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# PARENTING SELF-EFFICACY AND TIME INVOLVEMENT IN REMOTE SCHOOLING OF ELEMENTARY SCHOOL CHILDREN WITH AND WITHOUT HEARING AND/OR SPEECH DISORDERS

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**Abstract:** During the COVID-19 pandemic, remote schooling was conducted on several occasions in the Republic of Croatia. The aim of this study is to compare the remote schooling experiences of parents of elementary school children with hearing and/or speech and language disorders and those of parents of typically developing children during the COVID-19 pandemic. Parental time involvement and predictors of general parenting self-efficacy were examined using two online surveys based on the same questionnaire. The first survey involved 267 parents of typically developing children, while the second involved 109 parents of children with hearing and/or speech and language disorders. Data were analysed using chi-square tests and hierarchical regression analysis. Our results show that, on working days and on weekends, parents of children with developmental disorders invested significantly more time in their child's remote schooling than parents of typically developing children. Furthermore, higher general parenting self-efficacy was reported by parents who had more children, those whose children were more independent regarding remote schooling, those whose children did not suffer from developmental disorders, as well as those who experienced less stress due to their child's remote schooling. Our study highlights the importance of adapting the remote schooling model based on the different needs and abilities of students, as well as the requirements of their families in order to prevent low parenting self-efficacy and improve students' educational achievements.

**Keywords:** COVID-19 pandemic, parents, elementary school children, remote schooling, hearing and/or speech disorders

## INTRODUCTION

In 2020, governments worldwide introduced a variety of measures to protect their citizens from the health risks imposed by the COVID-19 pandemic. These measures included school closures and a sudden shift from traditional in-person learning to remote schooling. Remote schooling created a number of challenges for all participants in the educational process. A significantly high burden was placed on parents, because children, particularly those of elementary school age, needed help with the use of digital technology (Lathifah, Helmanto & Maryani, 2020; Putri et al., 2020). Hence, parents were forced to take on

the role of teachers (Doucet, Netolicky, Timmers & Tuscano, 2020; Drvodelić, Domović & Pažur, 2021; Novianti & Garzia, 2020; Obiakor & Adeniran, 2020; Putri et al., 2020). The present study examined remote schooling experiences during the COVID-19 pandemic among Croatian parents of elementary school children. We were especially interested in parental time involvement in their children's schooling and general parenting self-efficacy, as well as in differences between experiences of parents of typically developing children and those of children with hearing and/or speech and language disorders.

## **Parental involvement in child's remote schooling during the COVID-19 pandemic: challenges faced by parents of children with hearing and/or speech-language disorders**

School closures and the transition to remote schooling due to the pandemic forced parents to become involved in their children's schooling in previously unknown ways. Parents needed to create a home environment that enabled remote learning, which included, among other things, necessary digital devices, supporting children in usage of digital technology for educational purposes, structuring and supervising their child's studying/learning, recognising their child's learning difficulties, and communicating with the teachers (Novianti & Garzia, 2020). Available data suggests that the total amount of time that parents invested in children's schooling was greater during school closures in the pandemic than in the pre-pandemic period (Putri et al., 2020; Wildemann & Hosenfeld, 2020, cited in Schmidt, Kramer, Brose, Schmiedek & Neubauer, 2021). However, there are both between-family differences and within-person day-to-day fluctuations in the amount of parental time involvement in children's remote schooling: the latter included differences in involvement rate between weekdays and weekends (Schmidt et al., 2021).

Among the factors influencing between-family differences in parental time involvement in remote schooling, a child's developmental disabilities may play a prominent role (Putri et al., 2020). Parents of children with special educational needs (SEN) and disabilities felt inadequate, unprepared, and unsupported in their attempts to home-school their children during the pandemic, and their feelings and experiences were not associated with their socio-economic background or the type of disability experienced by the child (Greenway & Eaton-Thomas, 2020). In a large study involving participants from seven European countries (Belgium, Germany, Italy, Spain, Sweden, the Netherlands, UK), parents of children with a mental health condition reported more negative experiences related to home-schooling during the pandemic than parents of children without a mental health condition (Thorell et al., 2021). The authors went on to high-

light that the differences between the two groups of parents were small, and in general, all parents tended to perceive home-schooling negatively (Thorell et al., 2021). These findings indicate the difficulties that parents faced with the transition to remote schooling, as well as the need for further support since parents are crucial participants in the remote education process.

Educating students with hearing or speech and language disorders is a special challenge, because most school-related learning activities involve speaking, reading, and writing. The clinical status of speech and language disorders and hearing impairments can be manifested in the inability or difficulty associated with pronouncing a large number of sounds, difficulties related to verbal memory, problems of understanding content that is demanding and has been read aloud, difficulties in learning new words, incorrect use of grammatical forms, and difficulties in verbal expression. In addition, there are difficulties in the form of adopting the categorisation of concepts, noticing similarities and understanding abstract concepts, as well as a more permanent adoption of teaching content, because children are unable to receive, retain, and reproduce the required amount of information and successfully store it in their long-term memory (Dulčić, Pavičić Dokoza, Bakota, Šimunović & Košćec, 2013). These difficulties are challenging even for face-to-face teaching, and much more so for remote education. Therefore, compared to parents of typically developing students, parents of students with hearing and/or speech and language disorders may not only need to invest more time in remote schooling, but may also feel less effective in their parental role when schools are closed and they need to help their children with remote learning.

## **Parenting self-efficacy and children's remote schooling**

General parenting self-efficacy, referring to a parent's belief about their ability to be successful in their parental roles, is associated with the functioning and well-being of both parents and children (Jones & Prinz, 2005; Keresteš, Brković & Kuterovac Jagodić, 2011). Parenting self-efficacy

cy is determined by the same factors influencing other aspects of parental functioning, and it can be grouped into three broad categories based on Belsky's model of parenting: characteristics of the parent, characteristics of the child, and contextual sources of stress and support (Belsky, 1984).

School closures and transition to remote schooling during the pandemic may be conceptualised as a major contextual source of stress for parents of school-aged children. Remote schooling created a number of new tasks for parents and required them to invest significant amounts of time in supporting their children's learning. Parents may perceive themselves as lacking the necessary competency to provide adequate support to their child's remote learning, including insufficient digital literacy skills (Dong, Cao & Li, 2020). Consequently, parents may feel that the demands of children's remote schooling are above their capacities, and therefore experience immense stress (Drvodelić et al., 2021).

