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COVID-19 Pandemisi ve Koruyucu Tedbirlerin Çocukların Ruh Sağlığı Üzerindeki Etkisi

The Effect of COVID-19 Pandemic and Associated Protective Procedures on Children's Mental Health

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ÖZ

Amaç: Dünya Sağlık Örgütü, yeni Koronavirüs hastalığını (COVID-19) Mart 2020'de pandemi olarak ilan etti. Bu çalışmanın amacı, COVID-19 pandemisinin çocukların ruh sağlığı üzerindeki etkilerini değerlendirmektir.

Materyal ve Metot: Ebeveynlerin ve çocuklarının koruma kurallarına uyup uymadıklarını belirlemek için katılımcılara bir anket ve Gözden Geçirilmiş Çocukluk Kaygı ve Depresyon Ölçeği - Ebeveyn Formu uygulandı. Ayrıca pandemi ile ilgili haber alma yöntemleri ve korunma yöntemleri de değerlendirildi. Katılımcılar, COVID-19'un şüpheli semptomları olan ve olmayanlar olarak iki gruba ayrıldı.

Bulgular: Kişisel hijyen düzeyleri ile sosyal fobi puanı ve toplam kaygı puanı arasında negatif korelasyon saptandı ($p<0.05$). Yaygın anksiyete bozukluğu puanları ile koruyucu ekipman kullanım çeşitliliği arasında negatif bir ilişki gözlendi ($p<0.05$). Panik bozukluk ve obsesif kompulsif bozukluk puanları, katılımcıların izolasyon durumu ile negatif ilişkiliydi ($p<0.05$).

Sonuç: Kişisel koruyucu ekipman kullanımı, kişisel hijyen kurallarına uyulması ve ebeveynlerin izolasyon önlemlerine uyulması, çocuklarının ruh sağlığına olumlu katkıda bulunur.

Anahtar Kelimeler: Ergen, çocuklar, COVID-19, koruyucu tedbirler, ruh sağlığı

ABSTRACT

Objective: World Health Organization declared the novel Coronavirus disease 2019 (COVID-19) as a pandemic in March 2020. The aim of this study is to evaluate the effects of COVID-19 pandemic on children's mental health.

Materials and Methods: Revised Childhood Anxiety and Depression Scale - The Parent Form was applied to the participants to determine the compliance of parents and children with protection rules. In addition, the methods of getting news and protection methods about the pandemic were evaluated. Participants were divided into two groups as those with and without suspicious symptoms of COVID -19.

Results: Personal hygiene levels were found to be negatively correlated with social phobia score and total anxiety score ($p<0.05$). A negative correlation was observed between generalized anxiety disorder scores and the variety of use of protective equipments ($p<0.05$). Panic disorder and obsessive compulsive disorder scores were negatively associated with the isolation status of participants ($p<0.05$).

Conclusion: The use of personal protective equipment, following the personal hygiene rules and compliance to the isolation measures of the parents have a positive effect on their children's mental health.

Keywords: Adolescent, children,COVID-19, mental health, protective procedures

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INTRODUCTION

The novel Coronavirus disease 2019 (COVID-19) was first described in Wuhan, China's Hubei Province in January 2020. The disease soon spread all over the world. On March 11th, World Health Organization (WHO) declared the disease as a pandemic. Today, the disease is still ongoing in more than 200 countries and regions around the world.[1] The COVID-19 pandemic has changed life standarts all over the world. Due to the fact that a drug that will directly affect the agent has not been found yet and the use of vaccines has not become widespread, social isolation measures such as quarantine, closure of schools and shopping centers have been enforced by governments.[2] The COVID-19 pandemic has affected the mental health of humanity due to unpredictability of the course of the disease and the duration of the outbreak, individual differences in treatment effectivity, easy human-to-human transmission, and social isolation measures.[3–7] COVID-19 infections are significantly less common among children than adults.[8] However, during pandemics, mental health of children can adversely be affected.[9,10] Mental effects can be seen even in children who have not been affected by the disease.[9] Apart from the effects of the disease itself, it may encounter mental health problems due to reasons such as social distance measures, travel restrictions, isolation and quarantine processes and school closures.[4,11,12] Although there are not enough studies yet indicating what kind of mental problems do the COVID-19 pandemic causes, it is estimated that irritability, anxiety, isolation and aggression in children may cause post-traumatic stress disorder in long term.[13]

In this study, it was aimed to compare the psychiatric symptom levels of children with and without symptoms of COVID-19 who presented to the pediatric emergency department.

