

## **The Psychological Effects of the COVID- 19 on Children, University Students, Adults, Older Adults: A Review Study**

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**Abstract:** The COVID-19 pandemic has psychologically affected young and old alike. Loneliness, depression, anxiety, post-traumatic stress disorder and sleep problems have occurred in different parts of all societies. Especially for children and adolescents, getting away from the social environment and attending online lessons while sitting at home has caused a problematic process along with some other obstacles. University students had to move away from the campus environment, which is believed to be a satisfying social atmosphere and academic environment for them, and they had to move back to their hometowns due to strict restrictions and some lockdown implementations. For adults, having multi-faced responsibilities such as having children and taking care of many family members as well as fulfilling those changing responsibilities is emotionally challenging. Older adults have gone through a long process of social isolation, loneliness, depression, and negative stereotypes about age, and they have had difficulties in accessing their basic needs. By considering the different needs of every age group, it is essential to understand how everyone is affected during the pandemic process. The aim of study is to examine the psychological effects, risk factors, age-specific problems experienced in each age group during COVID-19 and to raise awareness about the protective factors and elements that can increase psychological well-being.

**Keywords:** Adults, COVID-19, Children, University Students, Psychological Effects

**Impact Statement:** This review can contribute to the literature for prevention and intervention studies on the effects of COVID-19 for various age populations, especially for students. The literature underlines that as well as many similarities, there are differences on the psychological

influences of the pandemic on these populations due to the fact that responsibilities change in different developmental phases of lives

Since the beginning of human history, there have been many pandemic periods affecting various regions or throughout the world. In plain words, plague and cholera could be given as examples, both of which killed millions of people on a global scale. The number of the plague cases has risen particularly at three definite time periods since its emergence, and the numbers are still high, especially in Africa (Neerinckx, 2010; Stenseth et al., 2008). These three periods are the 6<sup>th</sup>, 14<sup>th</sup> and 19<sup>th</sup> centuries, and the pandemics at these times took place for hundreds of years until the number of reported cases finally declined (Stenseth et al., 2008). Regarding the cholera, it was also accepted as a pandemic in the 19<sup>th</sup> century and recurred in 1990s; however, there is some compelling evidence of a disease similar to the cholera symptoms in sources from the hundreds of years BC (Colwell, 1996). More recently, the SARS virus and swine flu are serious diseases that spread to different countries. The SARS appeared in 2002 and based in Asia and Canada; however, the numbers of deaths related to the SARS virus were less than a thousand people (Tseng et. al, 2012). The Swine flu emerged in the USA and Mexico in 2009 and spread to 74 countries within a year including Turkey (Dandagi & Byahatti, 2011; Kara, 2010). In addition to the unavoidable loss of lives due to all these epidemic diseases, they resulted in many negative changes in social life and affected human beings psychologically. Similarly, in 2019, the world faced with the threat of a new epidemic.

It is globally known that the COVID-19 pandemic was first declared at the end of 2019 (Chen et al., 2020). The main differences of the COVID-19 pandemic compared to the previous ones are the huge numbers of casualties and deaths and its faster spreading rate. Even only in the one-year period, the World Health Organization (WHO) reported about 1.6 million casualties caused by the COVID-19 in December 2020. The quarantine was one of the most important and first protection policies of many governments upon facing the COVID-19 in their countries (Islam et al, 2020). Going outside and meeting with people in public places have been restricted, education systems have been changed towards online education, travelling both within and among countries, or even cities, have been banned, all of which are among the social and global effects of the pandemic on people (Chen & Yuan, 2020; Chen et al, 2020; Islam et al, 2020). Apparently, the precautions and restrictions due to the COVID-19

pandemic, as well as the disease itself, have led to some serious consequences on the general population. For instance, in addition to its detrimental and deadly effects on people's body functioning, all these afore-mentioned precautions increased anxiety, and due to the fear of the COVID-19, some harmful effects on various aspects of people's psychological functioning leading to worries about the disease among people, and also resulted in the feelings of restriction, confinement and isolation. The increased amounts of digital media usage, sleep problems, increased depression, and anxiety complaints are frequently reported to be important social effects of the COVID-19 (Arslan et al., 2020; Cellini et al., 2020; Marelli et al., 2020). In fact, the severe effects of the disease resulting in deaths, together with the psychological, social and communal outcomes caused by the afore-mentioned restrictions has become the focus of all the related research all over the world.

