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The Turkish Reliability and Validity of the Behavioral Pediatrics Feeding Assessment Scale in Children with Neurodevelopmental Disorders

Nörogelişimsel Bozukluğu Olan Çocuklarda Davranışsal Pediatrik Besleme Değerlendirme Ölçeği'nin Türkçe Güvenirliği ve Geçerliği

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ABSTRACT Objective: The aim of this study was to investigate the reliability and validity of the Behavioral Pediatrics Feeding Assessment Scale (BPFAS) in children with neurodevelopmental disorders. **Material and Methods:** The reliability study was conducted by investigating the reliability of parallel forms and the internal consistency of the instrument. The criterion validity of BPFAS was examined by checking the correlations between the BPFAS and "Children's Eating Behavior Questionnaire (CEBQ)" and "Depression, Anxiety, Stress Scale". **Results:** Cronbach's alpha internal consistency coefficients were acceptable for the subscales of the BPFAS (α>0.70). There were negative correlations between BPFAS and CEBQ subscales related to access to food, and positive correlations between BPFAS and CEBQ subscales related to food rejection ($p<0.05$). Positive correlations were found between emotional status of the parents and the frequency of the parent's problem behavior on one hand, as well as the frequency of poor strategy and the perception of the negative food behaviors of the child on the other hand (p=0.008; 0.034; 0.001, respectively). There was a correlation between children's weight and the increase in the frequency of negative feeding behaviors of the parents and the child (p=0.018; 0.043, respectively). **Conclusion:** It is concluded that the BPFAS can be used as a valid and reliable scale for children with neurodevelopmental disorders. The Turkish validity and reliability studies of the scale for different developmental disorders will make a significant contribution to the widening of its usage area.

Keywords: Feeding and eating disorders; neurodevelopmental disorders

ÖZET Amaç: Bu çalışmanın amacı, nörogelişimsel bozukluğu olan çocuklarda Davranışsal Pediatri Besleme Değerlendirme Ölçeği'nin (DPBDÖ) güvenirliğini ve geçerliğini araştırmaktır. **Gereç ve Yöntemler:** Güvenirlik çalışması, paralel formların güvenirliği ve ölçeğin iç tutarlılığı araştırılarak yapıldı. DPBDÖ'nün kriter geçerliği, DPBDÖ ile "Çocukların Yeme Davranışı Anketi (ÇYDA)" ile "Depresyon, Kaygı, Stres Ölçeği" arasındaki korelasyonlar kontrol edilerek incelendi. **Bulgular:** DPBDÖ alt ölçekleri için Cronbach alfa iç tutarlılık katsayıları kabul edildi (α>0,70). DPBDÖ ve ÇYDA alt ölçekleri arasında besine erişim ile negatif, DPBDÖ ve ÇYDA alt ölçekleri arasında besini reddetme ile ilişkili pozitif korelasyonlar bulundu ($p<0,05$). Ebeveynlerin duygusal durumu ile ebeveynlerin problemli davranışlarının sıklığı, yanlış strateji kullanım sıklığı ve çocuğun beslenme davranışlarının olumsuz algılanması arasında pozitif korelasyon bulundu (sırasıyla p=0,008; 0,034; 0,001). Çocukların kilosu ile ebeveyn ve çocuğun olumsuz beslenme davranışlarının sıklığı arasında korelasyon vardı (sırasıyla p=0,018; 0,043). **Sonuç:** DPBDÖ'nün, nörogelişimsel bozukluğu olan çocuklar için geçerli ve güvenilir bir ölçek olarak kullanılabileceği sonucuna varıldı. Ölçeğin farklı gelişimsel bozukluklar için Türkçe geçerlik, güvenirlik çalışmalarının yapılması kullanım alanının genişletilmesine önemli katkı sağlayacaktır.

