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Investigation of the Relationship Between the Burnout Level of Parents of Children with Autism Spectrum Disorder (ASD) and ASD Symptom Level and Family Needs by Regression Analysis

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Abstract

Autism spectrum disorder (ASD) is a neuro-developmental disorder, which manifests itself with severe social interaction and communication disorder, social behavior, language, perceptual functions, repetitive behaviors and interests in the first years of life, which continues throughout life and displays differences in the appearance and level of symptoms due to various reasons from individual to individual. It is known in the literature that the participation of an individual, diagnosed with ASD with these characteristics, in the family, has significant effects on the family and the functioning of the family. In families that have a member diagnosed with ASD, it is known that the needs of the family increase, stress sources are varied, and family functioning is affected by this situation. There are also research results indicating that this situation causes depression and traumatic stress. This study aimed to investigate the relationship between the burnout levels of parents of children diagnosed with ASD, and ASD symptom level, and family needs. For this purpose, data were collected from 273 parents using the Gilliam Autism Rating Scale-2-TV (GARS-2-TV), Family Needs Survey (FNS), and Parental Burnout Inventory (PBI). Based on the collected data, the relationship between the GARS-2-TV and FNS subscale scores and the PBI total score was examined and reported by hierarchical regression analysis. As a result of the analyses, it was observed that the two subscales of the GARS-2-TV and the four subscales of the FNS were related to the PBI total score and explained 40% of the observed variance in the PBI total score.

Keywords

Autism Spectrum Disorder
Autism Spectrum Disorder Symptom Level
Family Needs
Parental Burnout
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Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that emerges during the early developmental period with deficiencies in social interaction and communication, limited and repetitive behaviors, and limited interest symptoms [American Psychiatric Association (APA), 2013]. One of the critical points in the description is the necessity for symptoms that occur in these two areas to cause serious deficiencies in individuals' social or professional life or in other areas where they function (APA, 2013). In the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) published by APA, it is stated that individuals diagnosed with ASD need support at different levels depending on their symptom levels in relation to social interaction and communication and behavior areas. Individuals diagnosed with ASD were classified at three levels according to the amount of support they need: Individuals who require very intensive support, individuals who require intensive support, individuals who require support. In addition to this classification, in recent years, a different classification that deals with the social communication characteristics of individuals diagnosed with ASD is mentioned. In the study conducted by Di Rezze et al. (2016) based on symptom levels in the field of social communication, the classification of ASD was made at five levels. Although there is no current study demonstrating the prevalence rates of children diagnosed with ASD according to the support they need, studies in the United States reveal that the prevalence rate of ASD is generally 1 in 54 and this rate increases by years (Center for Disease Control and Prevention [CDC], 2020). This situation means that more and more families have to learn to live with a child diagnosed with ASD every year.

Having a child diagnosed with ASD reveals medical, educational, social and financial support needs varying at different levels (Brown et al., 2011; Cavkaytar, Batu, & Beklan-Çetin, 2008). The perspective, which argues that determination of these needs will provide the minimization of negative effects of the situation in which the child and the family are (Siklos & Kerns, 2006), support the development of the child at the highest level, and ensure that the child and the family can benefit from the services provided in the most efficient way (Kaytez, Durualp, & Kadan, 2015), ensured that the studies were conducted to determine the family needs. In the studies conducted to determine the needs of families having children diagnosed with ASD, the areas in which families had the most needs were listed as follows: obtaining information about the process of diagnosis of ASD, services to be provided and status management (Brown, Ouellette-Kuntz, Hunter, Kelley, & Cobigo, 2012; Ellis et al., 2002; Kogan et al., 2008; Uslucan, 2015), ensuring that the child has access to services intended for his/her participation in education, therapy, and social activities, planning and coordinating these services (Cassidy, McConkey, Truesdale-Kennedy, & Slevin, 2008; Siklos & Kerns, 2006), providing care for their children (e.g. finding a carer to take care of their child) (Kohler, 1999), and meeting with an expert when needed (Siklos & Kerns, 2006). In a study focusing on the needs of families having children with different diagnoses, families having children diagnosed with ASD were observed to have more needs than families having children diagnosed with mental and physical disability in the areas of information and childcare (Wang & Michaels, 2009).

