Exploring the Issue of Parental Burnout with ICT's. How Do the Parents of Children with Disabilities Feel

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Abstract—The aim of this research was to investigate the level of burnout, depression, anxiety and stress experienced by parents with a child with disabilities in Greece. In particular, the negative emotional state is investigated, as well as the factors that may contribute to the appearance of parental burnout, anxiety, stress and depression. The dominant focus of the research is to emphasize the importance of the parental role, with the aim of improving parents' well-being and the development of their emotional and mental resilience. The sample involved 50 parents with children with disabilities. Data were collected using the online forms of questionnaires Parental Burnout Assessment & Depression Anxiety Stress Scale. The results showed that parents are prone to parental burnout, with the predominant dimension being exhaustion from parental role. The results showed that parents are prone to increased levels of stress, anxiety and depression, with the stress scale predominating. In addition in terms of statistics difference, older parents experiencing increased levels of parental burnout, as well as stress, anxiety and depression. Regarding the number of children in the family, a positive correlation was found only in terms of anxiety, as parents with more children seem to experience increased levels of anxiety compared to parents with one child. In conclusion, it seems that there are significant positive correlations among the levels of total parental burnout and its individual dimensions and the levels of stress, anxiety and depression.

Keywords—ICT's technology, parental burnout, anxiety, stress, depression, parents with children with disabilities

1 Introduction

It is very common for parents of children with a developmental disorder to suffer from anxiety, stress, fatigue, frustration, guilt and burnout. Until recently, the term burnout primarily associated with the emotional, mental and physical exhaustion, the frustration and the loss of interest that professionals feel. However, it is not only a feature of the work environment but it is also observed in other conditions that require

a closer relationship. Parental burnout and its consequences as severe exhaustion, emotional detachment and loss of all parental satisfaction, has received growing attention in international research [1]. Many children during the developmental period experience serious difficulties and need extensive care. Caring for a child with developmental disorders is differentiated by creating additional burdens to the parents due to functional difficulties, and make them feel unable to handle their children's difficulties. [2]. The burden of caring for a child with disability often heavily affects both parent's physical and mental health. According to research, parents of children with disabilities often experience higher levels of anxiety, depression and stress than parents of children without disabilities, regardless of the category of disability [3,4,5].

2 Parental burnout

In 2017, Roskam, Raes and Mikolajczak examined the parental burnout phenomenon. They investigated if the three dimensional structure of the syndrome occurs in a parental environment. They examined the specificity in relation to the professional burnout. [6]. The outcomes indicated the validity of a tri-dimensional burnout syndrome. The first dimension was depletion related to ones role as a parent. Another dimension was emotional detachment from their parenting role. Exhausted parents engage less and less in their parenting role. Parents' care are limited to daily functional aspects at the expense of emotional needs. They may, for example, enter an "automatic pilot", where they perform all the obligations related to children's care but feel emotionally numb, cannot relax and enjoy moments with their children. The third dimension was the feeling of incapability. Parents experience that they cannot handle the problems related to the children and their special needs [7]. Subsequently, researchers created the 'Parental Burnout Assessment' questionnaire, after collecting data from a sample of more than 900 parents. [6]. Parents' narratives indicate the four domains of parental burnout: exhaustion, contrast with previous parenting self, emotional burden, and resignation.

Studies that have taken place show that the number of parents with burnout has greatly increased in recent years. Conservative point prevalence estimates [6] suggest that at least 5% of parents have burnout, while according to a recently published international survey in 42 countries, the percentage of parental burnout in some countries reaches 8% [8]. The Covid-19 pandemic and the lockdown of parents with their children has exacerbated many of these factors, reducing also parenting resources and the possibility of early quality of life [9]. Research in Melbourne indicated increased parental burnout and especially higher rates in working parents with children in primary school [10].

Parental stress and exhaustion only lead down negative paths for all family. An international study in 42 countries examined the prevalence of parental burnout [11]. The outcomes have shown that the cultural context contributes to parental burnout arising. Thus, in non-traditional western cultures has displayed noticeably high rates

compared to more traditional contexts. Individualism and social isolation play a greater role in parental burnout than sociodemographic variables and parental fatigue from constant care of their child. According to research, parents' stress and exhaustion is linearly related to Euro-American mentality as a risk factor for parental burnout. The findings are in line with the observation of sociologists that parental care standards in Euro-American countries have become more and more demanding in the last decades [12], causing increasing psychological pressure on parents [13].

