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Anger and aggression in children aged 6-12 in lockdowns during the COVID-19 pandemic in Turkey

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ABSTRACT

Objective: This study investigated the relationship between parents' emotional states and the anger and aggression levels of their children between the ages of 6-12 who were in social isolation during the coronavirus disease 2019 (COVID-19) pandemic in Turkey.

Materials and Methods: The study adopted a cross-sectional and descriptive design. The sample consisted of 261 parents. Data were collected online during lockdowns between May and September 2020 due to the COVID-19 pandemic.

Results: More than half of the participants reported that they were unhappy (53.2%), sad (63.2%), and worried about the future due to the COVID-19 pandemic (70.8%). Less than a quarter of the participants were angry (17.6%). Children living in districts had significantly higher verbal aggression scores than those living in city centers ($p < 0.05$). Children with relatives who tested positive for COVID-19 had significantly higher verbal aggression scores than those without ($p < 0.05$).

Conclusion: Although, preventive measures in response to the COVID-19 pandemic prevent the spread of the virus and allow parents and children to spend time together, they also adversely affect mental health.

Keywords: COVID-19, Pandemic, Social isolation, Parent-child relationship

1. INTRODUCTION

A pandemic is a common phenomenon that spreads in a wide range of areas and affects more than one country or continent [1]. The coronavirus disease 2019 (COVID-19) quickly spread all over the world, killing millions of people. Governments took preventive measures (school closures, online learning, lockdowns, social isolation, etc.) to prevent the spread of the virus. However, these measures affected people physically, psychologically, socially, and economically [1-3]. It is considered normal for children to experience concern, anxiety, and fear for themselves and their families and friends due to the COVID-19 pandemic because they cannot understand the process on their own [4, 5]. Children who cannot go out and are kept away from their teachers and friends are alienated from their social circles in crises like COVID-19. They need to see, play, and communicate with their friends. Children who are not socially supported feel anger, worthlessness, fear, sadness, guilt, and anxiety during the COVID-19 pandemic and project these feelings onto other people [5,6]. Children may act out anger by crying, blaming, and resenting their parents, hitting siblings and other family members, or throwing their toys because they are not yet fully developed cognitively, socially, and emotionally [7]. Anger and aggression affect many areas of life and impair functioning [8]. Anger is a negative emotional state which triggers aggression [1,9]. Anger is defined as a hidden or disguised emotion. However, it is also defined as an expression of aggression, which can occur in the form of passive aggression when it is suppressed, and that occurs as even more severe violence [1,7,9].

Although, everyone knows what aggression is, it is not easy to define. Aggression can also be indirect, such as physical violence, abusive or threatening words and behavior, or intentional social exclusion [10]. Even if anger and aggression among children are the product of a developmental process, they can turn into permanent behavior [8,9]. Since, children cannot manage their emotions in such situations; it is difficult to deal

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with anger [10]. Although, children of developmental age often express anger and frustration as tantrums, the intensity and number of tantrums may tend to decrease with age [9]. Many biological, psychological, and social factors affect aggression in children [11]. Social factors triggering aggressive behaviors are poor peer relationships, exposure to violence or bullying, low school success, poor living conditions, alcohol and substance abuse, domestic violence, and economic problems [11-13]. The significant risk factors for aggression are family, intelligence, personality traits, school, peer group, economic status, cultural environment, learning experiences, and communication and interaction [11-13].

Turkey underwent a process of social isolation due to the COVID-19 pandemic. It caused serious problems, which were hard for children to cope with. Inhibitions lead to aggressive behavior in children. Social isolation also prevents children from meeting some of their needs [13,15]. Parents are also adversely affected by social isolation, which may aggravate their children's moods. Therefore, it can be challenging for both parents and children to manage the process and cope with the situation. Parents in panic can cause their children to experience anxiety. Although, it is necessary to control our anxiety, it may not always be easy. Research shows that adults/parents have different emotional situations caused by many factors during the pandemic.

Brooks et al., found that people experienced post-traumatic stress disorder (PTSD), anxiety, anger, depression, anxiety-related insomnia, and frustration during the COVID-19 pandemic [15]. Kundu and Bhowmik also reported that adults had stress, anger, and fear during the COVID-19 pandemic [16].

