

Evaluation of Psychiatric Symptoms in 2-5 Years Old Children Who Are Followed and Treated with the Diagnosis of Wheezing during the COVID-19 Pandemic and Depression, Anxiety, and Stress Levels of Mothers

COVID-19 Pandemisi Döneminde Hışıltılı Çocuk Tanısıyla Takip ve Tedavi Edilen 2-5 Yaş Grubu Çocuklarda Psikiyatrik Belirtiler ve Annelerin Depresyon, Kaygı ve Stres Düzeylerinin Değerlendirilmesi

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ABSTRACT

Objective: The impact of COVID-19 on the mental health of children and adults is a candidate to be one of the most current issues in healthcare in the near future. This study aimed to determine the clinical course of patients diagnosed with wheezing, to make emotional, behavioral, social, and psychiatric evaluations, and to investigate the possible effect of the pandemic on disease follow-up and treatment by evaluating the psychiatric conditions of their mothers.

Material and Methods: The study included 58 patients diagnosed with a wheezy infant aged 2-5 years. Data regarding the sociodemographic characteristics and wheezing history of the patients were recorded. 'Test for Respiratory and Asthma Control in Kids (TRACK)' was applied to evaluate their current clinical condition. For psychiatric evaluation, the 'Strengths and Difficulties Questionnaires (SDQ)' was applied to the patients, and the 'Depression Anxiety Stress Scale 21 (DASS 21)' and 'The Brief Resilience Scale (BRS)' were administered to their mothers.

Results: In our study, it was observed that our patients experienced emotional, behavioral, peer, and social problems at varying rates (17-43%) during the pandemic period. It was especially noteworthy that emotional problems were seen more frequently in girls. It has been shown that there is a positive relationship between depression scores in mothers and SDQ Total Scores of their children. On the other hand, it was observed that current disease control status, hospitalization history, and whether or not being symptomatic during the pandemic period did not contribute to mental impairment in mothers.

Conclusion: The detection of high overall difficulty scores in children of mothers with high depression scores indicates that there is a need to evaluate maternal and child mental health together. Psychological influence is multifactorial and varies between societies. There is a need for studies on a larger scale that take familial and individual variables into account.

Key Words: Children, COVID-19, Mental health



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ÖZ

Amaç: COVID-19'un çocukların ve yetişkinlerin ruh sağlığı üzerindeki etkisi, yakın gelecekte sağlık hizmetlerinde en güncel sorunlardan biri olmaya adaydır. Bu çalışma ile hışıltılı çocuk tanılı hastaların pandemi dönemindeki klinik seyirlerini belirlemek, duygusal, davranışsal, sosyal ve psikiyatrik değerlendirmelerini yapmak, ayrıca annelerinin de psikiyatrik durumlarını değerlendirerek pandeminin hastalık takip ve tedavisi üzerine olan olası etkisinin araştırmak amaçlanmıştır.

Gereç ve Yöntemler: Çalışmaya 2-5 yaş arası 58 hışıltılı çocuk tanılı hasta dahil edildi. Hastaların sosyodemografik özellikleri ve hışıltılı geçmişlerine ait veriler kaydedildi. Güncel klinik durumlarını değerlendirmek üzere Çocuklar İçin Solunum ve Astım Kontrol Testi uygulandı. Psikiyatrik değerlendirme amacıyla hastalara Güçler ve Güçlükler Anketi (SDQ), annelerine ise Depresyon Anksiyete Stres Ölçeği 21 (DASS 21) ve Kısa Psikolojik Sağlık Testi uygulandı.

Bulgular: Çalışmamızda pandemi döneminde hastalarımızın değişen oranlarda (%17-43) duygusal, davranış, hiperaktivite, akran ve sosyal açılardan problem yaşadığı gözlemlenmiştir. Kız çocuklarda duygusal problemlerin daha sık görülmesi özellikle dikkat çekmiştir. Annelerdeki depresyon skorları ile çocuklarının SDQ toplam skorları arasında pozitif ilişki olduğu gösterilmiştir. Buna karşılık güncel hastalık kontrol durumunun, hospitalizasyon öyküsünün ve pandemi döneminde semptomatik olup olmamanın annelerde mental etkilenmeye katkıda bulunmadığı gözlenmiştir.