Studies on the needs of families having children diagnosed with ASD have focused on the variables that affect family needs, and in particular, the variables specific to the nature of ASD, in addition to the question what the needs of families are. In one of the studies examining the effects of these variables on family needs, Hodgetts, Zwaigenbaum, and Nicholas (2015) analyzed the needs of families having children diagnosed with ASD, as met, unmet, and total. The results of the study demonstrated that the total needs of families were predicted by the child's being at an early age, the family's having low income, and the mother's being at an advanced age. Similarly, this study revealed that the presence of behavioral problems predicted the unmet needs of families. However, the results

of the study emphasized that the language and intelligence level of the child did not predict family needs. Studies investigating the relationship between ASD symptom levels related to the communication and behavioral areas of children, and the levels of independent functioning formed according to these levels, and family needs demonstrated that the families with children, who were diagnosed with ASD and who had higher functional independence in terms of self-management, socialization and communication skills, had fewer unmet needs in comparison with families having children diagnosed with ASD who had lower functional independence (Brown et al., 2011). They also demonstrated that there was a positive relationship between ASD symptom level and family needs (Uslucan, 2015). In this sense, the literature indicates that as well as the symptoms related to the nature of ASD, the severity of ASD symptom levels which means that the degree children with ASD affected by disability is determinative in family needs, especially unmet family needs.

The high level of family needs necessitates their taking more personal responsibility for their children, and this causes emotional and physical fatigue and families to feel more stressed, anxious, and helpless (Güleç-Aslan, Cihan, & Altın, 2014). Excessive/chronic stress caused by the developmental difference and worsened care need of the child with disability causes parental burnout (Ardıç & Olçay-Gül, 2019; Goldman, 1989; Pelsma, Roland, Tollefson, & Wigington, 1989; Sullivan et al., 1979), defined as chronic physical and mental fatigue (Burisch, 2006). Parental burnout is the state of exhaustion that occurs in the internal resources of parents as a result of their having the sense of failure, experiencing exhaustion, losing their energy and power, or unsatisfied requests (Aydoğan & Kızıldağ, 2017; Kaner, 2007; Lindström, Aman, Anderzen-Carrison, & Norberg, 2015). The studies have demonstrated that the high symptom severity in the communication and behavioral areas of children diagnosed with ASD is an important variable in predicting family stress and burnout by increasing the needs related to coping with the behaviors of children by families, obtaining information about appropriate services, accessing these services (Hastings, 2002; Weiss, Wingsiong, & Lunsky, 2014), and related to the areas of providing daily care (Davis & Carter, 2008), which has been made difficult by the problems of eating, sleeping habits and emotional regulation that accompany ASD (Griffith & Hastings, 2013; Poslawsky, Naber, Van Daalen, & Van Engeland, 2014; Segeren & Fernandes, 2016; Stanojevic, Nenadovic, Fatic, & Stokic, 2017; Tunçel, 2017; Uslucan, 2015; Weiss et al., 2013, 2014). Although there are studies in the literature examining the relationship between ASD symptom level and family needs, and ASD symptom level and burnout, no studies on the relationships between these variables, which are thought to be related to each other, could not be reached in the literature. It was thought that the results of this study would contribute to determining the quality of support services given to parents of children diagnosed with ASD and to increasing the effectiveness and efficiency of these support services. The results were thought to contribute to the content and scope of family education programs planned, especially in the field of special education. Besides, the study can be considered as one of the leading studies examining the relationship between ASD symptom level and family needs and parental burnout in the literature. Therefore, it was thought that the results of the study would contribute to special education and related literature.

