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Parental Stress and Self-Efficacy as Predictors of Fear During the COVID-19 Pandemic: A Cross-Sectional Study in Türkiye

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Abstract

Large-scale societal crises characterized by prolonged uncertainty and threat impose substantial psychological burdens on individuals and families. During such periods, parents must simultaneously cope with their own emotional responses and caregiving responsibilities. The COVID-19 pandemic has provided a global example of these crisis conditions. This study aimed to examine perceived stress, general self-efficacy, and fear of COVID-19 among parents in a Turkish sample and to compare these variables and their interrelationships with those of non-parents. This controlled, cross-sectional, comparative, and correlational study included 1,007 adults aged 18 years and older living in Turkey. Data were collected online using a Demographic Information Form, the Perceived Stress Scale, the General Self-Efficacy Scale, and the Fear of COVID-19 Scale. Group comparisons and multiple linear regression analyses were performed to identify predictors of fear of COVID-19. Perceived stress was positively associated with fear of COVID-19 in both parents and non-parents, with stronger associations observed among parents. In the parent group, fear of COVID-19 was negatively associated with general self-efficacy and its subdimensions (effort–persistence and ability–confidence). Parenthood, particularly motherhood, was identified as a significant factor associated with higher levels of fear of COVID-19. Multiple linear regression analyses indicated that perceived stress was the strongest predictor of fear of COVID-19 in both groups. Fear experienced during the COVID-19 pandemic reflects broader psychological processes related to prolonged stress and uncertainty. Parents were more adversely affected than non-parents, whereas firmer self-efficacy beliefs appeared to play a protective role in reducing stress and fear. These findings provide contextual evidence from a Turkish sample and contribute to the international literature on psychological adaptation in parents during large-scale crisis conditions.

1 Introduction

Societal crises are processes characterized by uncertainty, perceived threat, and abrupt changes in daily life that challenge individuals' psychological adaptation mechanisms. Although such crises adversely affect adult mental health in general, they may impose more complex and multidimensional psychological burdens on parents. During crisis periods, parents must cope not only with their own stress and anxiety but also simultaneously attend to their children's safety, development, and emotional needs [1–2].

Previous research has shown that prolonged societal stress and uncertainty increase levels of perceived stress among parents and are closely associated with anxiety, depressive symptoms, and difficulties in coping [3–7]. During crisis conditions, parenting roles tend to intensify, while economic instability, weakening of social support systems, and disruption of daily routines place additional strain on parents' psychological resources [8–9]. In this context, parents' capacity to cope with stress and their beliefs about being able to effectively fulfill parenting responsibilities—that is, parental self-efficacy—emerge as a critical protective factor [2, 10–12].

Parental self-efficacy refers to parents' beliefs in their ability to manage the challenges of childrearing and to display appropriate parenting behaviors. High levels of parental self-efficacy have been associated with lower stress, more adaptive parenting practices, and healthier family functioning, whereas low self-efficacy beliefs may exacerbate psychological distress under crisis conditions [13–14].

Within this framework, the COVID-19 pandemic represents a global example of a large-scale societal crisis characterized by prolonged uncertainty and threat. The novel coronavirus (SARS-CoV-2) was first identified in late 2019 and rapidly spread worldwide due to its high transmissibility, leading the World Health Organization to declare a pandemic on 11 March 2020. Although the pandemic status was officially lifted on 5 May 2023, the crisis extended far beyond a health emergency and became a multidimensional psychosocial stressor for individuals and families due to quarantine measures, social isolation, economic instability, and profound changes in education and work arrangements [2, 10–11, 15–16].

During the pandemic, parents were confronted with multiple stressors, including fear of infection, job and income losses, disruptions in children's education, and increased caregiving responsibilities. Previous studies have reported that parents experienced higher levels of stress than non-parents during the pandemic, with particularly pronounced effects among working parents and socioeconomically disadvantaged groups [2, 17]. While some families developed resilience and adaptive functioning, others experienced increased risks of parent–child relational difficulties, emotional exhaustion, and family conflict [18–19].

In this context, the present study aimed to examine perceived stress, parental self-efficacy, and fear of COVID-19 among parents in a Turkish sample and to investigate the associations among these variables in comparison with non-parent individuals. In the current study, the COVID-19 pandemic is conceptualized not merely as a singular health event but as a prolonged societal crisis that challenges parental psychological adaptation. Although the study is based on a Turkish sample, psychological processes such as perceived stress, parental self-efficacy, and fear under conditions of uncertainty are assumed to reflect universal mechanisms observed across different cultural and socioeconomic contexts during acute and prolonged crises. By providing contextual evidence from Turkey, the present findings aim to contribute to the international literature on parental psychological adaptation and to inform the development of support and intervention programs for parents during large-scale crisis conditions.

