



Parents Evaluation of Changes in Parents and Children Physical and Psychological Health Status in COVID-19 Pandemic

COVID-19 Pandemisinde Anne-Babaların ve Çocukların Fiziksel ve Psikolojik Sağlık Durumlarındaki Değişiklikleri Anne-Babaların Değerlendirmesi

Süheyla Tekirdağlı¹, Cansu Ece Sarıcan¹, Göksel Karar¹, Zehra Akdoğan¹, Zelin Günalp¹, Nilüfer Güzoğlu²

¹Eastern Mediterranean University- Marmara University Faculty of Medicine Joint Program, Famagusta, Northern Cyprus, Mersin, Turkey

²Eastern Mediterranean University, Faculty of Medicine, Department of Paediatrics, Famagusta, Northern Cyprus, Mersin, Turkey

Abstract:

Aim: COVID-19 crisis has affected the psychological well-being of both parents and children through parental job loss, income loss, caregiving burden and terror of infection. This study aimed to evaluate the changes in the psychological and physical health of parents and their children according to parents' perspectives during COVID-19.

Materials and Methods: The snowball sampling method was used in the study. After obtaining ethical board approval, 100 participants were reached in 4 weeks. The questionnaire was designed for parents to fill out. The questionnaire was created as an online form, its link was distributed over social media platforms.

Results: 73% of parents reported an increase in their children's fears/anxieties. 93% of participants indicated that internet usage of their child increased during the pandemic. 91.9% of the parents stated that they have fears/concerns about the Coronavirus becoming pandemic in the world. 52% of the parents stated that their child gained weight during the pandemic process. A significant correlation was found between the child's weight gain and increased fears/anxieties ($p= 0.006$). A significant correlation was found between the presence of COVID-19 cases in or around the family and the increased fears/anxieties of children ($p= 0.024$).

Conclusion: Psychological effects of the pandemic and restrictions on children, the physical negative effects should also be taken into consideration.

Keywords: COVID-19; child, parent; psychological health; physical health

Öz

Amaç: COVID-19 krizinin ebeveyn iş kaybı, gelir kaybı, bakım yükü ve enfeksiyon korkusu yoluyla hem ebeveynlerin hem de çocukların psikolojik sağlığını etkilemiştir. Bu çalışmada COVID-19 pandemi sürecinde ebeveynlerin ve çocuklarının psikolojik ve fiziksel sağlıklarındaki değişimlerin ebeveyn bakış açılarına göre değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: Araştırmada kartopu örnekleme yöntemi kullanıldı. Etik kurul onayı alındıktan sonra dört haftada 100 katılımcıya ulaşıldı. Ebeveynlerin doldurması için tasarlanan anket çevrimiçi bir form olarak oluşturuldu, bağlantısı sosyal medya platformları üzerinden sağlandı.

Bulgular: Ebeveynlerin %73'ü çocukların korkularında/endişelerinde artış olduğunu bildirdi. Ebeveynlerin %93'ünün çocuklarının internet kullanımının pandemi sırasında arttığını belirtti. Ebeveynlerin %91,9'u Koronavirüs'ün dünyada pandemi haline gelmesine ilişkin korkuları/endişeleri olduğunu belirtti. Ebeveynlerin %52'si pandemi sürecinde çocuğunun kilo aldığını belirtti. Çocuğun kilo alması ile korkularının/endişelerinin artması arasında anlamlı bir korelasyon mevcut idi ($p= 0,006$). Aile içinde veya çevresinde COVID-19 vakalarının varlığı ile çocukların korkularının/endişelerinin artması arasında da anlamlı bir korelasyon vardı ($p= 0,024$).

Sonuç: Pandemi ve kısıtlamaların çocuklar üzerindeki psikolojik etkilerinin yanısıra fiziksel olumsuz etkileri de göz önünde bulundurulmalıdır.

Anahtar kelimeler: COVID-19; çocuk; ebeveyn; psikolojik sağlık; fiziksel sağlık

Corresponding Author: Süheyla TEKİRDAĞLI, M.D.