This study aimed to investigate the relationship between the burnout levels of parents having children diagnosed with ASD and ASD symptom level, and family needs. Within the framework of this general purpose, the sub-objectives of this study are as follows: (a) How much do the subscales of the Gilliam Autism Rating Scale-2-Turkish Version (GARS-2-TV), which are the stereotyped behaviors, the communication and social interaction, predict the level of parental burnout?, (b) How much do the subscales of the Family Needs Survey (FNS), which are financial need, need for explaining to the environment, need for information, and need for general support and social support, predict the level of parental burnout?

Method

Research Design

In this study, the effect of ASD symptom levels and family needs of children diagnosed with ASD on parental burnout was examined by regression analysis. Therefore, the research was designed as a relational study. Relational studies are conducted to determine the relationships between two or more variables and to obtain clues about cause and effect (Johnson & Christensen, 2014). At the same time, relational studies are also classified within descriptive studies because they aim to identify the relationships between variables (Fraenkel & Wallen, 2006).

Population and Sample

The population of this study is the parents of children diagnosed with ASD. In order to obtain information from this population, the sample was formed with the criterion sampling strategy of the purposeful sampling method. Purposeful sampling is defined as the case of conducting an in-depth study by selecting information-rich situations depending on the purpose of the study (Johnson & Christensen, 2014). The criterion of participation in this study is that the mother or father has a child diagnosed with ASD, and they volunteer to participate in the study. Based on this sampling method, by using the criterion sampling strategy, the Family Demographic Information Form, GARS-2-TV, FNS, and PBI were sent to special education and rehabilitation centers in various regions of Turkey in order to be filled out by parents of children diagnosed with ASD. Of the 940 scales sent, 310 were returned. The return rate of the scales is 33%. The probable reason for the low return rate of these scales may be that it takes too much time to score the scales.Due to missing data and incomplete filling out, 37 of the scales were excluded from the evaluation. Therefore, the study sample consisted of 273 participants. The cities where these participants live and their distribution are as follows: Ankara (n=45, 16%), Eskişehir (n=18, 7%), Manisa (n=16, 6%), Mardin (n=20, 7%), Samsun (n=26, 10%), Istanbul (n=48, 18%), Izmir (n=100, 36%). Of the participants, 211 were mothers (77.3%), and 62 were fathers (22.7%). In Table 1, the mean ages and standard deviations of the participants and the frequencies of their educational status according to gender were reported. The mean age of the children diagnosed with ASD is 8.58 years, its standard deviation is 5.05, and its range (1.5;33) is 31.5. In addition, the mean GARS-2-TV Autism Index Score is 94.76, its standard deviation is 16.98, and its range (60;151) is 91.

Table 1. Mean Ages and Standard Deviations of the Participants and Frequencies of Their Educational Status by Gender

	N	$\bar{X}$	SD	Range	Not literate (f)	Primary Education (f)	Secondary Education (f)	University and Higher (f)
Mother	211	37.66	7.08	54	7	81	53	70
Father	62	41.56	9.15	56	2	15	16	29
Total	273	38.54	7.75	66	9	96	69	99

Data Collection Tools

In this study, information on the demographic characteristics of the families was collected through the Family Demographic Information Descriptive Form. Data on parental burnout, which is the dependent variable of the study, were obtained using the Parental Burnout Inventory. Data related to ASD symptom level, which is one of the independent variables of the study, were collected with Turkish Version of the Gilliam Autism Rating Scale-2, and the data on family needs, which is the other independent variable of the study, were collected with the Family Needs Survey. Detailed information about each of the data collection tools was provided in the following section.

The Family Demographic Information Descriptive Form is a data collection tool developed by the researchers to collect information about parents of children diagnosed with ASD who participate in the study voluntarily. With this tool, information about parenting statuses, ages, the provinces where they live, educational statuses, and income levels was collected from the participants.