2 Methods

2.1 Study design

This study employed a quantitative, cross-sectional, comparative, and correlational design. The study group consisted of parents, whereas the control group comprised individuals without children. This design enabled comparisons between parents and non-parents in terms of perceived stress, self-

efficacy, and fear of COVID-19, as well as the examination of associations among these variables. Group comparisons based on parental status were conducted, and psychological variables associated with fear of COVID-19 were examined using predictive analyses.

2.2 Participants

The sample consisted of a total of 1,007 adults aged 18 years and older who were living in Turkey and voluntarily participated in the study during the data collection period (Table 1). The inclusion criteria were being at least 18 years of age and providing informed consent to participate in the study.

2.3 Measures

2.3.1 Demographic Information Form

A 21-item Demographic Information Form developed by the researchers was used to collect participants' sociodemographic characteristics.

2.3.2 Perceived Stress Scale

The Perceived Stress Scale (PSS) was developed by Cohen et al. (1983) to assess the degree to which individuals perceive their lives as stressful during the previous month. The scale consists of 14 items rated on a 5-point Likert scale, with higher scores indicating higher levels of perceived stress. The Turkish adaptation was conducted by Eskin et al. (2013), who reported good internal consistency (Cronbach's α = 0.84) and test–retest reliability (0.87) [20–21].

2.3.3 General Self-Efficacy Scale

The General Self-Efficacy Scale was developed by Jerusalem and Schwarzer (1992) and adapted into Turkish by Aypay (2010). The scale consists of 10 items rated on a 4-point Likert scale, with total scores ranging from 10 to 40; higher scores indicate higher perceived self-efficacy. The scale comprises two subdimensions: Effort–Persistence and Ability–Confidence. In the present study, Cronbach's alpha coefficients were .83 for the total scale and .78 and .91 for the Effort–Persistence and Ability–Confidence subscales, respectively [22–23].

Table 1
Distribution of participants by demographic characteristics (*n = 1007*)

Variable	Group	n	%	Variable	Group	n	%
Gander	Female	679	67.4	Chronic diseases	Yes	204	76.7
	Male	328	32.6		No	803	20.3
Disability	Yes	14	1.4	Your dependent	Yes	148	14.7
	No	993	98.6		No	859	85.3
Chronic diseases in children	I am not a parent	277	27.5	Separation from children	I am not a parent	277	27.5
	Yes	57	5.7		Yes	210	20.9
	No	673	66.8		No	520	51.6
The house you live in	Apartment	878	86.9	Place of residence	Village	28	2.8
	Detached house	20	2.0		District	120	11.9
	Detached house with garden	112	11.1		City	385	38.2
					Metroplitan	474	47.1
Marital status	Married	716	71.1	Having children	I am not a parent	277	27.5
	Divorced	53	5.3		1	276	27.4
	Widow	15	1.5		2	346	34.4
	Single	223	22.1		3	88	8.7
					> 4	20	2.0
Education level	Literate	10	1.0	Income level (monthly/ TL)	< Minimum wage	54	5.4
	Primary Education	14	1.4		Minimum wage	150	14.9
	Secondary Education	125	12.4		5000–9999	440	43.7
	University	486	48.3		10000–20000	304	30.2
	MA/PhD	372	36.9		> 20000	59	5.9
Age	18–20	49	4.9	Number of people in contact in the same place	Alone	72	7.1
	21–30	157	15.6		1	126	12.5

Variable	Group	n	%	Variable	Group	n	%
	31–40	291	28.9		2	248	24.6
	41–50	323	32.1		3	247	24.5
	51–60	155	15.4		4	139	13.8
	61–89	32	3.2		> 5	175	17.4
Region of residence	Marmara	239	23.7	Children's age	I am not a parent	277	27.5
	Ege	89	8.8		0–2	90	8.9
	İç Anadolu	302	30.0		3–6	194	19.3
	Akdeniz	67	6.7		7–10	187	18.6
	Güney Doğu	23	2.3		11–14	149	14.8
	Doğu Anadolu	32	3.2		15–18	108	10.7
	Karadeniz	255	25.3		19–24	147	14.6
					> 25	136	13.5
Working status	Leave of Absence	52	5.2				
	Reported	14	1.4				
	Full day	397	39.4				
	Part-time	278	27.6				
	Compulsory leave	10	1.0				
	Working from home	344	34.2				
	Unemployed	60	6.0				
	I was made redundant	4	0.4				
	Retired	75	7.4				
	Housewife	66	6.6				

2.3.4 Fear of COVID-19 Scale

Fear of COVID-19 was assessed using the Fear of COVID-19 Scale developed by Ahorsu et al. (2020) and adapted into Turkish by Bakioğlu et al. (2020). The scale consists of seven items rated on a 5-point Likert scale and has a unidimensional structure. In the original validation study, factor loadings ranged from .66

to .74, and item–total correlations ranged from .47 to .56. The internal consistency coefficient (Cronbach's α) was reported as .82 [24–25].