Parents who spend the whole day at home during the pandemic will likely project their feelings on their children [17]. Therefore, parents' attitudes affect their children's social behavior [18]. In other words, children can suffer more permanent damage due to the pandemic and their parents' reactions [19].

Parents help their children go through the pandemic more easily. However, this process positively or negatively affects both parents and children. In addition, school closures, lockdowns, and changes in daily routines cause sudden emotional changes and disturb sleep patterns in children [1,17,19]. Therefore, this study had two objectives: (1) investigating the relationship between parents' emotional states and their children's aggression and (2) determining the anger and aggression levels of children between the ages of 6-12 who were in social isolation during the COVID-19 pandemic in Turkey.

2. MATERIALS and METHODS

Design

The study adopted a cross-sectional and descriptive design.

Participants and Methods

The study was carried out during the curfew in the early days of the pandemic. For this reason, data were collected through social media using haphazard sampling and snowball sampling method. Some form of connection is made to one of the units in the universe to make a snowball sampling. Then, with the help of the contact person, another person is contacted, and then another in the same way. Thus, the sample is enlarged in a chain manner, in the form of a sample snowball effect [20]. Data were collected online. Parents who have children between 6 and 12 years of age were included in the study. The evaluation was conducted by a single parent. While determining the sample, the results of the previous studies in the literature and the generally accepted "effect sizes" in the related field were used [21]. Cohen's effect size was taken into account to determine the number of samples, and a sample size of 0.80 test power was calculated using G.Power – 3.1.6 program [21]. As a result of power analysis, it was determined that at the α=0.05 level, 95% trust and 80% test power should be reached to at least 235 parents. The data were collected during the COVID-19 pandemic. Therefore, the researchers aimed to recruit 260 participants to avoid missing data.

Inclusion Criteria

The study was conducted during social isolation and restrictions due to the COVID-19 pandemic. The study investigated the relationship between parents' emotions and their children's aggression and anger during social isolation. The sample consisted of 261 parents with children between 6-12. Participation was voluntary.

Exclusion Criteria

The exclusion criteria were not having children between the ages of 6-12 and not having an internet connection.

Data Collection Tools

The data were collected using an information form and the Children's Aggression Scale-Parent Version (CAS-P) [23].

Information Form

The information form was based on a literature review conducted by the researchers. The form consisted of 24 items on social demographic characteristics (n=10), social isolation (n=10), and the effect of social isolation on children and parents (n=4) [3-5, 8, 17, 26].

Children's Aggression Scale-Parent Version (CAS-P)

The Children's Aggression Scale-Parent Version (CAS-P) was developed by Halperin et al. and adapted to Turkish by Ercan et al. [22, 23]. The scale measures the severity, frequency, prevalence, and diversity of children's aggressive behavior. The Turkish version consists of 33 items and five subscales: verbal aggression (α=0.89), aggression toward objects and animals (α=0.55), provoked physical aggression (α=0.75), unprovoked physical aggression (α=0.74), and total family aggression (α=0.93).

Data Collection

Participants filled out the forms to evaluate their children's changing behaviors during social isolation. Each participant used her active e-mail address to log into the system and filled out the form only once. It took each participant 8-10 minutes to fill out the form.

Ethical Considerations

The study was approved by the ethics committee of Ankara Medipol University (Date: 29.04.2020 and No: 74791132-109/322). Authorization was obtained from the authors who developed the CAS-P. All mothers were briefed about the research purpose and procedure. Those who agreed to participate in the study clicked the approval button.

Statistical Analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS, v. 25) at a significance level of .05. Frequency, percentage, mean, and standard error were used for descriptive data. The Shapiro-Wilk test was used for normality testing. Independent groups t-test was used for normally distributed data, while the Mann-Whitney U test was used for nonnormally distributed data. The Kruskal-Wallis test was used to compare more than two independent variables that were nonnormally distributed, while the One-Way ANOVA test was used for variables that were normally distributed.