Regarding the psychological effects, one important variable should clearly be the age group. Since each age group has different developmental characteristics and different needs, so does their response to the effects of COVID-19. Besides, the precautions and restrictions applied by the governments are not the same for all age groups. Even mortality rates also differ depending on the age. Furthermore, many factors such as the previous experiences, like being affected by traumatic experiences in the past and whether developing certain coping skills or not could lead to different outcomes in different age groups. Accordingly, the present research involves the examination of these differences based on various age groups by reviewing the previous literature to provide the reader with an idea of specific psychological support approaches based on the age-related needs. The purpose of study is to examine the psychological effects, risk factors, age-specific problems experienced in each age group during COVID-19 and to raise awareness about the protective factors and elements that can increase psychological well-being.

### **The Psychological Effects of COVID-19 On Children**

As known clearly and globally, the COVID-19 outbreak has affected people deeply all over the world, including children. This is mostly because one of the most important changes has occurred in education during the COVID-19 pandemic. In fact, the sudden transition from traditional education to online learning has brought some difficulties with itself. For instance, some instructors found it difficult to use and/or adapt their courses to the online education system, and it is claimed that it had

been decreasing the quality of education. With such a transition to online learning during the pandemic process, another problem has appeared all over the world in educational systems. In other words, the inequality in education has become more evident. Economically wealthy families tend to provide children with more resources for their development and learning process assisted by computer technologies (Blundell, Dias et al., 2020). It is more difficult for students with low socio-economic status to achieve this transition or to adapt to it (Adedoyin & Soykan, 2020). It would not be wrong to think that online education is not an appropriate opportunity for poor families who do not have the resources to meet their daily needs and for the underprivileged children (Singh et al., 2020). This situation results in a lack of stimulus and access to the resources required to study (Singh et al., 2020). Also, a high level of inequality becomes apparent with the closure of common areas with Internet access, such as schools and libraries (Beaunoyer et al., 2020). In addition to the individual opportunities, the interruption of public services has a significant impact on the implementation of online education. Besides, the panic and insecure environment both in the country and in the world caused students to have great difficulties in adapting to home education and maintaining their motivation due to the fear of illness, depression, anxiety, lower level of life satisfaction and intolerance of uncertainty (Duman, 2020; Satici et al, 2020).

Considering that, most children are also students who continue either their kindergarten, primary school or high school education. Thus, these children have had to stay at homes and to continue their education online. The introduction of an unknown epidemic into our lives, the closure of schools and changes in the lives of children have brought along many psychological problems. According to the data collected from the schools in China, when the schools were closed and reopened, it was revealed that 10.4% of the students showed the symptoms of Post-Traumatic Stress Disorder (PTSD) (Shek et al., 2021). The biggest contribution to the development of PTSD symptoms stems from the perception of COVID-19 as a danger (Shek et al., 2021). Additionally, most parents state that quarantine has a significant impact on children's mental health. In fact, the previous reports already mentioned that one third of children who experience quarantine or isolation show PTSD symptoms (Sprang & Silman, 2013). Accordingly, the reports on anxiety, depression, traumatic and stress symptoms among the elementary and secondary school students have increased to serious levels at an alarming rate (Zhang et al., 2020). In

addition to these, an increase in the obsessive-compulsive disorder (OCD) symptom severity, the frequency of contamination obsessions and cleaning-washing compulsions in children diagnosed with OCD are also reported (Tanir et al., 2020). Having education at home, not playing outside and with friends also some other behavioural and emotional problems such as hyperactivity, distress, antisocial behaviours and attention difficulties for children intensified their fear more deeply (Spinelli et al., 2020). These observations are reported for all age groups of children and possibly, due to the outcomes of aforementioned restrictions, all of which cause loneliness, depressive symptoms, anxiety about school status, and they get through with their peers due to not being able to come together, particularly in adolescents (Ellis et al., 2020).

The psychological state of the parents affects the children positively or negatively. Children are exposed to the vast majority of information about the epidemic on TV and on the Internet. They see many adults who are concerned about the virus and the increasing cases every day. As it is known that children are highly sensitive to their parents' emotional states and changing behaviours as well as attitudes, and children perceive these changes as a threat to themselves (Dalton et al., 2020). Closing day-care centers, schools, decreasing family social networks (e.g., reduction of home visits), limited access to playgrounds reduce support systems for children and families (Cuartas, 2020). Throughout the COVID-19 pandemic, it is seen from time to time that parents cannot meet the needs of their children. Especially the age of the child affects this situation. Parents with older children than those with younger children reported having difficulties in meeting their children's needs in terms of cognitive, emotional, safety and basic care needs. (Bérubé et al., 2020).