Sonuç: Depresyon puanı yüksek olan annelerin çocuklarında genel güçlük puanlarının yüksek saptanması, anne ve çocuk ruh sağlığının birlikte değerlendirilmesine ihtiyaç olduğunu göstermektedir. Psikolojik etki çok faktörlüdür ve toplumlar arasında farklılık gösterir. Bu konuda ailesel ve bireysel değişkenlerin göz önüne alındığı daha büyük ölçekli gelecek çalışmalara ihtiyaç vardır.

Anahtar Sözcükler: Çocuklar, COVID-19, Ruh sağlığı

INTRODUCTION

Wheezing is an expiratory high-vibration sound caused by turbulent airflow passing through bronchi that are narrowed due to inflammation, bronchospasm, and mucosal edema. It is one of the most common respiratory symptoms in childhood and is a major reason for presenting to the hospital, especially in early childhood (1). Wheezing that begins in the early stages of life is associated with a group of diseases that have heterogeneous phenotypes and are different in terms of pathophysiology. It can start and end as a single attack, be prolonged, or be seen as recurrent attacks. The term "wheezing child" is used for children whose wheezing lasts longer than a month and/or recurs three or more times. While most cases are due to viral lower respiratory tract infections, some have an atopic background and are among the first symptoms of childhood asthma (2). Although this clinical picture can be controlled with appropriate treatments, attacks, and loss of control can occur, especially when treatment compliance diminishes and there are intervening triggers. Recent studies have shown that wheezing can have negative effects on the quality of life and mental health of both patients and their families due to the need for regular outpatient check-ups, regular medication use, and the need for emergency services when an attack occurs (3).

Coronavirus disease (COVID-19) is a serious medical condition caused by the novel severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). It emerged as a case of treatment-resistant pneumonia of unknown cause in the Chinese city of Wuhan, Hubei province, in December 2019 (4). The first case in Turkey was reported on March 11. It began to impact the population, and a series of public health measures, including social isolation, were declared to prevent it from progressing. The pandemic period has affected all chronic patient groups as well as the population of recurrent wheezing patients and their families. It was observed that patients and their parents

experienced concerns about issues like experiencing COVID-19 more severely due to their existing diseases or the medication they used and the risk of SARS-CoV-2 transmission during hospital admissions. The intense experience of emotions, such as anxiety of contracting the disease, fear of death, and feeling helpless, can have mental health consequences, such as depression, sleep and appetite problems, excessive anxiety and panic, inability to concentrate, and hopelessness. These factors can lead to mental and physical health problems in patients and caregivers. Psychiatric symptoms may develop in patients who do not have any prior psychiatric diseases, and it is possible for patients with existing psychiatric diseases to experience disease exacerbations (5–8).

This study aimed to record the demographic and clinical characteristics of patients diagnosed with wheezing who were followed and treated in the Pediatric Allergy and Immunology Clinic and to make emotional, behavioral, social, and psychiatric evaluations. A further aim was to assess the psychiatric conditions of their mothers and thus investigate the possible effect of the pandemic on follow-up and treatment.

MATERIALS and METHODS

The study was carried out in Ankara City Hospital's Pediatric Allergy and Immunology Clinic between June 1, 2020 (approximately two and a half months after the first case of COVID-19 was reported in Turkey) and September 1, 2020. All Patients between two and five years of age who were administered to our outpatient clinic (diagnosed with a wheezy infant in our clinic and followed up for at least one year) during the study period were included in the study.

The study was approved by the T.R. Ministry of Health and Ankara City Hospital Clinical Research Ethics Committee (decision number: E1-20-879). Written informed consent

was obtained from the parents before the study began. The study was carried out in accordance with the principles of the Declaration of Helsinki.