Anahtar Kelimeler: Beslenme ve yeme bozuklukları; nörogelişimsel bozukluklar

Neurodevelopmental disorders are a heterogeneous group includes impairments in neurodevelopmental functions such as cognitive, motor, and language.[1] Children may experience many health problems besides motor, intellectual and communication disorders and comorbidity. In addition to

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motor, mental and communication problems, children with neurodevelopmental disorders also have many health problems and comorbid diseases.[2] Behavioral problems adversely affect the communication between child and parent, their psychosocial health as well as their participation in educational programs or the management.[1]

Feeding is a vital function that provides interaction between the child and the parent and has a direct impact on the child's health. The behavior of the child and the parent may affect feeding function due to behavioral reasons as well as motor and sensory components. Children with neurodevelopmental disorders need parental support for feeding and daily care. Due to the tendency of these children to exhibit behavioral problems, it is reported that a high stress parents are prone to present abusive manners such as physical abuse or neglect.[3,4] Therefore, parental evaluations are considered as an important factor in the assessment of children with neurodevelopmental disorders. In the literature, the importance of parental reports as well as evaluating parent-child relationships and behaviors are emphasized in assessing feeding function.[5]

In our country, there is no assessment tool that evaluates the effects of feeding disorders on family and children. As a parent-reported assessment tool, the Behavioral Pediatrics Feeding Assessment Scale (BPFAS) evaluates the general condition of the child at home and offers a multifaceted approach to the assessment. In addition, it has been reported that the psychometric properties of the scale are high.[6] Therefore, the present study aimed to demonstrate the reliability and validity of the BPFAS in children with neurodevelopmental disorders.

MATERIAL AND METHODS

The study was conducted at Hacettepe University Swallowing Disorders Application and Research Center, with the participation of children with neurodevelopmental disorders in the range of age 3-12 years. Ethics committee permission was obtained from Hacettepe University, Non-invasive Clinical Research Ethics Committee with the decision dated 04.09.2013 and numbered GO 13/433. Written consent form was obtained from parents. The study was carried out in accordance with the Helsinki Declaration principles.

G*Power 3.1.9.2 showed that 82 participants were required to observe significant correlations ($p<0.05$) for a medium effect size (0.30) to achieve statistical power of 0.80. The study was carried out with 74 children with neurodevelopmental diseases, the flow chart of the study was given in Figure 1. The diagnoses of the 74 children included in the study are as follows: cerebral palsy (n=15), autism (n=14), different neurological diseases (hydrocephalus, epilepsy, encephalitis, etc.) (n=12), chromosomal disorders (n=11), metabolic and syndrome disorders (n=13), with spina bifida (n=9). All children were fed orally and had mild or moderate level of mental retardation according to medical board report.

Based on the translation-back translation method, two physiotherapists, who had good command of English, translated the scale, and prepared the initial Turkish version. After that, the initial Turkish version scale was translated back into English by the same physiotherapists. The original and back translated versions were compared and the final version was arranged after necessary revisions based on the feedback from the pilot study were conducted on 15 parents.

THE BEHAVIORAL PEDIATRICS FEEDING ASSESSMENT SCALE

The "BPFAS" was developed by Crist et al. Necessary permissions were obtained from the author for the Turkish adaptation of the scale for children with neurodevelopmental disorder.[7] The BPFAS is a scale that measures child and parent behaviors in two respects: (1) the frequency of negative eating behaviors and (2) whether these behaviors are perceived as problems by the parent. Therefore, parents rated each items for behavior frequency and their evaluation for the same behavior (as a problem or not). The presence of problems in the behavior of the child and parents is measured through yes/no questions that are answered by the parents. The scale evaluates both the child's and the parent's behavior during feeding, and clarifies whether these behaviors create a problem in their lives.