In the COVID-19 pandemic, the process of increasing anxiety and decreasing contact with peers is the most important issue for children and adolescents. Some children are more affected by the negative effects of the pandemic. Having a disability, any previous traumatic experiences, existing mental health problems, and low socio-economic status were factors that negatively caused mental distress in them (Fegert et al., 2020). The anxiety and stress problems that may occur in the family and with the child as a result of social distancing, economic difficulties of families due to the pandemic and limited access to support services as well as mental health services in this period affect children and adolescent importantly by changing their focus points negatively (Fegert et al., 2020). Due to the

COVID-19 pandemic, it has been the case that in some countries, children who receive care in institutions (such as childcare institutions) return to their biological parents. For children who are starting to live with their parents again, an unprepared change of place has caused various problems such as financial poverty and difficulty in accessing education (Wilke et al., 2020).

At the same time, many families experience and go through heavy economic difficulties due to the pandemic (Fallon et al., 2020). The effects of unemployment and economic distress on mental health affect both caregivers and children. Families are afraid of access to healthcare, food shortages, isolation, and personal security. During the pandemic, children's access to sports, being able to play outside, and doing any physical activity is restricted, which causes children to be more agitated than normal. (Tener et al., 2020). Parental distress during the pandemic period also increased the risk of child maltreatment. Lawson, Piel, and Simon (2020) stated that the parents' job loss and depressive symptoms were related to the increase in physical and psychological abuse of the child. The fact that the child is male and his age is young is associated with physical and psychological abuse (Lawson et al., 2020).

Since the beginning of the pandemic, the number of calls to the child helplines, which provide reporting of violence and supporting the child, has increased considerably (Petrowski et al., 2020). In this context, it is very important to reduce stress sources for caregivers and to provide economic and psychosocial support to disadvantaged families experiencing economic insecurity (Cuartas, 2020). As at any age, being good in areas such as emotional competence, resilience, bonding with others and self-efficacy assumes a protective role for children and young people against the negative mental health effects of COVID-19 (Shek et al., 2021).

### **The Psychological Effects of the COVID-19 on University Students**

As for university students, needless to say and as one would guess that the transition, which is believed to be a radical transformation, to online education has also affected them profoundly just like kindergarten, primary school or high school students. What is more, the university students have reported that their workload regarding the classes that they are taking has changed dramatically with the transition from traditional education to online education and that they are concerned about their

potential future professional careers as they reported that the quality of education has decreased substantially (Aristovnik et al., 2020). In addition, another important factor is that the infrastructure of both universities and the homes of students residing in various regions of the whole country are not sufficient and they are reported to be causing connection problems continuously (Durak et al., 2020; Ertuğ, 2020). Therefore, it is stated that accessibility is an important challenge due to some Internet and technical problems that may occur at any time during online education (Aboagye et al., 2020). Lack of access to the Internet facilities, proper interaction and communication between students and instructors are among the main challenges faced by students (Adnan & Anwar, 2020). It is also stated that the ineffective online learning systems and fear of losing academic years affect students psychologically (Hasan & Bao, 2020).

In support of the previous part, there are a variety of comprehensible and extensive studies suggesting and pointing out that most university students experience and go through an increase in depression, anxiety, and stress symptoms associated with the COVID-19 (Casagrande et al., 2020; Islam et al., 2020; Mechili et al., 2020; Son et al., 2020; Wang & Zhao, 2020; Ye et al., 2020; Yehudai et al., 2020). In addition to depression and anxiety, students experience and go through various psychological problems such as loneliness, anxiety, boredom, irritability and anger (Yehudai et al., 2020). Yet, there are important variables with protective and mediative roles against the psychological problems associated with the COVID-19. For instance, some psychological resilience (Dawson & Golijani-Moghaddam, 2020) and coping skills (Ye et al., 2020) of the students are reported to be protective of the psychological symptoms.

