



The Impact and Perceptions of the COVID-19 Pandemic on Children and Adolescents

COVID-19 Pandemisinin Çocuk ve Ergenler Üzerindeki Etkisi ve Algıları

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Cite this article as: Vural B, Gürhan N, Geniş B, Yılmaz Bingöl T. The impact and perceptions of the COVID-19 pandemic on children and adolescents. J Pediatr Inf 2024;18(4):e221-e229.

Abstract

Objective: The coronavirus disease-2019 (COVID-19) pandemic, which has affected the world and Türkiye, has caused severe upper respiratory tract infection as well as lower respiratory tract infection, organ failure and death in humans. Infection is seen in all age groups in children, but it has been reported that the incidence of COVID-19 increases with increasing age and is milder than in adults. This study was planned to determine the perceptions of children and adolescents during the pandemic process.

Material and Methods: This study, planned as a cross-sectional and quantitative study, was conducted between July 1 and October 1, 2021. The study sample consisted of children and adolescents between the ages of 7-18 studying in all primary, middle and high schools in the provincial center, and 1004 children were obtained after receiving parental consent. Data were collected through questionnaires prepared by the researchers. Descriptive statistics and chi-square test were used to analyze the data.

Results: In this sample, 59.2% of the children were girls, 96.8% attended public school, 45.8% attended secondary school, 79% lived in the city center and 96.7% lived with their families. During the pandemic process, 37.8% of children gained weight, 56.5% were afraid of getting sick and 54% were afraid of death, the hours spent on the internet increased, and their school achievement was moderately affected. As the level of education increased, the perception that the measures taken at the macro level (world or country-wide) were not sufficient increased, the perception of controllability of COVID-19 increased with increasing education, and students in high school thought that COVID-19 was more controllable.

Conclusion: As the age of children increases, the belief that the pandemic can be controlled may be a positive development, but it should be kept in mind that COVID-19 can be fatal, especially in children with underlying health problems. Therefore, it is important to take the necessary precautions to prevent the spread of the virus.

Keywords: COVID-19, children, perception, adolescent

Öz

Giriş: Dünyayı ve Türkiye'yi etkisi altına alan koronavirus hastalığı-2019 (COVID-19) pandemisi, insanlarda ağır üst solunum yolu enfeksiyonunun yanı sıra alt solunum yolu enfeksiyonuna, organ yetmezliğine ve ölüme neden olmuştur. Çocuklarda her yaş grubunda enfeksiyon görülmektedir. Ancak yaş arttıkça COVID-19 görülme sıklığının arttığı ve erişkinlere göre daha hafif olduğu bildirilmiştir. Bu araştırma pandemi sürecinde çocuk ve ergen bireylerin algılarını belirlemek amacıyla planlanmıştır.

Gereç ve Yöntemler: Kesitsel ve nicel bir çalışma olarak planlanan bu çalışma, 1 Temmuz-1 Ekim 2021 tarihleri arasında gerçekleştirildi. Araştırma örneklemini il merkezindeki tüm ilkököl, ortaokul ve lisede okuyan 7-18 yaş arasında bulunan çocuk ve ergen bireylerin ebeveynlerinden onay alındıktan sonra 1004 çocuk oluşturmuştur. Veriler, araştırmacılar tarafından hazırlanan anketler aracılığıyla toplandı. Verilerin analizinde tanımlayıcı istatistikler ve ki-kare testi kullanıldı.

Bulgular: Bu örnekleme çocukların %52.2'si kız çocuğudur. Çocukların %96.8'i devlet okuluna, %45.8'i ise ortaokula gitmektedir. Çocukların %79'u il merkezinde, %96.7'si ise ailesiyle birlikte kalmaktadır. Pandemi sürecinde çocukların %37.8'inin kilo aldığı, %56.5'inin hastalanma korkusu ve %54'ünün ölüm korkusu yaşadığı, internette geçirilen saatin arttığını ve okul başarılarını orta düzeyde kötü etkilendiği belirlendi. Eğitim düzeyi arttıkça makro düzeyde alınan tedbirlerin (dünya ya da ülke çapında) yeterli olmadığı algısının arttığı, COVID-19 ile ilgili kontrol edilebilirlik algısı eğitim arttıkça arttığı ve lisedeki öğrencilerde COVID-19'un daha kontrol edilebilir olduğunu düşündükleri belirlendi.