In contrast, life in a 'collectivistic' cultural environment can protect parents from burnout [14]. In many traditional African communities, parenting occurs within a collectivist environment of kin and community networks. It is consequently expected that every adult is responsible to play a role in educational terms even if the child is not a biological one. In this case education's role becomes social and collective. The responsibility passes from the family to the residents of the same village. The parental pressure is shared from the family to the community [15]. Similarly, the recent findings of a study in Poland demonstrate that the presence of social backing is a strong protective agent against parental burnout [16].

3 Methodology

3.1 Purpose of our study

The dominant goal of our research was to investigate the extent of burnout, depression, anxiety and stress experienced by parents with a child with disabilities in Greece. In particular, the negative emotional state is investigated, as well as the factors that may contribute to the occurrence of parental burnout, anxiety, stress and depression.

3.2 Main research question

The primary research question was whether the older parents have increased rates of parental burnout compared to younger parents, the older parents have higher levels of stress, anxiety and depression compared to the younger, the parents with more children have higher levels of parental burnout compared to parents who have a child, parents with more children have higher stages of stress, anxiety and depression compared to those who have a child and finally the correlation between the levels of parental burnout and stress, anxiety and depression.

3.3 Participants

The participants in the study are 50 parents of children with disabilities in Athens.

Table 1. Information on the demographic characteristics of the sample (n = 50)

	n	0/0
Educational level:		
High School	17	34,0
Higher Education/University	14	28,0
Technological Education	13	26,0
Postgraduate studies	6	12,0
Working status:		
Private employee	25	50,0
Freelancer	7	14,0
State employee	7	14,0
Unemployed	6	12,0
Other	2	4,0
Military	1	2,0
Medical staff	1	2,0
Scientific staff	1	2,0
Other children:		
Yes	30	60,0
No	20	40,0
Child Care:		
Mothers	48	96,0
Grandparents	1	2,0
Another person	1	2,0
Restriction of activities:		
Leisure time	32	64,0
Hobby/sports activities	11	22,0
Social/friendly contacts	7	14,0

3.4 Procedure

The data collection process took place in February 2022 and March 2022. Participants were informed about the research procedure and their consent was sought. They were also informed that there were no risks or inconveniences arising from participation in the research process and for the possibility to discontinue their participation at any time. They were also informed that their answers are completely confidential and fully anonymous. Then they were asked to answer once the Parental Burnout Assessment & Dass21 questionnaires as well as the demographic data form. The questionnaires were given to the participants through an application installed on their mobile phones. The application was able to open the electronic forms of the questionnaires. The aim was for participants to choose the answer that best describes how they personally feel, without taking time and making it clear to them that there is no right or wrong answer. The mean time to complete the 2 questionnaires and the demographic data form was 20 minutes.

1. The online form of PARENTAL BURNOUT ASSESSMENT (PBA) OUESTIONNAIRE

The online questionnaire consists of 23 closed-ended items rated on a 7-point Likert scale. Parental Burnout Assessment is not a clinical instrument and cannot diagnose parental burnout. If a person scores high on any of the 4 dimensions, referral to a specialist is required. The reliability of internal consistency (Cronbach's a) is > 0.85 [8]. In this study, the internal consistency indicators with Cronbach's alpha reliabilities were as follows: Exhaustion by parental role a = 0.93, contrast with previous parental self a = 0.88, feelings of being fed up as a parent a = 0.92 emotional distancing a = 0.63 and total parental burnout a = 0.92.

2. The online form of DEPRESSION ANXIETY STRESS SCALE 21 (DASS 21)

The purpose of the questionnaire is to evaluate the negative situation (depression, anxiety, stress). The self-administered DASS 21 questionnaire is a set of three self-report scales, designed to measure the negative emotional dimension of depression, anxiety and stress [17]. It consists of 21 items. Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The items are rated on a 4-point Likert scale where 0 = did not apply to me at all, 1 = applied to me to some degree, or some of the time, 2 = applied to me to a considerable degree or a good part of time, 3 = applied to me very much or most of the time.

DASS-21 is not a clinical instrument and cannot diagnose depression, anxiety or stress. It indicates whether any of these issues has a significant impact on one's life at the time being. If a person scores high on any of the scales, referral to a specialist is required.