It is claimed that for university students, having social support may alleviate the psychological effects of the COVID-19 (Cao et al., 2020; Ye et al., 2020). The decrease in social interaction also negatively affects students' psychological distress (Son et al., 2020). Especially, being alone during the periodical lockdowns is associated with an increase in anxiety symptoms (Sundarasan et al., 2020). Anxiety, depression and stress levels are found to be lower in individuals living with their family (Cao et al., 2020). This shows us how important social support is in coping with psychological problems. There are important risk factors in the increase of psychological symptoms due to the COVID-19. Studies have indicated that female students (Al-Rabiaah et al., 2020; Patsali et al., 2020; Rakhmanov & Dane, 2020; Sundarasan et al., 2020) and students under

the age of 18 (Sundarasan et al., 2020) experience and go through more psychological problems due to the COVID-19. In a study conducted in Turkey, female students also reported lower subjective well-being and academic satisfaction compared to male students. Also, there is an increase in health anxiety as a result of the COVID-19. The psychological problems are more common in individuals who are concerned about either their own health or the health of their loved ones (Cao et al., 2020; Son et al., 2020; Wang et al., 2020).

It is important to note and emphasise that with the COVID-19 epidemic in our lives, we are exposed to negative news and content every day on TVs and online media channels. People who lost their lives, and people tied to respirators in their beds are constantly broadcasted on the Televisions. A frequent exposure to these stressful contents increases the negative effects, anxiety, and stress. However, the expert opinions, and getting reliable information on the disease, as well as the heroic stories could provide a positive psychological boost (Chao et al., 2020). In the light of this information, it is seen that getting informed about the COVID-19 has very important and complex effects on people. For instance, in a study conducted with university students, an increased amount of knowledge on the COVID-19 was found to be associated with a decrease in anxiety level (Rakhmanov & Dane, 2020; Saravanan et al., 2020).

On the other hand, the fear of being infected has also significantly affected the psychological health of university students. To illustrate it, it may be pointed out that some depressive symptoms are more common in students with a high fear of the COVID-19 (Zolotov et al., 2020). A study conducted with the university students in the United Arab Emirates revealed that the students with a high fear of anxiety and the COVID-19 experience showed more psychological distress (Saravanan et al., 2020). The fear levels of the students also vary according to the departments they study in. For example, a study conducted with the students studying in Spain emphasized that those students studying in health sciences reported higher levels of fear (Martínez-Lorca et al., 2020). The importance of age was also emphasized in the same study that the younger students are reported to have a higher fear of the virus (Martínez-Lorca et al., 2020).

Regarding the health behaviour, it may be stated that psychological distress, increased time spent at home and health concerns are found to have caused changes in smoking and alcohol consumption. Smoking,

marijuana and alcohol use increased during the quarantine and social distance periods (Yehudai et al., 2020). More sedentary life is observed, especially among the students with a high stress level due to the COVID-19 (Savage et al., 2020). Besides, many reports reflected that the COVID-19 reduced physical exercises and caused disturbances in sleep patterns, both of which negatively affect stress, anxiety and depressive symptoms (Casagrande et al., 2020; Islam et al., 2020; Son et al., 2020). Contrary to these reports, a study carried out by Romero-Blanco et al. (2020) has drawn attention to the situations in which regular physical exercise habits increased during COVID-19 instead. They reported that the physical exercise and health behaviors intensified among the students who are of normal body weight before the COVID-19 epidemic and paid attention to their physical health. Yet, in those who did not pay attention to their health before the COVID-19, no changes were observed during the COVID-19 period (Romero-Blanco et al., 2020).

To sum up, depending on the studies, it may be indicated that the students with higher resilience (Dawson & Golijani-Moghaddam, 2020) and coping skills (Ye et al., 2020) developed less psychological symptoms. Besides, the importance of social support is enormous in psychology. A good social support is also protective for psychological problems caused by the COVID-19 (Cao et al., 2020; Ye et al., 2020). It is highly believed that physical health significantly affects psychology. Therefore, taking care of our physical health (regular physical exercise, adequate nutrition, good sleep) is also protective for our psychological health (Casagrande et al., 2020; Islam et al., 2020; Son et al., 2020). It is obvious that the COVID-19 is a new epidemic that has entered into our lives and we are getting new information about the COVID-19 every day. Following the recent events and expert opinions on the COVID-19, as long as the contents are not stressful, could also contribute to psychological well-being (Chao et al., 2020).