3. RESULTS

Tables I and II show all participants' sociodemographic characteristics. More than half of the participants stated that their children's sleep patterns changed during social isolation (64.7%). Less than half of the participants reported that their children had difficulty falling asleep (42.9%). Most participants noted that their children had no problem maintaining sleep when they fell asleep (97.8%) (Table II). More than a quarter of the participants remarked that their children felt very nervous and anxious some days (37.9%). Less than half of the participants stated that their children never felt uneasy (38.3%). Less than half of the participants noted that their children got angry easily some days (34.8%). More than a quarter of the participants reported that their children were less interested in doing activities (32.1%).

Children living in districts had a significantly higher verbal aggression score than those living in city centers ($p < 0.05$). Children with relatives who tested positive for COVID-19 had a significantly higher mean verbal aggression score than those without ($p < 0.05$). Children who were always angry about staying at home due to social isolation had significantly higher mean verbal aggression ($p < 0.001$) and general aggression scores ($p < 0.05$). Children who experienced fear due to social isolation had significantly higher mean general aggression and verbal aggression scores than those who did not experience fear due to social isolation ($p < 0.05$). Children who experienced sadness due to social isolation had a significantly higher mean verbal aggression score than those who did not ($p < 0.05$). Finally, children who were concerned about the future due to social isolation had significantly higher mean verbal aggression and general aggression scores than those who were not ($p < 0.05$; Table 1).

Table I. *Relationship between characteristics of parents and aggression scale score means*

Variables (n=261; 100%)	The parent form of aggression scale for children (α=0.92)			
	Verbal Aggression Sub Dimension (α=0.87) (Mean ± SEM)	P value*	General (Mean ± SEM)	P value*
Number of children 1 (n=68; 26.1%) 2 (n=124; 47.5%) ≥3 (n=69; 26.4%)	 0.57 ± 0.09 0.61 ± 0.06 0.54 ± 0.05	0.604	 0.29 ± 0.05 0.33 ± 0.03 0.28 ± 0.03	0.373
Age (Child) 6-8 (n=49; 18.7%) 9-12 (n=212; 81.3%)	 0.72 ± 0.1 0.55 ± 0.04	0.159	 0.38 ± 0.06 0.29 ± 0.02	0.235
Gender (Child) Female (n=128; 49%) Male (n=133; 51%)	 0.53 ± 0.05 0.63 ± 0.06	0.270	 0.28 ± 0.03 0.33 ± 0.03	0.895
Place of residence City (n=191; 73.1%) Town (n=70; 26.9%)	 0.54 ± 0.04 0.70 ± 0.08	0.010*	 0.29 ± 0.02 0.35 ± 0.05	0.081
COVID in familiy member Yes (n=23; 8.8%) No (n=238; 91.2%)	 1.03 ± 0.23 0.54 ± 0.03	0.033*	 0.55 ± 0.14 0.28 ± 0.02	0.107
Parent's unhappiness Yes (n=139; 53,2%) No (n=122 46,8%)	 0.66 ± 0.05 0.50 ± 0.05	0.026*	 0.36 ± 0.03 0.25 ± 0.03	0.005*
Parent's anger Yes (n=46; 17.6%) No(n=215 82.4%)	 0.89 ± 0.12 0.52 ± 0.03	<0.001*	 0.49 ± 0.08 0.27 ± 0.02	0.001*
Parent's fear Yes (n=109; 41.7%) No (n=152 58.3%)	 0.73 ± 0.07 0.48 ± 0.04	0.004*	 0.39 ± 0.04 0.25 ± 0.02	0.03*
Parent's sadness Yes (n=165; 63,2%) No (n=96 36,8%)	 0.61 ± 0.04 0.53 ± 0.07	0.030*	 0.33 ± 0.03 0.27 ± 0.03	0.08
Parent's concern for the future Yes (n=185; 70.8%) No (n=76 29.2%)	 0.66 ± 0.05 0.40 ± 0.04	0.008*	 0.35 ± 0.03 0.19 ± 0.02	0.01*

**Student t test, Mann-Whitney U test, One Way ANOVA and Kruskal-Wallis test, SEM; Standard error*

Children who cried more during lockdowns had significantly higher mean verbal aggression and general aggression scores than those who did not. Children who threw their belongings more during lockdowns had significantly higher mean verbal

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aggression and general aggression scores than those who did not. Children whose sleep patterns changed negatively during lockdowns had significantly higher mean verbal aggression and general aggression scores than those with the same sleep patterns during lockdowns. Children who were restless and nervous most of the day had significantly higher mean verbal aggression and general aggression scores than those who were not. Children who were uninterested in their daily routines had significantly higher mean verbal aggression and general aggression scores than those who were not (p<0.001, Table II).