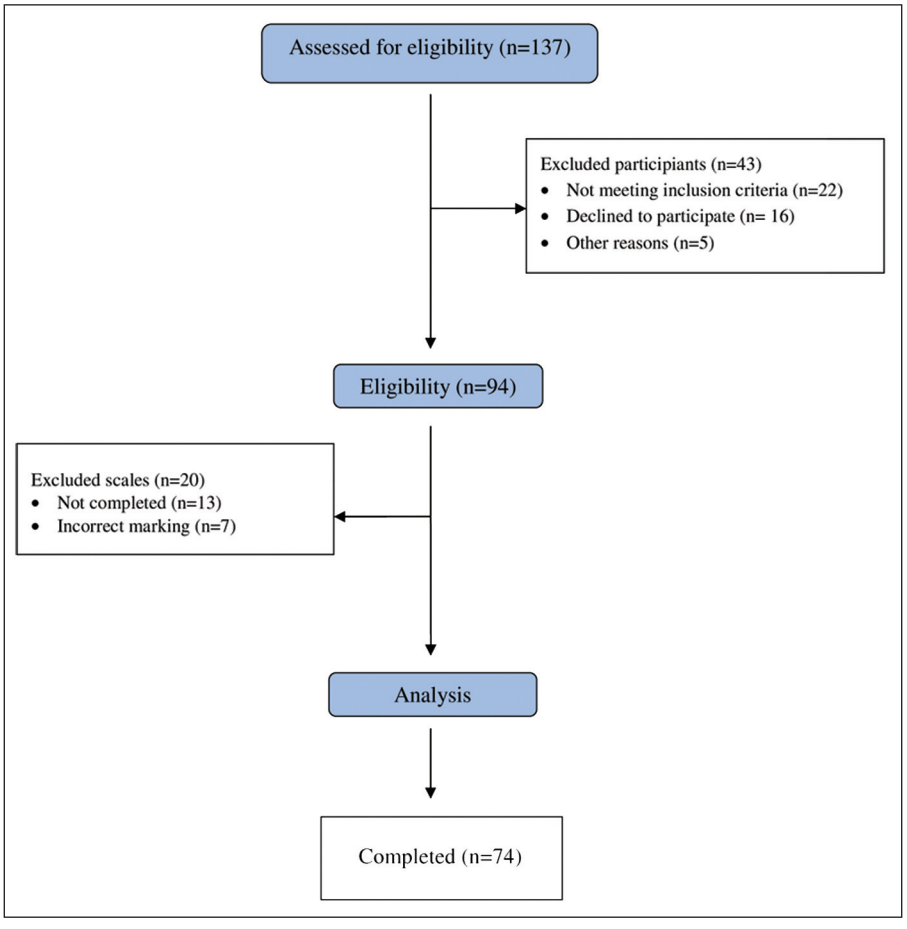

FIGURE 1: Consort flow chart.

While the first 25 items on the BPFAS measure the behavior of the child during feeding, the remaining 10 items evaluate the parent's behavior during child feeding. The scale consists of a total of 35 items and all items are scored between 1 and 5 (1= never, 5= always). It examines the behavior of the child and parent during feeding with eight subscales named as: Child Behavior Frequency (CBF), Parent Behavior Frequency (PBF), Restriction (R), Poor Strategies (PR), Child Behavior Problems (CBP), Parent Behavior Problems (PBP), Total Frequency Score (TFS), and Total Problem Score (TPS).

In addition to child and family assessments, the BPFAS assesses the restrictions of children in accessing various nutrient sources, and PR used by the parent to feed the child. The total score of six of the CBF items (m1, m5, m6, m8, m16 and m18) is calculated to evaluate the restrictions of the child's access to various nutrient sources (e.g. m1: eats fruits). Likewise, the total score of four of the PBF items (m27, m28, m31 and m32) is calculated to evaluate the PR used by the mother to feed her child (e.g. m27: coax my child to get him/her to take a bite).

ADAPTATION OF THE BPFAS FOR CHILDREN WITH NEURODEVELOPMENTAL DISORDERS

The BPFAS, which was culturally adapted to Turkish, was administered to the parents of 30 children with neurodevelopmental disorders. This application revealed that the 9th, 10th, and 13th items needed to be adapted for children with neurodevelopmental disorders. These items were revised as shown in Table 1 and the revisions made it possible for the evaluator to assess the child's desire to eat rather than his/her eating. The author of the questionnaire approved the revisions and the scale was implemented.

TABLE 1: Items revised for children with neurodevelopmental disorders.

Items on the original BPFAS	Items adapted for children with neurodevelopmental disorders
9. Comes readily to mealtime	Comes readily to mealtime or is willing to eat. (should only be used for children with limited mobility)
10. Eats junky snack food but will not eat at mealtime	Eats/wants to eat junky snack food but will not eat at mealtime. (should only be used for children with limited mobility)
13. Gets up from table during meal	Gets up from/wants to leave the table during meal. (should only be used for children with limited mobility)

BPFAS: Behavioral pediatrics feeding assessment scale.

DEMOGRAPHIC DATA FORM

The diagnosis, gender, height, weight and age of the children included in the study were recorded.