Due to increased time involvement in children's remote schooling, parents may also lack time for other parenting tasks, which may lead to a belief that they are not performing their parental roles effectively. Thus, increased time involvement in a child's remote schooling (Putri et al., 2020; Wildemann & Hosenfeld, 2020, cited in Schmidt et al., 2021), along with the stress stemming from supporting children in this type of schooling (Drvodelić et al., 2021), may undermine general parenting self-efficacy. The more time parents need to invest in a child's remote schooling and the greater the stress they experience due to such schooling, the lower is their general parenting self-efficacy. Although they did not specifically examine parenting self-efficacy as an outcome of remote schooling during the pandemic, a German 21-day diary study conducted in May and April, 2020, that assessed the quality of parent-child interactions and affective well-being of both parents and children revealed that parental involvement in their children's remote learning had detrimental effects on parental functioning (Schmidt et al., 2021). More specifically, the study showed that the days when parents were more involved in their children's remote learning

were also days when parental and child positive affect was lower, their negative affect was higher, and negative parent-child interactions were more frequent (Schmidt et al., 2021).

The level of a child's independence in remote learning also appears to play an important role in parental functioning and well-being. Parents whose children are more independent and struggle less with remote learning felt more effective and experienced better mental health than those whose children were less independent and struggled more with remote learning (Davis, Ortega, Rubalcaba & Vargas, 2021; Schmidt et al., 2021). Furthermore, the level of children's independence in remote learning moderated associations between the length of online learning, amount of learning assignments, and parental satisfaction with remote learning: positive relationships were found only among parents of children who were more independent in remote learning (Lau, Li & Lee, 2021).

### **Predictors of general parenting self-efficacy during the COVID-19 pandemic**

The main focus of the present study is to examine whether parental time involvement in their child's remote schooling and parental stress induced by transition to remote schooling are possible contextual predictive factors of general parenting self-efficacy among parents of elementary school children with and without hearing and/or speech and language disorders. In addition, we used Belsky's model of determinants of parenting (1984) as a theoretical framework to examine the role of several other factors in predicting general parenting self-efficacy during the pandemic.

Although Belsky's model (1984) was proposed a few decades ago, this model is still widely implemented in parenting research (e.g., Pérez, Huerta, Rubio, & Fernández, 2021), and we believe that it could be useful to investigate factors associated with parenting during the COVID-19 pandemic. As mentioned earlier, the model proposes that parenting is determined by interactions between the parent's characteristics, the child's characteristics, and contextual sources of stress and support. This study examined whether gener-

al parenting self-efficacy of parents of elementary school children during the pandemic could be predicted by factors belonging to these three groups of determinants. In order to identify possible predictors of general parenting self-efficacy during the pandemic, we analysed data on the parent's sex, level of education, and employment status (characteristics of the parent); the target child's sex, level of education/grade attended, level of independence in performing school obligations, and the presence of hearing and/or speech-language disorders (characteristics of the child); as well as the number of children in the household, parental time involvement in the child's remote schooling, stress caused by remote schooling, and perceived social support for remote schooling (contextual sources of stress and support in a parental role).

As far as we know, there are no prior studies examining determinants of parenting self-efficacy in the context of remote schooling during the pandemic. Therefore, the brief review that follows aims to present extant findings on the relationship between the above-mentioned variables and parenting self-efficacy by relying on data from pre-pandemic studies. Since findings relevant to the link between parenting self-efficacy and contextual sources of stress and support related to remote schooling during the pandemic have already been reviewed above, here we focus on studies examining additional non-pandemic related factors that could be associated with parenting self-efficacy.

A recent systematic review of studies investigating factors associated with parenting self-efficacy, guided by Belsky's (1984) model of parenting, showed that parenting stress and perceived social support are among the most influential predictors of self-efficacy in a parental role: parents who experienced lower levels of stress and those who perceived higher levels of social support reported higher parenting self-efficacy (Fang, Boelens, Windhorst, Raat, & Grieken, 2021). According to the same review, educational level and employment status of the parents, sex and age of the child, as well as number of children in the family were unable to consistently predict parenting self-efficacy. However, the number of studies included in this review was relatively small and

the majority of factors were reported only in one or two studies. Therefore, we present below a brief review of studies reporting associations between general parenting self-efficacy and factors that were examined in the current study.

Higher levels of general parenting self-efficacy were reported by mothers rather than fathers (Pećnik, 2013; Šepčević Sudar, 2014), parents who had completed higher levels of education than those with a lower level of education (Aydoğdu, Aysu, Aral, & Gürsoy, 2021; Coleman & Karraker, 2000), as well as parents of typically developing children than parents of children with developmental disabilities (Aydoğdu et al., 2021; Fulgosi-Masnjak, Gustović-Ercegovac & Igrić, 1998; Pećnik & Tokić, 2011). In addition, compared to adolescents with low academic self-efficacy, those who believe that they are capable of doing school errands have parents who are more satisfied and feel more competent in their parental roles (Reić Ercegovac & Koludrović, 2010). Theoretically, we expect a positive relationship between number of children in a family and parenting self-efficacy, because parents with more children are more experienced in childrearing and it is likely that their experience may increase their levels of self-efficacy. There is also a possibility that, in families with more children, the older children take some responsibility for the care for their younger siblings, making the demands of parenting somewhat easier, which results in an increase in self-efficacy in a parental role. However, empirical studies have either found no relationship (Coleman & Karraker, 2000) or reported a negative relationship (Hong & Liu, 2021) between the number of children and parenting self-efficacy.

### **Aim of the present study**

The COVID-19 pandemic has profoundly changed the context of parenting and created new demands for parental functioning, including those related to their children's remote schooling. In the Republic of Croatia, occasional school closures began from March 16, 2020, and lasted for longer or shorter periods of time. The sudden transition from in-person learning to remote schooling has opened up a number of questions, and one among

them is related to the ability of parents to cope with the new situation. The present study examined the amount of time that parents invested in their children's remote schooling during the pandemic, as well as the general parenting self-efficacy among Croatian parents of elementary school children with and without hearing and/or speech and language disorders. We compared the two groups of parents based on their time involvement in children's remote schooling during weekdays and weekends, as well as in their perception of the change in time involvement during the pandemic relative to the pre-pandemic period. We also examined whether sources of stress and support related to remote schooling can predict general parenting self-efficacy, in addition to other predictive factors such as parental level of education and child's hearing and/or speech and language disorder.