2.4 Statistical analysis

Before the analyses, multicategorical variables were dummy-coded into binary (0–1) variables. Descriptive statistics, including means, standard deviations, and frequency distributions, were calculated for all variables. As the assumption of normality was met, independent samples t-tests were used to compare fear of COVID-19 scores between parents and non-parents.

Multiple linear regression analysis was conducted to identify factors predicting fear of COVID-19 among parents. Dummy variables were created for categorical predictors. Diagnostic analyses indicated no violations of the assumptions of multicollinearity, heteroscedasticity, or autocorrelation. A backward elimination procedure was applied to determine the most significant predictors. All statistical analyses were performed using SPSS version 22.0 (IBM Corp., Armonk, NY, USA), and statistical significance was set at $p < .05$.

2.5 Procedure and ethical considerations

Participants from different regions of Türkiye were recruited for the study. Following a comprehensive review of the literature, an online survey including standardized measurement instruments was prepared and distributed via social media platforms such as Facebook, WhatsApp, and Instagram. Data were collected between July 25, 2020 and September 25, 2020 through an online questionnaire administered via a web-based platform (Google Forms, Google LLC). Participants provided informed consent electronically before completing the survey.

To ensure data quality, responses were screened for completeness and duplicate submissions. Incomplete questionnaires and duplicate responses were excluded from the dataset prior to analysis.

Ethical approval

for the study was obtained from the Non-Interventional Research Ethics Committee of Hitit University (Approval No: 2020/87, Date: July 20, 2020). The study was conducted in accordance with the ethical principles of the Declaration of Helsinki (2013 revision). All participants were informed about the purpose and scope of the research, and participation was entirely voluntary.

3 Results

Positive correlations were found between perceived stress and fear of COVID-19 in both the parent and non-parent groups. Accordingly, perceived stress emerged as a risk factor associated with higher levels of fear of COVID-19 regardless of parental status. However, the association between perceived stress and fear of COVID-19 was stronger among parents than among non-parents.

In the parent group, fear of COVID-19 was negatively associated with general self-efficacy, as well as its subdimensions, including Effort–Persistence and Ability–Confidence, and with total self-efficacy scores. In contrast, no significant associations were observed between fear of COVID-19 and self-efficacy or its subdimensions in the non-parent control group (Table 2).

Table 2
Correlation analyses

Measuments	**Research Group (Parents)**		**Control Group (Non-Parents)**	
	Covid-19 Fear Scale Total Score	**p**	**Covid-19 Fear Scale Total Score**	**p**
Perceived Stress Scale Total Score	.373**	0.000**	.265**	0.000**
General Self-Efficacy Scale / effort-resistance subscale	− .226**	0.000**	− .110	0.068
General Self-Efficacy Scale / ability-confidence sub-dimension	− .205**	0.000**	− .052	0.386
General Self-Efficacy Scale Total	− .222**	0.000**	− .085	0.160

Gender differences were observed in the parent group, with mothers reporting significantly higher levels of fear of COVID-19 than fathers, whereas no significant gender differences were found in the non-parent control group (Table 3).

In the parent group, the presence of a chronic illness and living with one to three individuals in the same household were associated with significantly higher levels of fear of COVID-19, whereas no such effects were observed in the control group. In addition, believing that the pandemic was not fatal or widespread, perceiving social reactions as exaggerated, and distrusting official statements while still complying with protective measures were associated with lower levels of fear of COVID-19 among parents; no significant associations were found in the control group.

Exposure to news about viral mutations, the belief that case numbers were underreported, concerns about not being able to return to normal life after the pandemic, and willingness to be vaccinated were identified as factors associated with increased fear of COVID-19 in the parent group. Full compliance with mask use was associated with higher fear of COVID-19 in both groups, whereas occasional compliance with mask.

In the parent group, fear of COVID-19 was higher among individuals who reported that the pandemic negatively affected their marital relationships. In contrast, those who reported no change in their

relationships exhibited lower levels of fear. No significant differences were observed in the control group.

Handwashing for more than 20 seconds during the pandemic was associated with lower fear of COVID-19 in the parent group but with higher fear levels in the control group. Persistent cleaning behaviors, feeling a constant need to wash, and forcing family members to wash their hands were associated with higher fear levels in both groups. Similarly, disinfecting shopping packages or leaving them unopened before use was associated with increased fear of COVID-19 in both groups.