MATERIALS AND METHODS

This study was done with the approval of Necmettin Erbakan University Ethics Committee (Date: 27.04.2020, decision no:2020/2451). All procedures have been carried out in accordance with the Helsinki Declaration and local laws and regulations. After the researchers explained the purpose and course of the research, written and verbal informed consent was obtained from the participants and their parents.

The study group consists of children and adolescents aged between 7-18 years old and their parents who applied to the pediatric emergency clinic of Necmettin Erbakan University between April 2020 and June 2020. The patients were divided into two groups; Group 1: Patients with suspected COVID-19 symptoms including cough, fever, rapid breathing, shortness of breath, fatigue, joint pain and Group 2: patients without COVID-19 symptoms.

Psychological Measurement Instruments: A questionnaire developed by the researchers which questioned the sociodemographic characteristics of the family (age, education levels, and socioeconomic income levels) and their life style during pandemic period (personal hygiene levels, protective procedures and equipments, attention to social distance, food storage and news sources) was applied to the parents of the children who applied to the pediatric emergency department.

The parents of the patients also filled in the Revised Childhood Anxiety and Depression Scale - Parental (RCAD-P) Form to determine the levels of depression and anxiety of their children. The main form consists of 47 items.[14] It can be applied to children and young people between the ages of 8-18. It measures the symptoms of social phobia (SoPH), panic disorder (PD), generalized anxiety disorder (GAD), separation anxiety disorder (SAD), depression and obsessive compulsive disorder (OCD) in children. Turkish validation of this scale was performed by Görmez et al.[15]

Statistical Analyses: Statistical analyses were performed using the SPSS 24.0 statistical software (SPSS Inc., Chicago, IL, USA). Categorical parameters are given as percentage. Continuous variables are given as mean ± standard deviation (SD). Normality of distribution was tested using the Shapiro–Wilk test. The Chi-square test was used to analyze differences between the groups in categorical variables. For the comparison of normally distributed variables, the Student's t test was used. The correlation between measurements and continuous variables was determined using Pearson's or Spearmen correlation coefficient. Ninety five percent confidence intervals (Cıs), and significances were calculated. A value of $p<0.05$ (two-tailed) was considered to indicate significance.

RESULTS

Fifty children and their parents were included in the study. Eighteen patients were in group 1, 32 patients were in group 2. There was no statistically significant difference between these two groups in terms of age, gender, age of parents and education, and socioeconomic status ($p> 0.05$). The sociodemographic characteristics of the study groups are presented in Table 1.

When the change in personal hygiene level between the groups during pandemic period was examined, it was found that 16.7% of the participants in group 1 did not change their personal hygiene, 27.8% made mild changes, 16.7% moderate and 38.8% of severe. The personal hygiene level analysis of group 2 revealed that 15.6% did not change, 3% made mild

Table 1. Sociodemographic and clinical characteristic of study groups.

Variables	Group 1 (n:18) Mean±SD	Group 2 (n:32) Mean±SD	Statistical Analyses	
			t or x^2	p
Age (years)	11.72±3.40	12.75±3.16	-1.073	0.289
Gender (boy/girl)	4/14	13/19	-0.845	0.278
Age of mothers	40±7.88	41.15±7.88	-0.531	0.598
Age of fathers	42.05±7.23	44.62±7.61	-1.166	0.249
Mother's education level (years)	7.83±4.65	7.03±3.93	0.714	0.479
Father's education level (years)	9±4.87	8.68±4.48	0.284	0.778

p<0.05; SD: Standard deviation.

changes, 37.5% moderate and 43.9% severe.

When the use of personal protective methods and equipment among the groups was examined, it was found that 27.8% of the participants in group 1 used only one protective method and equipment, and 72.2% used more than one. In group 2 it was found that 6% did not use any protective methods and equipment, 12.5% used only one protective method and equipment, and 81.5% used more than one.

