

Global Covid-19 Pandemic: A Comparison of Parents of Children with and Without Disabilities

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Abstract

Schools closures, relocations of companies to remote or reduce working, the ambiguous economic situation, and curfew restrictions on residents have caused many changes in daily lives of families. Without any doubt, drastic changes which have arisen from pandemic have adverse impacts on all children, but children with disabilities and their parents conceivably are more affected. The present study sheds lights on influential factors on perceived stress of parents of children with and without disabilities during global COVID-19 pandemic. The data were obtained from 369 parents living in Turkey using an online survey. Results confirmed that perceived burden, perceived social support, and problem behaviors of children predicted perceived stress of parents. Moreover, parents of children with disabilities reported significantly a lower level of social support and a higher level of problem behaviors for their children. The results highlight the necessity in receiving support services about how to deal with difficult situations for parents.

Keywords

Stress
Burden
Social support
Disability

About Article

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Küresel Covid-19 Pandemisi: Yetersizliği Olan ve Yetersizliği Olmayan Çocukların Ebeveynlerinin Karşılaştırılması

Özet

Okulların kapanması, şirketlerin uzaktan çalışmaya veya işi azaltmaya geçmesi, belirsiz ekonomik durum ve ikamet edenlere yönelik sokağa çıkma yasağı kısıtlamaları ailelerin günlük yaşamlarında birçok değişikliğe neden olmuştur. Şüphesiz pandemiden kaynaklanan bu köklü değişiklikler tüm çocukları olumsuz olarak etkilemiştir, ancak yetersizliği olan öğrenciler ve ebeveynleri muhtemelen daha fazla etkilenmiştir. Bu çalışma, küresel COVID-19 pandemisi sırasında yetersizliği olan ve olmayan çocukların ebeveynlerinin stres algıları üzerinde etkili olan faktörlere ışık tutmaktadır. Veriler, Türkiye'de yaşayan 369 ebeveyninden çevrimiçi bir anketle elde edilmiştir. Bulgular, algılanan bakım yükünün, algılanan sosyal desteğin ve çocukların problem davranışlarının, ebeveynlerin stres algılarını öngördüğünü doğrulamıştır. Ayrıca, yetersizliği olan çocukların ebeveynleri, sosyal destek algılarını anlamlı olarak daha düşük ve çocuklarındaki problem davranışları anlamlı olarak daha yüksek olduğunu bildirmiştir. Sonuçlar, ebeveynler için zor durumlarla nasıl başa çıkılacağı konusunda destek hizmetleri almalarının gerekliliğini vurgulamaktadır.

Anahtar Kelimeler

Stres
Bakım yükü
Sosyal destek
Yetersizlik

Makale Hakkında

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Introduction

The first COVID-19 case in Turkey was confirmed by the Ministry of Health in March 11th 2020. The day after, many protective measures and restrictions were taken by the state. The scope of these measures, which were gradually implemented, was expanded over time. On March 16th 2020, education activities were suspended for one week in elementary, middle and high schools. Starting from March 23rd 2020, an online platform entitled as EBA (Education Informatics Network [Eğitim Bilişim Ağı]) and the national broadcaster were used to air lessons in the country ("Millions of Turkish," 2020). Venues such as cinemas, concert halls, wedding halls, cafeterias, coffee shops, restaurants, massage saloons, swimming pools, and gymnasiums were temporarily closed by March 16th 2020; sports events were postponed by March 19th 2020; flights were suspended for 68 countries, a curfew was imposed for those under the age of 20 and above the age of 65 with some exceptions by March 22nd 2020; intercity travels were subjected to the permission of the governorship by March 28th 2020; and everyone was banned from leaving home during the weekends by April 10th 2020. The first peak of the first wave was on April 23rd 2020. The period of "controlled social life" started on May 10th 2020 and its scope was expanded over the time (Sert Karaaslan, 2021). A mass vaccination campaign was initiated on January 14th 2021 (Bayar & Aydogan, 2021). After one year, the country has entered the normalization process named as "controlled normalization" on March 2nd 2021, and lifted almost all restrictions on the basis of provinces (Sert Karaaslan, 2021).