Situations such as leaving home for essential reasons (e.g., grocery shopping), being deprived of preferred activities, hearing the doorbell ring, or encountering someone wearing a mask were

Table 3
Covid fear t - test analysis results of the research and control groups

Variable	Group	Research (Parents)		Control (Non-Parents)	
		$\bar{x} \pm SS$	p	$\bar{x} \pm SS$	p
Gander	Male	16.23 ± 5.80	0.000**	17.69 ± 7.21	0.329
	Female	19.03 ± 6.77		18.66 ± 6.91	
Chronic diseases	Yes	19.97 ± 6.74	0.000**	19.70 ± 5.31	0.144
	No	17.44 ± 6.41		18.24 ± 7.19	
Number of people in the same place	1 person	19.56 ± 6.78	0.049*	19.66 ± 6.34	0.116
	Other	17.87 ± 6.54		18.08 ± 7.13	
	3 person	18.88 ± 6.39	0.029*	19.25 ± 6.67	0.398
	Other	17.69 ± 6.62		18.28 ± 7.04	
Which of the statements is appropriate for you?	I don't think the pandemic is deadly and widespread; reactions have been exaggerated	11.41 ± 5.12	0.000**	15.30 ± 8.46	0.149
	Other	18.27 ± 6.49		18.55 ± 6.91	
	I think they don't tell all the cases, I'm so scared.	20.07 ± 6.67	0.000**	20.97 ± 7.64	0.032*
	Other	17.71 ± 6.49		18.11 ± 6.84	
	Although I do not trust official statements, I apply every precaution sensitively	17.13 ± 5.93	0.000**	18.36 ± 6.57	0.822
	Other	19.16 ± 7.17		18.55 ± 7.60	
	The descriptions are not accurate, but I'm not worried.	14.94 ± 6.04	0.001	11.44 ± 5.11	0.000**

	Other	18.24 ± 6.56		18.92 ± 6.84	
	The news that the virus has mutated scares me	21.47 ± 6.31	0.000**	20.40 ± 5.23	0.365
	Other	17.65 ± 6.50		18.36 ± 7.03	
	I am more anxious and scared now than when the epidemic first started	21.72 ± 6.40	0.000**	22.83 ± 6.36	0.002*
	Other	17.57 ± 6.45		18.03 ± 6.91	
Do you plan to get vaccinated?	Yes	18.50 ± 6.37	0.004*	19.03 ± 6.52	0.118
	No	16.99 ± 6.89		17.71 ± 7.46	
Do you think your life will return to normal?	Yes	16.21 ± 6.10	0.000**	16.69 ± 7.63	0.000**
	No	18.94 ± 6.62		19.10 ± 6.61	

Continuation of Table 3

Which of the statements is appropriate for you?	My relationship with my wife has been negatively affected	21.03 ± 7.56	0.000**	21.30 ± 7.18	0.186
	Other	17.71 ± 6.39		18.32 ± 6.96	
	My relationships with the people I live with have deteriorated	20.57 ± 7.61	0.005**	19.86 ± 7.90	0.116
	Other	17.83 ± 6.46		18.13 ± 6.75	
	There was no change	17.53 ± 6.05	0.001**	18.01 ± 6.69	0.077
	Other	19.33 ± 7.66		19.75 ± 7.72	
Do you follow mask rules?	Sometimes	13.60 ± 6.11	0.008**	8.20 ± 1.10	0.000**
	Other	18.11 ± 6.55		18.62 ± 6.80	
	Mostly	18.13 ± 6.51	0.004**	18.62 ± 6.90	0.001**
	Other	13,90 ± 7,64		8,0 ± 1,09	
Do you follow the rules of social distancing?	Sometimes	11.87 ± 4.19	0.000**	17.11 ± 7.80	0.407
	Other	18.23 ± 6.54		18.52 ± 6.93	
	Mostly	18.28 ± 6.48	0.000**	18.61 ± 6.92	0.143
	Other	12,00 ± 5,95		16,28 ± 7,50	
Which of the following statements is suitable for you?	I often wash my hands for much longer than 20 seconds	17.19 ± 6.69	0.002**	19.24 ± 6.91	0.009**
	Other	18.68 ± 6.41		16.96 ± 6.91	
	I feel the need to take a bath every time I come home	20.69 ± 6.93	0.000**	20.29 ± 7.31	0.001**
	Other	17.23 ± 6.26		17.41 ± 6.59	
	I wash shopping items with water mixed with detergent/bleach	20.47 ± 7.31	0.000**	21.24 ± 6.92	0.002**

Oter	17,62 ± 6,36		17.81 ± 6.85	
I force family members to take a bath	21.11 ± 7.58	0.000**	22.54 ± 6.89	0.000**
Other	17,60 ± 6,31		17.72 ± 6.76	
I leave the shopping bags for a while before opening them	19.44 ± 6.63	0.000**	20.13 ± 6.41	0.001**
Other	17.15 ± 6.39		17.36 ± 7.13	
I cannot open shopping bags/packaging without disinfecting them	20.06 ± 6.92	0.000**	20.70 ± 6.87	0.000**
Other	17.20 ± 6.24		17.37 ± 6.79	
I want to clean all the time	21.72 ± 7.37	0.000**	21.94 ± 7.68	0.000**
Other	17.35 ± 6.20		17.15 ± 6.25	
None of that applies to me.	14.80 ± 5.87	0.000**	12.87 ± 4.79	0,000**
Other	18.87 ± 6.49		19.34 ± 6.86	