Table II. *Relationship between children's emotional states and aggression scale score means*

Variables (n=261; 100%)	The parent form of aggression scale for children (α=0.92)			
	Verbal Aggression Sub Dimension (α=0.87) (Mean ± SEM)	P value*	General (Mean ± SEM)	P value*
Symptoms of anger (Child) Yes (n=106; 40.6%) No (n=155; 59.4%)	 0.91 ± 0.07 0.36 ± 0.03	<0.001*	 0.51 ± 0.05 0.17 ± 0.02	<0.001*
Frequent crying (Child) Yes (n=47; 18%) No (n=284; 82%)	 0.94 ± 0.13 0.51 ± 0.03	<0.001*	 0.51 ± 0.08 0.26 ± 0.02	<0.001*
Throwing items (Child) Yes (n=47; 18%) No (n=214; 82%)	 1.22 ± 0.13 0.44 ± 0.03	<0.001*	 0.69 ± 0.08 0.22 ± 0.01	<0.001*
Change in sleep pattern (Child) Yes (n=169; 64.7%) No (n=92; 35.3%)	 0.65 ± 0.04 0.46 ± 0.06	<0.001*	 0.34 ± 0.03 0.25 ± 0.03	<0.001*
Difficulty in falling asleep (Child) Yes (n=112; 42.9%) No (n=149; 57.1%)	 0.63 ± 0.06 0.55 ± 0.05	0.032*	 0.32 ± 0.03 0.30 ± 0.03	0.12
Difficulty in maintaining sleep (Child) Yes (n=6; 2.2%) No (n=255 97.8%)	 1.23 ± 0.28 0.57 ± 0.04	0.010*	 0.83 ± 0.26 0.30 ± 0.03	0.068
The child feels very angry and nervous Never1 (n=78; 29.8%) Sometimes2 (n=99; 37.9%) More than half of the days3 (n=52; 19.9%) Almost everyday4 (n=32; 12.2%)	 0.31 ± 0.05 0.47 ± 0.04 0.88 ± 0.10 1.13 ± 0.17	 <0,001* 1<2<3.4	 0.14 ± 0.02 0.23 ± 0.02 0.48 ± 0.06 0.67 ± 0.12	 <0.001* 1<2<3.4
The child feels cranky Never1 (n=100; 38.3%) Sometimes2 (n=88; 33.7%) More than half of the days3 (n=48; 18.3%) Almost everyday4 (n=25; 9.5%)	 0.39 ± 0.04 0.52 ± 0.06 0.90 ± 0.10 0.96 ± 0.19	 <0.001* 1.2<3.4	 0.20 ± 0.02 0.26 ± 0.03 0.53 ± 0.07 0.48 ± 0.12	 <0.001* 1.2<3.4
Easily angered (Child) Never1 (n=63; 24.1%) Sometimes2 (n=91; 34.8%) More than half of the days3 (n=57; 21.8%) Almost everyday4 (n=50; 19.1%)	 0.24 ± 0.05 0.38 ± 0.03 0.93 ± 0.09 0.99 ± 0.11	 <0.001* 1<2<3.4	 0.10 ± 0.01 0.21 ± 0.02 0.49 ± 0.06 0.53 ± 0.06	 <0.001* 1<2<3.4
Decrease in interest and pleasure (Child) Never1 (n=57; 21.8%) Sometimes2 (n=77; 29.5%) More than the half of the days3 (n=84; 32.1%) Almost everyday4 (n=43; 16.4%)	 0.28 ± 0.04 0.45 ± 0.06 0.69 ± 0.07 1.01 ± 0.13	 <0.001* 1.2<3.4	 0.15 ± 0.02 0.20 ± 0.03 0.38 ± 0.04 0.58 ± 0.09	 <0.001* 1.2<3.4