As mentioned above, schools and educational institutions closures, relocations of companies to remote or reduced working, the ambiguous economic situation, and curfew restrictions on residents have caused many changes in daily lives of families. Without any doubt pandemic is a stressful occasion itself as a result of obligation of dealing with these changes along with managing personal life, discharging job duties, and caring family members at home. Whilst drastic changes which have arisen from pandemic have adverse impacts on all children, students with disabilities and their parents conceivably are more affected. For instance, the smallest changes and transitions can be difficult for individuals with autism spectrum disorders (Altable, 2020; Drogomyretska, Fox, & Colbert, 2020), since "insistence on sameness and an inflexible adherence to routines" are the main characteristic (American Psychiatric Association, 2013). Considering the fact that interruptions of daily routines in conjunction with new rules that are not very understandable (i.e. wear mask) for individuals with disabilities (Narzisi, 2020), parents of children with disabilities have had further parenting roles when compared to the typical parenting. All of these changes in the daily life increase the likelihood of experiencing stress and negative emotions by parents (Sprang & Silman, 2013), which emphasize the necessity of research in terms of comparing parents, and particularly parents' perceived stress. The present study sheds lights on influential factors on perceived stress of parents of children with and without disabilities during global Covid-19 pandemic.

Perceived Stress

One of the earliest snapshot of the impact of COVID-19 revealed mild to severe stress on one third of the respondents, confirming the fact that negative health outcomes have arisen from pandemic in China (Wang, Pan, Wan, Tan, Xu, Ho, & Ho, 2020). Another early research investigating the stress levels of families in the United States of America indicated that individuals had a high level of stress exposure, while for those who were caregivers were found to be at disadvantage (Park, Russel, Fendrich, Finkelstein-Fox, Hutchison, & Becker,

2020), and expectedly, that having more than one youngster particularly rose parents' burden (Uzun, Karaca, & Metin, 2021). There is also ample evidence that parents who had troubles in handling quarantine demonstrated more stress, which indirectly influenced children's emotional and behavioral problems due to the mediating role of stress (Spinelli, Lionetti, Pastore, & Fasolo, 2020). Stress exposure can lead to detrimental impacts on parenting behavior, negatively influence parent-child relationship, and increase the likelihood of engaging in harsh parenting (Deater-Deckard, 1998). Overall, stress is found to be related to an array of negative outcomes and influenced by many factors. For the conceptualization of this study, it is hypothesized that the burden of the family caregiver, perceived social support from family and friends, and problem behaviors of children predict perceived stress of parents during global Covid-19 pandemic. As such, it is noteworthy to examine perceived stress of parents of children with and without disabilities, since a comparison of parents will allow us to investigate the same scope two angles.

Burden of Caregivers

While pandemic itself has a pervasive impact on individuals and their families, it has a more extensive impact on caregivers due to the closures of educational institutions and childcare centers in response to COVID-19 which potentially increase parents' burden. Caregiver burden is a multifaceted concept which encompasses the "physical, psychological, emotional, social, and financial problems that individuals experience due to providing care" (George & Gwyther, 1986, p. 253). The lack of support during difficult situations cascade children's wellbeing potentially resulting in demonstration of psychological symptoms (Spinelli et al., 2020). Recently, caregiver burden was found to be positively related to perception of children's stress in a study conducted nearly five weeks after the first advised quarantine in the U.S (Russel et al., 2020), proving that burden is another influential factor on parents.

Children with special needs have more complicated daily cares when compared to the children who have typical development milestones, resulting in additional demands from their parents, which can increase their burden. For instance, parents who had children with developmental disabilities, specifically those who had children with autism spectrum disorders (ASD) and attention deficit and hyperactivity disorders (ADHD), reported significantly a greater level of stress and burden when compared to the parents of children without disabilities (Iovino, Caemmerer, & Chafouleas, 2021). Additionally, accessibility of childcare resources as well as supports focused on specially designed educational objectives predicted parents' burden during the pandemic (Iovino et al., 2021). The lack of secondary supports (e.g. therapy services, special education supports) because of the protective measures (i.e. quarantine) taken during the pandemic may increase the burden on parents, which is related to parents' stress.