All participants were evaluated with a study questionnaire consisting of three sections. This questionnaire included a sociodemographic information form prepared by the authors, a clinical evaluation form, and a psychiatric evaluation section consisting of standard scales.

1. Sociodemographic Information Form: It included sociodemographic characteristics, such as age, gender, personal background, and family history, as well as data related to the history of wheezing (age at first episode, total number of episodes, hospital admission history, and medication information).

2. Clinical Evaluation Form: This included the Test for Respiratory and Asthma Control in Kids (TRACK) administered to the patients to determine their current level of disease control. This test includes five items, including frequency of symptoms in the last four weeks, night awakenings due to symptoms, activity limitation, frequency of bronchodilator medication in the last three months, and use of oral corticosteroids in the last year. It is designed for children under five years of age. The score for each item is between 0 and 20, and the total score ranges from 0 to 100. Eighty points and above indicates good disease control, while less than 80 points are interpreted as the loss of control. The validity and reliability studies of the Turkish version of the TRACK developed by Murphy et al. (9) was conducted by Büyüktiryaki et al.(10).

3. Evaluation of Psychiatric Symptoms: The Strengths and Difficulties Questionnaire (SDQ) for patients aged two to four was used for the two- to four-year-old patients, and the SDQ for patients aged five to 17 was used for the five-year-old patients. The Depression Anxiety Stress Scale 21 (DASS-21) and the Brief Resilience Scale (BRS) were administered to the mothers.

The SDQ, which is used to screen mental health problems in children and adolescents, was developed by Robert Goodman in 1997 (11). The validity and reliability studies of the Turkish version were performed by Güvenir et al (12). The SDQ contains 25 questions, some of which question positive behavior characteristics, while others ask about negative behavior characteristics. These questions are grouped under five subheadings: conduct problems, hyperactivity/inattention, emotional symptoms, peer problems, and prosocial behaviors. Each heading is evaluated within itself, and the sum of the first four headings yields the total difficulties score.

The BRS was developed by Smith et al. (13) in 2008 to measure resilience. Adapted to Turkish by Doğan et al., it is a five-point Likert-type scale measurement tool consisting of six items (14). Their findings show that the scale is a valid and

reliable measurement tool that can be used in Turkish culture. Receiving high scores from the scale indicates that there is a high predisposition to resilience.

The Depression Anxiety Stress Scale (DASS) developed by Lovibond SH and Lovibond PF in 1995 consists of 42 items (15). Brown et al. (16) published a short form called DASS-21. The 21-item short-form was used in this study. The Turkish validity and reliability study of DASS-21 was performed by Yılmaz et al. (17) in 2017. DASS-21 has seven questions prepared to measure each of the dimensions of depression, anxiety, and stress. It uses a four-point Likert-type scale that is coded as 0 “not suitable for me”, 1 “it suits me a little”, 2 “generally suitable for me”, and 3 “completely suitable for me”. The higher the score, the greater the emotional distress the person is experiencing.

Statistical analyses

Statistical analyses were performed using IBM SPSS Statistics version 22.0 statistical software package for Windows (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as the mean and standard deviation for data with normal distribution and as the median and interquartile range (IQR, 25th–75th percentile) for non-normally distributed data. The chi-square test was used to compare nonparametric data; the Mann–Whitney U test was used for comparisons among non-normally distributed continuous variables and independent samples t-test for normally distributed continuous variables. One-way ANOVA was used to compare normally distributed parameters among the TRACT groups (full control, partial control, uncontrolled). Kruskal-Wallis Tests were conducted to compare non-normally distributed parameters among the TRACT groups. While investigating the associations between non-normally distributed variables, the correlation coefficients and their significance were calculated using the Spearman test. A value of $p < 0.05$ was considered statistically significant.