Eastern Mediterranean University Famagusta, Northern Cyprus, Mersin, Turkey

E-mail: suheyla.tekirdagli@emu.edu.tr

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INTRODUCTION

The COVID-19 pandemic, which emerged in November 2019, has become a serious public health crisis worldwide (1). Due to the characteristics of SARS-CoV-2 which is spread easily by inhalation of respiratory droplets when people even talk or breathe, many measures were performed to prevent the spread of the disease by authorities, such as blocking access to cities, schools' suspensions, and home quarantine. Therefore, the pandemic has affected the economic and educational systems negatively as well as the health system.

Social interaction and friendship are essential for the normal psychological development and well-being of children. Neurodevelopment develops during childhood; it is a very sensitive period and many mental health issues may arise (2). Environmental factors around the child and families' reactions to these and the quality of parent-child communications within the child's micro space also affect the child (3). When there is no chance to communicate with anyone else for a child, good parenting skills are crucial.

On the other hand, the pandemic and measures have affected the psychological well-being of both parents and children. In addition to the terror of infection, becoming unemployed, loss of income, and not having adequate information from public authorities are factors of psychological well-being. Many parents had to manage these difficulties, and it reflects on their daily life (4-6). It is possible that the anxiety level of children may increase because of the increasing anxiety level of the parents (7).

Decreased physical activity and increased sedentary behaviour can negatively affect the physical and mental health of children (8). Xie et al. reported that overall screen time increased during the pandemic and nearly a quarter of students spend a long time on screen in China (9). Another negative impact of the COVID-19 outbreak process on parents and children was expressed by parents as sleep and nutritional disorders. Parents stated that their children had irregular sleep schedules, had high-calorie and unhealthy diets throughout the pandemic due to a decrease in physical activities, and resulted in excess weight (10). A positive relationship was found between individuals' sleep disorders and their stress (11). On the other hand, schools offer students an opportunity to communicate with teachers and receive psychological counselling besides the vital educational role. School closure and social isolation

may increase the risk of childhood obesity due to school closures and social isolation (12).

The main aim of this study was to determine the changes in parents' and their children's psychological and physical health according to parents' perspectives during COVID-19.

MATERIAL and METHODS

This was a cross-sectional study carried out for the academic year 2020 – 2021 in North Cyprus. Research population of the study included parents whose children enrolled in primary, secondary, or high school. Inclusion criteria was parents who live in North Cyprus and whose child enrolled in primary, secondary or high school. Exclusion criteria was non-Turkish speaker parents, participants who do not agree to fill consent form and parents who do not live in North Cyprus.

The independent variables were the demographic questions such as age, gender, education level, income, marital status etc., presence of healthcare worker in house, and school type of child.

Sampling method and sample size

Snowball sampling method was used as non-probability sampling instead of probability sampling methods due to pandemic condition. In order to sample the snowball, a connection is made to any unit in the universe. Then another person is contacted with the help of the contact person, and then another person is contacted in the same way. Thus, the sample is enlarged in the form of a snowball effect as the name indicates.

A four-week time interval was determined by researchers between May 1st to 28th. It was aimed to reach the maximum number of participants within determined time interval.

Reaching participants

The survey was created by using an online tool, Google Forms. After the ethical approval from Eastern Mediterranean University (EMU) Ethical Board, the link of the survey was sent to eligible participants who are known by any of the researchers living in North Cyprus via social media (Facebook, WhatsApp).

Also, it was asked parents to share the link among their contacts. Then another person was contacted with the help of the person concerned, and then another person was contacted in the same way. Since filling of the consent form's box was obligatory to continue the questionnaire, those who did not accept excluded. Before starting the questionnaire there was also a short paragraph that explains how to complete the questionnaire. In this section, it was stated that the whole part of the questionnaire is requested to fill in by the parents.

Each parent had the right to participate in the study just one time as considering his/her only one child. At the beginning of the questionnaire, it was asked about the residency of the participants whether they are living in North Cyprus or not. Participants who are did not living in North Cyprus were excluded from the research study.

