Resources Used By Parents	Teacher	167	*I get help from a guidance counsellor in the school [P177].*
		Social Media	151	*I follow a few pages on Instagram that post activities we can do at home. I try to do what suits us at home for my daughter [P143].*
		Books about pre-school education	130	*I use pre-school education books. We use the activity books and paints I bought from the internet a lot. We often use our own imagination [P164].*
		Experts	122	*I listen to the speeches of some academics and educators on the Internet. There is a live broadcast every day, I try to participate and take advantage of it whenever I find time [P48].*
		Using resources	40	*I can not get around to activities due to my work life and housework. We can only do what our teacher says. Unfortunately, I can not take care of my children anymore [P55].*

In examining Table 10, 167 parents indicated that they communicated with their children's teachers to select activities for their children during the pandemic process, 151 parents indicated that they benefited from social media content, 130 parents indicated that they benefited from preschool education books, 122 parents indicated that they benefited from experts in the field of preschool education, and 40 parents indicated that they had no choice in selecting activities. "When we couldn't leave our homes at the beginning of the pandemic, I first researched on the internet and I was able to find many different activity examples when I thought about what to do with the children apart from the education at school" [P45]. "We used and completed our activity sets that I had bought for my child before, but could not get round to it" [P2]. "Online conversations are held by many psychologists and child development experts on Instagram. I follow these conversations, I see it very useful, I think it helps me" [P67].

4. Discussion

In this part of the study, the effects of the pandemic process on children's daily life, their communication with family members; changes in children's behaviors, games, night sleep, feeding behaviors, cleaning and hygiene behaviors, and school life; activities performed by parents with their children, and resource choices in activity preferences were discussed. When parents' views on the impact of the pandemic on children's daily lives were examined, it was found that preschool children engaged in activities with their family members during the pandemic, they frequently introduced topics such as epidemics, diseases, and viruses into their daily conversations, and their negative, shy, and aggressive behaviors increased. According to Yıldız and Bektaş (2021), although children spend most of their time outdoors, the use of mobile devices is also becoming more common among children as technology develops.In addition, the fact that the areas where children can play in open areas become more limited compared to the past is another reason that increases children's interest in technology. In the study conducted by Demir Öztürk, Kuru & Demir Yıldız (2020), mothers and children were asked "How do you spend a day at home?". As a result of their studies,

they found that children spend much of their time playing and doing activities at home. As a result of their study in which they examined households, Öztürk, Yılmaz, Demir Erbil & Hazer (2020) found that during the Covid 19 pandemic, families spend more leisure time together (e.g., hobbies, TV, games, social media), share household chores, help each other, and talk with family members than they did before the pandemic.

Parents indicated that children's tendency to use technological devices during the day has increased and they spend more time using them than before the pandemic. According to Göker & Turan (2020), it is very important to monitor and regulate children's behavior. Parents are role models for children. Regulating children's use of social media and interaction with technological devices helps them to gain self-control. It has been found that ensuring that they go through the safety issues when entering the system and during distance learning in the system can prevent screen addiction that may occur (Akkaş Baysal, Ocak & Ocak, 2020). It can be said that the interruption of face-to-face teaching and isolation at home due to the rules of social distance during the Covid 19 pandemic increased children's communication and interaction time with technological devices, as well as that of parents.

When parents' views on the impact of the pandemic on children's communication with family members were examined, it was found that although children's communication with family members increased during the pandemic period, communication problems were also observed among children.During the Covid-19 pandemic process, changes occurred in their daily routines and school/work lives, and it can be stated that similarly, changes have occurred in family communication (Döğer & Kılınç, 2021). Since children have not reached sufficient maturity, they have difficulty in understanding the measures taken for the pandemic process developmentally. In this process, psychological problems such as intra-familial conflicts, deterioration of parenting roles, fear, anxiety, and social phobia experienced due to uncertainty are pretty common. In addition to all these, emotional and behavioral problems in children are also a factor that complicates the process (Kadan, Aysu & Aral, 2020). In this process, which emerged with the Covid-19 pandemic, supports for parents in terms of spending effective time with their children and communicating effectively are gaining importance (Abukan, Yıldırım & Öztürk, 2020). From the study of Yıldız and Bektaş (2021), the fact that children who could not go to school due to the outbreak of the pandemic, could not sufficiently dissipate their energy in the home environment and had to spend long periods of time in a closed environment caused physical and mental problems in the children.In addition, it was stated that the fear of children catching coronavirus and the fact that they had to spend time indoors for a long time had a negative impact on their relationships with their parents in the home environment.

The quality of communication between family members is very important for children to feel safe during the epidemic and to adapt to the epidemic more easily (Direktör, 2021). For this reason, it can be said that negative situations may have been observed in the communication of children with family members. In the study conducted by Göl-Güven, Şeker, Erbil, Özgünlü, Alvan and Uzunkök (2020), the researchers asked the parents who their children, the average age of whom was 6, met with during Covid-19 pandemic restrictions and with what methods those meetings were held. As a result of the study, it was determined that 72% of the children use online platforms to communicate with their family elders. Friends and peers took second place (46%). The rate of those who were in contact with their teachers was 29%.