VALIDITY AND RELIABILITY ANALYSIS

Since, previous studies conducted with the BPFAS generally focused on the scale's criterion validity rather than its construct validity, in the present study we investigated BPFAS' criterion validity.[7-9] In a study investigating factor structure of the scale, items related to child problem behavior frequency were included in factor analysis and the result revealed a five-factor structure.[7] However, researchers who developed the scale and carried out its factor analysis indicated that the clinical use of these factors might cause misleading results. In the present study, we conducted various factor analyzes, however we did not observe the factors reported by Crist and Napier-Phillips and not report our findings.[7] Therefore, the criterion validity of the BPFAS was examined and the correlations between subscales of "Children's Eating Behavior Questionnaire (CEBQ)" and "Depression, Anxiety, Stress Scale (DASS-42)" were investigated in order to generate an idea about construct validity of the BPFAS.

It is known that children with neurodevelopmental disorders may have behavioral problems and the parents need psychological support.[10-13] Parents' responses are related to their perceptions, interpretations and attitudes of the situations during feeding. The mental state of the parents can affect their own behavior as well as the perception and direction of the child's behavior. At the same time, nutritional problems are one of the factors that significantly affect the child-parent relationship.[14] For this reason, the DASS-42 scale was preferred as validity criteria of the BPFAS for evaluating the parents' mental state in relation with the parents' behavior. On the other hand, there is no scale developed in Turkish regarding the nutrition and eating behaviors of children, and very few scales are adapted to Turkish culture.[15-17] Therefore, CEBQ scale was chosen as the most appropriate scale adapted to Turkish during the study period.

The reliability study was conducted by calculating Cronbach alphas for total scale and its subscales.

CHILDREN'S EATING BEHAVIOR QUESTIONNAIRE

The Eating Behavior Questionnaire of Children has been translated into Turkish and adapted, its validity and reliability have been reported.[15] The CEBQ developed by Wardle et al. consists of 35 items answered by parents and is a Likert-type scale scored between 1 and 5 (1= never, 5= always).[18] It assesses the child's appetite and determines the tendency to obesity or loss of appetite.[15] The sub-parameters of the scale investigate appetence in two different ways in terms of child's desire to food versus his/her rejection of food. It determines the appetence of the child from eight aspects; Food Responsiveness (FR), Emotional Over-Eating (EOE), Enjoyment of Food (EF), Desire to Drink (DD), Satiety Responsiveness (SR), Slowness in Eating (SE), Emotional Under-Eating (EUE), and Food Fussiness (FF).[5,6]

DEPRESSION, ANXIETY, STRESS SCALE

The BPFAS questions the parent negative behavior frequency, problems and how the family perceives the current situation during mealtime. Hence, in our study, the DASS-42, as a test that evaluates psychological well-being of the parents, was used to investigate the reliability of the BPFAS.[19] DASS-42, whose Turkish adaptation, validity and reliability study is already performed, was answered by the parents who filled in the BPFAS considering their own

psychological status during the previous week.[20] DASS-42 determines anxiety, stress and depression levels in the non-clinical population on a score range of 0-3 (0= never, 3= always).

STATISTICAL ANALYSIS

In order to examine whether there was a significant difference in demographic variables and the BPFAS evaluations in terms of the gender of the participants, t-test was performed for independent samples.

Reliability analysis: The reliability of the BPFAS and its subscales were examined by calculating the Cronbach's alpha coefficient (α).

Criteria Validity Analysis: Pearson correlation coefficients were calculated to investigate the relationship between the BPFAS and CEBQ subscales. Likewise, Pearson correlation coefficients were calculated to investigate the relationship between the BPFAS and parental depression, anxiety and stress (DAS) levels. In order to examine the relationship between weight and the BPFAS, height was used as the control variable and partial correlation coefficients were calculated.

RESULTS

Parents of 31 girls and 43 boys (n=74) with neurodevelopmental disorders completed the scales. Table 2 presents data regarding children's weight, height and age according to their gender. Gender did not have a significant effect on children's weight, height and age (p=0.57, 0.82, 0.78, respectively) (Figure 2), BPFAS scores were not affected by gender (p=0.86).

RELIABILITY RESULTS

Internal Consistency

Alpha coefficients, means and standard deviations of BPFAS subscales are presented in Table 3. Alpha coefficients for different subscales of BPFAS were acceptable (α>0.70), except for the subscales of R (α=0.69) and PR (α=0.61).

TABLE 2: Weight, height and age distribution of the participants according to their gender.