Continuation of Table 3

Which of the following statements is suitable for you?	I'm so anxious about going out.	22.17 ± 7.01	0.000**	22.10 ± 7.21	0.000**
	Other	17.10 ± 6.10		17.46 ± 6,60	
	I don't enjoy doing many things I used to enjoy doing	21.08 ± 6.88	0.000**	19.97 ± 7.17	0.002**
	Other	16.77 ± 6.02		17,32 ± 6,65	
	It worries me when someone knocks on the door.	22.18 ± 7.14	0.000**	21.61 ± 6.75	0.001**
	Other	17.61 ± 6.37		17.88 ± 6.88	
	I'm worried about someone approaching me, even if they're masked.	22.21 ± 6.56	0.000**	21.19 ± 7.45	0.000**
	Other	16.21 ± 5.70		16.82 ± 6.16	
	I don't enjoy life as much as I used to	20.61 ± 6.82	0.000**	19.76 ± 6.94	0.004**
	Other	17.18 ± 6.27		17.36 ± 6.85	
	I'm too scared to go out of the house	23.61 ± 6.90	0.000**	23.49 ± 8.31	0.000**
	Other	17.38 ± 6.23		17.65 ± 6.42	
	I have difficulty falling and staying asleep	20.64 ± 7.54	0.000**	20.40 ± 7.96	0.011
	Other	17.52 ± 6.26		17.85 ± 6.57	
	I get pain in my arms and chest when I think about going out	20.64 ± 10.16	0.132	26.64 ± 7.17	0.000**
	Other	17.97 ± 6.48		18.09 ± 6.77	
	Many things in life have lost their meaning for me	20.03 ± 7.21	0.006**	19.57 ± 7.56	0.115
	Other	17.80 ± 6.47		18.05 ± 6.75	
	None of that applies to me	14.62 ± 5.06	0.000**	16.22 ± 6.28	0.003**
	Other	20.22 ± 6.51		19.14 ± 7.06	

associated with increased fear of COVID-19 in both groups. Difficulty initiating sleep and feelings of losing the meaning of life were associated with higher fear levels only in the parent group, whereas the item “When I think about going outside, I feel pain in my arms and chest” emerged as a risk factor only in the control group.

When parenting-related evaluations during the pandemic were examined in the parent group, having three children was associated with lower levels of fear of COVID-19. Overall, the pandemic process was perceived as harming parenting, and fear of COVID-19 significantly intensified these negative effects. As the adverse effects of social isolation, social distancing rules, pandemic-related anxiety, and uncertainty on parenting increased, fear levels were found to increase accordingly (Table 4).

Parents reported avoiding taking their children outside due to fear of virus transmission and indicated that persistent cleaning behaviors and the obligation to stay at home increased their fear of COVID-19. Fear levels were higher among parents who reported physical and psychological exhaustion due to increased workload, whereas this effect was weaker among those who perceived no change in their parenting attitudes compared with the pre-pandemic period. Constant cohabitation led to increased intolerance, and concerns about transmitting the virus to their children resulted in avoidance of physical contact. However, parents who reported no changes in their relationships with their children exhibited lower levels of fear of COVID-19.

The results of the multiple linear regression models constructed to identify the most salient predictors of fear of COVID-19 are presented in Table 5. The total score of the Perceived Stress Scale emerged as the strongest predictor of fear of COVID-19 in both the parent and control groups. The item “Being approached even by someone wearing a mask makes me anxious” was a positive predictor in both groups, with a stronger effect observed in the parent group. In addition, female gender and motherhood were identified as significant determinants associated with higher levels of fear of COVID-19 in the parent group.

In the parent group, the item “I no longer enjoy doing many of the things I used to enjoy” emerged as a positive predictor of fear of COVID-19. Exposure to news about viral mutations and reporting higher levels of anxiety and fear compared with the early phase of the pandemic were associated with increased fear of COVID-19 in both groups. Considering vaccination, feeling the need to take a shower after every return home, high compliance with hygiene rules, negative effects on marital relationships, and age were identified as positive predictors only in the parent group.

In both groups, fear of going outside, the need to disinfect shopping bags, and the belief that case numbers were underreported were associated with higher levels of fear of COVID-19. In the control group, living in the Black Sea or Aegean regions, compliance with mask use, living in an apartment building, experiencing physical symptoms when thinking about going outside, General Self-Efficacy Scale scores, and being a housewife were identified as positive predictors of fear of COVID-19.

Table 5 also presents factors associated with lower levels of fear of COVID-19. In the parent group, believing that the pandemic was not fatal or widespread, experiencing loss of meaning in life, and low income level emerged as negative predictors. In the control group, indifference to the accuracy of reported case numbers, not perceiving the pandemic as personally distressing, and living in the Eastern or Southeastern Anatolia regions were associated with lower levels of fear of COVID-19.