In addition to many negative situations experienced during the pandemic process, there are also advantageous situations. In particular, the fact that children spend effective time with their families is a finding expressed by all participants due to their study (Kurt Demirbaş & Sevgili Koçak, 2020). The active work-life of parents can restrict their effective time with their children. It can be said that the continuation in the home environment of business life, which started with the pandemic process, has allowed children to spend more time with their parents.

When parents' views on the impact of the pandemic on children's behavior were examined, it was found that their children exhibited compatible and cooperative behavior with their family members, their children's aggressive and shy behavior increased, and their children exhibited controlled and appropriate behavior.Trauma and crises (including the pandemic process) change the responses of adults and children. In parallel with the measures taken during the Covid-19 pandemic, which we have experienced and the regulations regarding our daily life, similar behavioral and emotional reactions can be given globally (Akoğlu & Karaaslan, 2020). The restricted lifestyle created by the pandemic process paves the way for the

emergence of various emotional and behavioral problems in children (Sağlam & Kay, 2020). Therefore, aggressive and shy behaviors of parents about their children emerge as a typical result of this process.

When parents' views on the impact of the pandemic on children's games were examined, it was found that families observed no difference in children's games, they used symbols about the school environment and their friends, they adopted roles such as doctors, nurses, health workers, they often included elements such as epidemics, diseases, viruses and violent behaviors were observed in their games during the pandemic.As a result of the study conducted by Yıldız and Bektaş (2021), it was determined that children spent most of their time outdoors by performing sports activities with their friends before Covid-19 epidemic. After the emergence of Covid-19, it was determined that children had to spend more time at home due to restrictions.

Suspension of face-to-face education and being isolated at home during the pandemic process have limited children's communication and movement areas with their environment. It is possible to observe the reflections of this change in their plays in their lives. Çaykuş & Mutlu Çaykuş (2020) stated that during the Covid-19 pandemic, which is one of the crisis periods in which support is most needed, children need to see their friends, play games and communicate with them. However, in this context, children's inability to communicate adequately with their peers, inability to play in open areas such as parks and gardens, and fear of contracting COVID -19 exacerbate their fears (Özçevik & Ocakçı, 2020). For this reason, parents indicated that the negative effects of the pandemic could be observed in the children's games, whose anxiety and worry levels increased during the pandemic. The fact that preschool children internalize this process and include it especially in their games shows us how negatively they are affected by this process.

When parents' opinions on the effects of the pandemic on children's sleep patterns were examined, parents indicated that their children slept later during the pandemic, they did not notice any difference in their sleep patterns, and children's nighttime sleep decreased. Özçevik & Ocakçı (2020) found that due to the disruption of children's daily routine during the pandemic, there are restricted and limited physical activities, irregular eating habits, and disruption of regular sleep patterns. In the study by Guan et al. (2020), as a result of the interviews they conducted with parents of preschool children in Beijing, the capital of China, it was found that most parents' children slept and woke up at late hours during the Covid 19 pandemic.The normal routines of many activities in children's daily lives were found to have changed during the preschool years, as did their regular sleeping habits, and most parents indicated that their children's regular sleeping habits had changed. This situation can be explained by the fact that the changes in the daily routine of the whole family affect the children.

When the parents' views regarding the effect of the pandemic process on the nutritional behavior of children were examined, some of the parents stated that they did not observe any difference in their children's nutritional behavior during the pandemic process. Some parents also stated that their child had a balanced and healthy diet. Their child wanted to eat something often, their child's appetite decreased, their child had anorexia, and consumed gaseous and sugary foods more often. While the alterations in the pandemic process highlight the importance of paying attention to the health of both adults and children, it can be also said that one of the most important issues in this process is nutritional habits. In the study conducted by Kutlu, Ekin, Alav, Ceylan & Meral (2021), they examined the change in the nutritional habits of individuals during the Covid-19 pandemic process. As a result of the study, it was stated that the tendency to packaged foods increased because individuals thought they were safe, fruits were often consumed as snack food instead of the main meal, and the tendency to take supplements increased due to their desire to strengthen their immunity. Dilber & Dilber (2020) examined the effect of the coronavirus pandemic on the nutritional habits of individuals. It was stated that there might be a tendency to overeat due to stress by spending a long time at home during the pandemic process. The findings obtained from the study conducted by İlbasmış, Toksoy Aksoy, Cihanyurdu, Ünver, and Rodopman Arman (2021) showed that parents observed many mental symptoms related to their children during the Covid-19 restrictions period. The detection of changes in appetite in girls compared to the pre-pandemic period was noteworthy.

In the study, it was found that there were both parents who stated that there was no change in the eating habits of the preschool children during the pandemic and parents who stated that they wanted to eat more than before the pandemic and that there was even a tendency for the children to consume junk food. It can be said that children's tendency to eat increases due to the restriction of daily activities in the home

environment during the pandemic process and their long-term fixation in front of the computer and TV for educational purposes.