The reliability of internal consistency (Cronbach's a) for the total scale is a=0.93 and Standarized Item Alpha = 0.93. The reliability of internal consistency for the depression scale is a=0.83, for the anxiety scale a=0.81 and for the stress scale is a=0.89. In the present study, the internal consistency indicators (Cronbach's a) for the stress, anxiety and depression scales were found as follows: stress a=0.92, anxiety a=0.92 and depression $\alpha=0.88$.

3.5 Statistical analysis

Statistical analysis was performed using SPSS Statistical Program 18 and included the estimation of the internal consistency of the questionnaires with the use of Cronbach's α coefficient, the descriptive statistics presenting median scores and range for each variable of the questionnaires as well as the investigation of relationships among the different subscales of the questionnaires through the Spearman Rho factor. In order to examine the first 2 research hypotheses regarding the differences between levels of parental burnout and anxiety, stress and depression levels in relation to age, Mann-Whitney U test was conducted since our data did not meet the criteria for normality. Accordingly, Mann-Whitney U test was applied to investigate the 3rd research hypothesis and the 4th research hypothesis.

4 Results

Table 2 presents the descriptive statistics (median and range) regarding the dimensions of parental burnout (Exhaustion in one's parental role / Contrast with the previous parental self / Feelings of being fed up with one's parental role / Emotional distancing from one's children) as well as regarding the stress, anxiety and depression levels of the sample (n = 50).

Table 2. Descriptive statistics (median and range) for the dimensions of parental burnout and levels of stress, anxiety and depression (n = 50)

	Median	Range
Total Parental Burnout	0,50	83
Exhaustion	29,50	31
Unlike the previous parent's self	17,00	30
Fatigued	15,00	22
Withdrawal	5,00	9
Stress	22,00	34
Anxiety	12,00	32
Depression	12,00	28

Furthermore, the rho correlation coefficient was applied to examine the correlations among the dimensions of parental burnout. Indeed, statistically significant positive correlations were found between the dimension of exhaustion in one's parental role and the dimension of the contrast with the previous parental self [Rho (50) = 0.35, p = 0.013], between the dimension of exhaustion in one's parental role and the dimension of feelings of being fed up with one's parental role [rho (50) = 0.74, p < 0.0005], between the dimension of prostration in one's parental role and the dimension of withdrawal [rho (50) = 0.36, p = 0.010], between the dimension of the unlike with the previous parental self and the dimension of feelings of being fatigued with one's parental role [Rho (50) = 0.62, p < 0.0005], between the dimension of the contrast with the previous parental self and the dimension of withdrawal [rho (50) = 0.63, p < 0.0005] and between the dimension of feelings of being fatigued with one's parental role and the dimension of withdrawal [rho (50) = 0.63, p < 0.0005] (Table 3).

Table 3. Correlation (Spearman Rho coefficient) among parental burnout dimensions (n = 50)

	Contrast	Feelings of Being Fed Up	Emotional Distancing
Exhaustion	0,35*	0,74**	0,36*
Contrast	_	0,62**	0,63**
Feelings of being fed up	-	_	0,57**

Notes: ** p< 0,01, * p< 0,05.

Similarly, the Spearman Rho correlation coefficient was applied to examine the correlations among levels of stress, anxiety and depression of the participants. In more detail, statistically significant positive correlations were found among levels of stress and anxiety of the sample [Rho (50) = 0.81, p <0.0005], among levels of stress and depression of the sample [Rho (50) = 0.81, P <0.0005] and among the levels of anxiety and depression of the sample, respectively [Rho (50) = 0.82, p <0.0005] (Table 4).

Table 4. Correlation (Spearman Rho coefficient) among levels of stress, anxiety and depression of participants (n = 50)

	Anxiety	Depression	
Stress	0,81**	0,81**	
Anxiety	-	0,82**	

Notes: ** p< 0,01.

Hypotheses testing

As mentioned above, the violation of the assumptions of normality led us to conduct non parametric tests in order to examine our research hypotheses.

Therefore, Mann-Whitney U test was applied in order to examine our first hypothesis that younger parents (25–35 years, n=25) will have reduced levels of parental burnout compared to older parents (36–50 years, n=25). Specifically, with regard to overall levels of parental burnout, the analysis highlighted the important discrepancy between the two age groups with younger parents showing reduced levels of parental burnout (median = 46,00, range = 56) compared to older parents (median = 82.00, range = 32), U (N1 = 25, N2 = 25) = 1,000, p < 0.00025.