Table 4
Covid fear t - test analysis results of the research group

Variable	Group	Research Group	
		$\bar{x} \pm SS$	p
Do you have children?	3 children	15.24 ± 6.01	0.000**
	Other	18.40 ± 6.56	
How did being a parent during the COVID-19 epidemic affect you (for someone who does not have children)?	Having to comply with social isolation and social distancing made my parenting difficult	19.26 ± 6.73	0.000**
	Other	17.21 ± 6.35	
	Anxiety due to the pandemic made it difficult for me to care for my children	21.24 ± 6.80	0.000**
	Other	17.48 ± 6.38	
	Having to be at home with children all the time negatively affected my parenting skills	19.36 ± 6.93	0.001**
	Other	17.55 ± 6.38	
	The uncertainty generated by the pandemic has caused me intense anxiety and uncertainty about the future, and I may have neglected my parental duties as I turned inward	19.99 ± 6.94	0.000**
	Other	17.38 ± 6.33	
	I do not take children outside unless I have to, as touching things increases the risk of infection	19.19 ± 6.61	0.000**
	Other	17.16 ± 6.42	
	Constantly washing the items out of the bag after each shopping trip increases my workload. Experiencing physical and psychological fatigue negatively affects my attitude and patience towards children	20.76 ± 6.81	0.000**
	Other	16.85 ± 6.12	

	No change in my parenting attitude compared to before the pandemic	15.74 ± 5.85	0.000**
	Other	18.84 ± 6.63	
How have your relationships with children changed during the COVID pandemic?	Because the kids are always at home, I have become more intolerant than before. I get angry easily	19.51 ± 7.01	0.001**
	Other	17.59 ± 6.38	
	I have less physical contact (such as hugging, kissing) for fear of transmitting the virus to my child	20.17 ± 6.61	0.000**
	Other	17.11 ± 6.66	
	There was no change	15.93 ± 6.21	0.000**
	Other	18.58 ± 6.56	

Finally, according to Table 6, in the parent group the strongest positive predictor of fear of COVID-19 was the item “The workload and fatigue caused by washing clothes after shopping negatively affect my attitudes toward my children,” followed by “Not allowing children to go outside,” “Anxiety and sadness make caregiving more difficult,” and “Having children aged 19–24 years.” The strongest negative predictors were “Having three children” and “No change in parenting attitudes compared with the pre-pandemic period.”

4 Discussion

The present study examined parental stress, parental self-efficacy, and fear of COVID-19 by conceptualizing the pandemic as a prolonged societal crisis characterized by uncertainty and threat. The findings revealed a significant positive association between perceived stress and fear of COVID-19, demonstrating that perceived stress was the strongest predictor of fear in both parents and non-parents. This result suggests that large-scale crises marked by prolonged threat and uncertainty constitute pervasive sources of stress that adversely affect psychological well-being regardless of parental status [2, 10–12, 26].

Consistent with previous research, the COVID-19 pandemic was perceived as a highly stressful experience across different segments of society. The elevated stress levels observed among parents in the present study are in line with earlier findings documenting the intense psychological burden experienced by families during the pandemic [15–17, 27–29]. In particular, cumulative stressors such as health-related concerns, disruptions in daily routines, economic uncertainty, and increased caregiving

demands appear to have placed families under substantial psychological strain, as also reported in previous studies [30].

One of the most salient findings of the present study was the negative association between fear of COVID-19 and parental self-efficacy. Higher levels of self-efficacy across all subdimensions were associated with lower levels of fear, supporting theoretical frameworks that conceptualize self-efficacy as a key protective psychological resource under conditions of crisis and uncertainty [31–32]. Parents who believe in their ability to effectively fulfill parenting roles may be better able to regulate their emotions and to limit excessive fear responses under stressful conditions.

Parental status itself was also associated with fear of COVID-19, with mothers reporting significantly higher levels of fear than fathers. This finding is consistent with literature highlighting gender differences in emotional responses to pandemic-related stressors and reflects the differential impact of socially constructed gender roles during crisis conditions [28, 33–35]. The heightened fear observed among mothers may reflect the intensified caregiving responsibilities and protective concerns that disproportionately fall on women during public health emergencies.

Health-related vulnerability emerged as another important factor influencing fear levels. Parents with chronic illnesses reported higher levels of fear of COVID-19, suggesting that the combination of health risk and caregiving responsibilities amplifies perceived threat and emotional distress, as also reported in previous studies [36]. Similarly, higher fear levels among parents living with fewer household members may be related to increased concerns about infection control and reduced availability of social support.