Sonuç: Çocukların yaşları arttıkça salgının kontrol edilebileceğine dair inancın artması olumlu bir gelişme olabilir ancak özellikle altta yatan sağlık sorunları bulunan çocuklarda COVID-19'un ölümcül olabileceği unutulmamalıdır. Bu nedenle, virüsün yayılmasını önlemek için gerekli önlemleri alması önemlidir.

Anahtar Kelimeler: COVID-19, çocuk, algı, ergen

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Received: 17.11.2023

Accepted: 10.06.2024

Available Online Date: 13.12.2024

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Available online at www.cocukenfeksiyon.org

Introduction

With the increase in cases showing symptoms of pneumonia and acute respiratory distress syndrome that started in Wuhan, China, the presence of a new coronavirus subtype was identified, and this agent was named SARS-CoV-2, and the disease was defined as COVID-19.

The World Health Organization (WHO) declared the coronavirus disease-2019 (COVID-19) pandemic as an international public health emergency on January 30, and the first COVID-19 case in Türkiye was reported on 11 March 2020, with more than 433 million confirmed cases and more than 5.9 million deaths reported on 06 March 2022 (1). According to data showing that COVID-19 is widespread among children, pediatric patients constitute 15-22% of all cases, and it is stated that the incidence in children increases with increasing age. For instance, while the incidence is 17.4% in children aged 0-4 years, it increases to 18.6% in children aged 5-10 years, 25.7% in children aged 11-13 years and 38.3% in children aged 14-17 years. These data show that children are also at risk for COVID-19 and that there are differences between age groups (2).

Common symptoms of COVID-19 include dry cough, shortness of breath, myalgia, fatigue and joint pain, gastrointestinal symptoms, dysgeusia or ageusia (impaired or complete loss of taste), anosmia (partial or complete loss of sense of smell) and fever (3). Children are usually asymptomatic or have mild clinical signs, but in some cases severe disease manifestations have been observed in infants and young children (4). Fortunately, most infected children recover after 1-2 weeks and have a good prognosis (5). However, some children have developed coronary artery aneurysms due to hyperinflammatory syndrome, vasculitis, fever and mucocutaneous symptoms similar to Kawasaki disease (6). The curfew imposed to control the COVID-19 pandemic has brought about profound changes in the lives of children and adolescents with the closure of schools and educational facilities and increased time spent at home. Activities carried out at home were more limited and were mostly carried out alone or with parents. The impact of these significant changes in daily routines and activities on parents has also affected the well-being and adaptation of children (7). Due to the pandemic, isolation, quarantine, measures for physical distancing, restrictions on public and private life, and changes in people's lifestyles have negatively affected the physical and mental health status of vulnerable groups such as children and young people (8).

The impact of the COVID-19 pandemic on the mental health of children and adolescents has been the subject of many studies, most of which have addressed the negative

psychological effects of this health and social crisis, such as anxiety, depression and post-traumatic symptoms, as well as stress, worry and helplessness (7,9). Furthermore, the systematic review conducted by Meherali et al. noted that both children and adolescents were more prone to experience increased rates of depression and anxiety during and after the COVID-19 pandemic, a highly alarming fact due to its short- and long-term effects. Compared to adults, he found that the long-term negative consequences of COVID-19 on the mental health of children and adolescents were higher (7,9).

In this process, the risk of experiencing many mental problems other than physical symptoms increases for all individuals, men, women and children living in the society. Many changes are observed in the lives of children and adolescents during the pandemic process. This study was planned to understand the perceptions of children and adolescents during the pandemic process.

Research Questions

1. Does the pandemic have an impact on children and adolescents?
2. Does the pandemic influence the perception levels of children and adolescents?
3. Is there a difference between the mean perception scores of children and adolescents according to their demographic characteristics during the pandemic process?

Materials and Methods

This cross-sectional and quantitative study was planned to determine the perceptions of children and adolescents during the pandemic process.

Population and Sample

The study was conducted between July 1 and October 1, 2021, with the consent of children and adolescents between the ages of 7 and 18 studying in primary, middle and high schools in Tokat province. The population consists of all children and adolescents in the society. Participants were selected by the random sampling method to reduce possible bias. The sampling population was calculated with the unknown sampling method, and the study was conducted with 1004 children between the ages of 7-18 who accepted the research in the Tokat city center.

Data Collection Tools

"Introductory Questionnaire Form" containing demographic information, "COVID-19 Perception Scale" and "Perception of Control of COVID-19 Scale" were used to collect data. The "Introductory Questionnaire Form", which was created by the researchers, consists of a total of 32 questions questioning

demographic data such as age, gender, educational status of the parent and child, information about the family, economic, physical, psychological, social status before and during the pandemic, and communication within the family and with the environment.