Perceived Social Support

Another factor related to stress is the perceived social support which can be simply defined as "an exchange of resources between two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient" (Shumaker & Brownell, 1984, p.11). While curfew restriction has decreased the number of infected cases in many countries, it has had adverse consequences on individuals too, due to lack of socialization and mobility, which resulted in less social support from family and friends. However, social support is an important factor in mitigating one's stress and helping individuals in dealing with difficult situations in life (Armstrong, Birnie-Lefcovitch, & Ungar, 2005). Even the feeling of socially

connectedness during the COVID-19 pandemic is a factor contributing to COVID-19 related distress. Individuals who perceived a higher level of social connection during the lockdown expressed a lower level of distress in a study conducted with adolescents in Australia (Magson, Freeman, Rapee, Richardson, & Fardouly, 2021). A mild stress was found on individuals in a study conducted in China, which, in turn, may be linked to the increased level of social and family support reported by the majority of the respondents (Zhang & Ma, 2020). A recent study showed that the inability to see friends and family were found to be related to a higher level of burden during the pandemic for parents with and without disabilities (Iovino et al., 2021) which outlines the importance of the social support.

Problem Behaviors of Children

Demonstration of behavioral problems is more prevalent in relation to being physically less active during the COVID-19 pandemic (Liu, Zhou, Xie, Xue, Zhu, Wan, Wu, Zhang, & Song, 2021). A pioneer research conducted in China indicated that clinging, inattention, and irritability were the rigorous psychological signs exhibited by youngster ranging from age 3 to 18; while fear, anxiety, and other emotions were found to be greater in children living in high-risk areas (Jiao, Wang, Liu, Fang, Jiao, Pettoello-Mantovani, & Somekh, 2020). In another study conducted in China, conduct problems were found to be the highest type of problem behaviors among other types of problems experienced by children whereas anxiety symptoms of parents increased the likelihood of the demonstration emotional problems of school-aged children (Liu et al., 2021)

Recent COVID-19 research has emphasized the vulnerability of children with special needs and the impact of pandemic on their parents (Alhuzimi, 2021; Colizzi, Sironi, Antonini, Ciceri, Bovo, Zoccante, 2020; Lim et al., 2021). For instance, Alhuzimi (2021) particularly focused on parents who have children with ASD since adaptation of these children into the quarantine or isolation is more challenging as a result of the nature of the disability. Substantial proportion of parents of children with ASD reported that they had difficulties in managing free time and structured activities of their children and observed more intense and frequent problem behaviors on their children during the pandemic, implying the necessity of healthcare support and interventions (Colizzi et al., 2020). Lim et al. (2021) concluded that stress levels of caregivers of children with ASD were higher than pre-pandemic times suggesting that closures of schools and therapy/intervention services were factors influencing parents' stress negatively. In addition, children with intellectual disabilities are vulnerable due to their limitations to cognitively process the information related to COVID-19 (Courtenay & Perera, 2020). In another study conducted in Netherlands, Embregts et al. (2021) found that pandemic heightened the fears of mothers of children with intellectual disabilities and increased mothers' concerns about their children's wellbeing which may imply a high level of stress. A significant association was also found between concerns for the child and stress of parents with children with neurodevelopmental disabilities in a study conducted in Italy (Grumi et al., 2021).

Consequently, research suggests that disaster outcomes are more detrimental among children whose parents are higher in stress. The ongoing pandemic and findings of early research necessitate further research focusing on predictors on perceived stress of parents of children with and without disabilities during global COVID-19 pandemic.

Purpose and Research Questions

The goal of current study is to examine influential factors on perceived stress of parents of children with and without disabilities during global COVID-19 pandemic. These research questions will be explored: (1) what is the distribution of parents' perceived stress, perceived burden, perceived social support, and problem behaviors of children? (2) is there a significant difference in perceived stress, perceived burden, perceived social support, and problem behaviors of children for parents of children with disabilities and parents of children without disabilities? (3) do perceived burden, perceived social support, and problem behaviors of children predict parents' perceived stress?

