

The Biopsychosocial Profile of Egyptian Children with Special Needs and Their Caregivers during the Coronavirus (COVID-19) Pandemic: An Exploratory Study

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ABSTRACT

The coronavirus pandemic (COVID-19) is one of the crises that had its drawbacks for all people and various aspects of their life activities. Especially, children with special needs and their caregivers who are in extreme need of attention in all health, psychological, and social fields. Therefore, this study explored the biopsychosocial profile of children with special needs and their caregivers during the COVID-19 pandemic. The biopsychosocial model determined the pandemic's effects regarding health follow-up, nutrition, learning, and psychological and social impacts. To screen the impact of the COVID-19 pandemic, 120 Egyptian caregivers of children with special needs responded to an online questionnaire distributed through social media. According to the findings, children with special needs suffered from negative effects in all health domains (physical, psychological, and social health) during the pandemic. The caregivers suffered from unavailability of health and rehabilitative services, disturbed social life, parental anxiety, and negative effects on income. The research findings showed that children with special needs and their caregivers did not escape from the drawbacks of the COVID-19 crisis.

KEYWORDS: Egypt; Biopsychosocial model; Developmental disorders; Childhood disabilities; COVID-19.

Introduction

The care of people with special needs is one of the important priorities of societies because a significant percentage of their members have one or more types of disability that hinder their full participation. With the announcement of the World Health Organization [WHO] that the novel coronavirus Covid-19 is a global pandemic, no space should be given to leave anyone behind, and many precautionary measures were imposed, these measures has led to a rise in anxiety and fear among individuals. This pandemic has affected everyone in general and people with special

needs in particular as they usually depend on the help of others to get their needs (Barhoumi, 2020).

The Coronavirus pandemic has had an evident impact on people and communities in a way that the world has never seen before, and this situation has hit a state of social panic in the world that has generated real fears among individuals in different countries. Stress is one of the main consequences of the societal impact of pandemic outbreaks, often affecting individuals' mental and emotional health along with growing concerns about the perceived threat of disease (Pierce et al., 2020 ; Sadati et al., 2020).

Moreover, the families of children with special needs have difficulties meeting their children's educational and medical needs at home, and this burden comes surprisingly with the lack of training, and economic and social support (Neece et al., 2020 ; Sun et al., 2020). Therefore, social cohesion is mandatory, especially in challenging times.

Wang & Zhao (2020) addressed the impact of Covid-19 on the psychological state of individuals, the results of the study indicated that the Coronavirus led to many negative consequences e.g. increased sensitivity to social risks, and a reduced sense of happiness and satisfaction in individuals, and in this regard, Dhiman et al. (2020) added that children with special needs are a particularly vulnerable group during the Corona pandemic because they rely on a wide range of services that have been suspended during this pandemic.

Moreover, isolation of children in homes has a greater psychological burden than physical suffering because the closure of schools, the lack of exposure of children to air, and the change of habits and lifestyle can lead to children feeling lonely and upset. If these are the effects of the pandemic on ordinary children, then here we ask how the impact on children with special needs after they have been deprived of receiving care due to the cessation of rehabilitation centers from doing their part and depriving them of going out of the house for the medical follow-up they need (Ghosh et al., 2020).

The Coronavirus crisis has severely affected the mental health of parents due to unstable financial conditions that resulted in psychological pressures and fears, hence the urgent need for family-based interventions during emergencies to prevent the exacerbation of psychological problems (Fontanesi et al., 2020).

Therefore, the biopsychosocial analysis of the effects of the pandemic could be helpful for further programs and strategies for improving the health of children with special needs and their caregivers.

Research Objectives

1. To explore the health, psychological, and social status of children with special needs during the Coronavirus pandemic starting in 2020.
2. To determine the availability of therapeutic and rehabilitation services for children with special needs.

- To evaluate the psychological and financial burden on the caregivers.

Methodology

The selection of the sample: The caregivers of children with special needs who participated in filling an electronic questionnaire distributed on the pages and groups of the families of children with special needs in social media between April and December 2021. The collected sample was 120 caregivers from different governorates in Egypt.

The study design: An exploratory observational study

The research tools and data collection: An electronic questionnaire composed of 44 questions collected the responses about the socio-demographic data about the children and the caregivers, awareness, and measures against COVID-19, its effects on the health and nutrition of the child, parent and child social life, the child's education, the income, and parent and child psychological state.