RESULTS

Of the 58 patients participating in the study, 34 (58.6%) were boys and 24 (41.4%) were girls. Their ages ranged from 24 to 60 months (median 48.0, IQR = 19). When examined in terms of wheezing history, the patients had at least one (3.4%) and at most ten (10.3%) attacks. When evaluated in terms of hospitalization history, 27 (46.6%) had been hospitalized at least once, and three patients (5.2%) had to be hospitalized in the intensive care unit during an attack. The demographic characteristics and clinical data of wheezing history are summarized in Table I.

When questioned about symptoms during the pandemic period, at least one of the symptoms that could be confused with COVID-19, such as cough and shortness of breath, was seen in 22 patients (37.9%), 37.9% presented to the outpatient clinic, and 29.3% presented to the emergency department. Ten

Table I: Demographic characteristics and clinical data of wheezing history.

Parameter	n (%)
Gender	
Female	24 (41.4)
Male	34 (58.6)
Week of birth	
<37 week	15 (25.9)
37-42 week	39 (67.2)
>42 week	4 (6.9)
Type of birth	
Vaginal delivery	28 (48.3)
C/S	30 (51.7)
Precense of additional disease	12 (20.7)
Precense of additional allergic diseases (atopic dermatitis, allergic rhinitis, food allergy etc...)	12 (20.7)
Precense of familial allergic disease	18 (31)
Precense of familial psychiatric disease	2 (3.4)
Family type	
Nuclear	42 (72.4)
Extended	16 (27.6)
Socioeconomic status	
Low	8 (13.8)
Middle	49 (84.5)
High	1 (1.7)
Garden house	22 (37.9)
House with balcony	50 (86.2)
Place	
Urban area	52 (89.7)
Rural area	6 (10.3)
Job change during the pandemic	15 (25.9)
Income reduction during the pandemic	29 (50)
Clinical data of wheezing history	
Total number of attack	
1-3 attack	36 (62)
4-6 attack	12 (20.6)
≥7 attack	10 (17.2)
Hospitalization history	27 (46.6)
PICU hospitalization	3 (5.2)
Medication used in the last attack	
Only SABA	17 (29.3)
SABA and inhaled corticosteroids	19 (32.8)
Systemic corticosteroids	5 (8.6)

PICU: Pediatric intensive care unit, **SABA:** Short acting beta2-agonist

(17.2%) patients had a COVID-19 Polymerase Chain Reaction (PCR) test during their admission, and three patients' tests were positive. The clinical data of the patients regarding the pandemic period are summarized in Table II.

TRACK was used to determine the current disease control status. The TRACK score was 80 and above in 36 of the patients (62.1%), which was defined as complete control.

Considering the DASS-21 that was administered to the mothers, according to the cut-off point, five mothers (8.6%) had mild-moderate depression, six (10.3%) had mild-moderate

Table II: Clinical status of patients during the pandemic period.

Parameter	n (%)
Had any symptoms that suggest Covid-19?	yes 22 (37.9)
Had any outpatient clinic application during the pandemic period?	yes 22 (37.9)
Had any emergency service application during the pandemic period?	yes 17 (29.3)
Had any telemedicine interview during the pandemic period?	yes 8 (13.8)
Used SABA during the pandemic period?	yes 8 (13.8)
Used oral corticosteroids during the pandemic period?	yes 4 (6.9)
Used antibiotics during the pandemic period?	yes 26 (44.8)
Any change in the maintenance treatment dose during the pandemic period?	yes 6 (10.3)
Any change in the maintenance treatment dose during the pandemic period?	yes 5 (8.6)
Has your child been tested for COVID-19 during the pandemic period?	yes 10 (17.2)
Have you been tested for COVID-19 during the pandemic period?	yes 7 (12.1)
Have you had contact with an individual diagnosed with COVID-19 during the pandemic period?	yes 4 (6.9)

anxiety, two (3.4%) had severe anxiety, and two (3.4%) had mild stress symptoms.

Comparing the children with wheezing according to the control level determined by the TRACK score, there was no statistically significant difference between the groups in terms of DASS-21 depression, anxiety, and stress scores ($p > 0.05$). No correlation was found between TRACK scores in patients and DASS-21 subscores in mothers.