Children who do not suffer from hearing and/or speech-language disorders, whose parents participated in the present study, were enrolled in local mainstream schools, while those with hearing and/or speech-language disorders attended the SUVAG Polyclinic Elementary School in Zagreb, Croatia. Students at the SUVAG school are typically educated according to the regular program, but under special conditions. They undergo rehabilitation using the verbotonal method (Pavičić Dokoza, 2021) and they return to local mainstream schools after completing the listening, speech and language rehabilitation: rehabilitation is continued as an outpatient, if necessary.

During the pandemic, the students involved in the present study (those from the SUVAG Polyclinic Elementary School and the local mainstream schools in Croatia) underwent two periods of remote schooling. During the first period, remote classes lasted from March 16 to the end of June 2020. During the second wave of the pandemic, remote schooling for fifth- to eighth-graders lasted from January 18 to January 29, 2021, but occasionally also for students of all grades who had to go into self-isolation during the entire school year (2020/2021). In the same period, Zagreb was hit by two strong earthquakes (on March 22, 2020 and December 29, 2020), which further aggravated schooling conditions.

## Research questions and hypotheses

In this study, we attempted to answer two research questions. First, we examined the differences in parental time involvement in children's remote schooling during the pandemic by comparing parents of children with and those without hearing and/or speech and language disorders. Here parental time involvement was operationalised through three variables: amount of time invested in the child's schooling during weekdays, amount of time invested in the child's schooling during weekends, and perception of change in the amount of time invested in remote schooling during the pandemic relative to traditional in-person schooling in pre-pandemic times. Second, we examined whether contextual sources of stress and support related to children's remote schooling can predict general parenting self-efficacy, in addition to predictors related to characteristics of the parents and children involved. More specifically, we examined whether sex, level of education, and employment status of the parent; sex, level of education/grade attended/age, level of independence in performing school obligations, and presence of hearing and/or speech and language disorders in the child; as well as the number of children in the household, parental time involvement in the child's remote schooling, stress caused by the child's remote schooling, and perceived social support for remote schooling can act as predictors of general parenting self-efficacy.

Based on the findings of previous studies, we formulated the following hypotheses:

H1a: With respect to weekdays, parents of children with hearing and/or speech and language disorders will report a greater amount of time invested in their children's remote learning during the pandemic than parents of children with no hearing and/or speech and language disorders.

H1b: With respect to weekends, parents of children with hearing and/or speech and language disorders will report a greater amount of time invested in their children's remote learning during the pandemic than parents of children with no hearing and/or speech and language disorders.

H1c: Compared to the pre-pandemic period, both groups of parents will report an increase in the amount of time invested in their children's remote learning during the pandemic. However, parents of children with hearing and/or speech and language disorders will report a greater increase in the amount of time invested in remote learning than parents of children with no hearing and/or speech and language disorders.

H2: Higher general parenting self-efficacy will be predicted by:

- a) Female sex of parents
- b) Higher level of parental education
- c) Non-existence of target child's hearing and/or speech and language disorders

- d) Higher levels of target child's independence with respect to performing school obligations
- e) Lower amounts of parental time invested in their child's remote schooling
- f) Lower levels of parental stress induced by their child's remote schooling
- g) Higher levels of perceived social support for parents involved in their child's remote schooling.

Due to previous inconclusive findings, we did not formulate any hypotheses related to the employment status of the parent, sex and age/grade of the child, and number of children in a household.

**Table 1:** Demographic characteristics of the sample used to examine the remote schooling experiences of parents of elementary school children during the COVID-19 pandemic

Characteristic		Total		SUVAG school		Mainstream school	
		N	%	N	%	N	%
Sex of parent	Men	31	8.2	22	20.2	9	3.4
	Women	345	91.8	87	79.8	258	96.6
Education level of parent	Elementary school	15	4	11	10.1	4	1.5
	High school	170	45.2	64	58.7	106	39.7
	Undergraduate study	49	13	8	7.3	41	15.4
	Graduate study	121	32.2	22	20.2	99	37.1
	Postgraduate study	21	5.6	4	3.7	17	6.4
Employment status of parent	Unemployed	61	16.3	28	25.7	33	12.4
	Maternity leave	3	0.8	-	-	3	1.1
	Retired	5	1.3	3	2.8	2	0.7
	Financially dependent	2	0.5	-	-	2	0.7
	Full-time	286	76.2	59	54.1	227	85.1
	Part-time	19	5.1	19	17.4		
Number of children in the household	1	63	16.8	14	12.8	49	18.4
	2	209	55.6	65	59.6	144	53.9
	3	85	22.6	26	23.9	59	22.1
	4	13	3.5	3	2.8	10	3.7
	5	4	1.1	1	0.9	3	1.1
	6 and more	2	0.5			2	0.7
Sex of child	Boys	214	56.9	77	70.6	137	51.3
	Girls	162	43.1	32	29.4	130	48.7
Grade of child	1st	67	17.8			67	25.1
	2nd	67	17.8	23	21.1	44	16.5
	3rd	69	18.4	18	16.5	51	19.1
	4th	53	14.1	13	11.9	40	15
	5th	35	9.3	10	9.2	25	9.4
	6th	41	10.9	19	17.4	22	8.2
	7th	22	5.9	11	10.1	11	4.1
	8th	22	5.9	15	13.8	7	2.6

## METHODS

### Participants

A total of 405 parents were recruited for the purpose of this study. After considering the requirements of the study, 29 parents were excluded since they provided incomplete questionnaires or their children did not participate in remote schooling. Finally, we included 267 parents of typically developing children from local mainstream schools and 109 parents of children with hearing and/or speech and language disorders from the SUVAG Polyclinic Elementary School (Table 1). The database for the 267 parents of children from mainstream elementary schools in the Republic of Croatia was taken from Punjek (2020). Although the number of children with developmental disabilities was not recorded in that subsample, there is some information about the percentage of students with disabilities in the general population of students in the Republic of Croatia. On average, 7.28% of elementary school students in Croatia have disabilities (ŠeR, October 18, 2021).

### Procedure

Data on participants from the general population (i.e., parents of students enrolled in local mainstream elementary schools) were collected between April 22 and April 26, 2020, when all schools in Croatia were closed due to the pandemic and schooling had shifted to remote learning. Using the web-based platform, Google Forms, an online questionnaire was created and distributed via several Facebook groups for parental communication, along with an invitation to participate in the study. All interested parents of elementary school children in the Republic of Croatia could participate. The purpose of the research study was presented in the introduction of the questionnaire, and all recruits were informed that their participation would be anonymous and voluntary. They were also informed that they could withdraw from the study at any time. The consent of the participants was also obtained as part of the questionnaire (by pressing the “Next” button).