Data collection tool (questionnaire)

The survey is composed of 31 questions. Close-ended questions and Likert scale questions were used. No scoring was included in any of the questions. The questionnaire is divided into two parts: Information about parent and information about child. First part of the survey is composed of 19 questions, 5 of them are demographic questions about parent which include their age, gender, educational status, marital status, and income. Fourteen questions are related to COVID-19 pandemic effects on parents. Those questions include stress and fears/worries of parent caused by pandemic, protection methods that parents use (masks, hand gloves, hand sanitizer).

Second part of the survey is composed of 12 questions in total, 5 demographic questions are about child's age, gender, and current educational status. 7 questions are related to COVID-19 pandemic effects on child.

Those topic-related questions include changes in child's weight, sleep schedule, internet usage and fears/worries according to parents' perspective. Besides changes in physical health and habits, questions related to child's education are also included. Thoughts of parents about online education and sufficiency of precautions that school board took were asked. All questions were answered by parents. It was thought that asking the parent to fill in the part about the child would be better in terms of reliability of the answers.

Ethical considerations

Ethics approval for this research was obtained from the EMU Research Ethics and Publication Committee. (ETK00-2021-0089). The researchers were careful in making sure to keep the participant's privacy, as confidentiality is an important matter. A consent form was included at the beginning of the survey, and it must be accepted by all participants.

Data analysis tools and statistical analysis design

Statistical analyses were performed using the SPSS 22.0 statistical package. Descriptive statistics were used for sociodemographic features and to summarize the effects of COVID-19 pandemic among children. The relationship between variables

was analysed by using the Chi-Square test. Also, Spearman correlation was used to find any relationship between the number of measures taken by parents and the number of Coronavirus-oriented behaviours of their children.

For the comparative analysis, normality test was applied first to variables and Shapiro-Wilk significance value was taken into consideration. There was no normal distribution in any of them ($p < 0.05$). For the comparative analysis, the Chi-Square test of independence is used. Scarce distribution of frequencies is observed in some of the responses due to polytomous choice questions. For example, options for the question about changes in increase fears/worries status of the child were: No change, slightly increased, partially increased, increased much, and extremely increased. These 5 options transformed into 2 options as; no change for no and the rest of them considered as yes. If it is still indicating low distribution ($>20\%$, expected count less than 5), Fisher Exact test's p-value was taken into consideration for this issue.

RESULTS

Demographic characteristics of the parents were presented at Table 1. One hundred and six participants were reached. Six participants were excluded due to a couple of reasons including 3 of them did not accept the consent form, two participants' children were below the school age, and 1 participant stated that she does not live in North Cyprus. In total 100 participants were taken into the consideration for this research study.

Demographic characteristics of the children were presented at Table 2. Most of the children were enrolled in primary school. 73% of children were recorded in public schools.

Distribution of characteristics of the parents related to the COVID-19 outbreak was presented in Table 3. 91% of parents were worried about the COVID-19 pandemics and most of them were fearing the transmission of Coronavirus to their loved ones. Social media or friends were the main information sources of outbreak information. In addition, more than half of the patients were following the news about Coronavirus and thought that they took sufficient precautions. Most of the families were affected economically and thought that precautions were not enough taken by the government.

Table 1: Distribution of characteristics of the parents included in the study (n=100)

Characteristics	n	%
Age	40.36± 6.463 (Min: 20-Max: 61)	100
Gender		
Female	92	92.0
Male	8	8.0
Educational status		
Primary school	2	2.0
Secondary school	5	5.0
High school	24	24.0
Associate/Bachelor's degree	41	41.0
Master's degree	28	28.0
Marital status		
Married	89	89.0
Single	11	11.0
Income status		
Income lower than the expense	16	16.2
Income equal to the expense	61	61.6
Income higher than the expense	22	22.2
Total children number		
1	28	28.3
2	68	68.7
3	2	2.0
8	1	1.0

Table 2: Distribution of characteristics of the children (n=100)