When the BRS data were examined, 38 mothers (65.5%) had moderate resilience scores, and two (3.4%) had low resilience scores. According to the control levels based on the TRACK score, there was no statistically significant difference between the groups in terms of BRS results. There was no correlation between the mothers' resilience scores and the patients' TRACK scores.

The distribution of the SDQ data applied to evaluate the patients' psychiatric symptoms according to the cut-off points is shown in Figure 1. When the SDQ scores were analyzed according to both TRACK control levels, there was no statistically significant difference in terms of SDQ total difficulties scores. There was no significant correlation between the TRACK score and the SDQ total difficulties score. When the SDQ subgroups were examined, no difference was found according to the TRACK control status. The TRACK score did not correlate with the scores of the SDQ subgroups.

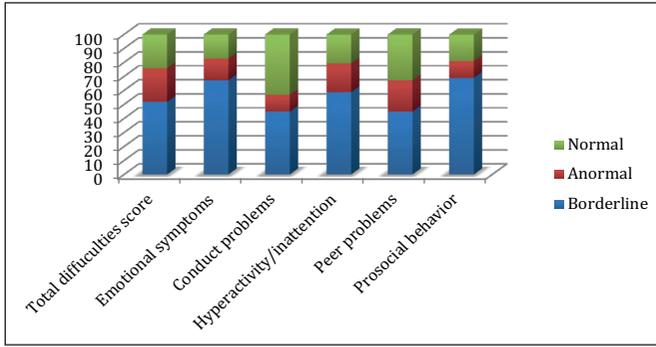


Figure I: Distribution of SDQ total difficulties score and subgroups by cut-off point.

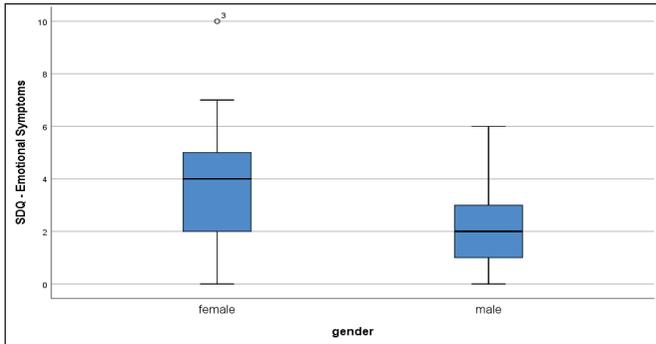


Figure II: The effect of gender on SDQ-emotional symptoms.

Looking at the effect of gender, no difference was observed in the DASS-21 scores of the mothers. Looking at the patients' SDQ data, among the SDQ subgroups in children, emotional symptoms were found to be higher in girls than in boys ($p = 0.008$) (Figure 2).

When the patients were evaluated in terms of a number of attacks, there was no correlation between DASS-21, BRS, and SDQ scores. Considering the effect of hospitalization history on psychiatric data, there was no significant difference in DASS-21, BRS, and SDQ total and subgroup scores. When the relationship between the patients' symptomatic status and the psychiatric evaluation data was evaluated, there was no statistically significant difference between DASS-21, BRS, and SDQ total and subgroup scores. When evaluated in terms of parameters that could affect psychiatric data, such as mother's educational status, socioeconomic status, and income reduction during the pandemic period, there was no significant difference between the groups. The data on the evaluation of the scales in terms of parameters that may be related are summarized in the Supplemental File.