The Parental Burnout Inventory (PBI) was used to collect data on parental burnout, which is the dependent variable of this study. The PBI was developed by Kaner (2007) to determine the level of burnout experienced by mothers and fathers in marital relationships. The original form of the inventory consists of 52 items, which are collected under four factors in total: Negative Spouse and Marriage Relationship, Emotional Burnout, Sensitivity to Spouse and Children, and Satisfaction with Marriage. The PBI is a Likert-type scale of which items are scored between "1" (defines me very well) and "5" (does not define me at all). The factor structure, validity, and reliability of the PBI were revised by Ardıç and Olçay-Gül (2019) with the data collected from parents of children diagnosed with ASD and this form was used in this research. As a result of the factor analysis, it was reported that the inventory consisted of 45 items in total collected under the factors of Negative Spouse and Marriage Relationship, Emotional Burnout, Sensitivity to Spouse and Child, and Satisfaction with Marriage. These four factors explain 59.09% of the total variance, and the factor loads of the items range between .50 and .82. The correlation between the total scores of the subinventories, which form the inventory, and the total score of the inventory ranged between .47 and .92 ($p<.01$). The reliability of the inventory was analyzed with test-retest reliability, split-half reliability, Cronbach's alpha coefficient, and item-total score correlation. Cronbach's alpha coefficient of the PBI calculated over 45 items was found to be .96. At the same time, while the Spearman-Brown split-half reliability was .88, the test-retest reliability was .98 for the entire inventory. The item-total score correlations of the items constituting the PBI range between .20 and .78.

The Gilliam Autism Rating Scale-2-TV (GARS-2-TV) was used to determine the level of being affected by autism, the independent variable of this study. The GARS-2-TV was developed by Gilliam (2006) in order to diagnose children with autism disorder, and its Turkish adaptation was performed by Diken, Ardıç, Diken, and Gilliam (2012). The scale consists of three sub-dimensions: stereotyped behaviors, communication, and social interaction. The scale consists of 14 items scored as "0" (never observed) and "3" (frequently observed) in each sub-dimension. The whole scale is 42 items. The raw scores of each subscale of the GARS-2-TV are first converted to a standard score, and then these standard scores are summed. The sum of the subscale standard scores is converted into a score conceptualized as the Autistic Disorder Index through a table. The highest standard score that can be obtained from the scale is 153, and the lowest score is 55. High scores received from the scale indicate high autism risk.

The test-retest reliability of the scale was found to be .98 for the Stereotyped Behaviors subscale (SBSS), .99 for the Communication subscale (CSS), .99 for the Social Interaction subscale (SISS), and .99 for the whole scale. Cronbach's alpha coefficient was calculated to be .79 for the SBSS, .77 for the CSS, .85 for the SISS, and .88 for the whole scale (Diken et al., 2012). Hypothesis tests were used to determine the validity of the scale. As a result of the statistical analysis of the six hypotheses, the scale was reported to be a valid tool (Diken et al., 2012).

The Family Needs Survey (FNS) was used to collect data about the needs of families of children diagnosed with ASD, which is the second independent variable of this study. The FNS was developed by Bailey and Simeonsson (1988) to determine the family needs of children with disabilities. The scale was adapted to Turkish by Sucuoğlu (1995). Furthermore, the validity and reliability studies of the scale were revised by Akçamete and Kargın (1998) by studying with different disability groups. The factor structure, validity, and reliability of the scale were reviewed by Cavkaytar, Ardıç, and Aksoy (2014). In this study, the scale, which was arranged by Cavkaytar et al. (2014), was used.