Table 5
Analysis results of multiple linear regression model for research and control groups

Variable	Research Group (Parents) (n = 730)				Control Group (Non-Parents) (n = 277)			
	B	B*	p	Row	B	B*	p	Row
	3.962		.012		.664		.865	
Perceived Stress Scale Total Score	.211	.235	.000***	n1[i]	.164	.174	.003***	n1
I am extremely anxious about someone approaching me, even if they are masked	3.255	.227	.000***	n2	1.303	.090	.091*	n13
Being a woman	1.628	.119	.000***	n3				
I don't enjoy doing many things I used to enjoy doing	1.704	.118	.000***	n4				
The news that the virus has mutated scares me	2.303	.103	.001***	n5	3.746	.100	.043**	n10
I'm more anxious and afraid these days than when the epidemic first started	1.995	.094	.002***	n6	4.053	.160	.001***	n2
I am thinking of getting Covid-19 vaccine	1.258	.089	.005***	n7				
I am extremely anxious about going out for grocery shopping and similar reasons	1.459	.086	.010**	n8	1.854	.108	.032**	n9
I cannot open shopping bags without wiping, washing or spraying them with disinfectant	1.391	.076	.016**	n9	2.482	.158	.003***	n4
Age	.051	.073	.016**	n10				
I think they don't tell all the cases, I'm really scared	1.551	.068	.029**	n11	1.892	.086	.086*	n14
I feel the need to take a bath every time I come home	1.028	.066	.036**	n12				
I mostly follow the hygiene rules.	2.090	.063	.052*	n13				

My relationship with my partner has been negatively affected	1.318	.058	.054*	n14				
I live in the Black Sea region					2.482	.159	.003***	n3
I live in the Aegean region					3.051	.118	.017**	n5
I follow the mask rule mostly or always					6.202	.118	.017**	n6
I live in an apartment					2.017	.115	.023**	n7
I get pain in my arms and chest when I think about going out					4.113	.115	.026**	n8
General Self-Efficacy Total Score					.105	.093	.098*	n11
I am a housewife					3.163	.092	.057*	n12
I do not think the epidemic is as lethal and widespread as they state, I find the reactions exaggerated	-2.891	− .083	.012**	p1				
Living does not matter to me.	-2.933	− .054	.070*	p2				
I earn minimum wage or below	-2.166	− .052	.078*	p3				
I am not concerned that the number of cases is not accurately disclosed					-4.829	− .171	.001***	p1
No negativity applies to me					-2.692	− .134	.010**	p2
I live in the South East Anatolia Region					-3.325	− .105	.037**	P3
I live in the Eastern Anatolia Region					0.000	− .099	.048**	P4

B: Regression coefficient, B*: Standardised Regression Coefficient, i: Variables that increase fear of Covid-19, d: Variables that decrease fear of Covid-19,

*: Significant at 0.10 level of significance, **: Significant at 0.05 level of significance, ***: Significant at 0.01 level of significance

Table 6
Analysis results of multiple linear regression model for the research group

Variable	Research Group(Parents) (n = 730)			
	B	B*	p	Row
	16,764		,000	
Washing the materials out of the bag after each shopping increases my workload, and experiencing physical and psychological fatigue negatively affects my attitude and patience towards my children	2,510	,175	,000	n1
I don't take my children outside unless necessary, because touching things outside increases the risk of infection.	1,995	,139	,000	n2
My anxiety/sadness due to the pandemic made it difficult for me to care for my children	2,517	,133	,000	n3
I have children between the ages of 19 and 24	1,385	,084	,017	n4
I have 3 children	-2,687	-,133	,000	p1
There was no change in my parenting behaviour compared to before the pandemic	-1,520	-,102	,006	p2

B: Regression coefficient, B*: Standardised Regression Coefficient, i: Variables that increase fear of Covid-19, d: Variables that decrease fear of Covid-19,

*: Significant at 0.10 level of significance, **: Significant at 0.05 level of significance, ***: Significant at 0.01 level of significance

Perceptions and evaluations of pandemic-related risks were also closely associated with fear levels. Lower trust in official data and the tendency to perceive the pandemic as exaggerated were associated with lower fear, indicating that subjective appraisals of vulnerability and threat play a central role in shaping emotional responses [15, 27, 37]. Conversely, fear associated with vaccination intentions, mask use, and social distancing behaviors—particularly among parents—may reflect heightened risk awareness driven by concerns about protecting children [38–40].

Despite the transition to a normalization phase, economic losses, psychological difficulties, and persistent uncertainty regarding children's futures remained associated with higher fear levels. This finding supports previous evidence indicating that the psychological consequences of COVID-19 extend beyond the acute phase of the pandemic and exert long-term effects on family functioning and emotional well-being [41–43]. The impact of fear of COVID-19 on family relationships, daily routines, life satisfaction, and sleep patterns appears to be particularly pronounced among parents, in combination with increased caregiving burden and work–family conflict [44–47].

Overall, the present study suggests that fear of COVID-19 should not be conceptualized merely as an individual anxiety response, but rather as a multidimensional psychological experience shaped by prolonged societal stress and uncertainty. By highlighting the central roles of perceived stress and parental self-efficacy, these findings contribute to a more comprehensive understanding of parental psychological adaptation during large-scale crises and provide valuable implications for the development of preventive and supportive interventions for families facing future public health emergencies.