The data were processed statistically to reach the results using the Statistical Package for the Social Science software program version 20 (IBM SPSS v20).

Ethics approval and consent to participate.

The Ethics Committee of the Faculty of Medicine, Alexandria University approved the study (IRB NO:00012098, FWA NO:00018699), and informed consent was obtained from all participants through the online survey after defining the objectives of the study, and the required time to complete the survey, and the contact information for queries. The study was conducted in accordance with the Declaration of Helsinki.

Results:

According to the socio-demographic data of the children and the caregivers, table 1 illustrated that children with developmental delays and disabilities were more males than females (66.1% and 33.9% respectively). About 42% of children were in the age group (6-12 years). Most children (67.5%) were under the care of both parents. However, 30.8% of children were only under their mothers' care. According to parental work, about half of fathers were fixed-wage employees while almost one-third were employees with variable wages. Most mothers (70.1%) did not work. According to education, nearly two-thirds of fathers (61.1%) have a university education and 57% of mothers have a university education. The main participants were from the governorates of Alexandria and Kafr al-Sheikh (40.5% and 24.1% respectively). Communication disorders and behavioral disorders were at the top of the developmental disorders categories (38.5% and 37.8% respectively). Health and rehabilitative services were available in 51.7% and 43.2% of the children, respectively.

Table 1. The Socio-Demographic Data of the Children and the Caregivers.

The socio-demographic data of the children and the caregivers	N	%	X ² (df)	P	
Residency (n=116)	Alexandria	47	40.5	23.8 ⁽³⁾	0.00*
	Cairo	10	8.6		

	Kafr Elsheikh	28	24.1		
	Other governorates	31	26.7		
Sex (n=118)	Male	78	66.1	12.2 ⁽¹⁾	0.00*
	Female	40	33.9		
Age (n=111)	0-2	5	4.5	36.3 ⁽³⁾	0.00*
	3-5	37	33.3		
	6-12	47	42.3		
	13-17	22	19.8		
Type of disability or delay (n=117) #	Communication disorders	45	38.5	7.2 ⁽¹⁾	0.01*
	Behavioral disorders/ learning disability	44	37.6	6.2 ⁽¹⁾	0.01*
	Intellectual disability	24	20.5	40.7 ⁽¹⁾	0.00*
	Developmental delay	17	14.5	58.9 ⁽¹⁾	0.00*
	Motor disability	11	9.4	77.1 ⁽¹⁾	0.00*
	Deafness	7	6.0	90.7 ⁽¹⁾	0.00*
	Blindness	3	2.6	105.3 ⁽¹⁾	0.00*
	Others	1	0.9	113.0 ⁽³⁾	0.00*
The caregiver (n=117)	Both parents	79	67.5	76.4 ⁽²⁾	0.00*
	Mother	36	30.8		
	Others	2	1.7		
Father's work (n=114)	Fixed	58	50.9	59.1 ⁽³⁾	0.00*
	Variable	36	31.6		
	No work	16	14.0		
	Unapplicable	4	3.5		
Mother's work (n=117)	Fixed	26	22.2	74.8 ⁽³⁾	0.00*
	Variable	9	7.7		
	No work	82	70.1		
	Unapplicable	0	0.0		
Father's education (n=113)	Illiterate	2	1.8	145.7 ⁽⁴⁾	0.00*
	Literate	3	2.7		
	Primary	7	6.2		
	Secondary	32	28.3		
	University	69	61.1		
Mother's education (n=111)	Illiterate	4	3.6	112.9 ⁽⁴⁾	0.00*
	Literate	3	2.7		
	Primary	15	13.5		
	Secondary	25	22.5		
Health services availability [regional hospitals and clinics] (n=116)	Yes	60	51.7	21.9 ⁽²⁾	0.00*
	No	19	16.4		
	Limited	37	31.9		
Rehabilitative services availability [regional centers of physiotherapy and early intervention] (n=118)	Yes	51	43.2	5.2 ⁽²⁾	0.07
	No	34	28.8		
	Limited	33	28.0		

Chi-square test * p <0.05 # Multiple response question

Table 2 shows that the internet and TV were the main sources of information about Coronavirus (75% and 63.8% respectively). Most caregivers (65.2%) thought that coronavirus was dangerous but cleaning and social distancing were enough to dispose of it. Most caregivers (72.4%) agreed that continuous handwashing was a suitable preventive measure that could be used with the children. Nearly half of caregivers (52.6%) stated that there were activities in the schools and centers to raise the children's awareness about infection and how to apply preventive measures.