Similarly, with regard to the dimension of exhaustion in one's parental role, a statistically significant difference was observed between the two age groups, with younger parents having reduced levels of exhaustion (median = 19.00, range = 11.00) compared to older parents (median = 40.00, range = 15), U (N1 = 25, N2 = 25) = 0.000, p < 0.00025.

In addition, with regard to the dimension of the contrast with the previous parental self, the analysis, informed that there is a important variation, with younger parents having reduced levels of contrast with the previous parental self (median = 14.00, range = 30) compared to older parents (median = 17.00, range = 17), U (N1 = 25, N2 = 25) = 171,000, p = 0.003.

Similarly, regarding the dimension of being fed up with one's parental role, the analysis showed that there is a statistically considerable discrimination, with younger parents having reduced levels of feelings of being satisfied with one's parental role (median = 6.00, range = 15.00) compared to older parents (median = 19.00, range = 7), U (N1 = 25, N2 = 25) = 1,000, p < 0.00025.

Continuing, with regard to the dimension of emotional distancing from one's children, a statistically significant difference was observed between the two age groups, with younger parents having reduced levels of emotional distancing from one's children (median = 4,00, range = 7) compared to older parents (median=6.00, range = 8), U (N1 = 25, N2 = 25) = 157,000, p = 0.001 (Figure 1).

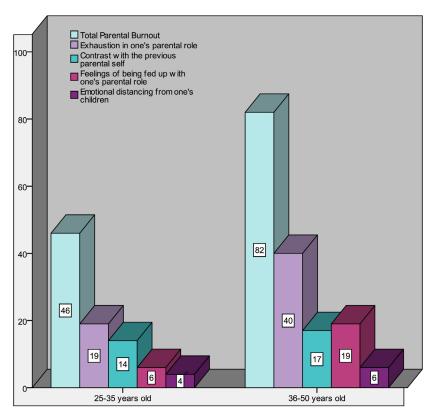


Fig. 1. Graph depicting differences in parental burnout levels with regard to age

Mann-Whitney U test was applied in order to examine our second research hypothesis that younger parents (25–35 years, n = 25) will have reduced levels of stress, anxiety, and depression compared to older parents (36–50 years, n = 25).

More specifically, regarding the dimension of stress, the analysis revealed statistically significant variation between the two age groups, with younger parents having reduced levels of stress (median = 12.00, range = 24.00) compared to older parents (median = 28.00, range = 16), U (N1 = 25, N2 = 25) = 12,000, p < 0.00025.

Similarly, in terms of the dimension of anxiety, the analysis highlighted high differentiation values between the two age groups, with younger parents having reduced levels of anxiety (median = 2.00, range = 14.00) compared to older parents (median = 20.00, range = 22), U (N1 = 25, N2 = 25) = 4,500, p <0.00025. In addition, regarding the dimension of depression it was observed that there is a statistically significant difference between the two age groups, with younger parents having reduced levels of depression (median = 6.00, range = 22.00) compared to older parents (median = 16.00, range = 16), U (N1 = 25, N2 = 25) = 18,500, p <0.00025 (Figure 2).

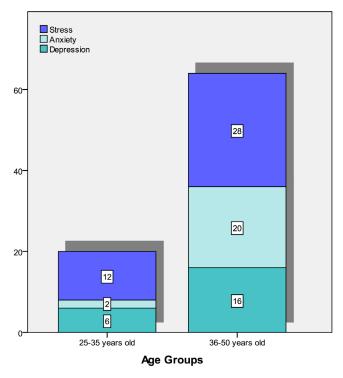


Fig. 2. Graph depicting differences in levels of stress, anxiety and depression with regard to age

Mann-Whitney U test for independent samples was applied in order to examine our third research hypothesis that parents with more children (n = 30) will have increased levels of parental burnout compared to parents who have only one child (n = 20).

Specifically, as for the overall levels of parental burnout, the analysis showed that the number of children is not an important factor (n1 = 30, n2 = 20) = 291,000, p = 0.429, also as for the dimension of exhaustion in one's parental role, U (N1 = 30, N2 = 20) = 267,500, p = 0.258.

In addition, as for the dimension of the contrast with the previous parental self, the analysis showed that there is no statistically significant difference between the two groups of parents in terms of the number of their children, U (N1 = 30, N2 = 20) = 249,500, p = 0.157.