We collected data on parents of elementary school children attending SUVAG Polyclinic EL-

ementary School between March 2 and March 8, 2021. First, the Parent School Council was informed via e-mail about the study and were requested to forward the information to the rest of the parents of students in SUVAG Polyclinic Elementary School. A couple of days after the announcement, a link to the online questionnaire used in the first part of the survey and an invitation to participate in the study was distributed via e-mail by the researchers to the parents of the students of the SUVAG Polyclinic Elementary School. The introduction to the questionnaire presented the purpose of the research study and informed the recruits that their participation was anonymous and voluntary. They were also informed about the possibility of withdrawing their participation from the study at any time. In addition, we emphasised the importance of parental participation in this study by highlighting the ultimate goal of improving the process of remote schooling. Once again, the consent of the participants was obtained as part of the questionnaire (by pressing the “Next” button). The link was e-mailed to 270 parents, of which 125 responded. After considering the inclusion criteria, 109 parents were included in the final analysis (16 parents did not meet the inclusion criteria). This study was approved by the Ethics Committee of the SUVAG Polyclinic and the Ministry of Education of the Republic of Croatia.

The questionnaire survey required < 10 minutes to complete. The responses of the parents of SUVAG Polyclinic Elementary School students recounted their general overall impressions of remote schooling during the pandemic, since most students had returned to in-person schooling by that time and only a small number of students were required to self-isolate and participate in remote schooling. We also made it clear that, when filling up their questionnaire, it was important for the participant to focus on one target child and describe their experiences related to the schooling of that particular child. To achieve this, participants were instructed to complete the questionnaire multiple times if they had multiple children attending the SUVAG Polyclinic Elementary School (i.e., individual questionnaires for each child). During



data processing, participants who filled the questionnaire more than once were identified based on identical sociodemographic characteristics and repetitive answers to the questionnaire were discarded. Thus, in the final database, each parent provided information about experiences related to the remote schooling of one particular child.

### Survey instruments

The following measures were used in the study: a socio-demographic questionnaire; a single question on the child's overall level of independence with respect to performing school duties both during face-to-face and remote schooling; the Perceived Parenting Stress During Remote Schooling in the COVID-19 Pandemic Scale; the Perceived Social Support to Parents Directed to the Child's Remote Schooling in the COVID-19 Pandemic Scale; the Parental Time Involvement in the Child's Remote Schooling in COVID-19 Pandemic Questionnaire; and the Parenting Self-Efficacy Scale.

The self-designed socio-demographic questionnaire contained questions on socio-demographic characteristics of the parent (sex, level of education, employment status), the target child (sex and grade/age), and data on the family (number of children in the household). The question on the target child's level of independence with respect to performing school duties had four response options, ranging from 1 indicating "completely dependent and constantly supervised" to 4 indicating "fully independent and rarely supervised".

The Perceived Parenting Stress During Remote Schooling in the COVID-19 Pandemic Scale was designed for the purpose of this study and modelled on the Perceived Stress Scale (Cohen, Kamarck & Mermelstein, 1983). It consists of five questions (e.g., "How often have you been upset about your child's school obligations during remote schooling?"), and participants answered questions using a scale ranging from 0 indicating "never" to 4 indicating "very often". A higher number indicated a higher frequency of unpleasant emotions related to remote schooling of the child (i.e., higher levels of stress). The total score was calculated as the mean

score of all five questions, and Cronbach's alpha for the entire sample was 0.903.

The Perceived Social Support to Parents during Child's Remote Schooling in COVID-19 Pandemic Scale was developed for this study and modelled on the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). It consists of five items examining how parents perceive support aimed at a child's remote schooling provided by the people around them (e.g., "I am the only family member who oversees the child's remote schooling."). Responses were scored based on a scale from 1 indicating "strongly disagree" to 5 indicating "strongly agree". In the second, third, fourth and fifth statement, a higher score represents higher perceived social support, while the first statement (presented as an example of a question) had to be re-coded during data processing, since a higher number indicates lower perceived social support. The total score was calculated as the mean score of all five items, and Cronbach's alpha was 0.653, which is satisfactory for research purposes.

The Parental Time Involvement in Child's Remote Schooling in the COVID-19 Pandemic Questionnaire was developed for the purpose of this study and consists of three questions. The first two questions measure parental estimates of the average time spent per day in helping their child with remote schooling obligations during the COVID-19 pandemic. The first question refers to weekdays and the second one to Saturdays and Sundays. In both questions, six responses were offered ranging from "I do not engage in these activities" to "more than three hours". The purpose of the third question was to find out if and by how much the time the parents devoted to the target child's school obligations has changed during remote schooling in comparison to traditional face-to-face schooling. This question had five response options ranging from "significantly decreased" to "significantly increased", with "has not changed" option as a middle point. The scores on the three questions were used differently depending on the research question in focus. For the first research question, the responses to each question were considered separately. For the second research

question, the mean results of the first two questions were used, but the third question was not used. The correlation between the first two questions was significant ( $r(376) = 0.566, p < 0.001$ ).

The Parenting Self-Efficacy Scale was designed by Keresteš et al. (2011), and is modelled on the Parenting Sense of Competence Scale (Johnston & Mash, 1989). The Scale measures the parents' beliefs about their ability to be successful in parental role and contains five statements (e.g., "I am convinced that I have all the abilities and qualities needed to be a good father/mother"). The responses were scored based on a scale ranging from 1 indicating "strongly disagree" to 4 indicating "strongly agree", with a higher number indicating higher levels of self-efficacy. The total score was calculated as the mean score across all items, and Cronbach's alpha was 0.745.

## RESULTS

First, we performed a descriptive analysis of data, and calculated means, standard deviations, minimum and maximum observed scores on scales, as well as kurtosis and skewness indices (Table 2). According to Ryu (2011), distributions that have asymmetry and flatness indices between -2 and +2 can be considered normally distributed. According to the above criteria, we concluded that the variables in this study were normally distributed.