When parents' views on the impact of the pandemic process on children's hygiene and personal hygiene behaviors were examined, parents indicated that they washed their children's hands more frequently during the pandemic, that they were more diligent in cleaning and personal hygiene, that their children encouraged family members to clean and personal hygiene, and that they observed no difference in the child's cleaning and personal hygiene behaviors, that the child was afraid to use his or her hands because of fear of contamination or viral infection.

Person-to-person transmission of coronavirus through contact or in the form of droplets after coughing, which spreads very quickly and leads to death, caused people to increase their personal hygiene measures and avoid environments with close contact. This situation also prompts people to take more precautions in hygiene, cleaning, and contact (Karataş, 2020). Studies have shown that children and adolescents, like other age groups, have a higher risk of becoming infected and spreading the disease (WHO, 2020). When children's expressions about school life during the pandemic were examined, parents indicated that they miss their children's school life, their friends/teachers during the pandemic, that they are satisfied with not going to school, and that they do not talk about school life.

Children, like adults, are not reckless to the effects of the COVID-19 pandemic process. They experience fears, uncertainties, physical and social isolation, and miss their school and friends because they are away from school for a long time (Çakır Kardeş, 2020). During the Covid 19 period, the distance education model began to be widely used due to the epidemic. During the educational process, children and educators struggled to access the materials they needed. In the distance education process, children and teachers experienced some deficits in knowledge and skills (Direktör, 2021). Children suddenly had to adapt to many changes that occurred in school and daily life during the pandemic, especially wearing masks, continuing education online, staying in the home environment for long periods of time, etc. The negative effects of this process will be felt more acutely by children in the future. The fact that children are separated from their friends and teachers for a long time during the pandemic causes them to miss school.

When investigating parents' views on the activities that children do with their parents during the pandemic, parents indicated that they do housework, play various games, do small muscle exercises, read, make music, paint and experiment together with their children during the pandemic. Kurt Demirbaş & Sevgili Koçak (2020) conducted a study assessing the Covid 19 pandemic process from the perspective of parents with children aged 2-6 years. In the study, parents indicated that children's activities were physical, mental, manual dexterity and interactive activities. Therefore, it can be said that this situation is consistent with the result of the study. In the study conducted by Lee, Ward, Chang & Downing (2021), it was found that parents performed many activities with their children during the Covid 19 pandemic. In this regard, parents indicated that they played games with their children, watched TV and other media programs, and played with toys more frequently.

As indicated by the results of the study, many parents had the opportunity to organize and carry out many activities that they had difficulty doing in their daily lives during the pandemic. It was found that the content of the activities was differentiated according to the level of competence of the parents and the activities were also designed according to the interests of the children.

When examining the resources used by the children's parents during the pandemic process, parents indicated that they communicated with their children's teachers and benefited from content on social media, books on preschool education, and experts in the field of preschool education. They also did not benefit from additional resources when choosing activities for their children during the pandemic. Since parents and children have the opportunity to spend more time at home during the pandemic than in the pre-pandemic period, it was found that parents are looking for examples of activities in different developmental areas to do with their children. In this situation, it was found that parents are making efforts to spend a lot of time at home with their children while getting information from the right sources. Being able to access examples of activities in different areas while searching for alternative resources with developing technology was the most accessible source for parents in this process.

5.Conclusion and Recommendations

This study was conducted to investigate parents' views of preschool children's experiences during the Covid 19 pandemic. When the results were examined, it was found that the children engaged in daily activities with their families, their communication with family members increased, their shy and aggressive behaviors increased, and they exhibited harmonious behaviors at home.. It was also found that the children imitated school life in their games and that there were often traces of the elements of the pandemic process; there were differences in their regular sleep patterns, they consumed snacks more frequently in their eating habits, they were more attentive in their self-care skills, they missed their school life, they undertook various activities with their parents at home, and their parents also got help from their children's teachers in doing so. In line with these results, support training can be provided to parents to emphasize the importance of family participation in education. In addition, material design, material use, technology and technological material use can be supported by field experts to increase the quality of the time that parents will spend with their children. Sets of activity booklets and examples can be prepared for parents to spend quality time at home during the pandemic. Children who have problems cleaning and personal care during the pandemic process can gain these behaviors with interesting materials by using drama and play methods. Informative activities can be organized for both parents and children to prevent obesity in children due to the increase in the use of technology, the decrease in children's movements and the change in their eating habits during the pandemic process. Children's physical activity can be increased through synchronous or asynchronous access via online platforms by preparing physical activity activities suitable for practice in the home environment and prepared by experts in the field. Parent training can be provided to promote healthy eating among children. Nutrition programs can be offered with the support of the relevant institution and organization.