	Girls (n=31)		Boys (n=43)			
	Mean	SD	Mean	SD	t value	p value
Height (cm)	104.71	18.41	103.70	19.71	0.223	0.817
Weight (kg)	18.85	7.25	18.03	6.14	0.528	0.578
Age (mo)	63.35	32.81	61.95	30.45	0.190	0.778

SD: Standard deviation. p<0.05

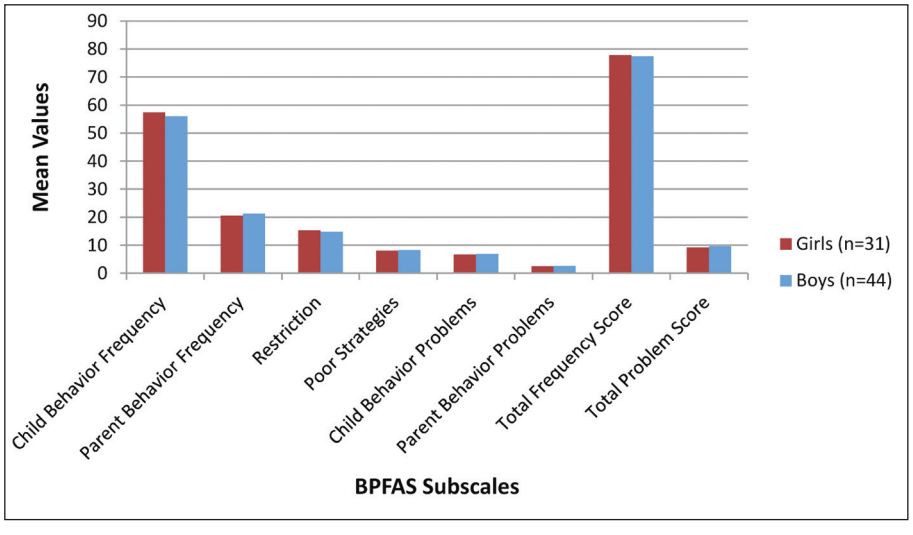

FIGURE 2: Behavioral Pediatrics Feeding Assessment Scale assessments of the participants in terms of gender.

TABLE 3: Internal consistency coefficients, mean and standard deviations of Behavioral Pediatrics Feeding Assessment Scale subscales.

BPFAS subscales	Mean	SD	Alpha
Child Behavior Frequency	56.57	14.34	0.86
Parent Behavior Frequency	21.07	6.98	0.80
Restriction	14.97	5.01	0.69
Poor Strategies	8.19	3.28	0.61
Child Behavior Problems	6.87	6.01	0.90
Parent Behavior Problems	2.60	2.84	0.85
Total Frequency Score	77.64	20.37	0.91
Total Problem Score	9.47	8.54	0.93

SD: Standard deviation; BPFAS: Behavioral Pediatrics Feeding Assessment Scale.

CRITERION VALIDITY RESULTS

Correlations between BPFAS and CEBQ subscales

The correlations between BPFAS and CEBQ subscales are presented in Table 4. Significant negative correlations were observed between BPFAS subscales and FR and EF subscales of CEBQ, both of which were related to access to food. The correlations between BPFAS subscales and EOE, however, were not significant.

Significant positive correlations were observed between BPFAS and SR, SE, EUE and FF subscales of CEBQ, all of which were related to food avoidance. As in the case of EOE subscale, EUE showed weak and non-significant correlations with BPFAS subscales. While an expected positive correlation between SE subscale of CEBQ and PR subscale of BPFAS was observed, its correlation with R subscale of BPFAS was not significant.

Correlations between BPFAS and DASS-42 subscales

The correlations between BPFAS subscales and parents' DAS levels are presented in Table 5. Par-

TABLE 4: Correlations between Behavioral Pediatrics Feeding Assessment Scale subscales and Children's Eating Behavior Questionnaire subscales.