When asked about the child's independence levels with respect to performing school duties,

6.4% of the parents reported that their child was completely dependent and required constant supervision (7.3% of the SUVAG subsample, 6% of the mainstream school subsample), 28.2% of the parents reported that their children were mostly dependent and needed supervision often (40.4% of the SUVAG subsample, 23.2% of the mainstream school subsample), 52.1% of the parents said that their child was mostly independent and required occasional supervision (43.1% of the SUVAG subsample, 55.8% of the mainstream school subsample), and 13% of parents considered their children completely independent and rarely supervised them when they performed school duties (8.3% of the SUVAG subsample, 15% of the mainstream school subsample). We observed a significant difference between the two subsamples in the independence levels of children ( $\chi^2(3,376) = 15.816; p = 0.003$ ). This difference could be due to the fact that a higher percentage of SUVAG-parents reported that their child was dependent compared to parents of students from the mainstream schools, and a higher percentage of parents of students from the mainstream schools reported that their child was independent compared to SUVAG-parents.

Our results show that parents experienced moderate stress during remote schooling: the parents of students from the SUVAG school experienced higher stress levels than those of children from the mainstream schools ( $t = 6.961, df = 372, p < .001$ ). Perceived social support during the remote

**Table 2:** Descriptive data on variables used in examining the remote schooling experiences of parents of elementary school children during the COVID-19 pandemic

Variable	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>S</i>	<i>K</i>	
Perceived parenting stress caused by child's remote schooling	Total ( <i>N</i> = 376)	1.29	1.02	0	4	0.46	- 0.89
	SUVAG school ( <i>N</i> = 109)	1.84	0.97	0	4	0.11	- 0.61
	Mainstream school ( <i>N</i> = 267)	1.07	0.96	0	3	0.65	- 0.85
Perceived social support during child's remote schooling	Total ( <i>N</i> = 376)	3.27	0.96	1	5	- 0.09	- 0.67
	SUVAG school ( <i>N</i> = 109)	3.37	0.83	1.6	5	0.02	- 0.66
	Mainstream school ( <i>N</i> = 267)	3.22	1.00	1	5	- 0.08	- 0.75
General parenting self-efficacy	Total ( <i>N</i> = 376)	3.20	0.59	1	4	- 0.55	0.05
	SUVAG school ( <i>N</i> = 109)	2.68	0.42	1	3.2	- 0.93	1.54
	Mainstream school ( <i>N</i> = 267)	3.41	0.51	1.2	4	- 1.02	1.42

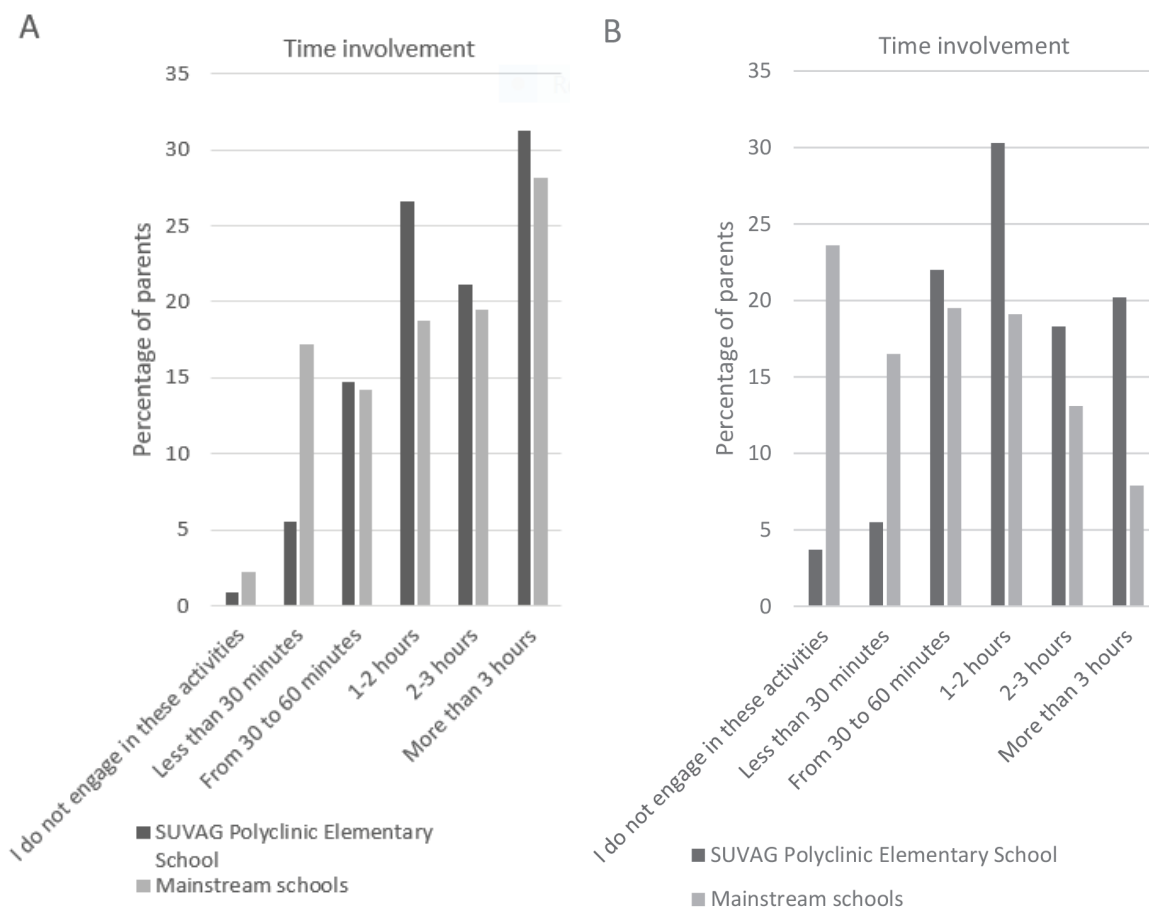
K, kurtosis index; M, mean; S, skewness index; SD, standard deviation

schooling of the child was moderately high, suggesting that the vast majority of parents had a satisfactory level of support. Nevertheless, the parents of SUVAG students reported higher levels of perceived social support than those of students from the mainstream schools, but this difference was not statistically significant ( $t = -1.552$ ,  $df = 237.524$ ,  $p = 0.122$ ). General parenting self-efficacy levels were also high, indicating that parents felt capable of functioning in a parental role. However, parents of students from the mainstream schools felt more effective than parents of SUVAG students ( $t = 14.404$ ,  $df = 241.569$ ,  $p < 0.001$ )

### Parental time involvement

Based on the results of the chi-square test, we found that parents of children enrolled in SUVAG