The FNS consists of four sub-factors in total: financial need, need for explaining to the environment, need for information, and need for general support and social support. The original form of the FNS consists of a total of 35 items, but Cavkaytar et al. (2014) reported that the scale consisted of a total of 29 items after the factor analysis. The distribution of these items by the factors is as follows:

Financial Need subscale (FNSS) 6 items, Explaining to the Environment Need subscale (EENSS) 7 items, Information Need subscale (INSS) 10 items, and General Support and Social Support Need subscale (GSSSNSS) 6 items. The items of the scale are scored between "1" (Absolutely no) and "3" (Absolutely yes), and high scores obtained from the scale indicate high family needs. While the lowest score that can be received from this scale is 29, the highest score is 87.

The item-total score correlations of the items that constitute the FNS range between .29 and .67. Cronbach's alpha values of the subscales are .83 for the FNSS, .85 for the EENSS, .80 for the INSS, .82 for the GSSSNSS, and .92 for all items (Cavkaytar et al., 2014). Reliability analysis of the FNS was performed by test-retest. The test-retest reliability of the FNS was calculated to be .92 in the second application performed six months after the first application. Moreover, Cronbach's alpha coefficient, which is considered as evidence of the internal consistency of the scale, is .92.

Data Collection and Analysis

Nine hundred forty forms consisting of the Family Demographic Information Form, GARS-2-TV, FNS, and PBI were sent to the private educational institutions that agreed to participate in the study. In this process, private educational institutions and schools located in 21 provinces were reached. Among these institutions, there was a return from private educational institutions and schools in nine provinces. In filling out forms at special educational institutions and schools which had returned, special education teachers or guidance teachers served voluntarily. Data obtained from a total of 273 scales filled out by parents were analyzed statistically.

The item scores were reversed after the data were entered so that high scores obtained from the PBI expressed a high level of burnout. Furthermore, raw scores of the subscales of the GARS-2-TV were calculated, and they were converted into standard scores. The total scores of the data collected through the FNS and the total scores of the FNS subscales were calculated.

Whether the GARS-2-TV and FNS subscale scores and the PBI total score provided the necessary prerequisites for regression analysis was analyzed. Firstly, whether the relationship between the predictor variables and the dependent variable was linear, and whether the scores showed normal distribution were examined through graphs (Fraenkel & Wallen, 2006). As a result of the analysis of the graphs, it was observed that the total parental burnout scores obtained from the PBI, which was the dependent variable, showed a linear relationship with the subscale scores of the GARS-2-TV and FNS, which were predictor variables. Secondly, whether the total score received from the PBI and the subscale scores of the GARS-2-TV and FNS were normally distributed was analyzed with the Kolmogorov-Smirnov test. In the analysis results, it was found out that the subscale scores of the GARS-2-TV and FNS and the PBI total score were not normally distributed. However, opinions about the fact that only the normality tests do not provide sufficient information, especially in the examination of the normal distribution of the data obtained from Likert-type scales, are increasingly gaining importance in the literature (Hair, Black, Babin, Anderson, & Tatham, 2013; Tabachnick & Fidell, 2013). In addition to normality tests, if the skewness and kurtosis values are between -1.5 and 1.5 or -1.0 and 1.0, it should be accepted that the data obtained from Likert-type scales show normal distribution (Hair et al., 2013; Tabachnick & Fidell, 2013). For this reason, the skewness and kurtosis values of the subscale scores of the GARS-2-TV and FNS and the total score received from the PBI were examined and reported in Table 2. Since the values expressed in Table 2 are between -1.5 and 1.5, the data obtained from each of the three scales were accepted to be normally distributed (Tabachnick & Fidell, 2013).

Table 2. Skewness and kurtosis values of the GARS-2-TV and FNS subscale scores and PBI total scores

	SBSS	CSS	SISS	FNSS	EENSS	INSS	GSSSNSS	PBI
Skewness	.21	-.59	-.78	-1.31	-.90	.10	-1.03	-.40
Curtosis	.51	.38	.31	.20	.43	-.84	.11	.42

Another prerequisite of regression analysis is that there is no multicollinearity between the predictor variables. In other words, there should be no correlation of .80 and above between independent variables predicting the dependent variable (Tabachnick & Fidell, 2013). Therefore, the correlation between the independent variables of this study, the GARS-2-TV subscales and FNS subscales, was examined. The correlations of the subscales forming these two scales with each other were detected to range between .15 and .25. Therefore, the data obtained during this study process could be stated to be suitable for regression analysis.