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Knowledge, Attitudes and Practices, and Personality Predictors of Risk Taking towards COVİD-19 among University Students in Kenya

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ABSTRACT

The purpose of this study was to examine the knowledge, attitudes, and practices (KAP) of university students towards COVID-19, and further, some personality characteristics that exacerbate the risk of infection. Out of the 300 university students based in Mombasa, Kenya, targeted in the online study, 219 submitted their filled questionnaires. Data was analyzed quantitatively using SPSS (v.25). Two-way ANOVA and regression models were used to analyze the data. Findings show high knowledge levels and low-risk behaviors towards COVID-19 but unhealthy attitudes especially among women aged 20-29 who also reported higher extroversion, and positive attitudes towards social interactions during COVID-19. Basic knowledge was predicted by age, gender, extroversion, public self-consciousness, and high-risk perception while advanced knowledge was predicted by basic knowledge. Low-risk perception was predicted by age, basic knowledge, and positive attitudes towards social interaction during COVID-19. Age, extroversion and risk perception predicted attitudes about social interactions. Preventive practices were in turn predicted by gender, risk perception, attitudes towards social interactions, extroversion and lack of premeditation. Findings of the study raise interest about university students' KAP, underlying personality dynamics that predict risk taking towards COVID-19, and appropriate COVID-19 messaging to affect attitudes.

Keywords:
Attitudes; COVID-19; knowledge; personality; practices; university students.

1. Introduction

Since 2020 when the coronavirus disease (COVID-19) was declared a pandemic by the World Health Organization, unprecedented changes in people's lives have been witnessed. Despite low initial numbers of COVID-19 infections in sub-Saharan Africa, the numbers began to rise. By then, community transmission of COVID-19 was detected by the WHO and more fatalities were duly expected. To control the pandemic, almost all countries implemented public measures which included border closures, social isolation, and school closures among others. In Kenya, the COVID-19 National Emergency Response Committee (NERC) was launched, chaired by the Ministry of Health (MoH) to implement initial prevention and mitigation measures. The measures included curfews and cessation of movements and health protocols including social distancing, closing educational institutions, hand washing, etc (MoH, 2020). As of January 2021, Kenya had recorded 97,398 confirmed infections and 1,694 deaths due to COVID-19 (WHO, 2021).

While night curfews are still in effect, Kenya has entered a phased reopening of schools and universities for face to face learning. While mass vaccination remains a distant reality, the management of the outbreak requires adherence to the recommended measures. The measures are in turn affected by the knowledge, attitudes, and practices (KAP) of the population (Aldukhayel et al., 2020). Studies (Austrian et al., 2020; Hatabu

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et al., 2020) indicate that sufficient KAP ensures that the population does not underestimate the situation or stigmatize those infected. The demographic profile of the population is an important measure for adherence to protocols. For instance, most university students are emerging adults, a stage corresponding to independence and personality development in the cognitive, physical, affective, sexual, family, and social domains; and also heightened risk-taking behavior (Alves et al., 2020). By their educational background, university students occupy an enviable position in their communities and hence own power to influence their communities' health, either through their own health choices or decision-making influences. Consequently, this special demographic segment is responsible for a wide range of preventive measures through providing knowledge and adopting protective measures.

Underlying psychological traits are expected to shape behaviour. As they develop separate identities separate from their families, university students' behaviour is more likely to be influenced by what is acceptable by society. Therefore, how they carry themselves in public, i.e. their public self-awareness is assumed to influence behaviour (including risk behaviour). The extent to which such behaviour is manifested is hypothesised to depend on underlying personality characteristics including extroversion and lack of premeditation. This is in line with studies which have found personality influences of COVID-19 risk perception including extroversion, conscientiousness and self-consciousness (Al-Omiri et al., 2021; Aschwanden et al., 2021; Hatabu et al., 2020); and optimism/pessimism and self-enhancement tendency (Sakakibara & Ozono, 2020). Further, demographic characteristics including age, gender, education level and place of residence, among others, predict KAP (Aldukhayel et al., 2020; Alves et al., 2020; Peng et al., 2020). In Kenya, studies indicate significantly higher knowledge of COVID-19 among females than males (Austrian et al., 2020; Karijo et al., 2020).

Whereas no published studies in Kenya on KAP have specifically targeted university students (Austrian et al., 2020; Karijo et al., 2020; Muriuki et al., 2020; Twaweza, 2020), they expose gaps that are cause for concern. They include findings that few Kenyans observe social distancing and mask wearing, self-medicate when feeling symptoms or ignore symptoms (MoH, 2020); feel at low risk and have misconceptions about COVID-19 including its origins and possible remedies (Karijo et al., 2020; Twaweza, 2020) and use social media as sources of information (Karijo et al., 2020; Muriuki et al., 2020). Studies among university students across the globe show high knowledge levels but inconsistent attitudes and practices (Aldukhayel et al., 2020; Alves et al., 2020) and hence provides justification for a study of this nature among university students in Kenya for comparisons. Additionally, studies on KAP have not exhaustively examined the underlying psychological predictors.

Considering that university students are more independent, yet retaining close ties with their families, they are more likely to be asymptomatic with the possibility of spreading viruses to the high-risk population by virtue of their engagement in vigorous activities and more opportunities to get into contact with others. Knowing the states of KAP toward COVID-19 among university students and further analyzing psychological factors that underlie risk behavior can help in planning countermeasures and developing appropriate risk communication strategies during COVID-19 and other pandemics. The inclusion of psychological attributes to the study of KAP adds a new dimension in understanding innate reluctance and resistance to adhere to government enforced COVID-19 restrictions.