Characteristics	n	%
Age	11.69 ± 3.390 (Min:6- Max: 18)	
Gender		
Female	51	51.0
Male	49	49.0
School grade		
Primary school	47	47.0
Secondary school	26	26.0
High school	27	27.0
School type		
Public school	73	73.0
Private school	27	27.0

Table 3: Distribution of characteristics of the parents related to COVID-19 outbreak (n= 100)

Characteristics	n	%
Fear/worries about coronavirus becoming a pandemic		
Yes	92	
No	8	
Information source for the outbreak		
Internet/Social media	56	56.0
Friends	24	24.0
TV/Radio	13	13.0
Scientific journals and articles	6	6.0
Ministry of Health and other official organizations	1	1.0
Diagnosed with coronavirus		
Their own	3	3.0
Family members	12	12.0
Someone they knew	54	54.0
No one	31	31.0
Economical concerns		
Not at all	3	3.0
Slightly	19	19.0
Moderately	39	39.0
Much	26	26.0
Extremely	13	13.0
Frequency of talking about coronavirus in the home		
Never	1	1.0
Rarely	11	11.0
Sometimes	34	34.0
Often	49	49.0
Very much	5	5.0
Frequency of following news about coronavirus		
Never	0	0.0
Rarely	7	7.0
Sometimes	23	23.0
Often	63	63.0
Very much	7	7.0
Fears/worries about the transmission of coronavirus to their loved ones		
None	1	1.0
Little	2	2.0
Medium	26	26.0
Much	42	42.0
Very much	29	29.0
Thoughts about the adequacy of precautions taken by themselves		
Little	1	1.0
Moderate	32	32.0
Much	51	51.0
Very much	16	16.0
Thoughts about the adequacy of precautions taken by the government		
Not enough at all	25	25.0
Less enough	34	34.0
I am indecisive	29	29.0
Quite enough	10	10.0
Totally enough	2	2.0
Thoughts about the pressure to family members made by themselves		
No	26	26.0
Partially	46	46.0
Yes	28	28.0

Distribution of characteristics of the children related to COVID-19 outbreak were presented at Table 4. More than half of the children were stated that they gained weight. Almost 75% of parents did not observe any tendency to sleep. However, internet usage of children was dramatically increased.

A significant relationship was found between the presence of a person diagnosed with Coronavirus in the parents' environment and the increase in the fears/worries of the children ($\chi^2 (1, N=100) = 5.085, p = .024$). Also, there was a significant association between the child's weight gain and the increase in the child's fears/worries ($\chi^2 (1, N=100) = 7.416, p = .006$).

The relationship between the demographic factors of children and change in the physical properties of children was investigated. Gender of the child

compared with weight gain ($\chi^2 (1, N=100) = 0.037, p = .848$), with increased tendency to sleep ($\chi^2 (1, N=100) = 0.630, p = .427$), and with increase in internet use ($p = 1.000$, Fisher's Exact Test). No significant relationship was found between these physical changes and the gender of the child.

Also, these physical changes and the school grade of the child was compared. It's found that there was a significant association between increased tendency to sleep and child's school grade ($\chi^2 (2, N=100) = 6.370, p = .041$).

A positive correlation was observed between the number of measures taken by families to prevent the transmission of Coronavirus and the number of Coronavirus-oriented behaviours observed in their children ($r_s = 0.342, n = 75, p = .003$). There was a weak correlation between the two variables. The results are summarized in Table 5.

Table 4: Distribution of characteristics of the children related to COVID-19 outbreak (n= 100)

Characteristics	n	%
Days of schooling		
Every weekday	21	21.0
Certain days of the week	51	51.0
Never	28	28.0
Changes in weight		
Weight gain	52	52.0
Weight loss	11	11.0
No change	37	37.0
Increase tendency to sleep		
Yes	26	26.0
No	74	74.0
Increase internet usage		
Yes	93	93.0
No	7	7.0
Changes in fears/worries		
No change	27	27.0
Slightly increased	26	26.0
Partially increased	32	32.0
Increased much	11	11.0
Extremely increased	4	4.0