COVID-19 Perception Scale and COVID-19 Control Perception Scales were used to measure the perception level of the children participating in the study. The data were collected by delivering them to the students via WhatsApp application with the link created on Google Form.

COVID-19 Perception Scale: The scale developed by Geniş et al. has seven items and a five-point Likert structure. In the scale, two sub-dimensions, "dangerousness" and "infectiousness", and statements such as "Strongly disagree (1)", "Disagree (2)", "Undecided (3)", "Agree (4)", "Strongly agree (5)" are evaluated. The dangerousness subscale (items 1, 2 and 3) includes perceptions and beliefs about the danger posed by COVID-19. Items 1 and 2 in the dangerousness subscale are reverse scored, i.e. coded as 1→5; 2→4; 3→3; 4→2; 5→1. The infectiousness subscale (items 4, 5, 6 and 7) includes perceptions of the infectiousness of the disease. The total score obtained by summing the item scores in the subscale is divided by the number of items in that subscale and a value between 1-5 is obtained. High dangerousness subscale scores indicate a high perception of the dangerousness of the disease, and high infectiousness subscale scores indicate a high perception of the infectiousness of the virus (10).

Perception of Control of COVID-19 Scale: The scale developed by Geniş et al. consists of twelve items and has a five-point Likert structure. There are three sub-dimensions in the scale: Items 1-4 - macro control, Items 5-8 - personal (micro) control and Items 9-12 - controllability. The statements are "Strongly disagree (1)", "Disagree (2)", "Neutral (3)", "Agree (4)", "Strongly agree (5)". Macro control includes beliefs about the effectiveness of measures taken at the institutional, national or global level. Personal control evaluates the effectiveness of personal measures taken to avoid getting the disease. All items in the controllability subscale (items 9, 10, 11 and 12) are reverse scored, i.e. coded as 1→5; 2→4; 3→3; 4→2; 5→1. The total score obtained by summing the item scores in the scale subscale is divided by the number of items in that subscale and a value between 1 and 5 is obtained. High macro control subscale scores reflect the belief that the measures taken are adequate, high personal control scores reflect the belief that the disease can be well controlled with individual measures, and high controllability scores reflect the belief that the disease can be controlled (10).

Data Collection

The link to the volunteer consent form, survey questions and scales created in the electronic environment was shared with parents and children in the electronic environment and families who volunteered to participate in the study were asked to fill out the questionnaires.

Ethical Aspects of the Study

The research was authorized by the non-clinical research ethics committee of Tokat Gaziosmanpaşa University (dated 21.06.2021 and numbered 49077). After reading the informed consent form at the beginning of the study, the participants proceeded by checking "yes" in the statement "I have been informed about the research, I agree to participate." The study was conducted in accordance with the Principles of the Declaration of Helsinki. Those who approved informed consent from the individuals to participate in the study were included in the study.

Data Analysis

The data of the study were analyzed with SPSS 22.0 package program. Descriptive statistics were expressed as frequency, percentage, mean and standard deviation. Since the skewness and kurtosis values of the numerical variables varied between ± 1.5 , it was assumed that the data showed normal distribution (11). Pearson correlation test was used to evaluate the relationship between continuous variables. Independent sample t test was used to compare continuous variables between two independent groups and one-way analysis of variance was used to compare continuous variables between three independent groups. Statistical significance level was accepted as $p < 0.05$ and interpreted.

Results

In this study, which was conducted to determine the perception levels experienced during the pandemic process in children and adolescents between the ages of seven and 18, 59.2% of the students were females, 96.8% of them attended public school and 45.8% of them attended secondary school. It was determined that 79% of the students lived in the city center and 96.7% of them lived with their families, 97% of the parents were alive and 92% of them lived together. It was determined that 27.3% of the mothers and 35.9% of the fathers graduated from primary school and university or higher, respectively, 64.9% of the mothers were housewives and 58.3% of the fathers were workers. Before the pandemic, 69.7% of mothers and 73.2% during the pandemic were not working, 88.4% of fathers before the pandemic and 81.8% during the pandemic were working, and 53.8% of the family before the pandemic and 52.7% during the pandemic had a medium income (Table 1).