Therefore this study sought to:

1. Evaluate knowledge, attitudes, and practices (KAP) towards COVID-19.
2. Assess the extent to which personality factors of extroversion, lack of premeditation, and public self-consciousness predict knowledge, attitudes, and practices.
3. Determine demographic group differences in knowledge, attitudes, and practices.

2. Methodology

2.1 Research Model

A cross-sectional research design using an anonymous online survey was employed for the study. The study entailed collecting information on students' knowledge, attitudes and practices at a specific point in time to establish relationships between the variables of interest.

2.2 Research Sample and Procedure

The survey targeted self-sponsored university students resident in Mombasa, Kenya. No financial incentive was provided. Out of the target of 300, a total of 219 students returned their completed questionnaires. The sample included undergraduate students from Year 1-4 residing in Mombasa, Kenya during the period of the government-enforced lackdown ranging in age from 20-45 years. Informed consent was obtained from each participant on the first page of the online questionnaire and participation was voluntary. Data were collected using Google forms in February 2021 during the 11th month of government-enforced lockdowns due to COVID-19 via a link posted on students' social media groups (Whatsapp).

2.3 Data Collection Tools

KAP questionnaire: The tool was developed and used by Hatabu et al. (2020) was modified and used for this study. The questionnaire is divided into six categories: demographic information (age and gender), knowledge, attitudes, practices, extroversion and public self-consciousness. Responses to all categories save demographic data were made on a five point Likert scale (1 = strongly disagree; 5 = strongly agree). Negative items were reverse-coded. The reliability indices for the sub-scales were: KAP = 0.72; Extroversion = 0.68; Public self-consciousness = 0.66. These reliability indices were found to be closely similar to Hatabu et al. (2020) who used a similar instrument in Japan.
Lack of premeditation: Four items of the lack of premeditation sub-scale of the Short UPPS-P Impulsive Behaviour Scale (Cyders et al., 2014) were used on a four point Likert scale from 1 = strongly agree to 4 = strongly disagree (Cronbach alpha= .88). Sample items include "My thinking is usually careful and purposeful" (reverse coded); I like to stop and think things over before I do them"; I tend to value and follow a rational "sensible" approach to things"; and, "I usually think carefully before doing anything" (reverse coded).

2.4 Data Analysis

Data pre-processing included testing for normality which was examined with skewness and kurtosis. Data were analyzed using two-way ANOVA, multiple linear regression and logistic regression analyses. For the regression analyses, autocorrelations were tested using Durbin Watson statistic and values of 2 ±0.2 were regarded as appropriate. Homogeneity was tested using Levene test of the equality of variance. Acceptance of the skewness and kurtosis values for the main values of interest was in line with recommendations of -2/+2 and -7/+7 respectively by Hair et al. (2010).

2.5. Ethical considerations

This study was approved by the National Commission for Science, Technology and Innovation, Kenya (Licence No. 843229) on 20.01.2021.

3. Findings

University students' knowledge, attitudes and practices

A total of 216 participants were included in the analyses after removing three participants due to incomplete questionnaires. The participants' age ranged from 19-45 years (M = 23.5, SD = 3.08) and 58.3% were women.

Descriptive statistics of KAP showed that university students tended towards having COVID-19 information and staying safe. Responses on consolidated KAP ranged from 65.7%-96.3% for attitudes about COVID-19 risk and COVID-19 basic knowledge respectively (Table 1). Item level analyses also indicated high scores when split into low/high based on a theoretical median of 2.5. The highest scores were reported on COVID-19 basic knowledge items especially "I know it is important to avoid enclosed spaces, crowded areas and close situations (98.1%); "I know that COVID-19 is spread by respiratory droplets of infected persons (98.1%); and "I know COVID-19 is airborne" (99.1%). The majority of respondents reported high advanced knowledge concerning signs of COVID-19: fever and cough (86.1%), taste disorders (96.8%), smell disorders (93.1%), and the likelihood of developing severe symptoms and death (92.1%). High scores were also reported on COVID-19 preventive practices especially washing hands (95.4%) and wearing masks (94.4%). However, concerning

attitudes, 44.4% would still travel if they got a cheap ticket; participate in gatherings and parties (43.5%); have meals with non-family people on the same table (49.1%); think that COVID-19 restrictions are excessive (44.9%) and want bars opened (45.8%). Cumulatively, 34.3% had low risk perception of COVID-19, 22.7% had positive attitudes towards social interactions during the period and up to a third (32.9%) reported unsafe preventive practices. Findings, therefore, show that despite having high basic information, attitudes towards COVID-19 restrictions and prevention remain unhealthy.