Similarly, regarding the dimension of feelings of being fed up with one's parental role, the analysis showed that there is no statistically significant difference between the two groups of parents in terms of the number of their children, U (N1 = 30, N2 = 20) = 263,000, p = 0.231. In addition, regarding the dimension of emotional distancing from one's children, there was no statistically significant difference between the two groups of parents in terms of the number of their children, U (N1 = 30, N2 = 20) = 274,000, p = 0.300.

Subsequently, Mann-Whitney U test for independent samples was applied to examine our fourth research hypothesis that parents with more children (n = 30) will have increased levels of stress, anxiety and depression compared to parents who have only one child (n = 20).

Specifically, with regard to overall levels of stress, the analysis did not show the existence of a statistically significant difference between parents with more children (median = 25.00, range = 34.00) and parents with a child (median = 13.00, range = 28.00), U (N1 = 30, N2 = 20) = 261,500, p = 0.221.

On the contrary, with regard to the stress dimension, the analysis highlighted differentiation, with parents with more children (median = 16.00, range = 32.00) having increased levels of stress compared to parents who have a child (median = 8.00, range = 24.00), U (N1 = 25, N2 = 25) = 201.500, p = 0.025.

The dimension of depression, no notably results indicates parents with more children (median = 13.00, range = 28.00) and parents with a child (median = 10.00, range = 20.00), U (n1 = 30, n2 = 20) = 257,000, p = 0.195 (Figure 3).



Fig. 3. Graph depicting differences regarding the number of children

Finally, the Spearman Rho correlation coefficient was applied to the entire sample in order to examine our fifth research hypothesis that parental burnout levels will be positively associated with levels of stress, anxiety and depression.

More specifically, statistically significant positive correlations were found between levels of total parental burnout and stress dimension [Rho (50) = 0.81, p <0.00025], between levels of total parental burnout and stress dimension [Rho (50) = 0.73, p <0.00025] and between the levels of total parental burnout and the dimension of depression [rho (50) = 0.79, p <0.00025].

Concerning the dimension of depletion, the analysis highlighted the existence of statistically significant positive correlations between participants' levels of exhaustion in one's parental role and stress levels [Rho (50) = 0.75, p <0.00025], between participants' levels of exhaustion in one's parental role and anxiety levels [Rho (50) = 0.73, p <0.00025] and between participants' levels of exhaustion in one's parental role of participants and depression levels, respectively [Rho (50) = 0.70, p <0.00025].

Similarly, regarding the dimension of the contrast with the previous parental self, statistically significant positive correlations occurred between the levels of these factor and the dimension of stress [Rho (50) = 0.46, p <0.00025], between the levels of conflict with the previous feelings and the dimension of anxiety [rho (50) = 0.35, p = 0.003].

In addition, statistically significant positive correlations were observed between participants' levels of feeling fed up with one's parental role and the dimension of stress [Rho (50) = 0.78, p < 0.00025], between participants' levels of feeling fed up with one's parental role and the dimension of anxiety [rho (50) = 0.76, p < 0.00025] and between participants' levels of feeling fed up with one's parental role and the dimension of depression, respectively [rho (50) = 0.81, p < 0.00025].

Also, regarding the dimension of withdrawal, the analysis highlighted the existence of statistically significant positive correlations between the levels of emotional distancing of the sample and the dimension of stress [Rho (50) = 0.55, p <0.00025], between levels of emotional distancing of the sample and the dimension of anxiety [rho (50) = 0.30, p = 0.008] and between the levels of emotional distancing of the sample and the dimension of depression, respectively [rho (50) = 0.54, p <0.00025] (Table 5).

Table 5. Correlation (Spearman Rho correlation coefficient) between dimensions of parental burnout and levels of stress, anxiety and depression (n = 50)

	Stress	Anxiety	Depression
Total parental burnout	0,81**	0,73**	0,79**
Exhaustion	0,75**	0,73**	0,70**
Unlike with the previous parental self	0,46**	0,35**	0,50**
Fatigued	0,78**	0,76**	0,81**
Withdrawal	0,55**	0,30*	0,54**

Notes: ** p< 0,01, * p< 0,05.

5 Discussion

The integration of digital technologies in the special education field always has successful results in recording and facilitating every process through mobile phones [37–46], ICT apps [47–79], AI & STEM [80–91], and games [92–97]. Furthermore, the combination of ICT and theories of metacognition, mindfulness, meditation and emotional intelligence cultivation [98–121] as well as environmental factors and nutrition [33–36], develop positive educational and parenting practices.