Table 1. Distribution of the socio-demographic characteristics of the children and adolescents (n= 1004)

Sociodemographic Characteristics	n	%		n	%
Sex					
Female	594	59.2			
Male	410	40.8			
School type			School level		
Public school	972	96.8	Primary school	279	27.8
Private school	32	3.2	Middle school	460	45.8
			High school	265	26.4
Where do you live?			Place of residence		
With family	971	96.7	Metropolitan	78	7.8
With relatives	9	0.9	City	793	79.0
State dorm	17	1.7	District	78	7.8
Private dorm	7	0.7	Village	55	5.5
Parental health status			Parental unity		
Mother alive	25	2.5	Yes	924	92.0
Father alive	4	0.4	No	80	8.0
Both alive	974	97.0			
Both dead	1	0.1			
Father's educational status			Mother's educational status		
Illiterate	5	0.5	Illiterate	17	1.7
Literate	19	1.9	Literate	23	2.3
Primary school	169	16.8	Primary school	274	27.3
Middle school	146	14.5	Middle school	196	19.5
High school	305	30.4	High school	262	26.1
University and higher	360	35.9	University and higher	232	23.1
Father's occupation			Mother's occupation		
Unemployed	130	12.9	Unemployed	652	64.9
Retired	42	4.2	Retired	8	0.8
Worker	585	58.3	Worker	172	17.1
State officer	247	24.6	State officer	172	17.1
Is your mother working during the pandemic?			Was your mother working before the pandemic?		
Yes	269	26.8	Yes	304	30.3
No	735	73.2	No	700	69.7
Is your father working during the pandemic?			Was your father working before the pandemic?		
Yes	821	81.8	Yes	888	88.4
No	183	18.2	No	116	11.6
In your opinion, what is your family's income level during the pandemic?			In your opinion, what was your family's income level before the pandemic?		
Very bad	31	3.1	Very bad	12	1.2
Bad	142	14.1	Bad	53	5.3
Middle	529	52.7	Middle	540	53.8
Good	275	27.4	Good	361	36.0
Very good	27	2.7	Very good	38	3.8
Has your physical appearance changed during the pandemic?			Has your fear of death increased during the pandemic?		
Yes	446	(44.4)	Yes	543	(54.1)
No	558	(55.6)	No	461	(45.9)
Has there been a change in your anxiety level during the pandemic?			Have you experienced fear of getting sick during the pandemic?		
Yes	280	(27.9)	Yes	567	(56.5)
No	394	(39.2)	No	253	(25.2)
Partially	330	(32.9)	Partially	184	(18.3)

Table 1 (continue). Distribution of the socio-demographic characteristics of the children and adolescents (n= 1004)

Sociodemographic Characteristics	n	(%)		n	(%)
What effect did the pandemic process have on you?			Has your relationship with the people you live with at home been affected during the pandemic?		
No effect, I am the same	261	(26.0)	Very badly affected	47	(4.7)
I gained weight	380	(37.8)	Moderately badly affected	243	(24.2)
I lost weight	92	(9.2)	Unaffected, the same	571	(56.9)
I became impatient	123	(12.3)	Moderately well affected	102	(10.2)
I became angry	72	(7.2)	Very good level of impact	41	(4.1)
I started not taking care of my personal hygiene	64	(6.4)			
I started not taking care of my clothes	12	(1.2)			
Has your relationship with your friends been affected during the pandemic?			How did the hours you spent online during the pandemic affect you?		
Very badly affected	127	(12.6)	Reduced a lot	16	(6)
Moderately badly affected	321	(32.0)	Slightly reduced	34	(3.4)
Unaffected, the same	456	(45.4)	Unaffected, the same	151	(15.0)
Moderately well affected	73	(7.3)	Slightly increased	455	(45.3)
Very good level of impact	27	(2.7)	Increased a lot	348	(34.7)
How much time do you spend on the internet in a day?			Has your school performance been affected after the pandemic?		
I do not use it	38	(3.8)	Very badly affected	159	(15.8)
2 hours	307	(30.6)	Moderately badly affected	365	(36.4)
4 hours	177	(17.6)	Unaffected, the same	325	(32.4)
6 hours	223	(22.2)	Moderately well affected	107	(10.7)
8 hours	130	(12.9)	Very good level of impact	48	(4.8)
10 hours	54	(5.4)			
12 hours	18	(1.8)			
Over 15 hours	57	(5.7)			

During the pandemic, 55.6% of the children and adolescents who participated in the study reported that there was no change in their physical appearance, 37.8% reported weight gain, 32.9% reported partial anxiety, 56.5% reported fear of getting the disease and 54.1% reported fear of death, it was determined that 56.9% of the participants' family relationships were not affected, 30.6% spent at least two hours on the internet, 45.3% spent more hours on the Internet, and 36.4% were moderately affected by school achievement (Table 1).