**Student t test, Mann-Whitney U test, One Way ANOVA and Kruskal-Wallis test, SEM; Standard error, 1,2,3,4: Tukey's Honest Significant Difference test*

4. DISCUSSION

This study investigated the relationship between parents' emotional states and their children's aggression during the COVID-19 pandemic in Turkey. Our results showed that children had high verbal and general aggression scores, suggesting that they suffered from insufficient physical activity, irregular sleep patterns, frustration, separation anxiety, anger, and aggression [3, 13,15,19,23-25]. Although, there is limited research on the effects of COVID-19 and social isolation on children and parents [2,19,24,25], the OECD 2020 report argues that economic status, home conditions, parental education, and sociocultural factors can affect children psychosocially during the pandemic [13]. The pandemic affects all children. However, how much it affects them depends on risk and protective factors. Studies before the pandemic showed that age, parental education, and economic status did not affect children's aggression and anger levels [25-27], which is consistent with our results.

However, some researchers have reported that gender and age affect aggression [28,29]. They state that boys are more aggressive than girls [28-31]. Card et al. argue that gender is an essential factor in aggression [32]. On the other hand, some other researchers maintain that aggression in boys may be related to gender roles, high muscle strength, and hormonal changes [26,31].

Children living in districts has a significantly higher mean verbal aggression score than those living in city centers ($p < 0.05$). Research also shows that children living in the countryside (villages, rural areas, regions with limited access to health services, etc.) have higher aggression levels than those living in cities [13, 19, 32, 34]. Aggressive children are more likely to experience anxiety, stress, and anger due to limited access to education and inadequate technological, health, and social facilities in districts.

Children with relatives who tested positive for COVID-19 had a significantly higher mean verbal aggression score than those without ($p < 0.05$). Jiao et al. also reported that children living in regions where the pandemic was more severe had more anger, anxiety, fear, and other mood disorders than those living in regions where the pandemic was less severe [3]. Children experienced anxiety during the COVID-19 pandemic because they could not grasp the gravity of the situation and lacked the coping mechanisms that could have helped them cope with the challenges of the process. In the study of Demirbaş et al., parents reported that their children experienced stress, anxiety, and mood swings due to constant homestay during the pandemic [2]. Our results support the results that suggest that the higher the aggression, the higher the stress levels in children [19,35-37].

Our results pointed to a significant relationship between parents' emotional states and their children's verbal aggression levels. Research also shows that parents experienced fear, anxiety, sadness, and panic during the COVID-19 pandemic [2, 3,16,24]. Parents had to spend a lot of time with their children at home during the pandemic. Therefore, it is no surprise that their emotional states directly affect their children [1-3, 12,19,24]. Regarding developmental theories, parents play an important role in how their children make sense of and manage this process. In other words, how parents cope with the challenges of the COVID-19 pandemic is likely to determine how their children handle the situation because the latter take the former as role models. Therefore, parents are responsible for preventing secondary trauma by spending quality time with their children, coming up with new daily routines, and explaining the whole situation carefully [15, 38, 39]. From another perspective, social isolation can give parents and children the opportunity to interact more, which can help children get involved in family activities and develop self-sufficiency skills. With the right approaches, parents can form stronger ties with their children and meet their needs. Therefore, we can state that children who are supported, cared for, and loved by their parents can better cope with the pandemic's challenges, resulting in reduced anger and aggression levels [15, 38-40].