Table 1. *Descriptive Information of Measured Variables (Consolidated)*

Variables	Min	Max	Mean	SD	Skewness	Kurtosis
Age	20	45	23.5	3.08	1.22	-.51
Gender	0.00	1.00	.42	.49	.34	-1.90
COVID-19 basic knowledge	8.00	20.00	17.61	2.14	-1.65	5.50
COVID-19 advanced knowledge	7.00	20.00	15.78	2.61	-.71	1.66
COVID-19 risk perception	4.00	14.00	8.00	2.68	.12	-.87
Attitudes about social interactions during COVID-19	5.00	25.00	12.42	4.39	.25	-.08
COVID-19 preventive practices	17.00	27.00	21.65	2.39	.23	-.38
Extraversion	10.00	24.00	16.90	2.81	-.23	-.26
Lack of premeditation	4.00	16.00	7.50	2.51	1.15	2.60
Public self-consciousness	7.00	25.00	15.97	4.02	.06	-.52

*N = 216. Age: 0 = 20-29 (75.9%), 1 = 30+ (24.1%). Gender: 0 = Female (58.3%), 1 = Male (41.7%). COVID-19 basic knowledge: 0 = Low (3.7%), 1 = High (96.3%). COVID-19 advanced knowledge: 0 = Low (13.9%), 1 = High (86.1%). COVID-19 risk perception: 0 = Low = (34.3%), 1 = High (65.7%). Attitudes about social interactions during COVID-19: 0 = Safe/Negative (77.3%), 1 = Risky/Positive (22.7%). COVID-19 preventive measures: 0 = Safe (67.1%), 1 = Risky = (32.9%). Extroversion: 0 = Low (51.4%), 1 = High (48.6%). Lack of premeditation: 0 = Low (91.2%), 1 = High (8.8%). Public self-consciousness: 0 = Low (55.1%), 1 = High (44.9%).

Group differences in university students' KAP and psychological characteristics

Two-way ANOVA (age and gender) was conducted to explore group differences in KAP and psychological variables. An interaction was found on COVID-19 basic knowledge, F(1) = 4.61, p = .033. Group means indicate that 20-29 women had higher basic knowledge (M = 17.87, SD = 1.42) than those 30 years and above (M = 17.81, SD = 1.80) while men 30 years and above had higher basic knowledge (M = 18.35, SD = 1.73) compared to the 20-29 years group (16.94, SD = 2.92). Significant age differences were found in attitudes about social interactions during COVID-19, F(1) = 11.22, p = .001 with students between 20-29 years reporting more positive attitudes (M = 12.99, SD = 4.45) compared to students 30 years and above (M = 10.62, SD = 3.68). Significant age differences were found in extroversion, F(1) = 8.49, p = .004 with students between 20-29 years reporting higher extroversion (M = 17.22, SD = 2.61) compared to those 30 years and above (M = 15.88, SD = 3.20). An interaction was found in public self-consciousness, F(1) = 7.21, p = .008. Women between 20-29 years reported higher public self-consciousness (M = 15.96, SD = 3.13) compared to those 30 years and above (M = 13.53, SD = 3.29); while men 30 years and above had higher public self-consciousness (M = 17.20, SD = 4.11) compared to their younger counterparts (M = 16.20, SD = 4.94). Only gender significantly predicted lack of premeditation, F(1) = 5.44, p = .021 with higher reports among men (M = 8.07, SD = 2.87) compared to women (M = 7.10, SD = 2.13).

Factors predicting university students' COVID-19 knowledge levels

Linear regressions were conducted to explore predictors of university students' basic and advanced knowledge (Table 2). For basic knowledge, age, gender, extroversion, public self-consciousness and COVID-19 risk perception were significant predictors. The model was significant, F(7,208) = 11.74, p = .000, with a predictive ability of .28. Findings show that highly extroverted female students aged 30 years and above with low lack of premeditation and high COVID-19 risk perception were likely to have more basic knowledge than others.

For advanced knowledge, the only significant explanatory variable was having COVID-19 basic information. The overall model was also significant, F(8, 207) = 9.31, p = .000, with a predictive ability of .27.

Table 2. *Linear Regression Models for Knowledge Level*

a) Linear regression model for COVID-19 basic knowledge	Unstandardized Coefficients			
	B	SE	*t*	*p*
Constant	14.39	1.16	12.46	.000
Age	.79	.31	2.52	.012
Gender	-.56	.26	-2.16	.032
Extraversion	.22	.05	4.61	.000
Public self-consciousness	.12	.03	3.76	.000
Lack of premeditation	-.06	.05	-1.21	.228
COVID-19 risk perception	.23	.06	4.02	.000
Attitudes about social interactions during COVID-19	.06	.04	1.68	.095
b) Linear regression model for COVID-19 advanced knowledge				
Constant	7.83	1.89	4.13	.000
Age	-.46	.39	-1.18	.239
Gender	-.22	.33	-.67	.505
Extroversion	-.12	.06	-1.92	.056
Public self-consciousness	-.01	.04	-.24	.812
Lack of premeditation	.11	.07	1.63	.104
COVID-19 basic knowledge	.61	.09	7.04	.000
COVID-19 risk perception	.03	.07	.35	.729
Attitudes about social interactions during COVID-19	.07	.05	-1.60	.111