When COVID-19 disease perception scale subscale scores were evaluated, 9.91 ± 1.21 was found to be the dangerousness subscale and 16.07 ± 2.87 was found to be

the infectiousness subscale. A high score in the infectiousness subscale indicates the perception that the virus is highly contagious. The perception of control of COVID-19 scale was found to have 11.98 ± 3.01 macro control sub-dimension, 12.55 ± 2.92 personal sub-dimension and 12.14 ± 2.96 controllability dimension. A high score in the personal sub-dimension indicates the effectiveness of personal measures taken to prevent the disease (Table 2).

When we look at the result of Pearson correlation analysis in Table 3, it was determined that there was a statistically significant correlation between the COVID-19 perception scale and the COVID-19 fear scale, the belief that the government or state can control the epidemic in macro control decreased

Table 2. Distribution of COVID-19 perception scores and COVID-19 control perception scores

	Mean $\pm$ SD	Minimum $\pm$ Maximum
COVID-19 Disease Perception Scale		
Dangerousness	9.91 ± 1.21	5.00 ± 15.00
Infectiousness	16.07 ± 2.87	4.00 ± 20.00
Perception of Control of COVID-19 Scale		
Macro control	11.98 ± 3.01	4.00 ± 20.00
Personal control	12.55 ± 2.92	4.00 ± 20.00
Controllability	12.14 ± 2.96	4.00 ± 20.00
SD: Standard deviation.		

Table 3. Correlation analysis results of COVID-19 perception and COVID-19 control perception scales and sub-dimensions

Correlations							
		1	2	3	4	5	6
Age (1)	r	-					
	p						
Dangerousness (2)	r	-0.042	-				
	p	0.188					
Infectiousness (3)	r	-0.027	0.213**	-			
	p	0.387	0.000				
Macro control (4)	r	-0.106**	0.003	0.158**	-		
	p	0.001	0.927	0.000			
Micro control (5)	r	-0.059	0.037	0.044	0.438**	-	
	p	0.062	0.241	0.161	0.000		
Controllability (6)	r	0.168**	0.086**	-0.048	-0.130**	-0.094**	-
	p	0.000	0.006	0.129	0.000	0.003	

*Correlation is significant at the 0.05 level.
**Correlation is significant at the 0.01 level.

as age increased, controllability increased as age increased, and the belief that the epidemic could be controlled when appropriate measures were taken increased.

In Table 4, it was found that men believed that COVID-19 could be controlled with personal measures taken more than women did ($p < 0.005$). As the level of education increases, the perception that the measures taken at the macro level

(worldwide or nationwide) are not sufficient increases. The perception of controllability of COVID-19 increases with increasing education ($p < 0.005$). Students in high school think that COVID-19 is more controllable ($p < 0.005$). Did your fear of death increase during the pandemic? Those who answered yes to the question had a higher perception of dangerousness and infectiousness about COVID-19 ($p < 0.005$).

Table 4. Distribution of COVID-19 perception scores and COVID-19 control perception scores according to the sociodemographic characteristics of the children and adolescents (n= 1004)