When the correlation between the scales was examined, a strong positive correlation ($r = 0.348, p = 0.007$) was observed between DASS-21 depression and SDQ total difficulties scores (Figure 3). There was no correlation between DASS-21 anxiety and DASS-21 stress score and SDQ total difficulties score. There was also no correlation between SDQ and BRS scores. There was a moderate negative correlation between BRS and DASS-21 depression score ($r = 0.519, p < 0.001$), DASS-21

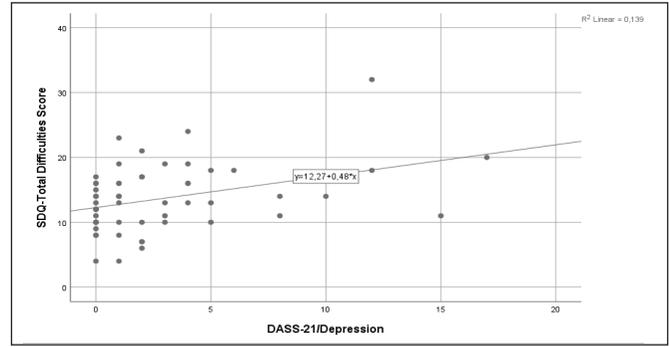


Figure III: Correlation between SDQ Total Difficulties Score and DASS-21/Depression.

anxiety score ($r = 0.417, p = 0.001$), and DASS-21 stress score ($r = 0.428, p = 0.001$).

DISCUSSION

Viral respiratory tract infections are the trigger for 85% of wheezing attacks in children. Since SARS-CoV-2 is a respiratory pathogen, it may not be easy to distinguish the symptoms that occur during a wheezing attack associated with COVID-19 from a wheezing attack due to another trigger. Dry cough and shortness of breath are among the most common symptoms during both wheezing episodes and COVID-19 infections.18 It was determined that about 40% of the patients in this study experienced at least one of these symptoms during the pandemic period and presented to the outpatient clinic or emergency department as a result.

There are currently insufficient data to indicate that COVID-19 is a risk factor for respiratory diseases like wheezing attacks or asthma or increased disease severity in asthma patients infected with SARS-CoV-2 (19,20). In this study, three patients were infected with COVID-19 and recovered with mild symptoms without any attacks or hospitalization.

It is known that epidemics harm mental health and psychological well-being and significantly increase psychiatric morbidity in the general population (21). This effect is more pronounced in adults with a history of chronic disease and their caregivers (22). There are fewer studies in the literature evaluating the effect of pandemics on mother-child mental health (23). Malkawi et al.(24) reported that they found mild depression, anxiety, and stress scores (median: 10/4/18, respectively) in mothers in their study that used the DASS-21 to evaluate the mental health of mothers with healthy children aged four to 18 years old. In the same study, it was emphasized that quarantine effects, such as lifestyle changes, the increased time required for child care at home, and domestic violence, maybe the cause of these difficulties and that providing psychological support to mothers should be a priority. In our study, the depression, anxiety, and stress levels of the mothers were evaluated with the same scale, and the median scores were much lower compared to the

study by Malkawi et al. (24) This may be explained by the fact that psychological effects occur as a result of more than one factor. Although mothers of two-to five-year-old patients with frequent hospital admissions and hospitalization history due to respiratory tract disease were included in this study, it was observed that current disease control status, hospitalization history, and the symptomatic status during the pandemic period did not contribute to mental health issues in mothers. This situation may be related to the fact that COVID-19 is less common in the pediatric population, and its course is mostly known to be mild by mothers (25).

Studies are evaluating the effect of the pandemic period on children's mental health from different perspectives, with different scales, and in different geographic locations. In a study investigating the effects of quarantines on mental health, it was reported that post-traumatic stress disorder developed in children at a rate of around 30%.²⁶ In a study involving children aged six to 12 in Brazil, the prevalence of anxiety was found to be higher (19.4%) during the COVID-19 pandemic compared to the pre-pandemic period (27). In a study in Italy in which the effect of quarantines on mother-child mental health was evaluated in healthy children aged two to five and their mothers, sleep disorders, boredom, and difficulty following daily routines were found in children, and impaired sleep quality was observed in mothers. Also, it was emphasized that an increase was observed in emotional symptoms and conduct/hyperactivity/inattention problems compared to before the quarantine period according to the SDQ scale (5). In another study conducted in China in which children aged three to 18 were included, it was reported that psychological and behavioral problems such as distraction, irritability, and fear of asking questions about the pandemic were common (28). In another study involving children aged three to 18 from three different European countries, more behavioral problems in Spain, significant mood changes in Portugal, and lower anxiety, sleep, and nutrition problems in Italy were found compared to the others. It was emphasized that the difference was a result of both individual and familial factors (29). When we looked at the SDQ total and subgroup scores in our study according to the cut-off point, it was observed that our patients experienced emotional, conduct, hyperactivity, peer, and prosocial problems at varying rates (17–43%). It is particularly striking that emotional problems were more common in girls. This finding supports the results of a study that found that internalizing problems such as depression and anxiety were more common in girls (30–32). In our study, a positive relationship was demonstrated between the depression scores of mothers and the SDQ total difficulties scores of their children. The relationship of internalization, externalization and general psychopathology in children with maternal depression is a recurrent finding in many studies (33). Maternal depression is considered an important risk factor for childhood mental illness. Therefore, it would be useful to consider the psychiatric problems of mothers along with their children during the follow-up process of these children.