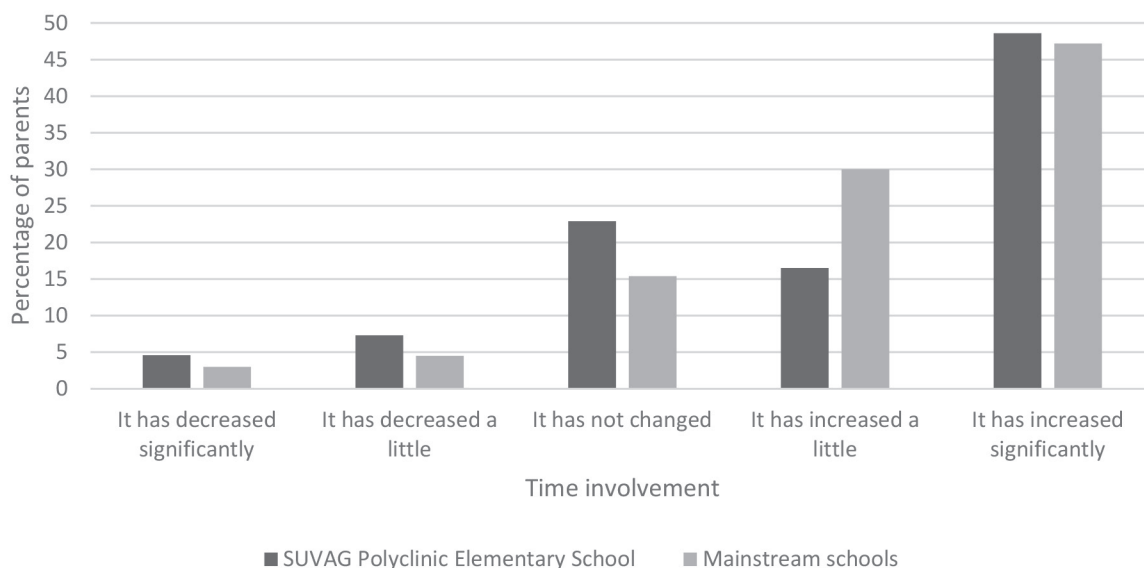
Polyclinic Elementary School invested significantly higher amounts of time in their children's remote schooling than parents of children attending local mainstream schools, both on weekdays ( $\chi^2(25, 376) = 11.085$ ,  $p = 0.050$ ) and weekends ( $\chi^2(25, 376) = 40.489$ ,  $p < 0.001$ ; Fig. 1). The difference in providing support during the weekend was especially pronounced. More than 50% of SUVAG-parents and almost 50% of the parents of students from the mainstream schools reported that they spent two or more hours devoted to the target child's remote schooling on an average weekday. In addition, almost 40% of SUVAG-parents and around 20% of the parents of students from the mainstream schools reported that they spent two or more hours per day supporting the target child's remote learning during weekends (Fig. 1).



**Figure 1.** Parental time involvement in the remote schooling obligations of their elementary school children on (A) weekdays and (B) weekends during the COVID-19 pandemic ( $N = 376$ ).

Compared to the period before the COVID-19 pandemic, the perceived change in the amount of time devoted to helping a child during remote schooling also differed significantly between the two groups of parents ( $\chi^2(25, 376) = 9.683, p = 0.046$ ), but this difference was minimal. As depicted in Figure 2, the difference is due to a higher percentage of SUVAG-parents, compared to parents of students from mainstream schools, who reported no changes in time involvement in children's schooling from the pre-pandemic to the

pandemic period, as well as due to a higher percentage of parents of students from mainstream schools, compared to SUVAG-parents, who reported a small increase in time involvement. Most importantly, the majority of parents in both groups reported an increase in time involvement in their children's schooling from pre-pandemic schooling to pandemic remote schooling, and a very small proportion of parents reported a corresponding decrease in their time involvement (Fig. 2).



**Figure 2.** Change in parental time involvement in school obligations of their elementary school children during remote schooling in the COVID-19 pandemic ( $N = 376$ ).

### Predictors of general parenting self-efficacy

A hierarchical regression analysis was conducted with general parenting self-efficacy as a criterion variable (Table 4). A total of 11 predictor variables were introduced in the regression equation in three blocks. Predictor variables were stratified into blocks on the basis of Belsky's (1984) model of parenting, as explained in the Introduction section. The first block included characteristics of the parents: sex (1 = female; 2 = male), level of education (1 = elementary and high school; 2 = undergraduate, graduate and postgraduate study), and employment status (1 = unemployed, maternity leave, retired, financially dependent; 2 = full-time, part-time). The second block includes the

characteristics of the target child: sex (1 = female; 2 = male), level of education (grade attended) (1 = first, second, third, fourth grade; 2 = fifth, sixth, seventh, eighth grade), level of independence with respect to performing school obligations (1 = completely dependent, constantly supervised to 4 = completely independent, rarely supervised), and the presence of hearing and/or speech disorders (0 = non-existence of disorder; 1 = existence of disorder). The third block addressed contextual sources of stress and support affecting parents, particularly those related to remote schooling in the pandemic: number of children in a household (1 = 1, 2 = 2, 3 = 3 or more), parental time involvement in a child's remote schooling during a pandemic, parenting stress caused by remote

schooling during a pandemic, and perceived social support available to parents who are involved in remote schooling during the pandemic.

A multicollinearity check was performed by calculating the variance inflation factor (VIF), which showed that the variables were in a moderate correlation. The VIFs for all variables were between 1.006 and 1.690, corresponding to acceptable levels of VIF (Mansfield & Helms, 1982). The final regression model explained 45.8% of the variance in general parenting self-efficacy. In the first step of the analysis, female sex and higher levels of education had significant independent effects, and the first block of predictors explained 6% of the variance. The second step of the analysis identified the largest increase in the explained variance (36.6%) because of the significant independent contributions of predictor variables such as level of independence in learning and presence

of hearing and/or speech-language disorder. Predictors introduced in the third step significantly increased the explained variance of parental self-efficacy by 3.1% based on the significant independent contributions of number of children in a household and perceived parenting stress caused by a child's remote schooling. The final regression model showed that mothers, parents whose children were more independent in schooling, parents whose children who did not suffer from hearing and/or speech and language disorders, parents who had more children, and those who experienced less stress due to their children's remote schooling during the COVID-19 pandemic felt more effective in their parental roles. These results partially confirm our second hypothesis (H2).