There are various methods for regression analysis. In accordance with the purposes of this study, hierarchical regression analysis was used for data analysis. Hierarchical regression analysis enables the determination of predictor variables in blocks and the examination of their effect on the dependent variable in turn (Tabachnick & Fidell, 2013). There are three reasons for using hierarchical regression analysis in this study. Firstly, having a child with a disability has an impact on family needs. The ASD level affects family needs and prioritizes them in time. Therefore, the first block of the hierarchical regression analysis was determined to be the GARS-2-TV subscales. The second block is composed of the FNS subscales. The second reason for using hierarchical regression analysis in this study is that the GARS-2-TV and FNS subscale scores can be included as separate blocks in the regression analysis. The third reason is that the sub-scales, which are included in hierarchical regression analysis in blocks, both give a value related to predicting as a whole and also show which area has a positive or negative effect on parental burnout, based on the relationships of the subscales. For these three reasons, hierarchical regression analysis was used in this study, and the results were reported in the following section.

Results

The correlation coefficients between the subscale scores of GARS-2-TV, FNS and the total scores of PBI and the results of the regression analysis of the GARS-2-TV and FNS subscale scores and the PBI total score were reported in the following section.

The Correlation Coefficients Between the Subscale Scores of GARS-2-TV, FNS and the Total Scores of PBI

The correlation coefficients between the subscale scores of GARS-2-TV, FNS and the total scores of PBI was reported in Table 3. These correlation coefficients will assist in the interpretation of the results of the regression analysis. When Table 3 are analyzed, it was seen that all subscales, except the INSS, show a moderate significant correlation with total score of PBI.

Table 3. The Correlation Coefficients Between the Subscale Scores of GARS-2-TV, FNS and the Total Scores of PBI

Subscales	SBSS	CSS	SISS	PBI Total Score
FNSS	.20**	.15*	.17**	.37**
EENSS	.25**	.17**	.24**	.41**
INSS	.07	.14*	.10	.17**
GSSSNSS	.18**	.18**	.15**	.42**
PBI Total Score	.42**	.38**	.47**	1

*p<.05 **p<.01

Regression Analysis Results

The mean and standard deviation values of the participants' GARS-2-TV and FNS subscale scores are reported in Table 4. The number of participants of CSS (N=245) is lower than the number of participants of other subcales of GARS-2-TV (N=273). The reason for this situation is that children with ASD should Show verbal and non-verbal communication behavior in order to score CSS. However, even if this subscale has not been scored, the total score of the GARS-2-TV can be calculated.

Table 4. Mean and Standard Deviation of the Subscale Scores of GARS-2-TV, and FNS

Subscales	N	$\bar{X}$	SD
SBSS	273	8.94	2.86
CSS	245	10.07	3.16
SISS	273	8.52	3.00
FNSS	273	11.10	4.07
EENSS	273	12.45	4.14
INSS	273	23.74	5.01
GSSSNSS	273	11.44	3.71

The extent to which the GARS-2-TV and FNS subscale scores predicted parental burnout level was examined by hierarchical regression analysis, and the results were given in Table 5. In the first block, the scores of the stereotypic, communication, and social subscales were taken to the analysis. These subscales are the subscales of the GARS-2-TV. These variables explain 21% of the variance obtained from the PBI total score. There was a positive correlation between the PBI total score and the SBSS, CSS, and SISS. While the CSS and SISS were a significant predictor of the PBI total score, the SBSS was not a significant predictor of the PBI total score. In other words, ASD symptom levels observed in communication and social areas were a significant predictor in predicting parental burnout, while stereotyped behaviors were not a significant predictor.