### **The Psychological Effects of the COVID-19 on Adults**

Although the psychological effects of COVID-19 in adults are similar to other age groups, they may vary according to several factors such as the marital status of the individuals, their economic and social status, whether they have children and the type of profession they do. In a study conducted with more than 1000 adults in the United States, it was revealed that the symptoms of depression increased significantly after the pandemic than before, and being a woman, being single and having low-income level are

some of the risk factors for having a high level of depression (Ettman et al., 2020). Moreover, it has been reported that adults with more than one stress factor have higher levels of depression (Ettman et al., 2020). In another study investigating the effects of pandemics on adults, those with chronic diseases are more sensitive to psychological effects, while those living in rural areas have significantly less psychological effects compared to those living in urban areas (El-Zoghby et al., 2020). Pearman and her colleagues (2021) reported that the anxiety levels of older adults are higher than other adult groups because of their vulnerability to fatal effects of COVID-19, however active coping skills reduce the anxiety level and can be considered as a resilience factor (Pearman, 2021).

While some studies indicate that being alone is a risk factor (Ettman et al., 2020; Gao & Sai, 2020; Portacolone et al., 2021), other studies show that couples with children are in the risk group due to their increased responsibilities (Griffith, 2020; Spinelli et al., 2020; Twenge & Joiner, 2020). Parenting is believed to be more difficult if a pandemic spreads as a disease requires dealing with its negative effects and threatening features for all family members. In the study of Twenge and Joiner (2020) comparing the National Health Interview Survey data applied in the USA in 2018 and April 2020, it was found that the mental distress level in 2020 was higher in all demographic groups compared to 2018, and the increase in the distress level was significantly higher in adults with children. For many countries, a quarantine period was applied as the community health policy and sticking at home with children for a long time has brought along many burdens that are difficult for parents to cope with. For parents, not finding enough time for themselves, their partner and children increased their level of individual and dyadic (about their relationship with children) stress (Spinelli et al., 2020). What is more, financial problems and unemployment, lack of social support and difficulties in time management may cause parental burnout and maltreatment of children (Griffith, 2020; Sorkkila & Aunola, 2020).

In addition to parents and their coping skills with continuously emerging problems in the face of the COVID-19, healthcare workers are highly believed to be one of the groups which are mostly exposed to the negative psychological effects of the COVID-19 among the adult population. According to Rossi and his colleagues (2020), depression, anxiety, insomnia and post-traumatic stress symptoms are high among the healthcare workers in Italy. Being on front-lines of the COVID-19,

workers and having hospitalised or deceased colleagues are associated with these negative effects (Rossi et al., 2020). Another study conducted with women nurses, doctors and medical technicians in Wuhan shows high levels of acute stress, depression and anxiety (Li et al., 2020). Having two or more children, working for more than ten years and having medical or psychiatric history are found to be risk factors for health workers (Li et al., 2020). In a study comparing the psychological status of the general population and healthcare professionals, the perception of infection risk and worry about the disease of healthcare workers were higher than the other group (Simione & Gnagnarella, 2020). Therefore, medical workers are more vulnerable in society to the psychological effects of COVID-19 as well as the physiological effects.

To sum up, as the caregivers of children and elder population and as the actively working population of the society, being an adult seems to be an important risk factor. Yet, the negative psychological effects of the COVID-19 on the adult population are strongly based on their profession. Moreover, being a health worker is another risk factor. Social support, improving working conditions and carrying out policies to decrease the behavioural and emotional problems of children at home might be protective for the mental health of the adult population.

### **The Psychological Effects of the COVID-19 on Older Adults**

During the COVID-19, the older adults faced particular physical health challenges as well as psychosocial challenges. Since the mortality rate is lower in older adults, they faced more severe precautions and restrictions. One of the restrictions against the COVID-19 pandemic is social isolation. The prolongation of the quarantine and social isolation is also associated with the increase of some psychiatric disorders (Roy et al., 2020). In this process, the older adults experience the effects of social isolation and loneliness in addition to their risks in medical health conditions (Tyrrell & Williams, 2020). In the study of Heid and her colleagues (2021), it was stated that most of the older adults experienced difficulties in social interaction and restrictions in activities related to their daily routines.