Variables	COVID-19 Perception Scale		COVID-19 Control Perception Scale		
	Dangerousness	Infectiousness	Macro Control	Micro Control	Controllability
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
Sex					
Female	9.96 $\pm$ 1.17	16.12 $\pm$ 2.83	11.73 $\pm$ 2.99	12.40 $\pm$ 2.94	12.27 $\pm$ 2.91
Male	9.84 $\pm$ 1.27	15.99 $\pm$ 2.94	12.34 $\pm$ 3.01	12.78 $\pm$ 2.88	11.93 $\pm$ 3.04
t (1002)	1.491	0.0736	-3.135	-2.043	1.788
p	0.136	0.462	0.002	0.041	0.074
School type					
Public school	9.92 $\pm$ 1.21	16.07 $\pm$ 2.86	11.95 $\pm$ 3.00	12.56 $\pm$ 2.92	12.15 $\pm$ 2.97
Private school	9.56 $\pm$ 1.38	15.90 $\pm$ 3.31	12.81 $\pm$ 3.15	12.34 $\pm$ 2.94	11.81 $\pm$ 2.69
t (1002)	1.666	0.328	-1.581	0.423	0.635
p	0.096	0.743	0.114	0.673	0.526
School level					
Primary school	9.92 $\pm$ 1.215	16.11 $\pm$ 3.09	12.53 $\pm$ 3.01	12.86 $\pm$ 3.09	11.51 $\pm$ 2.92
Middle school	9.96 $\pm$ 1.20	16.05 $\pm$ 2.95	11.83 $\pm$ 2.98	12.44 $\pm$ 2.95	12.09 $\pm$ 3.12
High school	9.81 $\pm$ 1.25	16.04 $\pm$ 2.50	11.66 $\pm$ 3.00	12.43 $\pm$ 2.65	12.87 $\pm$ 2.56
F (2.1001)	1.199	0.056	6.760	2.058	14.895
p	0.302	0.946	0.001	0.128	<0.001
Place of residence					
Province	9.91 $\pm$ 1.22	16.07 $\pm$ 2.88	11.99 $\pm$ 2.98	12.57 $\pm$ 2.89	12.08 $\pm$ 2.96
$\leq$ County	9.90 $\pm$ 1.16	16.03 $\pm$ 2.83	11.93 $\pm$ 3.19	12.45 $\pm$ 3.12	12.52 $\pm$ 2.97
t (1002)	0.057	0.142	0.212	0.424	-1.610
p	0.955	0.887	0.832	0.672	0.108

Table 4 (continue). Distribution of COVID-19 perception scores and COVID-19 control perception scores according to the sociodemographic characteristics of the children and adolescents (n= 1004)

Variables	COVID-19 Perception Scale		COVID-19 Control Perception Scale		
	Dangerousness	Infectiousness	Macro Control	Micro Control	Controllability
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
Parental unity					
Together	9.91 $\pm$ 1.20	16.07 $\pm$ 2.84	12.04 $\pm$ 2.99	12.60 $\pm$ 2.86	12.16 $\pm$ 2.95
Separated	9.95 $\pm$ 1.39	16.07 $\pm$ 3.27	11.32 $\pm$ 3.15	12.05 $\pm$ 3.51	11.80 $\pm$ 3.17
t (1002)	-0.265	-0.014	2.042	1.623	1.069
p	0.791	0.989	0.041	0.105	0.285
Has your fear of death increased during the pandemic?					
Yes	9.99 $\pm$ 1.23	16.30 $\pm$ 2.83	11.69 $\pm$ 3.02	12.34 $\pm$ 2.93	12.19 $\pm$ 2.97
No	9.82 $\pm$ 1.19	15.79 $\pm$ 2.91	12.32 $\pm$ 2.97	12.80 $\pm$ 2.89	12.07 $\pm$ 2.96
t (1002)	2.237	2.838	-3.280	-2.506	0.634
p	0.025	0.005	0.001	0.012	0.526

p $\leq$ 0.05, SD: Standard deviation.

Discussion

Perceptions and attitudes towards infectious diseases are influenced by many factors, and the rapid spread of COVID-19 has spread the idea that the world is not a safe place. This situation has caused crises of fear, hopelessness, stress, anxiety, helplessness and depression on people's mental health (12). Feeling in danger and helpless affects experiences, beliefs, perceptions and attitudes in the social and cultural environment. Increased anxiety and fear during pandemic periods change the perception and attitude towards the disease (10,13).

The limited data on children's reactions to trauma and pandemics indicate that more research is needed in this field. In existing studies, it has been reported that symptoms of negative psychological effects such as anxiety, depression, impaired social interaction and changes in appetite have been observed in children (14). It has been determined that negative emotions such as anxiety, fear, panic, worry and hopelessness regarding the mental state of people aged 20-60 years after the COVID-19 pandemic are common in the society (15). In particular, it was determined that individuals who lost their loved ones after the pandemic developed more negative perspectives on life in addition to the fear and anxiety they experienced. In a study conducted at the beginning of the COVID-19 pandemic, it was reported that fear, panic and anxiety were experienced with high case numbers (16). However, in our study, it was observed that the anxiety level of 39.2% of our participants did not change, which can be attributed to the fact that it was towards the end of the COVID-19 pandemic. These findings may help us understand how emotional reactions during the pandemic may change over time.