Table 5. Results of Regression Analysis Between the GARS-2-TV Subscale Scores and FNS Subscale Scores and the PBI Total Score

Model	Predictor	B	SH_B	Beta	ΔR^2
1	SBSS	1.64	1.01	.13	.21**
	CSS	2.08	.77	.19**	
	SISS	2.38	1.08	.20*	
	Constant	44.34	7.57		
2	SBSS	.45	.90	.04	.19**
	CSS	1.78	.63	.17**	
	SISS	2.56	.95	.19*	
	FNSS	1.50	.55	.18**	
	EENSS	-1.40	.46	-.20**	
	INSS	1.39	.61	.17*	
	GSSSNSS	2.73	.72	.29**	
	Constant	27.41	10.05		

*p<.05 **p<.01

As the second block, the family needs level was taken to the hierarchical regression analysis. In this block, the FNSS, EENSS, INSS, and GSSSNSS, which were the subscales of the FNS, were included. When the analysis results presented in Table 4 are examined, all subscales of the FNS are observed to have a significant relationship with the PBI. While the FNSS, EENSS, and GSSSNSS showed a positive correlation with the PBI total score, the INSS showed a negative correlation with the PBI. The independent variables in the second block explain 19% of the variance observed in the PBI total score. Variables in both blocks explain 40% of the variance observed in the PBI total score.

Discussion and Conclusion

When the results of the study were examined, it could be stated that: (a) Standard scores of the GARS-2-TV subscale explained 21% of the variance observed in parental burnout, (b) the FNS subscale scores explained 19% of the variance observed in parental burnout, (c) both independent variables explained 40% of the variance in parental burnout.

The results of the study demonstrated that ASD symptom level explained 21% of the variance observed in parental burnout, scores received from the communication and social interaction subscales were a significant predictor of the PBI total score, whereas the score obtained from the stereotypic subscales was not a significant predictor of the PBI total score. While this result supports the study results which emphasize that there is a positive correlation between communication and social interaction deficiencies, which are one of the two important symptom areas in the diagnosis of ASD, and the stress, depression and burnout levels of families (Poslawsky et al., 2014; Stanojevic et al., 2017; Tomanik, Harris, & Hawkins, 2004), it differs from the study results which state that verbal communication difficulties do not predict stress in families (Konstantareas & Papageorgiou, 2006; Segeren & Fernandes, 2016). Study results focusing on the relationship between stereotypic behaviors and limited interest areas, which are another symptom area in the diagnosis of ASD, and families' stress, depression, and burnout levels are incompatible with the study findings, which state that behavioral characteristics, especially behavioral problems, observed in children diagnosed with ASD, play an essential role in the explanation of stress, depression, and burnout in families (Hasting, 2002; Lecavalier, Leone, & Wiltz, 2006). However, these study results are compatible with the results showing that there is no significant difference between the stress levels of families when the variable of behavioral problems is controlled (Blacher & McIntyre, 2006). In the study conducted by Blacher and McIntyre, they observed that the relationship between behavioral problems and family stress strengthened as children grew up. Since in this study, the age variable was not included in the analysis and no analysis was performed on the structural equation model, stereotypic behaviors may not have predicted family burnout. However, the stabdart deviation of subscales (Table 4) an their correlations with the total scores of PBI suggest that new analyzes should be made only on the basis of age variables.Conducting analyses in future studies by considering this limitation will contribute to the literature.