Factors predicting university students' COVID-19 related attitudes

University students' attitudes were measured as COVID-19 risk perception and attitudes towards social interactions during COVID-19 (Table 3). For COVID-19 risk perception, age, COVID-19 basic knowledge and attitudes about interactions during COVID-19 were significant predictors. The model was significant, $F(8,207) = 15.52$, $p = .000$, with a predictive ability of .38. Older students with high basic knowledge were more likely to perceive COVID-19 as more risky while more positive attitudes towards social interactions during COVID-19 were associated with low COVID-19 risk perception. For positive (unhealthy) attitudes towards social interactions during COVID-19, age, extroversion and COVID-19 risk perception were significant predictors. The model was significant, $F(8,207) = 17.22$, $p = .000$, and had a predictive ability of .40. Younger students high in extroversion and low COVID-19 risk perception had more permissive attitudes towards social interaction during COVID-19.

Table 3. *Linear Regression Models for Attitudes*

a) COVID-19 risk perception	Unstandardized Coefficients			
	B	SE	*t*	*p*
Constant	5.98	1.82	3.29	.001
Age	1.08	.36	2.98	.003
Gender	-.17	.31	-.55	.586
Extroversion	.05	.06	.83	.410
Public self-consciousness	.07	.04	1.84	.068
Lack of premeditation	.05	.06	.85	.397
COVID-19 basic knowledge	.33	.09	3.74	.000
COVID-19 advanced knowledge	.02	.07	.35	.729
Attitudes about social interactions during COVID-19	-.31	.04	-8.23	.000
b) Attitudes towards social interaction during COVID-19				
Constant	9.12	2.93	3.12	.002
Age	-2.00	.58	-3.44	.001
Gender	.02	.50	.05	.964
Extroversion	.26	.09	2.90	.004
Public self-consciousness	-.07	.06	-1.10	.273
Lack of premeditation	.09	.10	.891	.374
COVID-19 basic knowledge	-.11	.15	-.79	.433
COVID-19 advanced knowledge	-.17	.11	-1.60	.111
COVID-19 risk perception	-.80	.10	-8.23	.000

Predicting university students' COVID-19 related preventive risk practices

A logistic regression model for COVID-19 risk practices was constructed using demographic characteristics of age and gender; psychological variables; knowledge and attitudes. The model explained 28% variance in practices (Nagelkerke R square = .28).

The determinant factors for risky practices were gender, low COVID-19 risk perception, having positive attitudes towards social interactions during COVID-19, extroversion and lack of premeditation. The odds of male students engaging in risky practices was 3.80 times greater than female students (Table 4). Findings show that male students with low COVID-19 risk perception and positive attitudes towards social interactions during COVID-19, and who were high in extroversion were more likely to engage in high risk COVID-19-related preventive practices. Interestingly, the odds ratio (OR) of lack of premeditation was <1 suggesting that the more individuals were able to think about their actions, the more likely they were to engage in safe COVID-19-related behaviours.

Table 4. *Logistic Regression Model for COVID-19 Risk Practices*

							95% CI for EXP(B)	
	B	SE	Wald	df	Sig.	Exp(B)	Lower	Upper
Age	-.08	.42	.04	1	.849	.92	.40	2.11
Gender	1.34	.37	13.15	1	.000	3.80	1.85	7.83
COVID-19 basic knowledge	-.22	.87	.06	1	.803	1.24	.23	6.81
COVID-19 advanced knowledge	-.42	.48	.77	1	.380	.66	.26	1.68
COVID-19 risk perception	-.92	.36	6.64	1	.010	2.51	1.25	5.07
Attitudes towards social interaction in COVID-19	.82	.40	4.30	1	.038	2.67	1.05	4.92
Extroversion	1.08	.36	9.20	1	.002	2.95	1.47	5.93
Public self-consciousness	.58	.34	2.96	1	.085	1.79	.92	3.49
Lack of premeditation	-2.17	.87	6.30	1	.012	.11	.02	.62
Constant	-2.44	.95	6.58	1	.010	.09		

4. Conclusion and Discussion

This study was done to examine university students' KAP and selected personality factors that predict risk taking towards COVID-19. Findings reveal the highest scores on COVID-19 basic and advanced knowledge in general. Specifically, knowledge on avoiding enclosed spaces, crowded areas, and close situations, and how COVID-19 is spread (airborne, respiratory droplets), and symptoms of COVID-19 (smell and taste disorders) is reported. High scores were also reported on prevention practices especially washing hands, and wearing masks. The high scores may be attributed to the 'COVID-19 information explosion' since the first cases were reported in Kenya. For the past year, print and electronic media that are easily accessible to university students have repeated the message of COVID-19 infection and prevention and it is likely that university students understand the importance of adhering to the government's directives on the prevention of COVID-19. This finding corroborates similar studies among university students in Japan (Hatabu et al., 2020) which indicate an understanding of the importance of the 3Cs (avoiding enclosed spaces, crowded areas, and close situations); Portugal (Alves et al., 2020), and China (Peng et al., 2020). Further, the findings corroborate studies among the general population in Kenya (Austrian et al., 2020; Muriuki et al., 2020; Twaweza, 2020) which show high knowledge of transmission and symptoms.