The economic impact of the COVID-19 pandemic has had serious consequences, with millions of people losing their

jobs (17). Job losses, especially for people who were told to stay at home, have had a psychological impact on individuals around the world. In our study, it was found that 69.7% of mothers did not work before the pandemic and 73.2% during the pandemic, while 88.4% of fathers worked before the pandemic and 81.8% during the pandemic. Similar findings were also found in other studies (11). These results may help us understand the actual and potential economic effects of the pandemic on families.

It was observed that 56.5% of the children and adolescents who participated in the study during the pandemic experienced fear of getting the disease and 54.1% experienced fear of death. This finding emphasizes the seriousness of the psychological effects of the pandemic on children. Similarly, in a study conducted in China to determine the psychological effects of COVID-19 on children, anxiety and depression levels were measured in second and sixth graders and anxiety symptoms were reported to be 18.9%. These results may help us understand the impact of the pandemic on the psychological health of children (14).

There is a statistically significant relationship between the COVID-19 perception scale and the COVID-19 fear scale, and as the age increases, there is a decrease in the belief that the government or state can control the pandemic. With increasing age, an increase in the belief that the pandemic is controllable was observed. In addition, as age increased, it was determined that the belief that the pandemic can be controlled by observing protective (social, personal) distance, wearing appropriate masks, observing hand, environmental and personal contact hygiene, providing access to the health system to students-educators in case of illness and providing treatment and protection increased. These findings emphasize the effects of age on COVID-19 perception, fear and control belief.

In our study, male students believe that COVID-19 can be controlled with the personal measures taken more than female students ($p < 0.005$). In similar studies conducted in Jordan and Kuwait, it was determined that male students applied the measures taken against COVID-19 more. It is seen that our study is consistent with the literature (18).

Our study has shown that as the level of education increases, the perception that the measures taken at the macro level (world or country-wide) are not sufficient increases. The perception of controllability regarding COVID-19 increases with increasing education ($p < 0.005$). When we look at the literature, it was determined that the perception of COVID-19 pandemic control decreased as the level of education increased (19). In the COVID-19 pandemic, social isolation, quarantine, measures for social distancing, and measures for public and private life have led to a significant change in people's lifestyles and a positive development in the level of awareness and consciousness in infectious diseases, especially in young people.

Adolescents are generally healthy individuals unless they have a chronic disease. Ignoring the measures taken due to the pandemic and the psychological effects of these measures may lead to more serious health and social problems (9,14). Did your fear of death increase during the pandemic? It was determined that the perception of dangerousness and contagiousness related to COVID-19 was higher in those who answered yes to the question ($p < 0.005$). In the study conducted by Wang et al. in the COVID-19 pandemic in China, most participants reported the psychological impact and anxiety as moderate. In another study, it was stated that while the perception of social risk increased, life satisfaction decreased in parallel (20). Positive COVID-19 in the family and environment may have increased the perception of the disease. It is seen that our study is compatible with the literature.

As the limitations of the study, the research covers children and adolescents between the ages of seven and eighteen living in Tokat and was conducted through an online survey application. In this context, along with the limitations of being quantitative research, it is limited to a certain period of time, people who use social networks and have internet access and who agree to participate in the research. Data were collected in July-October 2021, when the pandemic process was ongoing.

Conclusion

Our study is the first study in Türkiye to determine the impact and perceptions of COVID-19 on children and adolescents. It was determined that the belief that the government or the state can control the epidemic decreases as the age increases in children, controllability increases as the age increases, and the belief that the epidemic can be controlled when appropriate measures are taken increases. It is thought that there is a need for new studies on the

symptoms that may be seen in children and adolescents in the mentally affected group during the COVID-19 process and in the following periods.

Ethics Committee Approval: This study was approved by the Ethics Committee of Social and Human Research at Tokat Gaziosmanpaşa University (Decision no: 49077, Date: 21.06.2021).

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - NG; Design - BV; Supervision - BV; Resource - BG; Data Collection and/or Processing - BV; Analysis and/or Interpretation - BG; Literature Search - NG; Writing - BV; Critical Reviews - TYB.

Conflict of Interest: All authors declare that they have no conflicts of interest or funding to disclose.

Financial Disclosure: The authors declared that this study has received no financial support.