The strengths of our study are that the study group included preschool-age children with respiratory tract disease who need more maternal attention, and the effect of the pandemic on mother and child mental health was evaluated together. The low number of participants and the absence of a control group consisting of healthy children and their mothers can be seen as limitations, but this is because this study was conducted face-to-face, and admissions to hospitals and pediatric allergy clinics decreased in general during the pandemic period.

In conclusion, during the pandemic period, the necessary precautions were taken in our clinic, the follow-up of the wheezy infant patient group continued, and there were no patients who were infected with COVID-19 due to hospital admission. It was observed that patients who tested positive for COVID-19 during the pandemic period recovered with mild symptoms.

As a result of the evaluation of our patients and their mothers in terms of psychiatric symptoms, the fact that the total difficulties scores of the children of mothers with high depression scores were increased highlights the importance of evaluating maternal and child mental health together. Future studies on a larger scale that take family and individual variables into account are needed to evaluate the mental health of children and their mothers.

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Supplemental file: Evaluation of scales in terms of parameters that may be related.

	DASS-21			BRS Mean \pm SS (Min-Max)	SDQ					
	Median (min-max)				Total difficulties score Mean (min-max)	Emotional symptoms Median (min-max)	Conduct problems Mean \pm SS (Min-Max)	Hyperactivity inattention Mean \pm SS (Min-Max)	Peer problems Median (min-max)	Prosocial behavior Mean \pm SS (Min-Max)
	Depression	Anxiety	Stress							
TRACK										
≥ 80	1 (0-15)	2 (0-16)	1 (0-17)	21.1 \pm 0.7 (11-30)	13.2 \pm 0.7 (4-32)	2 (0-10)	2.9 \pm 0.2 (0-7)	4.8 \pm 0.3 (0-10)	3 (0-8)	6.8 \pm 0.3 (2-12)
< 80	1 (0-17) p=0.511	2.5 (0-15) p=0.469	2 (0-16) p=0.082	20.4 \pm 1.0 (11-30) p=0.561	14.1 \pm 1.1 (4-24) p=0.552	2.5 (0-6) p=0.642	3.3 \pm 0.3 (1-7) p=0.394	5.0 \pm 0.4 (1-9) p=0.717	3 (1-8) p=0.731	5.9 \pm 0.4 (2-10) p=0.128
Hospitalization history										