5 Conclusion

The present study demonstrates that fear experienced during the COVID-19 pandemic reflects not merely an individual anxiety response but a broader psychological process shaped by prolonged societal stress and uncertainty. Consistent with post-pandemic research, perceived stress emerged as the strongest predictor of fear of COVID-19 regardless of parental status. Nevertheless, parents appeared to be more emotionally burdened by the pandemic due to caregiving responsibilities, health-related concerns, and uncertainty regarding their children's futures.

The negative association between parental self-efficacy and fear of COVID-19 highlights the protective role of individual psychological resources under conditions of crisis and unpredictability. The higher levels of fear observed among mothers further suggest that gender-based caregiving roles may increase psychological vulnerability during acute and prolonged crises. At the same time, the association between fear and greater adherence to protective behaviors indicates that fear may function not only as a maladaptive emotional reaction but also as an adaptive response that promotes risk awareness and preventive action.

Taken together, these findings suggest that the pandemic experience revealed important gaps in the preparedness of individuals, families, social systems, and governance mechanisms to cope with the psychosocial consequences of sudden global crises. In this context, future crisis preparedness efforts should integrate comprehensive approaches that strengthen psychological resilience, acknowledge caregiving and parenting roles, and prioritize effective risk communication under conditions of uncertainty within public health and social policy frameworks.

6 Limitations

Despite its strengths, the present study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design precludes any causal inferences regarding the relationships among perceived stress, self-efficacy, and fear of COVID-19. Longitudinal studies are needed to clarify the temporal dynamics and potential bidirectional effects among these variables.

Second, data were collected using self-report measures, which may be subject to response biases such as social desirability and recall bias. Although standardized and validated instruments were used, future

studies may benefit from incorporating multi-method assessments, including clinical interviews or behavioral indicators.

Third, the sample consisted of volunteers recruited through online platforms, which may limit the generalizability of the findings. Individuals with limited internet access or lower digital literacy may have been underrepresented. In addition, although the study included participants from different regions of Turkey, the results may not be fully generalizable to other cultural or socioeconomic contexts.

Finally, the study did not assess pre-pandemic levels of stress or fear, which limits the ability to determine the extent to which the observed effects reflect pandemic-specific changes. Future research should consider prospective designs and include additional contextual variables, such as social support and coping strategies, to provide a more comprehensive understanding of parental psychological adaptation during large-scale crises.

7 Implications and Future Directions

The present findings have important clinical and practical implications. The identification of perceived stress as the strongest predictor of fear of COVID-19 highlights the central role of stress management in preventing excessive fear responses during large-scale crises. Interventions aimed at reducing parental stress and enhancing adaptive coping strategies may be particularly effective in promoting psychological resilience among families.

Moreover, the protective role of parental self-efficacy suggests that programs designed to strengthen parents' confidence in their caregiving abilities may help buffer the negative impact of prolonged uncertainty and threat. Parenting support interventions, psychoeducational programs, and family-centered mental health services may benefit from incorporating components that target self-efficacy and emotional regulation skills.

Given the heightened vulnerability observed among mothers and parents with health-related risks, targeted interventions for these high-risk groups may be warranted. Public health policies should consider the specific psychological needs of parents during and after public health emergencies and integrate family-focused mental health support into crisis response strategies.

Future research should employ longitudinal and cross-cultural designs to examine the long-term trajectories of fear and stress and to identify universal and culture-specific mechanisms underlying parental psychological adaptation. Such efforts may contribute to the development of more effective preventive and intervention programs for families facing future societal crises.

Declarations

Ethical approval and consent to participate

Ethical approval for this study was obtained from the Non-Interventional Research Ethics Committee of Hitit University (Approval No: 2020/87, Date: July 20, 2020). The study was conducted in accordance with the ethical principles of the Declaration of Helsinki (2013 revision). All participants were informed about the purpose and scope of the study, and informed consent was obtained electronically from all participants prior to participation.

Human ethics and consent to participate

Not applicable.

Consent for publication

Not applicable. This study does not include any identifying images or personal or clinical details of participants.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

AB: Conceptualization, methodology, data collection, statistical analysis, writing—original draft preparation, critical revision, and final approval of the version to be published. The author is responsible for all aspects of the study.

CK: Conceptualization, study design, data collection and statistical analysis, interpretation of results, supervision, theoretical framework development, validation, and critical revision. Final approval of the version to be published.

GÖS: Conceptualization, study design, data collection, support for statistical analysis, literature review, editing and revision, and final approval of the version to be published.

All authors have read and approved the final version of the manuscript.

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Data Availability

The datasets analyzed during the current study are not publicly available due to the necessity to preserve participant anonymity. However, they are available from the corresponding author upon reasonable request.

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