Method

Research Design

Designed as a survey research, the current study aims to explore perceived stress, perceived burden, perceived social support, and problem behaviors of children. Surveys are used to gather data to explore characteristics, attitudes or opinions of large populations (Gall, Gall, and Borg, 2003). Due to restrictions during the global pandemic, an online survey by using a snowball sampling technique was used in the current research.

Participants

To be eligible for participation in this study, parents had to live in Turkey and care at least for one child at the age of 4 to 17 years old at the time of survey administration. In case of having more than one child, as mentioned in the online survey, the parent was directed to think about the oldest child who was under the age of 18 while filling out the survey. In total, 381 parents completed the survey. Among these respondents, four of them did not meet eligibility criteria (residing out of the country) and eight of them did not complete the whole survey. A total of 369 individuals responded to survey, of which 28.2% had a child with a disability. The majority (69.6%) of the respondents were females, with a mean age of 39.22 (SD = 6.92). Most of them (39.6%) hold bachelor's degree, followed by elementary school diploma (21.7%), high school diploma (17.1%), middle school diploma (11.1%), and graduate degree (10.5%), respectively. Table 1 shows detailed information about the participants.

Table 1. Participants

Demographic Variables	<i>n</i> (%)
Gender	
Female	257 (69.6%)
Male	112 (30.4%)
Educational degree	
Elementary school diploma	80 (21.7%)
Middle school diploma	41 (11.1%)
High school diploma	63 (17.1%)
Bachelor's	146 (39.6%)
Master's/doctoral	39 (10.5%)
Number of children	
One child	86 (23.3%)
Two children	175 (47.4%)

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Three children	72 (19.5%)
Four children	36 (9.8%)
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Children with disabilities	
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Yes	104 (28.2%)
Intellectual disabilities	30 (8.1%)
Autism spectrum disorders	17 (4.6%)
Attention deficit hyperactivity disorders	15 (4.1%)
Learning disabilities	14 (3.8%)
Orthopedic impairments	12 (3.3%)
Visual impairments	6 (1.6%)
Hearing impairments	3 (0.8%)
Not indicated	7 (1.9%)
No	265 (71.8%)

N = 369

Data Collection Tools

The online survey began with a consent letter covering brief information about the survey (the purpose, approximate time etc.), and assuring that participation is voluntary, that participants have rights to terminate the survey at any time, and that data are protected confidentially was used in this study. Furthermore, identifying demographic questions were not inquired to guarantee participants' confidentiality. Parents completed a researcher-created demographic information questionnaire, the Perceived Stress Scale (Eskin, Harlak, Demirkıran, & Dereboy, 2013), the Perceived Social Support from Family and Friends Scale (Eker, Arkar, & Yıldız, 2001), the Burden Scale of Family Caregivers (Ulusoy & Graessel, 2017), and the Strengths and Difficulties Questionnaire (<https://www.sdqinfo.org/py/sdqinfo/b0.py>, Güvenir, Özbek, Baykara, Arkar, Şentürk, & İncekaş, 2008). The study was conducted between February 13, 2021 and February 26, 2021 in Turkey.

Socio-Demographic Form

The form encompassed 12 questions in total, pertaining to the parent's gender, residential city, educational degree, age, working status during the pandemic, family income based on the minimum subsistence amount recognized in Turkey, impact of COVID-19 on the financial status, number of children, number of children with disabilities as well as their diagnosis, and the COVID-19 exposure.

Perceived Stress Scale (PSS)

The PSS is a global measure of perceived stress aiming to examine the degree to which situations in one's life are perceived as being stressful, which was developed by Cohen, Kamarck, and Mermelstein (1983). The PSS is a five point Likert scale that includes 14 items (from 0 = never to 4 = very often). The scores range from 0 to 56 points and a higher score indicates a greater level of perceived stress in the PSS. The reliability and validity of the Turkish version of the scale was established by Eskin et al. (2013). Eskin et al. (2013) found that all items were loaded on two factors as in the original scale and the internal consistency

reliability coefficient (Cronbach alpha) and the test-retest reliability coefficients were .84 and .87, respectively.