While all patients in group 1 paid attention to social distance in their daily routine, 12.5% of the participants in the group 2 did not pay attention to social distance. When food storage status was evaluated among the two groups, it was found that 11,1% of the patients parents in the group 1 stored food for an incoming possible quarantine period, and this rate was 15,6% for group 2.

In group 1, the rate of those who used one of the news sources (radio, television, newspaper and internet / social media) during the pandemic period was 72.2% and the rate of those who used more than one news source was 27.8%. In group 2, this rates were 56.3%, 43.7%, respectively. When the groups' own isolation status was analyzed, it was seen that all patients in group 1 and 87.5% in group 2 did not go out of the house to provide their isolation, except for mandatory situations. There was no statistically significant difference between the groups in terms of personal hygiene changes, the use of protective methods and equipment, attention to social distance, food storage, use of news sources and providing their own isolation (p> 0.05).

There was no statistically significant difference between the groups in terms of depression, SoPH, PD, GAD, SAD, OCD subscales and total score of RCAD scored by children and their parents (p> 0.05) (Table 2 and Table 3).

When correlation analysis was evaluated, negative correlation was observed between change in personal hygiene level and children's RCADS SoPH scores, RCADS total anxiety and total scores (p<0.05). Also, a negative correlation was observed between use of personal protective methods and equipment and children' RCADS GAD scores (p<0.05). In addition, negative correlation was observed between isolation status of children and children's PD and OCD scores (p<0.05). All correlation analysis presented in Table 4.

Table 2. Childrens' RCADS Scores in study groups

Variables	Group 1 (n:6) Mean±SD	Group 2 (n:25) Mean±SD	Statistical Analyses	
			t	p
RCADS – Total	36.16±36.60	37.50±19.02	-0.126	0.901
RCADS - Total Anxiety	36±31.43	30.40±17.52	0.483	0.633
RCADS -Depression	8.66±7.60	7.70±5.63	0.348	0.731
RCADS - OCD	4.83±4.16	4.60±2.59	0.175	0.862

p<0.05; SD: Standard deviation; RCADS: Revised Children's Anxiety and Depression Scale, OCD: Obsessive compulsive disorder; RCADS Total: Revised Children's Anxiety and Depression Scale Total Score; RCADS – Total Anxiety: Revised Children's Anxiety and Depression Scale Total Anxiety Score.

Table 3. Parents' RCADS Scores in Study Groups.

Variables	Group 1 (n:13) Mean±SD	Group 2 (n:32) Mean±SD	Statistical Analyses	
			t	p
RCADS – Total	36.16±36.60	37.50±19.02	0.764	0.449
RCADS - Total Anxiety	36±31.43	30.40±17.52	0.746	0.326
RCADS -Depression	8.66±7.60	7.70±5.63	1.316	0.195
RCADS - OCD	4.83±4.16	4.60±2.59	1.159	0.253

p<0.05; RCADS: Revised Children's Anxiety and Depression Scale; OCD: Obsessive compulsive disorder; SoPh: Social Phobia; PD: Panic Disorder; GAD: Generalized Anxiety Disorder; SAD: Seperation Anxiety Disorder; D: Depression; OCD: Obsessive compulsive disorder; RCADS Total: Revised Children's Anxiety and Depression Scale Total Score; RCADS – A: Revised Children's Anxiety and Depression Scale Total Anxiety Score.

Table 4. Correlations of childrens' RCAS and other variables.

Variables	Personal Hygiene	Protective Methods	Isolation	Food Storage
RCADS - SoPh	**-0.356***	-0.122	-0.092	0.004
RCADS - PD	-0.254	-0.085	**-0.363***	0.022
RCADS - GAD	-0.288	-0.**422***	-0.254	-0.191
RCADS - SAD	-0.195	-0.127	-0.342	0.109
RCADS - D	-0.224	-0.180	-0.114	-0.114
RCADS - OCD	-0.264	-0.079	**-0.358***	0.061
RCADS - A	**-0.398***	-0.240	-0.335	-0.102
RCADS - Total	**-0.373***	-0.180	-0.261	-0.036

*Results written in bold in the table are statistically significant (p<0.05); RCADS: Revised Children's Anxiety and Depression Scale; OCD: Obsessive compulsive disorder; SoPh: Social Phobia; PD: Panic Disorder; GAD: Generalized Anxiety Disorder; SAD: Seperation Anxiety Disorder; D: Depression; OCD: Obsessive compulsive disorder; RCADS Total: Revised Children's Anxiety and Depression Scale Total Score; RCADS – A: Revised Children's Anxiety and Depression Scale Total Anxiety Score.