	CBF	PBF	R	PR	CBP	PBP	TFS	TPS
FR								
r value	-0.360**	-0.243*	-0.307**	-0.176	-0.308**	-0.317**	-0.336**	-0.322**
p value	0.020	0.042	0.009	0.130	0.009	0.006	0.004	0.006
EOE								
r value	-0.055	-0.074	-0.001	-0.100	-0.138	-0.206	-0.064	-0.165
p value	0.629	0.518	0.977	0.393	0.231	0.076	0.574	0.152
EF								
r value	-0.760**	-0.714**	-0.575**	-0.652**	-0.509**	-0.557**	-0.780**	-0.544**
p value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DD								
r value	0.081	0.236*	-0.149	0.260*	0.005	0.126	0.138	0.045
p value	0.500	0.044	0.198	0.025	0.984	0.286	0.246	0.713
SR								
r value	0.450**	0.492**	0.268*	0.382**	0.173	0.241*	0.485**	0.202
p value	0.000	0.000	0.24	0.001	0.158	0.040	0.000	0.094
SE								
r value	0.569**	0,609**	0.166	0.536**	0.262*	0.301**	0.610**	0.284*
p value	0.000	0,000	0.156	0.000	0.024	0.009	0.000	0.014
EUE								
r value	0.194	0.0243*	0.15	0.098	0.260*	0.267*	0.22	0.272*
p value	0.111	0.041	0.234	0.406	0.031	0.022	0.068	0.022
FF								
r value	-0.573**	-0.441**	-0.615**	-0.361**	-0.412**	-0.395**	-0.554**	-0.421**
p value	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000

* p<0.05, ** p<0.01, *** p<0.001

CBF: Child behavior frequency; PBF: Parent behavior frequency; R: Restriction); PR: Poor strategies; CBP: Child behavior problems; PBP: Parent behavior problems; TFS: Total frequency score; TPS: Total problem score; FR: Food responsiveness; FOE: Emotional over-eating; EF: Enjoyment of food; DD: Desire to drink; SR: Satiety responsiveness; SE: Slowness in eating; EUE: Emotional Under-Eating; FF: Food fussiness.

TABLE 5: Relationships between Behavioral Pediatrics Feeding Assessment Scale scales and parental depression, anxiety and stress and Behavioral Pediatrics Feeding Assessment Scale evaluations and weight (height effect was controlled).

	CBF	PBF	R	PR	CBP	PBP	TFS	TPS
Depression								
r value	0.18	0.317**	0.048	0.251*	0.194	0.380**	0.235*	0.264*
p value	0.143	0.008	0.726	0.034	0.116	0.001	0.001	0.029
Anxiety								
r value	0.109	0.270*	-0.02	0.228	0.055	0.237*	0.169	0.118
p value	0.386	0.024	0.668	0.055	0.686	0.048	0.286	0.344
Stress								
r value	0.164	0.310**	0.04	0.241*	0.104	0.288*	0.221	0.17
p value	0.142	0.006	0.668	0.040	0.324	0.012	0.324	0.127
Weight								
r value	-0.282*	-0.378***	0.032	-0.317**	-0.105	-0.178	-0.328**	0,133
p value	0.043	0.018	0.630	0.021	0.354	0.350	0.034	0.335

* p<0.05, ** p<0.01, *** p<0.001

CBF: Child behavior frequency; PBF: Parent behavior frequency; R: Restriction; PR: Poor strategies; CBP: Child behavior problems; PBP: Parent behavior problems; TFS: Total frequency score; TPS: Total problem score.

ents' DAS levels were positively correlated with the subscales of PBF, PR, and PBP.

Correlations between BPFAS and children's weight

Children's weight might be another factor affecting their mealtime behaviors. In this case, significant negative correlations between children's weight and BPFAS subscales would be expected. To test this argument, partial correlation coefficients between weight and BPFAS subscales were calculated by controlling children's height, which was related to their weight. As seen in Table 5, increase in the frequency of negative mealtime behaviors of parents and children were related to decrease in children's weight.

DISCUSSION

According to the results of the study, whole BPFAS and its subscales are reliable, except for the subscales of R and Poor Strategies. The criterion validity of BPFAS was demonstrated by examining the correlations between BPFAS and CEBQ, DASS-42 and children's body weights. The scores of the BPFAS and other subscales were generally correlated with the weight of children (independent of their gender). The decrease in the child's body weight was associated with the negative behaviors of the parents. DAS level of the parent is related to the parent's perception of negative eating behaviors as more problems. The increase in parental depression and anxiety leads to increased use of poor strategies.

No significant differences on gender were observed in BPFAS evaluations, indicating that the scale can be used for both girls and boys. Although there are studies in the literature that present differences between nutritional status and weight levels of children depending on their age, and there are no studies reported that a difference between nutritional behaviors.[21,22]

The reliability of the whole BPFAS and its subscales were within acceptable ranges. However, the reliability of R and PR subscales were found to be less than acceptable. A possible reason for this situation is that there are relatively fewer items in these subscales.[23] In order to overcome this limitation, it may be considered to add new items to these two subscales in future studies.