Table 2. Awareness and Measures Against COVID-19.

Awareness and measures against COVID-19	N	%	X ² (df)	P
Sources of information about Coronavirus (n=116) #				
Internet	87	75.0	70.6 ⁽¹⁾	0.00*
Tv	74	63.8	46.7 ⁽¹⁾	0.00*
Doctors and health workers in the health centers	53	45.7	27.6 ⁽¹⁾	0.00*
Mobile messages	16	13.8	0.9 ⁽¹⁾	0.33
Radio	12	10.3	2.5 ⁽¹⁾	0.12
Others	5	4.3	9.9 ⁽¹⁾	0.00*
The perception of the severity of Coronavirus (n=115)				
Dangerous, it needs complete isolation.	30	26.1	113.9 ⁽³⁾	0.00*
Dangerous but cleaning and social distancing are enough.	75	65.2		
Not dangerous, it does not need all these actions.	3	2.6		
I cannot specify	7	6.1		
The suitable preventive measures that could be used with the children (n=116) #				
Washing hands continuously	84	72.4	23.3 ⁽¹⁾	0.00*
Mask or face shield-wearing	78	67.2	13.8 ⁽¹⁾	0.00*
Avoidance of the crowded places	78	67.2	13.8 ⁽¹⁾	0.00*
The complete lockdown	15	12.9	63.8 ⁽¹⁾	0.00*
Others	3	2.6	104.3 ⁽¹⁾	0.00*
Offering activities in the schools, and centers to raise the children's awareness about the infection and how to apply the preventive measures (n=116)	61	52.6	21.5 ⁽²⁾	0.00*
	34	29.3		
	Nil	21	18.1	

Chi-square test * p < 0.05 # Multiple response question

Most caregivers (84.1%) mentioned in Table 3 that the COVID-19 pandemic had a negative effect on the child's general health to different degrees. The caregivers who suffered from difficulty in health status follow-up were 69.2%. The main cause of difficult follow up was the lockdown and home isolation in 33.3% of the caregivers. About one-third of the children (33.3%) needed other medications. According to the child's weight change, 15.5% of the children suffered from weight loss and 21.6% of the children had weight gain. The cause for the change in the child's diet and weight was mainly due to the prolonged stay at home and the child's health status (65.6% and 30.2% respectively).

Table 3. The Effects of the COVID-19 Pandemic on the Child's Health and Nutrition.

Effects of the COVID-19 pandemic on the child's health and nutrition	N	%	X ² (df)	P
No	20	16.9	7.5 ⁽³⁾	0.06
Child general health (the negative effects on the associated medical conditions) (n=118)	34	28.8		
Mild	39	33.1		
Moderate	25	21.2		
Severe	81	69.2	17.3 ⁽¹⁾	0.00*
The difficulty of health status follow-up (n=117)	36	30.8		
Causes of difficult health follow-up (n=81) #				
The lockdown & home isolation	36	33.3	1.0 ⁽¹⁾	0.32
Difficult transportation	22	20.4	16.9 ⁽¹⁾	0.00*
Health providers unavailability	35	32.4	1.5 ⁽¹⁾	0.22
Other causes	15	13.9	32.1 ⁽¹⁾	0.00*
Increased the need for other medications (n=111)	37	33.3	12.3 ⁽¹⁾	0.00*
Yes	74	66.7		
No	18	15.5	46.7 ⁽³⁾	0.00*
Child weight change (n=116)	25	21.6		
Weight loss	60	51.7		
Weight gain	13	11.2		
No change				
Absent follow up				

The probable causes of change in the child's diet (n=96) #				
The prolonged stay at home	63	65.6	8.0 ⁽¹⁾	0.01*
Lack of food resources	9	9.4	65.3 ⁽¹⁾	0.00*
The child's health status	29	30.2	16.3 ⁽¹⁾	0.00*
Other causes	2	2.1	90.2 ⁽¹⁾	0.00*

Chi-square test * p <0.05 # Multiple response question

Table 4 shows the effect of COVID-19 pandemic on parent and child social life. Both parent and child social life was disturbed in 91.4% of the children. About two thirds of the children (62.8%) who previously practiced sports, stopped their practice.

Table 4. The Effects of the COVID-19 Pandemic on Parent and Child Social Life.