Burden Scale for Family Caregivers-short (BSFC-s)

The BSFC is a global measure of perceived burden of family caregivers, which was developed in German in 1993 and translated to English by Gräsel et al. (1995). The BSFC-s is a 4-point Likert scale (from 0 = strongly disagree to 3 = strongly agree) that includes 10 items. The scores in the BSFC-s range from 0 to 30 points and a higher score indicates a greater level of caregiver burden. Scores up to 4 points indicate a mild burden, scores between 5 and 14 indicate a moderate burden, and scores between 15 and 30 indicate a severe burden (Pendergrass, Malnis, Graf, Engel, & Graessel, (2018). 2018). Graessel, Berth, Lichte, and Grau (2014) established the reliability and validity of the short version and found that all items were loaded on one factor, the internal consistency reliability coefficient was .92, and the scale had a high discriminatory power. The BSFC-s was adapted to 20 languages, including Turkish (<http://www.caregiver-burden.eu>). Ulusoy and Graessel (2017) established the reliability and validity of the Turkish version of the BSFC and found that Cronbach's alpha for the total scale was 0.89. While both long and short versions are widely used in Turkey, the BSFC-s was used in this study because of its being an economical instrument.

Multidimensional Scale of Perceived Social Support from Family and Friends Scale (MSPSS)

The MSPSS is a global measure of social support which was developed by Zimet, Dahlem, Zimet, & Farley (1988). The MSPSS is a 7-point Likert scale (from 1 = very strongly disagree to 7 = very strongly agree) that includes 12 items. The scores in the MSPSS range from 12 to 84 and a higher score shows a greater level of social support. Eker et al. (2001) reestablished the Turkish version of the scale and reported that all items were loaded on three factors as in the original version (Zimet et al., 1988) and the prior adaptation study (Eker & Arkar, 1995). The internal consistency reliability coefficient was .89 in their recent research.

Strengths and Difficulties Questionnaire (SDQ)

The SDQ is a global measure of a brief behavioral screening questionnaire which was developed by Goodman (1997). The SDQ includes 3-point (from 0 = not true to 2 = certainly true) 25 items for completion by parents of children who are 4-16 years old. The SDQ includes five dimensions of five items: (1) the emotional symptoms, (2) conduct problems, (3) hyperactivity/inattention, (4) peer relationships problems, (5) and prosocial behavior. The first four dimensions were used in this study as being represented internalizing and externalizing problems proposed by Goodman et al. (2010). The scores range from 0 to 40 except for the prosocial behavior, which is recommended not to be used to calculate the full score since the deficiency of prosocial behaviors is different than other types of difficulties (Goodman, 1997). A higher score in the four dimensions indicates difficulties. The SDQ is one of the most frequently used instruments which is available in 75 languages (<https://www.sdqinfo.org/py/sdqinfo/b0.py>). Güvenir et al. (2008) assessed the reliability and validity of the Turkish version and found that the internal consistency reliability coefficient for the full scale was .84.

Data Collection and Analysis

An online survey by using a snowball sampling technique in which initial sources were asked to assist researchers in identifying potential participants was used in the current research.

Initial sources were identified as educators and principals of educational institutions (e.g. special education and rehabilitation centers, general education schools, special education schools) to reach out parents. Initial resources were asked to share the online survey link with parents. The snowball sampling technique helped to reach out more respondents as the parents were advised the forward the link to parents caring at least one child at the age of 4 to 17 years old.

Descriptive analyses (mean and standard deviation) were performed to reveal parents' perceived stress, perceived burden, perceived social support, and problem behaviors of children. The determination of normality was conducted by skewness and kurtosis. An acceptable range of normality of skewness and kurtosis is considered between -2 and $+2$ (George & Mallery, 2019). An independent sample t-test was performed to examine whether there is a significant difference in perceived stress, perceived burden, perceived social support, and problem behaviors of children for parents of children with disabilities and parents of children without disabilities. Next, relationships among perceived stress, perceived burden, perceived social support, and problem behaviors of children were examined using Pearson's bivariate correlations. Finally, a multiple linear regression with enter method was carried out to predict perceived stress of parents from perceived burden, perceived social support, and problem behaviors of children. An alpha level of .05 was used for all analyses. Data analysis was performed using IBM SPSS Statistics 25.