References

1. Avcu G, Yıldız Atikan B, Sığ AK. COVID-19 nedeniyle hastaneye yatırılan çocukların değerlendirilmesi. *J Pediatr Inf* 2023;17(2):112-118. <https://doi.org/10.5578/ced.20239819>
2. Özgür Gündeşlioğlu Ö. Çocuklarda COVID-19 enfeksiyonu tedavisi. *Mersin Univ Sağlık Bilim Derg* 2022;15 (Özel Sayı-1, 21. Mersin Pediatri Günleri):1-6.
3. Hamzah FB, Lau C, Nazri H, Ligot DV, Lee G, Tan CL, et al. CoronaTracker: Worldwide COVID-19 outbreak data analysis and prediction. *Bull. World Health Organ* 2020;1:1-32. 2. <https://doi.org/10.2471/BLT.20.255695>
4. Zhang YH, Lin DJ, Xiao MF, Wang JC, Wei Y, Lei ZX. 2019-novel coronavirus infection in a three-month-old baby. *Zhonghua Er Ke Za Zhi* 2020;58:E006. doi: <https://10.3760/cma.j.issn.0578-1310.2020.0006>.
5. Cai JH, Wang XS, Ge YL, Xia AM, Chang HL, Tian H. First case of 2019 novel coronavirus infection in children in Shanghai. *Zhonghua Er Ke Za Zhi*. 2020;58:E002. doi: 10.3760/cma.j.issn.0578-1310.2020.0002.
6. Feldstein LR, Rose EB, Horwitz SM, Collins JP, Newhams MM, Son MBF, et al. Multisystem inflammatory syndrome in U.S. children and adolescents. *N Engl J Med* 2020;383:334-46. <https://doi.org/10.1056/NEJ-Moa2021680>
7. Tabachnick B, Fidell L. *Using multivariate statistics* (6 ed.). United States: Pearson Education, 2013.
8. Zintel S, Flock C, Arbogast AL, Forster A, von Wagner C, Sieverding M. Gender differences in the intention to get vaccinated against COVID-19: A systematic review and meta-analysis. *Z Gesundh Wiss* 2022;7:1-25. <https://doi.org/10.2139/ssrn.3803323>
9. World Health Organization. WHO coronavirus disease (COVID-19) dashboard. Available from: <https://covid19.who.int/>
10. Geniş B, Gürhan N, Koç M, Geniş Ç, Şirin B, Çırakoğlu OC, et al. Development of perception and attitude scales related with COVID-19 pandemic. *PEARSON J* 2020;5(7):306-28. <https://doi.org/10.46872/pj.127>
11. Avan H, Koç ET, Vural B. Çocukları salgın sürecinde okula devam eden ebeveynlerin kaygı düzeylerinin belirlenmesi: 6-12, yaş örneği. *J Health Pro Res* 2021;3(2):65-74.
12. Yamaguchi K, Takebayashi Y. Role of focusing on the positive side during COVID-19 outbreak: Mental health perspective from positive psychology. *Psychol Trauma* 2020;12(1):49-50. <https://doi.org/10.1037/tra0000807>

13. İlbasmış Ç, Aksoy AT, Cihanyurdu İ, Ünver H, Arman AR. COVID-19 salgınının çocukların ruh sağlığı üzerindeki etkileri. *Turk J Child Adolesc Ment Health* 2021;28(1):1-3. <https://doi.org/10.4274/tjcamh.galenos.2020.92400>
14. Xie X, Xue Q, Zhou Y, Zhu K, Liu Q, Zhang J, et al. Mental health status among children in home confinement during the coronavirus disease 2019 outbreak in Hubei Province, China. *JAMA Pediatr* 2020;174(9):898-900. <https://doi.org/10.1001/jamapediatrics.2020.1619>
15. Tönbul Ö. Koronavirüs (Covid-19) salgını sonrası 20-60 yaş arası bireylerin psikolojik dayanıklılıklarının bazı değişkenler açısından incelenmesi. *Humanistic Perspective* 2020;2(2):159-74.
16. Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian J Psychiatr* 2020;52:102066. <https://doi.org/10.1016/j.ajp.2020.102066>
17. Pakpour AH, Griffiths MD. The fear of COVID-19 and its role in preventive behaviors. *J Concur Disord* 2020;2:58-63.
18. Aykaç Yazıcıoğlu S, Taşkın D, Çarıkçı F. Üniversite öğrencilerinin COVID-19 pandemisine yönelik algı ve tutumlarının değerlendirilmesi. *TSAD* 2022;3(3):10-21.
19. Ekiz T, İlman E, Dönmez E. Bireylerin sağlık anksiyetesi düzeyleri ile COVID-19 salgını kontrol algısının karşılaştırılması. *Usaysad Derg* 2020;6(1):139-54.
20. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health* 2020;17(5):1729. <https://doi.org/10.3390/ijerph17051729>