**Table 3:** Hierarchical regression analysis of factors associated with parenting self-efficacy ( $N = 376$ )

Variable block		(1)	(2)	(3)
		$\beta$	$\beta$	$\beta$
<b>(1) Characteristics of parents</b>	Sex	- 0.191**	- 0.046	- 0.046
	Level of education	0.147**	0.015	0.020
	Employment status	- 0.008	- 0.043	- 0.043
<b>(2) Characteristics of the target child</b>	Sex		- 0.016	- 0.027
	Grade attended		0.021	0.042
	Level of independence in learning		0.310**	0.261**
	Presence of hearing and/or speech and language disorder		- 0.513**	- 0.469**
<b>(3) Contextual sources of stress and support</b>	Number of children in a household			0.078*
	Parental time involvement in child's remote schooling			0.034
	Perceived parenting stress caused by a child's remote schooling			- 0.189**
	Perceived social support to parents aimed at remote schooling of a child			- 0.008
	$R$	0.246	0.653	0.677
	$\Delta R^2$	0.060	0.366	0.031
	$\Delta F$	7.792**	57.336**	5.083**
	$R^2$	0.060	0.427	0.458
	$F$ Total	7.792**	38.176**	27.247**
	$df$	3/363	7/359	11/355

\*\*  $p > 0.01$ , \*  $p > 0.05$

## DISCUSSION

The aim of this study was to compare the remote schooling experiences of parents of elementary school children with hearing and/or speech and language disorders to those of parents of typically developing students during the COVID-19 pandemic. We focussed on parental time involvement in a child's remote schooling and predictors of general parenting self-efficacy. Parental time involvement was operationalised through three variables: amount of time invested in the child's schooling during weekdays, amount of time invested in the child's schooling during weekends, and perception of change in the amount of time invested in children's learning during remote schooling during the pandemic relative to traditional in-person schooling during pre-pandemic periods. The study also examined whether general parenting self-efficacy could be predicted based on contextual sources of stress and support related to children's remote schooling, in addition to predictors related to the characteristics of the parent and the target child. We examined several potential predictors of general parenting self-efficacy, including the sex, level of education, and employment status of the parent; the sex, level of education/grade attended/age, level of independence with respect to performing school obligations, and the presence of hearing and/or speech and language disorders in the target child; as well as the number of children in the household, parental time involvement in child's remote schooling, stress caused by the child's remote schooling, and perceived social support associated with remote schooling (contextual sources of stress and support in a parental role). These predictors were stratified into three blocks using Belsky's (1984) process model of determinants of parenting functioning as a theoretical framework.

Our results showed that all parents experienced moderate stress during remote schooling. Consistent with previous findings (Thorell et al., 2021), we observed that parents of students from the SUVAG Polyclinic Elementary School experienced higher stress levels than that experienced by parents of typically developing children from local mainstream schools. Perceived social support in

both groups was moderately high, suggesting that the vast majority of parents experienced a satisfactory level of support. General parenting self-efficacy was also high, indicating that parents felt that they were capable of functioning effectively in a parental role during the pandemic. Parents of students attending local mainstream schools felt more effective than parents of SUVAG students. Lower parenting self-efficacy in parents of SUVAG students can be explained by their feelings of uncertainty in fulfilling their tasks not only in the field of educational programs, but also in the field of rehabilitation. During the pandemic, the parents of SUVAG students had to become teachers, as well as rehabilitators.

### Parental time involvement

Parents of children with hearing impairment and/or speech and language disorders were expected to report that they devoted more time to their child's schooling on weekdays and on weekends than parents of typically developing children (children without SEN and other disabilities). It was also hypothesised that perception of change in the amount of time invested in children's learning during remote schooling in pandemic relative to traditional in-person schooling during pre-pandemic time would be more pronounced in parents of children with hearing and/or speech and language disorders. Our results confirm these expectations. Consistent with previous findings (Putri et al., 2021; Wildemann & Hosenfeld, 2020 cited in Schmidt et al., 2021), we showed that parents of children with hearing and/or speech and language disorders invested significantly more time in helping their child with school tasks during remote schooling. More than 50% of parents of SUVAG students and almost 50% of parents of typically developing students stated that, during remote schooling, they participated in school activities for more than two hours on an average weekday. The differences were more pronounced when the time invested on weekends was compared between the two groups. On Saturdays and Sundays, parents of children without disabilities managed to use the weekend as a time for rest (only 20 % of these parents spent more than two hours a day

helping their children with remote learning), but parents of children with disabilities had to continue working intensively with their children (40% of these parents spent more than two hours a day to help their child with school obligations during weekends). More time invested in a child's education during the pandemic, combined with lower general parenting self-efficacy, can lead to parents who are unsatisfied with themselves. Time consuming tasks such as homework and the lack of time for other parenting tasks can induce feelings of incompetence. In such conditions, a parent cannot provide sufficient support to the child.

In addition, the perceived change in the amount of time devoted to helping a child during remote schooling, compared to the period before the COVID-19 pandemic, differed significantly between the two groups of parents, although this difference was minimal. Both groups of parents reported an increase in time involvement in their child's education during remote schooling. Thus, the time-consuming nature of remote schooling for parents is unquestionable (Drvodelić et al., 2021; Putri et al., 2021), but pandemic schooling seems to have brought greater changes for parents of children with hearing and/or speech and language disorders than for parents of typically developing children when it comes to the time invested by parents in support of children's education (Putri et al., 2020; Thorell et al., 2021). These results draw attention to the fact that being a parent of children with hearing and/or speech and language disorders is more challenging, with or without pandemic conditions. SEN children and those with other learning disabilities need higher levels of parental support than children without disabilities, regardless of whether remote schooling takes place or not.

### **Predictors of general parenting self-efficacy**

The results of the hierarchical regression analysis, which used general parenting self-efficacy as a criterion variable and 11 predictor variables introduced into the regression equation in three blocks, guided by Belsky's (1984) process model of parenting, provided important insights into the determinants of parenting self-efficacy during re-

mote schooling in the COVID-19 pandemic. The final regression model explained 45.8% of variance in general parenting self-efficacy. The first block of predictors explained 6% of the variance based on significant independent contributions of female sex and higher levels of education in parents. The second block of variables explained 36.6% of the variance based on the significant independent contributions of level of independence in learning and presence of hearing and/or speech and language disorders in the child. The third block of predictors significantly increased the explained variance of the parenting self-efficacy by 3.1% based on the significant independent contributions of the number of children in a household and perceived parenting stress caused by a child's remote schooling. The final regression model results showed that parents whose children were more independent in schooling, those whose children did not have hearing and/or speech and language disorders, as well as those who had more children and experienced less stress due to their children's remote schooling during the COVID-19 pandemic, felt more effective in a parental role.