Table 5: Comparison of increase in child's fears/worries with certain questions (*p< α , $\alpha=.05$)

Increase fears/worries of children during COVID-19 pandemic vs.	p-value
Income status of the parent	0.060
Presence of HCW in the home	0.177
Presence of anyone who had diagnosed with Coronavirus around them	0.024*
Presence of economic concerns	0.180
Applying pressure to family members for protection from Coronavirus	0.126
Presence of parents' worries about for transmission of Coronavirus to them	0.270
Increase in weight of children during the pandemic process	0.006*
Increased tendency to sleep during the pandemic process	0.600
Child's school type (public school/private school)	0.386

Three questions were a multiple response therefore the sum of frequencies is not equal to the total number of participants (N: 100) (Fig 1-3). Since the vaccine against COVID-19 was not available during the study period there was no mention as a prevention method.

Figure 1: Distribution of measures taken by parents to prevent transmission.

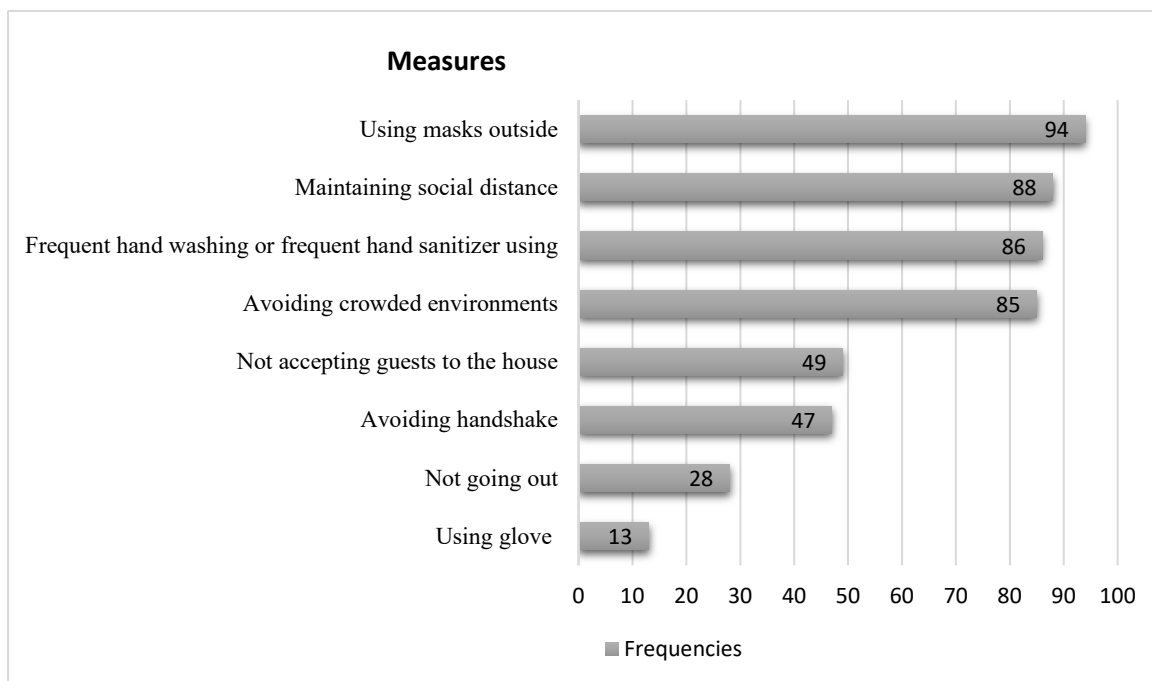


Figure 2: The behaviours of children that their parents observed during the COVID-19 pandemic.