In the study, it was also observed that family needs explained 19% of the variance observed in parental burnout, a significant positive correlation was found between the FNSS, EENSS and GSSSNSS subscales and the PBI total score, whereas there was a significant negative correlation between the INSS subscale and PBI total score. The literature focusing on family needs demonstrates that families need financial support in order to meet the educational needs (private lessons, therapies, etc.) of children diagnosed with ASD, and that this requirement is predictive in families' psychological reactions (Atagün, Balaban, Atagün, Elagöz, & Özpolat, 2011; Montes & Halterman, 2008). The literature on the need for explaining to the environment and need for general and social support demonstrates that these needs predict the psychological reactions of families and that stress, depression and burnout levels of families increase as their needs for explanation to the environment and need for social support increase. In addition to studies conducted with families having children diagnosed with ASD (Brown et al., 2012; Siklos & Kerns, 2006), it was observed that similar needs were frequently expressed in different disability groups such as mental disability (Özsoy, Özkahraman, & Çallı, 2006) and physical disability (Palisano et al., 2009) and that these needs predicted family reactions. In both ASD and other disability groups, another need that is most frequently mentioned by families is the need for information. The results of the study revealed that families of children diagnosed with ASD need information about education, therapy (Ellis et al., 2002; Siklos & Kerns, 2006) and access to services (Brown et al., 2012). The results obtained from this study showed that there is a negative correlation between the families' need for information and burnout levels and that burnout levels decrease as the need for information increases. This situation can be explained by the fact that families are always looking for information about education, therapy, and services, they are trying to find out what the best education, therapy, and services for their children diagnosed with ASD are, and they believe and are motivated that they will

overcome the problems they face because of the nature of ASD by reaching new information. This effort, belief, and motivation to achieve the best for their children may have been effective in reducing the burnout experienced by families.

As a result, when the effect of ASD symptom level and family needs, which are independent variables of this study, on parental burnout is examined, it is observed that both variables explain in total 40% of the variance observed in parental burnout. This result is compatible with the results in the literature (Griffith & Hastings, 2013; Poslawsky et al., 2014; Segeren & Fernandes, 2016; Stanojevic et al., 2017; Tunçel, 2017; Uslucan, 2015; Weiss et al., 2013, 2014). However, studies conducted in the literature indicate that increasing ASD symptom level increases the needs of the family (Davis & Carter, 2008; Hastings, 2002; Weiss et al., 2014). The results of this study show that there is a low correlation between ASD symptom level and family needs. One of the criteria to perform regression analysis is multicollinearity analysis. When the results of this analysis are examined, while the correlation between the GARS-2-TV subscales and FNS subscales is observed to vary between .15 and .25, the correlation between the autism index score obtained from the GARS-2-TV and the FNS total score is .22 ($p<.01$). This situation may be evaluated as evidence that family needs do not mediate the effect of ASD symptom level on parental burnout because ASD symptom level explains the variance observed in parental burnout more than the variance explained by family needs. Investigating the relationship between the mentioned two independent variables and parental burnout in a more detailed way in future studies will contribute to the studies that will be conducted on the base of a structural equation model. It can be said that these studies will contribute to the more profound understanding of the relationships between the variables that cause the emotional situations experienced by families and to making new arrangements in terms of both theory and practice.

This study has some limitations. First of all, the demographic variables of the family, which are related to parental burnout, were not analyzed in this study. The most important reason for this situation is that the families did not provide information about demographic variables (especially about the elapsed time after diagnosis and economic condition). The second significant limitation of this study is that the structural equation model was not used to examine the relationship between these two independent variables and family burnout. The first reason for this limitation is the difficulties experienced in performing this analysis in terms of the number of participants and the number of items of the scales measuring the variables. The second and most important reason for this limitation is that studies on family burnout do not provide detailed information about other variables related to family burnout and the relationship between these variables and family burnout. In other words, in the literature, there is not enough information to establish a structural equation model about family burnout and variables related to family burnout.

As a result, planning more detailed future studies about the relationship between parental burnout and related variables in the literature on special education will determine the variety and content of support services to be provided to parents. At the same time, new studies will contribute to conducting a more robust study based on the structural equation model related to family burnout. In light of these study results, it can be said that ASD symptom level and family needs predict a significant part of the variance in parental burnout. However, it is thought to be appropriate to collect more detailed information about the other variables affecting the psychological well-being of parents and about these variables through future studies.

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