Despite the above benefits there are the issues of burnout. The survey on parental burnout is still in beginning, but researchers have demonstrated reliable measured [1,8] that its prevalence requires further investigation [6,8], that it is related to sociodemographic, personal, parental and marital factors [7] and that it has negative consequences for the child, such as neglect and violence [32] but also for the parent, such as thoughts of escape and suicidal ideations [7].

The present study aims to explore the level of burnout, depression, anxiety and stress experienced by parents with a child with a disability in Greece, as well as the factors that may contribute to the emergence of parental burnout, anxiety, stress and depression. The results show that mothers are the ones who, in a percentage of 96.0%, take care of the child, which is not surprising as the mother usually has the burden of caring for the child with disability [18,19,20,21], an element that is also reflected in the present study.

A very interesting conclusion from the research concerns the research hypothesis that younger parents (25–35 years) have reduced levels of parental burnout compared to older parents (36–50 years). Indeed, the statistical analysis of the data shows that, in terms of overall levels of parental burnout and its individual dimensions, younger parents have reduced levels of parental burnout compared to older parents. Similarly, the results of this research study confirm the second research hypothesis that younger parents (25–35 years) have reduced levels of stress, anxiety and depression compared to older parents (36–50 years).

Consequently, the age of parents was positively associated with parental burnout levels, stress, 1,7anxiety, depression, with parents aged 36 to 50 showing higher rates. These findings confirm other studies, according to which older parents feel severe psychological distress, anxiety and stress [22,23]. One reason that probably contributes to this is parents' anxiety about what will happen to the child with a disability when they will no longer be able to care for him/her. The parents who participated in the study have children from 1 to 6 years old. It is believed that the care of preschoolers with disabilities, contributes to the emergence of increased levels of mental distress [10,8], which is also illustrated by the findings of the present study. The fact that the majority of parents interviewed are working also probably contributes to this. At the same time, based on the study findings, participants' free time, hobbies and sporting activities, as well as social and friendly contacts, have been limited.

Also, 60% of participants stated that they have other children, while 10.0% reported that their other child has a chronic health or disability issue. According to bibliographical references, the existence of more children is a risk factor for both emotional distancing and for loss of parental achievement [8,24] However, our research hypotheses that parents with more children have increased levels of parental burnout, stress and depression compared to parents who have only one child have not been confirmed. The analysis highlighted the existence of a difference between the two groups, only in terms of stress, with parents with more children having increased levels of stress compared to parents who have a child.

Concerning the correlation between levels of parental burnout and stress, anxiety and depression, findings have shown statistically significant positive correlations between the levels of parental burnout and levels of stress, anxiety and depression of participants. The aforementioned results coincide with researchers' findings that

parental burnout is a distinct syndrome and differs from depression, professional burnout, stress and anxiety of parents, but is directly related to them [25,9,26,27,28,29]. This correlation may be due to the fact that parents are so burdened by their parental role, taking care of the child with disability, that they often neglect their own physical and mental health. They experience anxiety with sadness, anger, guilt, to a point that the mere thinking of what to do for or with children seems unbearable, or are no longer the parents who were or wanted to be.

The results of this study confirm the prevailing view of the scientific community that developmental disabilities often lead to high rates of parental burnout, anxiety, stress, and depression. Indeed, it appears that the participants in the study have a tendency for parental burnout. Regarding the individual dimensions of parental burnout, parents seem to experience mainly exhaustion. Parents feel that being a parent requires total commitment. They feel burdened by the parenting role due to their extensive responsibilities and that they have reached the end of their endurance.

Additional reasons that can justify the burden that parents feel are the lack of support both from the wider family network and from the services, the disruption of relationships among family members and the increased obligations due to child care of children. Parents with children with disabilities need support and assistance, both by other family members [30] and the wider social context.

Parents in socially isolated societies are more prone to parental burnout than those coming from more solidarity societies [11]. Social support and government subvention are the most powerful protective factors against parental burnout [31,32] and the burden of responsibility for raising a child should not be shouldered only by the parents but there should be a circle of relatives and professionals to support the parents and the child.

It is especially important to identify parental resources through a systematic assessment of parents' needs. This will be an important step in prevention but also in guiding parents towards appropriate supportive interventions and services. Parent support programs should not only focus on the needs of a child with disabilities but they should also strengthen parents and encourage them to take care of themselves as this will benefit not only themselves but also their children. Proper information is essential so that parental burnout ceases to be a taboo subject and parents are empowered to seek the help they often need.

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