As for stress factors for the older adults, it is important to mention that they emerge from restrictions, concerns for others, social isolation and loneliness (Whitehead & Torossian, 2021). When we look at the effects of social isolation on the older adults, it is reported that it may result in depression, anxiety (Robb et al., 2020) and more sleep problems

(Grossman et al., 2021). In addition, the reactions as to social distancing and staying at home to protect the older adults may unintentionally increase loneliness, depression, and stereotypes against the elderly (Monahan et al., 2020).

Introducing new restrictions during the pandemic based on chronological age prevents the older adults from receiving the necessary care service, and it triggers negative stereotypes about the age factor (Previtali et al., 2020). This approach may lead to the marginalization of the older adults, social isolation and increased psychosocial distress (Rahman & Jahan, 2020). Furthermore, another issue is the limited access to technology and limitations with their technology skills which may prevent the older adults from accessing necessary services and receiving social support (Ayalon et al., 2020). They experience disruptions in their medical and psychiatric treatments and difficulties in accessing and getting these services. It is also significant to note that another factor that the older adults may be exposed to is abuse. Social isolation during the COVID-19 process has increased dependence on others in daily activities for the older adults. Close contacts between the older adults and caregivers also increase the likelihood of abuse (Han & Mosqueda, 2020).

In opposition to the negative effects of the strict restrictions on the elderly people, it is interesting to note and emphasise the fact that the sources reported for the older adults in terms of psychological well-being during the pandemic process include family-friendly relationships, digital social communication, and hobbies (Whitehead & Torossian, 2021). In addition, spending more time in the garden of their homes is associated with better physical and mental health for the older adults, and thus living in a villa rather than in an apartment might be considered to be a protective measure (Corley et al., 2021). Considering the psychological effects of the COVID-19 on the older adults, it is important to prevent any age-related stereotypes, to support social communication channels, and to make sure to provide access to necessary resources such as health services and psychosocial support.

**Table 1. Summary of factors related with COVID-19 for different age groups**

Age Group	Pandemic Effects	Psychological Effects	Risk Factor	Protective Factor	Recommendations
Children	<ul style="list-style-type: none"> <li>● Online education system</li> <li>● Inequality in education opportunities</li> <li>● Closed day-care centers</li> <li>● Limited access to playground</li> <li>● Restricted physical activity</li> </ul>	<ul style="list-style-type: none"> <li>● Fear of illness</li> <li>● Depression</li> <li>● Anxiety</li> <li>● Loneliness</li> <li>● Lower level of life satisfaction</li> <li>● Intolerance of uncertainty</li> <li>● Post-Traumatic Stress Disorder (PTSD)</li> <li>● OCD symptoms</li> <li>● Hyperactivity and Attention difficulties</li> <li>● Antisocial behaviours</li> </ul>	<ul style="list-style-type: none"> <li>● Having a disability</li> <li>● Any previous traumatic experiences</li> <li>● Existing mental health problems</li> <li>● Parents' emotional states</li> <li>● Low socio-economic status</li> <li>● Increased the risk of child maltreatment.</li> <li>● The parents' job loss and depressive symptoms</li> </ul>	<ul style="list-style-type: none"> <li>● Emotional competence</li> <li>● Resilience</li> <li>● Bonding with others</li> <li>● Self-efficacy</li> <li>● Economic and internet-accessing opportunities</li> </ul>	<ul style="list-style-type: none"> <li>● Economic and psychosocial support to disadvantaged families</li> <li>● Equal access to the Internet</li> <li>● Giving a short training to teachers about online education</li> <li>● Going to school part-time</li> <li>● Being informed about the pandemic</li> </ul>