Effects of the COVID-19 pandemic on parent and child social life	N	%	X ² (df)	P	
Child social life (the negative effects on his relationship with peers, family, and daily activities) (n=116)	No	10	8.6	20.5 ⁽³⁾	0.00*
	Mild	28	24.1		
	Moderate	35	30.2		
	Severe	43	37.1		
Previous sports practice (n=116)	Yes	43	36.8	8.2 ⁽¹⁾	0.00*
	No	74	63.2		
Sport continuity (n=43)	Stopped	27	62.8	19.0 ⁽²⁾	0.00*
	Partial continuity	12	27.9		
	Total continuity	4	9.3		
Parent social life (n=116)	No	10	8.6	37.9 ⁽³⁾	0.00*
	Mild	17	14.7		
	Moderate	52	44.8		
	Severe	37	31.9		

Chi-square test * p <0.05 # Multiple response question

Table 5 showed the effect of the COVID-19 pandemic on the child's education. Child learning and education were disturbed by 91.5% of the children. Severe failure in educational activity was in 32.5% of the children. About half of the children (52.6%) joined an early intervention program while nearly one third of them (31.9%) were in the educational inclusion program. About two thirds of the children (60.3%) stopped their learning and educational programs during the pandemic.

Table 5. The Effects of the COVID-19 Pandemic on the Child's Education.

Effects of the COVID-19 pandemic on the child's education	N	%	X ² (df)	P	
Child learning and education (the negative effects that hinder the follow-up of educational programs, and acquisition of skills) (n=117)	No	10	8.5	44.8 ⁽³⁾	0.00*
	Mild	14	12.0		
	Moderate	39	33.3		
	Severe	54	46.2		
Effect of educational activity change (n=114)	Severe failure	37	32.5	35.4 ⁽⁴⁾	0.00*
	Mild failure	39	34.2		
	No effect	14	12.3		
	Mild improvement	16	14.0		
	Noticeable improvement	8	7.0		
Type of the previous interventions and programs (n=116) #					
Early intervention program	61	52.6	0.3 ⁽¹⁾	0.58	
The educational inclusion program	37	31.9	15.2 ⁽¹⁾	0.00*	
Homeschooling	32	27.6	23.3 ⁽¹⁾	0.00*	
Other interventions	10	8.6	79.5 ⁽¹⁾	0.00*	
No interventions	18	15.5	54.3 ⁽¹⁾	0.00*	
The methods of continuity of the educational and early intervention programs (n=117) #					
Stopped	70	60.3	5.0 ⁽¹⁾	0.03*	
Home-based interventions	36	31.0	16.7 ⁽¹⁾	0.00*	

Online	17	14.7	58.0 ⁽¹⁾	0.00*
Another method	13	11.2	69.8 ⁽¹⁾	0.00*

Chi-square test * p <0.05 # Multiple response question

Table 6 illustrated that the pandemic had a negative effect on the family income in 93.9% of the caregivers. The financial burden increased for 77.4% of the caregivers and it was a severe burden for 40.9% of the caregivers. The parents' work was severely disturbed by 32.5% of the caregivers.

Table 6. The Effects of the COVID-19 Pandemic on the Family's Income.

Effects of the COVID-19 pandemic on the income	N	%	X ² (df)	P	
The negative effects on income (n=115)	No	7	6.1	44.7 ⁽³⁾	0.00*
	Mild	17	14.8		
	Moderate	38	33.0		
	Severe	53	46.1		
Increase in financial burden (n=115)	Decreased	11	9.6	35.2 ⁽³⁾	0.00*
	No increase	15	13.0		
	Mild increase	42	36.5		
	Severe increase	47	40.9		
The negative impact on the parent's work (the stoppage, interruption of work, or doing overtime) (n=117)	No	18	15.4	17.7 ⁽³⁾	0.00*
	Mild	18	15.4		
	Moderate	43	36.8		
	Severe	38	32.5		

Chi-square test * p <0.05 # Multiple response question

Table 7 showed that the feelings of fear and anxiety increased in two thirds (60%) of the children. The difficult behavior increased in 80.2% of the children. About one third of the children (36.5%) needed psychological support and nearly one third of the children (34.8%) were also in need but no awareness about the people or services that could help. Most parents (93.9%) suffered from anxiety. Nearly half of the caregivers (49.6%) needed psychological support. About 36% of the caregivers were unsatisfied with the presented services to the child.

Table 7. The Psychological Effects of the COVID-19 Pandemic.