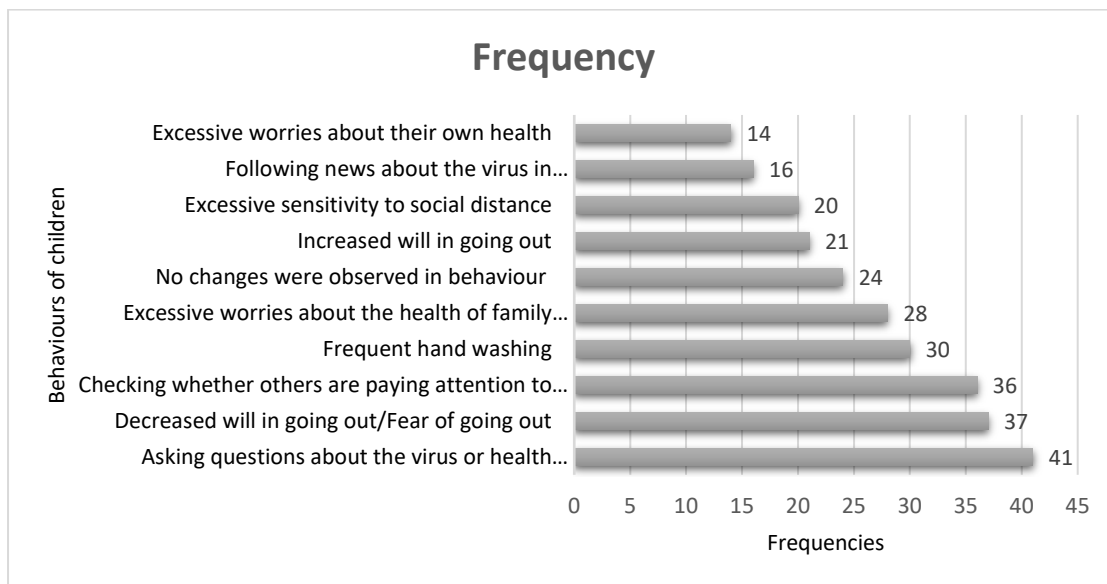
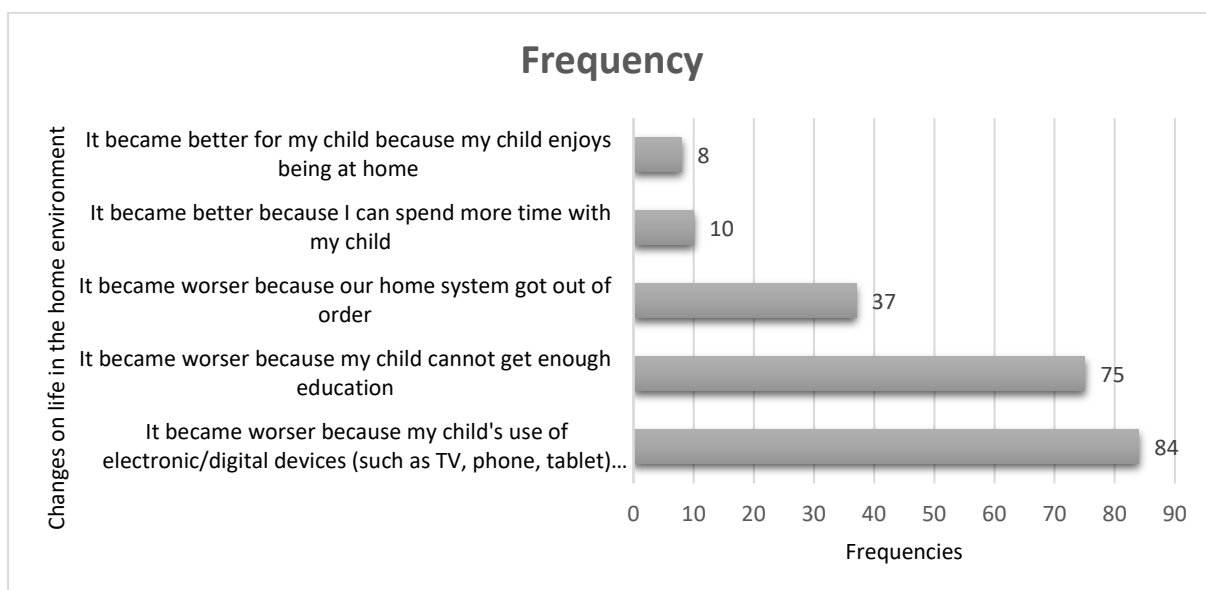