<p>University Students</p>	<ul style="list-style-type: none"> <li>● Transition from traditional education to online education</li> <li>● Internet and technical problems during online education</li> <li>● Ineffective online learning systems</li> <li>● Sedentary life</li> </ul>	<ul style="list-style-type: none"> <li>● Depression</li> <li>● Anxiety</li> <li>● Stress</li> <li>● Loneliness</li> <li>● Boredom</li> <li>● Irritability</li> <li>● Anger</li> <li>● Fear of being infected</li> <li>● Increased smoking and alcohol consumption.</li> <li>● Fear of losing academic years and decreased quality of education</li> </ul>	<ul style="list-style-type: none"> <li>● Being alone during the periodical lockdowns</li> <li>● Being a female student</li> <li>● Students under the age of 18</li> <li>● A frequent exposure to stressful media contents related to COVID-19</li> </ul>	<ul style="list-style-type: none"> <li>● Social support</li> <li>● Psychological resilience,</li> <li>● Coping skills</li> <li>● Getting reliable information on the disease</li> <li>● Taking care of physical health</li> </ul>	<ul style="list-style-type: none"> <li>● Technological support</li> <li>● Socialize within the framework of the pandemic rules</li> <li>● Benefit from the campus facilities</li> <li>● Coming to university and attending the lessons</li> </ul>
<p>Adults</p>	<ul style="list-style-type: none"> <li>● Difficulties in parenting</li> <li>● Increased responsibilities of adults about taking care of children and elderly</li> <li>● Not finding enough time for themselves</li> </ul>	<ul style="list-style-type: none"> <li>● Depression</li> <li>● Anxiety</li> <li>● Insomnia</li> <li>● Post-traumatic stress symptoms</li> <li>● Burnout</li> </ul>	<ul style="list-style-type: none"> <li>● Being a woman</li> <li>● Being single or alone</li> <li>● Being a health worker</li> <li>● Having low-income level</li> <li>● Having children</li> <li>● Having chronic disease</li> <li>● Living in rural areas</li> <li>● Financial problems and unemployment</li> <li>● Lack of social support and difficulties in time management</li> </ul>	<ul style="list-style-type: none"> <li>● Coping skills</li> <li>● Resilience</li> <li>● Social support</li> <li>● Financial support</li> <li>● Having a free time</li> </ul>	<ul style="list-style-type: none"> <li>● Increasing social support sources</li> <li>● Improving working conditions</li> <li>● Providing financial support</li> <li>● Carrying out policies to decrease the behavioural and emotional problems of children</li> <li>● Parents taking time for themselves</li> <li>● Keeping public transport vehicles and</li> </ul>

					public areas hygienic
Older Adults	<ul style="list-style-type: none"> <li>• Social isolation</li> <li>• A limited access to technology</li> <li>• Difficulties in accessing some essential services</li> <li>• Difficulties in social interaction and restrictions in activities related to their daily routines</li> <li>• Difficulties in accessing and getting medical and psychiatric treatments</li> <li>• Negative stereotypes of age against the older adults</li> </ul>	<ul style="list-style-type: none"> <li>• Social isolation</li> <li>• Loneliness</li> <li>• Depression</li> <li>• Anxiety</li> <li>• Sleep problems</li> <li>• Psychosocial distress</li> </ul>	<ul style="list-style-type: none"> <li>• Social isolation</li> <li>• Prolongation of the quarantine</li> <li>• Stereotypes</li> <li>• Marginalization of the older adults</li> <li>• Chronological age</li> <li>• Risk of abusing</li> </ul>	<ul style="list-style-type: none"> <li>• Family-friendly relationship</li> <li>• Coping skills</li> <li>• Digital social communication</li> <li>• Having hobbies</li> <li>• Easy access to caregivers</li> </ul>	<ul style="list-style-type: none"> <li>• Psychological support programs</li> <li>• Using spaces outside the home (e.g., garden)</li> <li>• Regular physical exercise</li> <li>• Public awareness activities regarding the negative stereotypes</li> <li>• Public services for the basic needs of older adults</li> <li>• Easy accessibility to healthcare services</li> <li>• Providing technological facilities</li> <li>• Meeting financial needs</li> <li>• Supporting social communication channels</li> <li>• Providing access to necessary resources such as health services and psychosocial support</li> </ul>

## **RESULT AND RECOMMENDATIONS**

It is obvious that one of the most important effects of the COVID-19 pandemic could be categorized as psychological effects. Relatively high levels of anxiety, depression, PTSD, psychological distress and stress have been reported for the general population following the COVID-19 (Xiong et al., 2020). The recent reports reflect that avoidant behaviours or avoidance are the most common psychological responses in both women and men during this period (García-Portilla et al., 2020; Rodríguez-Rey et al., 2020). It is important to note that the psychological effects of the COVID-19 pandemic on children, adolescents, adults and the elderly are expected to be different. In this regard, the current studies conducted on the age differences for the psychological effects of the COVID-19 revealed that the risk of developing psychological distress and its psychological effects are higher in young people compared to the elderly population (Conversano et al., 2020; García-Portilla et al. 2020; Nwachukwu et al., 2020). Furthermore, the risk factors associated with the psychological effects of the COVID-19 pandemic were also stated to be as follows; young age group, previous chronic or psychiatric illness, unemployment, student status, frequent exposure to worrying news about the COVID-19 (Xiong et al., 2020). Table 1 includes recommendations for the psychological effects, risk and protective factors associated with COVID-19.