The psychological effects of the COVID-19 pandemic	N	%	X ² (df)	P	
Fear and anxiety increase (n=115)	I do not know	28	24.3	21.0 ⁽³⁾	0.00*
	No increase	18	15.7		
	Mild increase	49	42.6		
	Severe increase	20	17.4		
Difficult behavior increase (n=116)	I do not know	8	6.9	48.1 ⁽³⁾	0.00*
	No increase	15	12.9		
	Mild increase	55	47.4		
	Severe increase	38	32.8		
Child need for psychological support (n=115)	Yes	42	36.5	1.2 ⁽²⁾	0.56
	No	33	28.7		
	Yes, but I do not know who can help	40	34.8		
Parental anxiety (n=114)	No	7	6.1	42.0 ⁽³⁾	0.00*
	Mild	16	14.0		
	Moderate	45	39.5		
	Severe	46	40.4		
Parental need for psychological support (n=115)	Yes	57	49.6	23.9 ⁽²⁾	0.00*
	No	15	13.0		
	I can pass it	43	37.4		
Parent satisfaction with child	Severe unsatisfied	22	19.0	7.4 ⁽⁴⁾	0.12

services (n=116)	Mild unsatisfied	20	17.2
	Just satisfied	32	27.6
	Mild satisfied	27	23.3
	Large satisfaction	15	12.9

Chi-square test * p <0.05

Discussion:

Families with children with special needs face a lot of challenges in their attempts to adapt to the presence of children with special needs, as well as the spread of the coronavirus and the imposed home isolation and precautionary measures. During this period, the negative effects were not only limited to adults but extended to children who were deprived of forms of effective communication and recreational activities that they practiced, and the effects were not only limited to ordinary children but included children with special needs and their families (Gadermann et al.,2021; El-Zoghby et al.,2020; El-Zaki,2020).

Regardless of the pandemic, the caregivers in this research suffered from a shortage of health and rehabilitative services, and this is agreed with the analysis of Cieza et al (2021) with its keynote "The unmet needs of children and adolescents with disabilities are steadily increasing because services have not been expanded despite many more children requiring care".

Regarding the awareness channels about COVID-19 and its preventive measures, the internet played a significant role, and this was identical to the results of Abdelhafiz et al. (2021), who clarified that the knowledge gained mainly through social media and the internet, as well as Egyptian people's perception of COVID-19, is a dangerous disease.

However, with the disruption of the daily lives of families and children due to the closure of schools and social distancing, economic burdens and family conflicts have increased, leading to additional effects on the mental health of children. A study conducted in the UK in 2020 showed that during the first wave of COVID-19, children whose parents were under stress were three times more likely to develop psychological problems than others (Vizard et al.,2020). This was compatible with our study, as COVID-19 affected the social life and mental health of both children and caregivers.

One of the mental health consequences of this pandemic was an increase in the proportion of parents who suffer from an increase in negative thoughts and feelings, stress, and anxiety, as well as an increased incidence of domestic violence since the beginning of the pandemic (Holmes et al.,2020 ;Pfefferbaum& North, 2020).

Patrick's study confirmed that the precautionary measures taken to control the epidemic led to social distancing, difficulty in providing social care services, deficits in the educational process, increased risks, and increased behavioral problems in the diet, according to parents' reports (Patrick,2020).

In Egypt, the studies concluded that prolonged lockdowns lead to changes in eating patterns in children and adolescents, linked to factors contributing to physical

inactivity and long screen time, as well as sleep disturbances and increased mental disorders such as anxiety and depression (Hashem et al.,2020 ; Mekkawy, 2022). Besides, AboKresha et al. (2021) showed an increase in violence against children during the isolation period.

The negative impact of the Corona pandemic affected children with special needs and their caregivers in the fields of social and health life (Cluver et al.,2020). This was like the results of the current study, as there were negative impacts on general child health and family life as the children's stay at home caused an increase in parents' anxiety, and the Corona crisis also affected the family's income, work, education, and access to health services.

Chanchlani et al. (2020) also discussed the strong effects of the pandemic on the public health of children and youth, where the difficulty of accessing health care, which increased compared to the same period in previous years, school closures, and financial and employment instability increased the risk of exposure to negative childhood experiences, including domestic violence and trauma. The study also recommended that safe care should be provided in hospitals, and there is a need for effective communication with children and their families to provide continuous care.