Findings

The items in the PSS, the BSFC-s, the MSPSS, and the SDQ were analyzed in means and standard deviations. Values of skewness and kurtosis were used to test the normality. The mean score on the PSS was 27.00 ($SD = 8.25$) ranging from 1 to 53 (skewness = $-.031$ and kurtosis = $.311$) for the whole sample. The mean score on the BSFC-s was 12.35 ($SD = 8.65$) ranging from 0 to 30 (skewness = $.321$ and kurtosis = $-.944$) for the whole sample. The mean score on the MSPSS was 58.08 ($SD = 17.15$) ranging from 12 to 84 (skewness = $-.413$ and kurtosis = $-.469$) for the whole sample. The mean score on the SDQ was 13.68 ($SD = 6.97$) ranging from 1 to 33 (skewness = $.468$ and kurtosis = $-.435$) for the whole sample. Values of skewness and kurtosis were found to be between -2 and $+2$ showing acceptable range of normality.

An independent sample t-test was conducted to compare perceived stress, perceived burden, perceived social support, and problem behaviors of children for both parents with children with disabilities and parents with children without disabilities. There was no significant difference in perceived stress, $t(367) = -1.00$, $p = .248$ for parents, despite parents of children with disabilities were higher in perceived stress ($M = 27.71$) than parents of children without disabilities ($M = 26.74$). Moreover, there was no significant difference perceived burden, $t(367) = -1.47$, $p = .696$, for parents, despite parents of children with disabilities were higher in perceived burden ($M = 13.42$) than parents of children without disabilities ($M = 11.94$). In addition, there was a significant difference in perceived social support for parents of children with disabilities ($M = 51.56$, $SD = 18.96$) and parents of children without disabilities ($M = 60.57$, $SD = 15.74$), $t(367) = 4.64$, $p = .009$. Findings suggest that perceived social support is significantly lower for parents of children with disabilities than parents of children without disabilities. Lastly, there was a significant difference in problem behaviors of children with disabilities ($M = 18.25$, $SD = 7.17$) and children without disabilities ($M = 11.93$, $SD = 6.04$), $t(367) = -8.53$, $p = .024$. Findings suggest that problem behaviors of children with disabilities are significantly higher than children without disabilities. Results are shown in Table 2.

Table 2. An Independent Sample T-test Comparing Parents

Outcome	Parents of children with disabilities			Parents of children without disabilities			<i>t</i>	<i>df</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>			
PSS	27.71	8.23	102	26.74	8.25	267	-1.00	367	.248
BSFC-s	13.42	8.83	102	11.94	8.55	267	-1.47	367	.696
MSPSS	51.56	18.96	102	60.57	15.74	267	4.64	367	.009*
SDQ	18.25	7.17	102	11.93	6.04	267	-8.53	367	.024*

p < .05

A Pearson correlation coefficient was computed to calculate the linear correlations among perceived stress, perceived burden, perceived social support, and problem behaviors of children. There was a positive correlation between perceived stress and perceived burden, $r = .52$, $N = 320$ ($p = .000$); perceived stress and problem behaviors of children, $r = .33$, $N = 320$ ($p = .000$); and perceived burden and problem behaviors of children, $r = .33$, $N = 320$ ($p = .000$). In addition, there was a negative correlation between perceived stress and perceived social support, $r = -.31$, $N = 320$ ($p = .000$); perceived burden and perceived social support, $r = -.30$, $N = 320$ ($p = .000$); and perceived social support and problem behaviors of children, $r = -.19$, $N = 320$ ($p = .000$). Correlations among independent variables were less than 0.7, showing that multicollinearity is not a problem. Findings of the bivariate correlations among perceived stress, perceived burden, perceived social support, and problem behaviors of children can be found in Table 3.