In the COVID-19 pandemic, the transition of traditional education for children and adolescents to online education has made socioeconomic differences clear and most importantly more evident. It is found out that it was not possible for every student to have equal access to the Internet, and it is discovered to have caused disruptions in the education of students during the pandemic period. It is recommended to provide opportunities to facilitate the participation of students in online education before making a decision in such kind of extraordinary situations. It is also suggested that it would be important to give a short training to teachers so that the lessons could be taught completely online. In this way, any potentially possible problems that may occur in online education could be spotted and sorted easily. In addition, the idea of recording the online education and tracking the students and teachers throughout the online courses could be helpful for the children and adolescents who stay away from their schools. The distance from the social environment for children and adolescents, the uncertainty of the pandemic caused an increase in the psychological symptoms. Instead of keeping children and adolescents at home, going to

school part-time and being informed about the pandemic may be beneficial in terms of mental health.

Similarly, university students continued their education at home along through distance education. For university students, this situation brought along the process of moving from the city where they live as students back to their hometowns. Life changes, staying away from the social environment, difficulties in accessing educational opportunities as well as facilities have also caused various mental distress among university students. It is thought that technological support will be important for students who do not have equal living conditions in socioeconomic terms. Factors such as effective coping skills, social support, and resilience have been protective for university students. Considering all these, although we have to pay attention to our social distance, and it is still spreading at an alarming rate, it is very important to note and allow young people to socialize within the framework of the pandemic rules. In terms of education, even if there is a pandemic, university students come to campus and benefit from the university's facilities. Even if it is online, coming to university and attending these lessons from the school can have a positive effect on their psychological functioning.

In the research and policies on the COVID-19 pandemic, adults often do not take attention as a risk group, but it is important to realize that the process has been difficult for them in many aspects and therefore, it is important to provide them with appropriate support and protective interventions. Adults are the caregivers of both their children and their elderly parents, and their daily responsibilities might be more complicated than the other populations. Therefore, adults are also affected by almost all of the physical and psychological difficulties experienced by different age groups. Especially for adults who have children, and who have to take care of the elderly, to increase the activities that can be shared with them at home, to create environments where they can go out and breathe within the allowed time according to their countries' policies, and to increase the opportunities to communicate with their loved ones from home (such as social media, video phone calls) could also be beneficial for relieving their responsibilities. In addition, adults may have to deal with different challenges in different professions. It is essential to increase the cleaning and protection measures for both healthcare workers and those who have to use public transportation and go to their workplaces during the COVID-19 pandemic. What is more, detailed, reliable and continuous information

should be given about the pandemic by using media channels. These applications are advantageous for both physical and psychological health of adults in this ambiguous situation. Also, providing financial support for those who are unemployed in this process or who cannot maintain their profession regularly will have some benefits of meeting both their own needs and the needs of those they are responsible for.

During the COVID-19 pandemic, the older adults faced with psychological effects such as social isolation, loneliness, depression, anxiety, sleep problems as well as risks in medical health conditions. A limited access to technology, difficulties in accessing some essential services, and negative stereotypes of age against the older adults may lead to psychological and psychosocial distress. Psychological support programs might be structured to reduce the effects of social isolation and loneliness. The older adults might be encouraged to use spaces outside the home (e.g., garden) and regular physical exercise. Public awareness activities regarding the negative stereotypes about the age could be carried out through media channels. Policy makers could make arrangements that may make it easier for the older adults to access their basic needs and services.

As a result, all the groups appear to be psychologically affected and various suggestions have been made for relieving these effects. Social support was thought to be very important in extraordinary periods such as pandemics. Furthermore, it seems very important to meet basic needs such as an easy accessibility to healthcare services, providing technological facilities, and meeting financial needs. In this pandemic period in which everyone is distancing from each other either physically or emotionally, it is discovered that everybody is in need of each other to be mentally/psychologically relieved.

### **Compliance with Ethical Standards**

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

There are no human participants in this study. That's why, there was no need for ethical approval and informed consent for this research.

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