However, concerning attitudes, up to half the sample reported low COVID-19 risk perception as well as positive attitudes towards social interactions during the COVID-19 period. Between 40-45% of respondents would travel if a cheap ticket was available, participate in gatherings and have meals with non-family people on same table. They also saw the COVID-19 restrictions as excessive and saw no reason to keep bars and other entertainment places closed. In line with studies among the general population in Kenya, this finding shows that more knowledge has not been transformed into appropriate attitudes towards COVID-19. For instance, Austrian et al. (2020) found that only 35% of the sample in Nairobi's urban informal settlements perceived that they were at risk of infection while both Karijo et al. (2020) and Twaweza (2020) found low risk perception despite high knowledge. This can be explained in light of the finding by Twaweza, 2020) on misconceptions about origins, transmission and remedies of COVID-19. Poor attitudes about COVID-19 have not been helped

by reports of corruption in the management of funds (Igunza, 2020) and police brutality in the enforcement of measures (Bearak & Ombuor, 2020) while political leaders continue flouting measures by addressing large public rallies countrywide.

Among this sample, basic knowledge was predicted by age, gender, extroversion, public self-consciousness and high COVID-19 risk perception. More specifically, being female over 30 years, extroverted, with high public self-consciousness and high risk perception of COVID-19 predicted having high basic knowledge; while being male was associated with lower basic knowledge. The finding on the significant prediction of gender supports previous studies that indicate significantly higher knowledge among female students (Aldukhayel et al., 2020; Alves et al., 2020; Hatabu et al., 2020; Karijo et al., 2020; Peng et al., 2020). The significance of the psychological aspect of extroversion seems to suggest that being extroverted allows one to gain information from others. This aspect aligns with harmony seeking (Sakakibara & Ozono, 2020) which is positively related to preventive behaviors. Further, the finding on the significant prediction of public self-consciousness indicates that basic knowledge among this sample can be explained by social pressure as opposed to the individual.

COVID-19 risk perception was predicted by age, basic knowledge, and positive attitudes towards social interactions during COVID-19. Being 30+ years and having positive attitudes towards social interaction during COVID-19 reduced risk perception while high basic knowledge increased risk perception. Attitudes about social interactions during COVID-19 were predicted by age, extroversion, and COVID-19 risk perception. Highly extroverted younger students with low COVID-19 risk perception were more likely to have positive attitudes towards socializing during COVID-19. This study, like Aldukhayel et al. (2020) shows higher risk perception among the oldest group and further highlights the role of macro factors e.g. media in developing attitudes among the population (Igunza, 2020). Additionally, this finding points to a contradiction between attitudes and practices – that individuals can accept to act proactively despite inconsistent attitudes, maybe through violent enforcement of COVID-19 measures (Bearak & Ombuor, 2020). This cognitive dissonance is at the root of difficulties in prevention measures faced by the Kenyan government.

Findings show that university students who were male with low COVID-19 risk perception, positive attitudes towards social interaction, high in extroversion and low in premeditation were more likely to engage in risky COVID-19- related preventive practices. The gender difference in preventive measures supports Sakakibara & Ozono (2020) whose findings in a Japanese sample show that being female was associated with mask wearing; and Peng et al., (2020) in China who found higher scores on practice related to COVID-19 among female students. Further, Hatabu et al., (2020) found gender, extroversion, basic knowledge to significantly predict self-restraint practices. The significant prediction of extroversion and lack of premeditation indicates the important gap to be filled by personality characteristics and supports findings of earlier studies (Al-Omiri et al., 2020; Aschwanden et al., 2021) that found higher extroversion to predict more acceptance and application of precautions to avoid infections. However, extroversion seems to play a dual role –it is associated with both basic knowledge and risky practices risky practices. The significant role of attitudes in prevention is in line with the finding by Peng et al., (2020) and Aldukhayel et al. (2020) of a positive relation between attitudes and practice.

5. Limitations and Recommendations

The usefulness of this study is in its application to COVID-19 prevention policy as educational institutions reopen and compensates for the absence of studies among Kenyan university students. However, the study has some limitations. First, though practical in the COVID-19 context, the lack of random sampling may present challenges in generalizing the findings to other populations. Secondly, age and gender were the only demographic factors assessed for comparisons. Since human behavior is multi-influenced, future studies may incorporate other demographic and environmental factors. Thirdly, the cross-sectional nature of the study does not examine causality and trends of KAP which a longitudinal study could. Fourth, responses to items were self-reported with the likelihood of social desirability bias.

Beyond demographic factors, results of this study show that KAP are associated with psychological factors of extraversion, lack of premeditation and public self-consciousness. Therefore, this study supports previous research on the relation between personality and KAP and adds to the body of knowledge on pandemic-

related health behaviours. COVID-19 and other pandemic management needs to take into consideration personality factors in the design and application of public health messages and personality should be included in models that predict COVID-19 and other future pandemics.

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Research Approval

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