Children who cried more during lockdowns had significantly higher mean verbal aggression and general aggression scores than those who did not. Children who threw their belongings more during lockdowns had significantly higher mean verbal aggression and general aggression scores than those who did not. Children whose sleep patterns changed negatively during lockdowns had significantly higher mean verbal aggression and general aggression scores than those with the same sleep patterns during lockdowns. Children who were restless and nervous most of the day had significantly higher mean verbal aggression and general aggression scores than those who were not. Children who were uninterested in their daily routines had significantly higher mean verbal aggression and general aggression scores than those who were not. Children unable to complete their cognitive, social, and emotional development can show their reactions during isolation by crying, accusing their parents, shouting at them, and acting aggressively toward their toys [12,14]. Research also shows that children and adolescents who experience house arrest due to COVID-19 experience stress and anger and exhibit violent behaviors [1,3,12,19]. Demirbaş et al., determined that children experienced emotional changes due to lockdowns and changes in daily routines. They suffered from anxiety because they got sick or missed their peers [2]. Jiao et al., also documented that children experienced sudden emotional changes more frequently due to the COVID-19 pandemic and house arrest [3]. Pisano et al. (2020) determined that one in two children was more irritable and experienced mood swings and agitation due to isolation [12].

Sometimes, children become aggressive due to anxiety and loss of control. However, aggression is considered normal unless it reaches a pathological level [6, 7, 9]. Children with a tendency to anger are more likely to exhibit physical, verbal, and indirect aggression [24,25,30]. Our results showed that aggressive children were angrier. Therefore, preventive measures (lockdowns, school closures, etc.) paved the way for a sense of disability, especially in school-age children. In addition, little to no interaction with peers and limited play and sports activities lead to aggression.

Children whose sleep patterns changed negatively during lockdowns had significantly higher mean verbal aggression and general aggression scores than those with the same sleep patterns during lockdowns. Although, many environmental, physiological, and psychological factors affect sleep quality, it is generally accepted that this triggering factor should be a source of stress for sleep problems [3,12]. Research has also shown that children who experience house arrest due to COVID-19 experience a change in sleep patterns [2,12,19,40]. Liu and colleagues found that two in five students experienced sleep problems during the COVID pandemic [42]. Ghosh et al., determined that children had significantly more sleep problems after school closures. These results suggest that social isolation, uncertainty, and limited physical activity lead to changes in sleep patterns, resulting in fear and anxiety [19]

Children who were restless and nervous most of the day had significantly higher mean verbal aggression and general aggression scores than those who were not. Children who were uninterested in their daily routines had significantly higher mean verbal aggression and general aggression scores than those who were not. Studies suggest that angry and nervous children are more likely to attack others [1,3,15]. For example, Sprang and Silman found that quarantined children were four times more likely to have PTSD than those not quarantined. Prolonged social isolation and lifestyle changes cause psychosocial problems in children [41-43].

This study had three limitations. First, the data were collected during the pandemic. However, we had no data on children's mental and physical health before the pandemic. Second, we excluded parents who could not use smart devices and had no Internet connection. Therefore, the sample consisted only of 261 parents. Third, the results are sample-specific and cannot be generalized to the whole population.

However, our results provide an overview of the psychological impact of COVID-19 on parents and children. Therefore, we think that they will pave the way for further research. Researchers should conduct more studies with larger samples to better understand the impact of COVID-19 on parents and children. We also think our results will help authorities formulate interventions to help parents and children cope with outbreaks.

Conclusion

Although, the pandemic and related preventive measures allow parents to spend more quality time with their children, they have adverse effects on their mental health. Authorities should take various measures to protect the mental health of children and parents. For example, educators should provide parents with training on how to protect their mental and physical health during outbreaks. Moreover, healthcare professionals should provide psychosocial support and encourage parents and children to engage in physical activities to help them cope with the challenges of outbreaks. They should train them in healthy lifestyle behaviors, balanced diets, sleep patterns, and personal hygiene. In addition, researchers should determine the risk factors associated with outbreaks and focus on ways to strengthen social support resources and help parents and children develop functional coping and problem-solving skills.

Compliance with Ethical Standards

Ethical Approval: The study was approved by the ethics committee of Ankara Medipol University (Date: 29.04.2020 and No: 74791132-109/322). Authorization was obtained from the authors who developed the CAS-P. All procedures adhered to the ethical standards of the institutional and/or national research committee. The study was carried out according to the World Medical Association (WMA) Declaration of Helsinki.

Conflicts of interest: The authors declare no conflicts of interest.

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