DISCUSSION AND CONCLUSION

There are few studies evaluating children's mental health during COVID-19 outbreak.[16] This study revealed that the use of personal protective equipment, level of personal hygiene, and compliance with social distance and isolation measures of parents reduced the signs of anxiety and depression in children.

The most common mental health problems seen during pandemics are anxiety and depression.[6,17,18] In the study conducted by Gao et al. the frequency of anxiety was reported as 22.6% and the frequency of anxiety coexistence as 19.4% in adults.[19] Conditions which affect the whole society, such as pandemics, can also have psychological effects even on people who have never been affected by the disease.[9] In our study, no statistically significant difference was found between the patients with and without COVID -19 symptoms in terms of mental health (p>0.05). The mild course of the outbreak in children may explain this finding.[2] The habituation created by the pandemic period in the society may also contribute to this similarity among the groups.

In the study of Roy et al., the rate of social distance, travel restriction, self-isolation and compliance with hygiene measures were reported as 80%.[6] In our study, the increment rates of personal hygiene levels were 83.3% in the group with COVID-19 symptoms and 84.4% in the group without symptoms. Compliance of social distance and ensuring own isolation rates were also high in both groups of our study. The fact that these results of our study are similar to that of Roy et al.[6] may be due to the strengthening communication in a globalized world which causes similar sensitivities about pandemics in many societies.

The rate of fuss shopping and food storing during the epidemic was reported as 1/3 in the study of Roy et al.[6] In our study, this rate was 11.1% in the group with COVID-19 symptoms and 15,6% in the group without symptoms. The reason for the low rate of food storing in our study may be due to cultural differences between nations and accessing to food is easier in our country.

In the study of Wang et al. it has been reported that 66.6% of the participants always wash their hands after touching the contaminated surfaces, 59.8% wear a mask continuously, 57.4% close their mouth during cough and sneeze, 56.8% constantly washed hands with soap.[20] In our study, the increased rates of consistency to hygiene rules since the pandemic began were 83.3% and 84.4% in the group with symptoms and group without symptoms, respective-

ly. The use of personal protective equipment were higher as 100% and 94% in both groups, respectively. The first COVID-19 cases in our country were seen on March 10th. The pandemic was declared by the WHO on 11th March. The study of Wang et al. was published before the disease was declared as pandemic. Increased attention to hygiene rules and usage of protective equipment after pandemic was declared may explain our higher rates.

It has been reported in the literature that quarantine and social distance measures increase depression and anxiety levels.[4,11,12] In contrast, a study reported that preventive measures have positive effects on mental health.[20] In our study, a negative correlation was found between compliance of social distance and OCD and PD scores ($p<0.05$). In addition, a negative correlation was found between personal hygiene levels and SoPH and total anxiety scores and a negative correlation between GAD and the use of personal protective equipment ($p<0.05$). Belief that compliance of social distance protects against disease can lead to low anxiety scores. Also, higher levels of parents' attention to social distance, compilance of the hygiene rules and measures may contribute to reducing children's anxiety scores.

In conclusion, higher levels of parent's usage of personal protective equipment, level of personal hygiene, compliance with social distance and isolation measures reduce the anxiety and depression scores of their children. Parents have a great responsibility to protect the mental health of their children during the pandemic periods. To ensure this, it is important to pay attention to protective procedures.

There are some limitations in our study. Lack of clinical interviews and self-report scales to determine the mental problems of patients, the cross-sectional type of the study and the low number of samples are main limitations of our study. More randomized controlled studies are required in this topic to be prepared for possible future pandemics.

Ethics Committee Approval: Our study was approved by the Necmettin Erbakan University Ethics Committee (Date: 27/04/2020, Decision no:2020/2451).

Conflict of Interest: No conflict of interest was declared by the authors.

Author Contributions: Concept – AOK, NU; Supervision – FA, AY, OFA, IR; Materials – AOK, NU; Data Collection and/or Processing – AOK, OMA; Analysis and/ or Interpretation AOK, NU, FA; Writing –AOK, NU.

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