Figure 3: Effects of current educational practices on life in the home environment



DISCUSSION

In this study, 73% of the parents reported that there has been an increase in the fears/worries of children. There has been a significant relationship between fears/worries of children and their weight status. Parents of children who stated an increase in the worries of their child also stated that their children gained weight. Relationship between grade of children and increased tendency to sleep was found as well. 93% of the parents stated that there is an increased internet usage of their child and 26% of the parents stated that there is an increase in tendency to sleep during pandemic. A study that

was conducted in Italy and Spain indicated that routines changed during the pandemic, children spend more time using screens such as tablets, TVs, mobiles, or computer and tend to sleep a bit more (5).

Adıbelli et al. stated that half of the parents reported that their children gained weight during the Coronavirus pandemic and their sleep tendencies increased (1). Similar to that we also found 52% participants stated that their children gained weight and 26% stated increased tendency to sleep.

In terms of COVID-19 pandemic, a large-scale multicentre research study from Turkey

demonstrated that parents worry ‘a lot’ about themselves or their loved one’s transmission infection (59.8%) (13). But in our study just 29% of parents worry ‘a lot’ about themselves or their loved ones. This difference might be since the number of cases was not so high in Northern Cyprus during the study period. This difference might be since the number of cases was not so high in Northern Cyprus during the study period. In that multicenter study online survey was completed by the 3278 parents; however, in our study, there were 100 parents.

Kılınçel et al. (14) published factors that affect the anxiety levels of adolescents in home-quarantine during COVID-19 pandemic in Turkey and they indicated that having a Coronavirus positive patient in or around the family and exposing children to excessive information about COVID-19 pandemic cause’s elevated levels of stress and anxiety scores. In our study, we also found that there is a significant relationship between the presence of Coronavirus cases in or around the family and an increase in children's fears/worries. 69% of our participants stated that there are Coronavirus cases in or around their families. There is a significant relationship between worries/ fears of children and the presence of Coronavirus cases in their environment. In addition, high school children had tendency to sleep increased during the pandemic process. A study that evaluated COVID-19 through the aspect of children and their mothers indicated that while some children were adversely affected by changes, however, some mothers who stated that their children were not adversely affected by this process and that they were happy to be together with their parents who work at normal times (15). In our study, as well as the families who were negatively affected by the process, about 18% stated that the process was positive and that the children were happy to be at home with them. In the same study, parents mentioned that their children generally adhered strictly to the measures and warned others about them (15). Similar to that 36% of our participants observed that their child was checking other people to obey rules.

It has been shown that children aged 6-18 most frequently exhibit excessive questioning about the pandemic (16). In our study it was also the most observed behaviour of children by parents during pandemic.

A study from Czech Republic indicated that families are coping well with the educational situation during pandemic (17). However, in our study more than half of the parents stated that it became worse. The reason might be due to economic concerns. Ninety-six % of the

participants have stated that they have concerns of being negatively affected economically due to Coronavirus pandemic.

In this study, we found pandemics affect children both emotionally and physically in Northern Cyprus who enrolled in primary, secondary, or high school. However, our study has some limitations. Firstly, the sample size is small and non-probability sampling method is used. Therefore, the study does not represent whole society. Second, because of the pandemic situation, an online survey was used for this reason communication between participants and researchers were disrupted.

CONCLUSION

Pandemics are a demanding period in our lives and affect children both physically and emotionally. We may experience different pandemics in the 21st century, so we need to be aware of precautions to ensure that children are less affected.

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Author’s Contribution

This study was conducted within the scope of ICS research.

The authors declare no conflict of interest.

The authors disclose that no grants or support resources were used.

All authors declared their contribution to the study at all stages and approved the final version of the manuscript.

All authors declared that this manuscript has not been published before and is not currently being considered for publication elsewhere.

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