There was no correlation between the EOE subscale of CEBQ and BPFAS subscales, and this was an expected result. In the CEBQ, eating behaviors are examined in relation to the child's emotional state, whereas the BPFAS evaluates feeding mostly in terms of child's behaviors and child-parent relationship. Furthermore, as in the EOE subscale, feeding is not defined as more or less than sufficient, and the amount of eating is not investigated.[24] Similarly, in

their factor validity study of the BPFAS in rural overweight children, Davis et al. reported that BPFAS is suitable for clinical conditions and cannot be applied for cases with over-eating.[24] Moreover, there is a notable pattern between the SE subscale of CEBQ and the R and PR subscales of BPFAS. SE is positively correlated with all subscales of BPFAS other than R in food diversity. SE is regarded as both a problematic eating behavior of the child and a problem for the parents. Yet, this may be caused by sensory and motor problems in disorders that are characterized with inadequate physical development such as cerebral palsy.[25,26] In cases of physical disability, it is not enough to seek solutions solely from a behavioral point of view.[27,28] These children may eat much slower than their potential, as a result of a learned behavior as well as physical problems, and this situation may be aggravated by poor parent strategies. Examining correlation coefficients prove that this situation is mostly related to the PR used by the parents. In clinical practice, the application of the scale following motor and sensory evaluations provides a more accurate guidance for the family.

It is known that the quality of life and emotional status of the parents of children with neurodevelopmental disorder are lower and needs support for increasing than the parents of children with typical development.[11-13] The scale, indeed, presents a report based on parental assessment. Since the feeding needs of children with neurodevelopmental disorders are mostly dependent on the parent, it is important to evaluate the emotional state of the parent and its correlation with the BPFAS. Similarly, the DAS level of the parent is related to the parent's perception of negative eating behaviors as more problems. On the other hand, the increase in parental depression and anxiety leads to increased use of poor strategies.

The scores of the BPFAS and other subscales were generally correlated with the weight of children (independent of their gender). The only exception was that there were no significant correlations in the expected direction between the parent's problem evaluations of negative eating behaviors and weight. Furthermore, our findings suggest that weight loss in children is associated mostly with PR used by parents rather than restrictions in nutritional diversity.

The findings that the decrease in the child's weight was related to the negative behaviors of the parents, while the decrease in nutritional variety was not correlated to the child's weight underlines an important point for the child's development. While meeting the nutritional needs of the child is related to physical, cognitive and mental development, the child's weight level is not an indicator of development by itself.[29,30] For children with neurodevelopmental disorders, not meeting enough nutritional needs despite of the risks such as high weight gain, malnutrition, osteoporosis and drug use is a serious health threat.[31-33] In many societies, it is seen that mothers attach importance to the amount of nutrients of the child and describe the development of the child by weight level and often ignore the nutritional content.[34,35] The assessment of nutritional restriction of BPFAS is an important evaluation tool for children with neurodevelopmental disorders and provides an opportunity to examine malnutrition problems in relation to the parent's behavior.

CONCLUSION

The findings of the present study indicate that the reliability of BPFAS subscales is acceptable; and in terms of criterion validity, the subscales are related to children's weight (regardless of their gender), their desire and access to food, and their rejection of food. It is also worth noting that on one hand, child's weight was not correlated with the R subscale of BPFAS, but correlated with parent's PR; and on the other hand, psychological well-being of the parent was correlated more with PR rather than child's behaviors. Accordingly, these findings provide important support for the criterion validity of the BPFAS and that the scale can be used as a valid and reliable tool for children with neurodevelopmental disorders.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Meltem Yazıcı;* ***Design:*** *Timuçin Aktan, Meltem Yazıcı, Numan Demir;* ***Control/Supervision:*** *Ayşe Karaduman;* ***Data Collection and/or Processing:*** *Meltem Yazıcı, Selen Serel Arslan, Numan Demir;* ***Analysis and/or Interpretation:*** *Timuçin Aktan, Meltem Yazıcı;* ***Literature Review:*** *Meltem Yazıcı;* ***Writing the Article:*** *Meltem Yazıcı, Timuçin Aktan, Selen Serel Arslan;* ***Critical Review:*** *Ayşe Karaduman;* ***References and Fundings:*** *Meltem Yazıcı, Ayşe Karaduman;* ***Materials:****Meltem Yazıcı, Ayşe Karaduman.*

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