Yes	2 (0-17)	2 (0-14)	1 (0-10)	20.5 \pm 0.5 (16-29)	12.5 \pm 0.7 (6-24)	2 (0-5)	2.6 \pm 0.2 (0-5)	4.9 \pm 0.4 (0-9)	3 (0-5)	6.3 \pm 0.3 (4-9)
No	1 (0-12) p=0.786	2 (0-16) p=0.924	1 (0-17) p=0.678	21.1 \pm 1.0 (11-30) p=0.585	14.5 \pm 1.0 (4-32) p=0.139	3 (0-10) p=0.115	3.4 \pm 0.3 (1-7) p=0.062	4.8 \pm 0.3 (1-10) p=0.872	3 (1-8) p=0.720	6.4 \pm 0.4 (2-12) p=0.556
Symptoms during pandemic										
Yes	1 (0-17)	3 (0-15)	2 (0-16)	20.8 \pm 1.2 (11-30)	14.6 \pm 1.1 (4-24)	2.5 (0-6)	3.6 \pm 0.3 (1-17)	5.3 \pm 0.5 (1-10)	1 (1-8)	6.8 \pm 0.5 (2-10)
No	1 (0-15) p=0.200	1 (0-16) p=0.159	1 (0-17) p=0.165	20.8 \pm 0.6 (11-30) p=0.585	12.9 \pm 0.7 (4-32) p=0.139	2 (0-10) p=0.468	2.7 \pm 0.2 (0-7) p=0.062	4.6 \pm 0.3 (0-8) p=0.872	3 (0-8) p=0.492	6.3 \pm 0.3 (2-12) p=0.556
Gender										
Female	2 (0-15)	2.5 (0-16)	1.5 (0-17)	21.2 \pm 1.0 (11-30)	14.2 \pm 1.2 (6-32)	4 (0-10)	2.9 \pm 0.3 (0-7)	5.0 \pm 0.4 (1-10)	2 (0-8)	6.7 \pm 0.4 (2-12)
Male	1 (0-17) p=0.343	2 (0-5) p=0.386	1 (0-16) p=0.193	20.5 \pm 0.7 (11-29) p=0.554	13.1 \pm 0.7 (4-23) p=0.415	2 (0-6) p=0.008*	3.1 \pm 0.2 (0-7) p=0.614	4.3 \pm 0.3 (0-9) p=0.799	3 (1-8) p=0.513	6.3 \pm 0.3 (2-10) p=0.502
Education status of mother										
Elementary	1 (0-8)	2 (0-10)	1 (0-9)	20.1 \pm 0.8 (14-30)	13.2 \pm 0.7 (7-21)	2 (1-7)	3.0 \pm 0.2 (0-5)	4.5 \pm 0.3 (1-8)	3 (0-8)	6.1 \pm 0.3 (3-12)
High school	1 (0-15)	3 (0-14)	1 (0-12)	21.0 \pm 0.9 (16-29)	12.9 \pm 1.3 (4-24)	2 (0-6)	2.8 \pm 0.4 (0-7)	4.8 \pm 0.5 (0-9)	2 (1-5)	6.7 \pm 0.5 (2-10)
University	2.5 (0-17) p=0.548	3 (0-16) p=0.582	2 (0-17) p=0.551	21.8 \pm 1.4 (11-30) p=0.512	14.8 \pm 1.5 (4-32) p=0.523	2.5 (0-10) p=0.903	3.3 \pm 0.4 (1-7) p=0.750	5.6 \pm 0.6 (1-10) p=0.270	3 (1-8) p=0.986	6.8 \pm 0.5 (2-10) p=0.553
Income reduction during pandemic										
Yes	1 (0-17)	2 (0-11)	1 (0-11)	20.7 \pm 0.8 (14-30)	12.7 \pm 0.8 (4-24)	2 (0-5)	2.8 \pm 0.3 (0-6)	4.7 \pm 0.4 (0-10)	3 (0-8)	6.5 \pm 0.4 (2-12)
No	1.5 (0-15) p=0.889	2 (0-16) p=0.871	2 (0-16) p=0.488	21.0 \pm 0.9 (11-30) p=0.846	14.5 \pm 1.0 (4-32) p=0.185	2.5 (0-10) p=0.441	3.3 \pm 0.2 (1-7) p=0.220	5.1 \pm 0.36 (1-9) p=0.585	3 (1-8) p=0.352	6.5 \pm 0.3 (2-10) p=0.977

*p < 0.05, **TRACK:** Test for respiratory and asthma control in kids, **DASS-21:** Depression anxiety stress scale-21, **BRS:** Brief Resilience Scale, **SDQ:** Strengths and difficulties questionnaire, **SS:** standart deviation