It is important to note that a parent's sex and level of education contributed to variance in parenting self-efficacy in the first step of hierarchical regression analysis, but did not remain significant predictors in the second and third step when the child's characteristics and contextual sources of stress and support were included in the analysis. These results suggest an indirect association between the socio-economic background of parents and parenting self-efficacy, probably via the child's level of independence in learning. It is likely that parents who have completed higher levels of education have children who are more independent in learning, resulting in higher parenting self-efficacy. The fact that socio-economic variables did not contribute to predicting parenting self-efficacy in the final regression model is consistent with results reported by Greenway and Eaton-Thomas (2020), who found that feelings and experiences related to home-schooling during the pandemic among parents of children with SEN were not related to their socio-economic background. It appears that in demanding

contexts such as the pandemic and remote schooling, distal socio-economic characteristics are less important for parental functioning than proximal sources of stress and support. Furthermore, we can draw a tentative conclusion that, in the present study, most parents had completed levels of education that were sufficient to support a child's educational needs during remote schooling (only 4% of parents enrolled in the study had an elementary school education).

The number of children in a household was not expected to predict parenting self-efficacy due to inconclusive findings from previous research (Coleman & Karraker, 2000; Hong & Liu, 2021). However, our findings indicate that parents with more children felt more effective in a parental role, which is consistent with theoretical expectations (Coleman & Karraker, 2000; Jones & Prinz, 2005). For a family with multiple children, it can be assumed that parents feel more successful in their parental role, have more experience, and are ready to face different kinds of problems. There is a possibility that, in larger families, older children take some of the responsibilities to care for their younger siblings, thus making it easier for their parents who are consequently more satisfied with themselves and their role as parents. Furthermore, we can assume that children in large families are fundamentally more independent and self-contained and have fewer demands from their parents, so parents find it easier to solve their parental tasks. These are tentative conclusions and require further research.

Given the findings of Reić Ercegovac and Koludrović (2010), it was expected that parents whose children are more independent with respect to performing school obligations would feel more efficient in their parental role. Our results confirmed this expectation. Consistent with the pre-pandemic results indicating the importance of stress for parenting self-efficacy (Fang, 2021; Šepčević Sudar, 2014), our findings show that lower levels of parental stress induced by a child's remote schooling is associated with higher levels of parenting self-efficacy. However, the most powerful predictor of general parenting self-efficacy in our study was the presence of hearing

and/or speech and language disorders in the child. Parents of children with such disorders are, like most parents of children with developmental disabilities, a particularly vulnerable population. They often fear that they will miss something in the successful development of the child, and they constantly wonder if they are doing the right thing, resulting in a more sensitive and demanding child in terms of upbringing and education. It is not surprising that, in the highly demanding context of children's remote schooling during the pandemic, these parents felt less effective than parents of typically developing children.

We could not confirm the expectation that parental time involvement in a child's remote schooling and perceived social support during remote schooling would predict parenting self-efficacy. This is likely due to the fact that these variables correlate with other predictors in our model, primarily with the level of stress related to a child's remote schooling. More specifically, parents who reported higher stress related to a child's remote schooling, also reported higher time involvement and lower perceived social support.

In conclusion, the results of the hierarchical regression analysis showed that it is important to be aware that the pressure of remote schooling on parents of children with SEN and disabilities is higher than the pressure on parents of typically developing children, leading to lower general parenting self-efficacy. It is also necessary to place an emphasis on the child's independence in learning as an important prerequisite for effective functioning under pandemic school conditions. It is crucial to teach children to be autonomous and develop self-organisation skills, as well as encourage them to independently explore their abilities. In order to achieve and maintain this, the child's environment must be supportive, and parents play a very important role in that process. As mentioned earlier, children learn about self-efficacy through modelling (Ardelt & Eccles, 2001). Therefore, if we want competent and autonomous children, we must have competent and autonomous parents who perceive themselves as having high self-efficacy in a parental role.



### **Practical implications of the present study**

Our findings have several important practical implications. They show that remote schooling during the pandemic is highly demanding and time-consuming for parents of elementary school children, especially parents of children with SEN and other learning disabilities. Low general parenting self-efficacy is associated with parental stress as a result of remote schooling, the child's dependence on the parents when performing school tasks, as well as the presence of hearing and/or speech and language disabilities. On the other hand, higher numbers of children in a household contribute to feelings of greater parenting self-efficacy. Parents who felt less effective were less likely to adequately support their child's learning and development. Therefore, if we want parents to be able to support their children's remote schooling, as well as their psychological well-being and development, we need to take into account their feelings of general parenting self-efficacy and the factors related to it. When educational and rehabilitation goals are being defined, educational authorities and experts need to provide better support for parents as key partners in children's education, especially during periods of remote schooling.

### **Limitations**

One of the limitations of this study is the self-selection of participants, leading to the lack of generalisability of the results. In addition, the two subsamples of parents differed in socio-demographic characteristics, which can pose a bias when comparing the results. Also, it is important to note that the parents responded to the question-

naires during two different time periods, with one part of the sample completing the survey at the very beginning of the pandemic and the other part of the sample almost a year later. Finally, another major limitation is the lack of data on the percentage of children with developmental disabilities in the subsample from the mainstream schools.

### **CONCLUSION**

The aim of this study was to compare the remote schooling experiences of parents of elementary school children with hearing and/or speech and language disorders and those of parents of typically developing children during the COVID-19 pandemic. We examined the differences between the two groups of parents in the parental time involvement and predictors of general parenting self-efficacy.

We found that parents of elementary school children with hearing and/or speech and language disorders tend to be more involved in their child's remote schooling on weekdays, as well as on weekends, than parents of typically developing children. Higher general parenting self-efficacy was reported by parents who have more children, those whose children were more independent regarding remote schooling, those whose children did not suffer from developmental disorders, and those who experienced less stress associated with remote schooling.

Based on our results, we can conclude that remote schooling needs to be adapted to the different needs and abilities of students, as well as the requirements of their families in order to prevent lower parenting self-efficacy and improve students' educational achievements.

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