Table 3. Correlations Among Variables

	1	2	3	4
1. PSS	-			
2. BSFC-s	.52**	-		
3. MSPSS	-.31**	-.30**	-	
4. SDQ	.33**	.33**	-.19**	-

** . Correlation is significant at the .01 level (2 tailed)

A multiple linear regression analysis was used to identify predictor variables associated with perceived stress of parents. The linear regression assumptions regarding normality, linearity, independence, multicollinearity, and homoscedasticity were met in this study. The p-value for the Shapiro-Wilk test was at .198, suggesting that dependent variable was normally distributed. The Durbin-Watson statistic was 2.12, suggesting that residuals are independent. VIF scores were well below 10, tolerance scores were above 0.2, and correlations among independent variables were less than 0.7, suggesting that there is no multicollinearity. Scatter plots showed no obvious signs of funneling, suggesting that data are homoscedastic. The overall model explained 31.9% of the variance in perceived stress of parents, $F(3, 365) = 56.993$, $p = .000$.

The independent variables that made significant contributions to the model, i.e. predicted perceived stress of parents, were perceived burden, perceived social support and problem behaviors of children. With one-unit increase in perceived burden, the perceived stress of parents increased by .39, $t(365) = 8.72, p = .000$. With one-unit increase in perceived social support, the perceived stress of parents decreased by .08, $t(365) = -3.55, p = .000$. With one-unit increase in problem behaviors of children, the perceived stress of parents increased by .20, $t(365) = 3.62, p = .000$. Findings suggest that perceived stress was predicted by a lower level of social support and higher level of burden and problems behaviors of children. Table 4 presents the test statistics of each predictor variable.

Table 4. Results of Multiple Linear Regression Analysis

Predictor	<i>B</i>	SE	β	<i>t</i>	<i>p</i>
BSFC-s	.39	.045	.413	8.72	.000
MSPSS	-.08	.022	-.161	-3.55	.000
SDQ	.20	.054	.167	3.62	.000

$p < .05$

Discussion

In this study, influential factors (perceived burden, perceived social support, and problem behaviors of children) on perceived stress on parents of children with and without disabilities during global COVID-19 pandemic was investigated. Results of this study are discussed in the light of available research.

Initially, means of perceived stress, perceived burden, perceived social support, and problem behaviors of children were compared to the prior research. For instance, the mean of perceived stress was 27.00 in the PSS, showing a moderate perceived stress during the pandemic. Further examination showed that there was no significant difference in perceived stress between parents while perceived stress was slightly higher for parents of children with disabilities. This finding was in contrast with the research of Iovino et al. (2021) which indicates that parents of children with developmental disabilities were significantly subjected to higher stress and burden when compared to parents of children without disabilities. Similarly, Embregts et al. (2021), Grumi et al. (2021), Lim et al. (2021) revealed a higher level of stress for parents of children with intellectual disabilities, neurodevelopmental disabilities, and autism spectrum disorders, respectively. One assumption for unexpected finding of the present study was related to the time when the study was conducted, after one year of the COVID-19 pandemic. Possibly, parents have become accustomed to the conditions arisen from pandemic, resulting in moderate level of stress.

In terms of the perceived burden of parents, the mean was found to be 12.35 in the BSFC-s, indicating a moderate burden during the COVID-19 pandemic. Mixed results exist in the literature. For instance, a moderate level of burden is consistent with a relevant COVID-19 study (Russel et al., 2020), while Iovino et al. (2021) reported a higher level of burden. Iovino et al. (2021) emphasized the stability of burden from April 2020 to October 2021 for parents of children without disabilities, but with a higher level of burden. A moderate level of stress emerged from the present study can be related to, again, the time when the study was conducted. Further exploration showed that there was no significant difference in perceived burden between parents while perceived burden was slightly higher for parents of children

with disabilities. This was not consistent with previous research, indicating that the burden was significantly higher for parents of children with developmental disabilities (Iovino et al., 2021). This finding may be explained by the idea that; since the children have different types of disabilities reported by parents in this study, a moderate level of burden may be reasonable in accordance with the different amounts of burdens between different types of disabilities. Future research should explore perceived burden of parents by the type of disability in case of pandemic or emergency situation.