The United Nations has also warned of unprecedented risks to the rights and safety of the world's children (UNICEF, 2020). This is consistent with the results of the current study about the impact of the Corona pandemic on children's education, as 91.5% suffered from disturbances in educational and learning problems because of the children's cessation of educational and learning programs during the pandemic.

In this regard, the study of Sinha et al. (2020) indicated that the impact of the Corona pandemic was not limited to the economic and social level only but included the health and educational aspects of children, as the main driver of the child's poor condition rose to 4.1 million children, and social distancing measures and school closures led to a boycott of educational paths for most children, but for some children, the lack of the Internet, electronic devices, and quiet space at home exacerbated the inequality of educational outcomes despite the plans to reopen schools in phases.

The results of the current study also showed in Table (6) that the Corona pandemic has a negative impact on family income by 93%, increasing the financial burden of care, increasing feelings of fear and anxiety by 60%, increasing difficult behaviors in children by 80%, and 93.9% of parents suffered from anxiety, which led to nearly half of them needing psychological support, and the rate of parents' dissatisfaction with the services provided to children reached 36.2%.

The Corona pandemic has also profoundly affected aspects of society, including psychological, social, neurological, and mental effects (Holmes et al.,2020 ;Pfefferbaum& North, 2020). So, it has become an urgent priority to study the situation of parents of children with special needs and to collect high-quality data on the effects of the Corona pandemic on the entire population and on the health, educational, and psychological aspects. An urgent need has emerged to research and address how the effects of the Corona pandemic on mental health can be mitigated for children with special needs by exploring, evaluating, and encouraging

interventions to address the psychological, social, and neurological aspects and what they require to meet the challenge.

A study by Gadermann et al. (2021) agreed that parents with children under 18 years old suffer from stress and anxiety about their children's health, education, and mental health, as a high percentage of parents felt stressed about caring for their children while continuing to work, the great financial concerns amounting to 45.6%, and the percentage of concerns about mental health problems was 27.8%.

The stress and anxiety of parents and their financial fears due to the Corona pandemic have led to an increase in negative attitudes towards their children, an increase in conflicts, and the use of harsh words. The children were relatively exposed to neglect during the Corona pandemic and the conditions that have been exacerbated by the pandemic, whether physical, nutritional, domestic, or educational violence (Gadermann et al.,2021; Chanchlani et al.,2020; Sinha et al.,2020).

Grumi et al (2021) explained that concerns about COVID-19 infection and concerns about a child left without rehabilitation programs represented the largest sources of mental health burden for caregivers.

In summary, the aggravation of the state of vulnerability of the children with special needs, which were already vulnerable prior to the COVID-19 pandemic, should not be overlooked by governments (Li et al.,2023). During the COVID-19 recovery period, policymakers and physicians should dedicate specific care measures to families of children with disabilities.

Conclusion:

The biopsychosocial profile of children with special needs considering the Coronavirus pandemic indicates that there were challenges in the health aspects represented in poor health follow-up, increase in comorbidities, increase in usage of medications, lack of health and rehabilitation services, as well as an increase in their nutritional problems. As regard the psychological aspects, there was an increase in anxiety feelings and the need for psychological support. The pandemic has also affected the social aspects of children and caregivers alike by increasing financial burdens and stopping recreational and sports activities.

Recommendations:

1. The periodic monitoring of the challenges faced by children with special needs and developing measures to address the problems.
2. Integration of health, rehabilitation, and educational services in the natural environments of children and in medical centers, and hospitals.
3. Providing supporting programs to mentor, support and empower parents of children with special needs.
4. Disseminating awareness messages using various means of communication.

5. Providing health education programs and preventive measures in the natural environments of the child using activities appropriate to the child's abilities and cognition.
6. Use distance rehabilitation programs to ensure the continuity of early intervention programs and educational inclusion programs.
7. Encouraging home sports to maintain physical activity and prevent obesity in children with special needs.
8. Establishing food security programs in crises and disasters.
9. Spreading the culture of psychological first aid in crises and disasters.
10. Insuring the expenses of therapeutic and rehabilitation services for children with special needs.

Abbreviations

COVID-19: The coronavirus disease

WHO: World Health Organization

UK: United Kingdom

Declarations

Consent for publication.

Not applicable.

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All data are included in the manuscript.

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L.E.: writing the main manuscript text, preparation of statistical tables, analysis, and interpretation of data.

N.Y. and E.Y.: writing and collecting references for the background and discussion.

All authors participated in designing the online questionnaire and distributing it in the social media. All authors reviewed the manuscript and approved it to be published.

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