In terms of the perceived social support, the mean was found to be 58.08 in the MSPSS, indicating a moderate support during the pandemic. Further examination indicated that parents of children with disabilities reported significantly lower levels of social support ($M = 51.56$) than parents of children without disabilities ($M = 60.57$). This finding is not surprising as vulnerable groups are less likely to receive social support in their daily lives as evidenced in prior research (Drogomyretska et al., 2020). Drogomyretska et al. (2020) found that perceived social support for the parents of children autism spectrum disorders was lower ($M = 45.15$) than the perceived social support explored in this study, implying that perceived social support can differ by the type of disability. This finding can be an important area for future research.

In terms of problem behaviors of children, the total score of the SDQ was found to be 13.68 in the SDQ, indicating that children had a high level of problem behaviors. Considering the home confinement and online education at the time of the conduction of the study, it is not surprising for parents to report a higher level of problem behaviors for their children. We can speculate that the physical isolation can be more challenging for children. As expected by recent evidence (Alhuzimi, 2021; Colizzi et al., 2020; Lim et al., 2021), parents of children with disabilities ($M = 18.25$) reported a higher level of problem behaviors than parents of children without disabilities ($M = 11.93$). This finding is coherent with the findings of the adaptation study (Güvenir et al., 2008) where the SDQ form was administered to the parents of children who applied to the psychological clinic ($M = 17.40$) and parents from the community ($M = 15.31$). It should be noted that there is limited information about special education programs and sustainability of the online education for students with disabilities during the COVID-19. The dramatic disruptions and changes in daily routines may lead to an increase in problem behaviors for students with disabilities, which also implies the necessity of emergency plan for this population.

In terms of correlations among perceived stress, perceived burden, perceived social support, and problem behaviors of children, findings were as expected. First, more problem behaviors of children were associated with higher perceived stress and higher perceived burden of parents. Second, less social support was associated with higher perceived stress, higher perceived burden, and more problem behaviors of children in the current study. As a result of increased time that is spent at home due to online education in conjunction with curfew restrictions, it is possible to speculate that children demonstrate more problem behaviors which may increase parents' stress as well as parents' burden and decrease the amount of social support. Through the multiple linear regression analysis, it was confirmed that perceived burden, perceived social support, and problem behaviors of children are predictors on parents' perceived stress. Previously, parental support (Brown et al., 2020) and social support (Drogomyretska et al., 2020; Ren et al., 2020) were found as protective factors over stress for parents. Despite the limited research examining perceived burden and perceived

social support on parents' stress, results are indicative of potential solutions to alleviate stress. Helping parents, which would reduce their burden at home and enhance their sense of social support, would also reduce perceived stress of parents. Perceived social support derived from friends was particularly important for parents of children with ASD (Drogomyretska et al., 2020). In this regard, external sources (e.g. community-based family support programs, parenting therapy) should be readily available for potential disasters. In addition, the relationship between problem behaviors and stress was well-established in previous studies (Alhuzimi, 2021). For instance, the severity of ASD symptoms was significantly related to the parental stress (Alhuzimi, 2021). The findings are consistent with relevant research, confirming that increased burden and social support in conjunction with less problem behaviors of children predict perceived stress of parents.

Conclusion and Recommendations

In the face of pandemic, it is still unknown what factors influence the perceived stress of parents. As identified in this study, parents' perceived stress was predicted by perceived burden, perceived social support, and problem behaviors of children, contributing to the literature. As such, this study has a number of implications highlighting the necessity of support services for parents, such as counseling, education programs, community-based family support programs, and parenting therapy to express their problems as well as concerns and receive assistance about how to deal with difficult situations, which in turn reduce parents' stress.

The present study is subjected to some limitations. Initially, pre-pandemic baseline data were not available for the sample; thereby, the results provide exploratory evidence which can be used as a baseline data when we return to 'normalcy' in the future. As pandemic is still ongoing, it is recommended to conduct a follow-up study to have stronger inferences about the perceived stress, perceived burden, perceived social support, and problem behaviors of children. In addition, examination of the study variables by the type of disability would provide a deeper understanding about a specific population. In conclusion, results of this study will benefit practitioners by informing them about influential factors on stress parents and help them to develop disaster plans to support parents in cases of potential disasters.

Ethics Committee Approval Information

Prior to data collection, the study was received approval by Ibn Haldun University Ethical Board with a protocol number of 2021/01-4 issued on 21/01/2021.

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