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RESEARCH ARTICLE

ADOLESCENT FOOD PARENTING QUESTIONNAIRE: EVALUATION OF TURKISH PSYCHOMETRIC PROPERTIES OF PARENT AND ADOLESCENT VERSIONS

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ABSTRACT

Purpose: This study aimed to adapt the "Adolescent Food Parenting Questionnaire: Parent and Adolescent Version" into Turkish and conduct validity and reliability studies.
Material and Methods: The research was carried out in methodological type and was carried out with 337 adolescents aged 12-16 years and their parents between June to September 2022. Data were collected with the Child and Parent Information Form and Adolescent Food Parent Questionnaire. Content validity, construct validity, internal consistency reliability, and item analysis were used to determine the questionnaire's psychometric properties.
Results: Both parent and adolescent versions of the Adolescent Food Parenting Questionnaire contain 16 items. The results of the exploratory factor analysis determined that the five-factor structure explained 50.45% of the total Variance for the parent version and 63.31% of the total Variance for the adolescent version. In addition, item factor loads for the parent version ranged from 0.32 to 0.71, while item factor loads for the adolescent version ranged from 0.37 to 0.75. As a result of confirmatory factor analysis, the goodness of fit values of the parent version were χ2/sd=2.030, RMSEA=0.055, GFI=0.94, CFI=0.95, IFI=0.95, RFI=0.87, NFI=0.90, TLI =0.93, and the adolescent version were χ2/sd=1.672, RMSEA = 0.045, GFI = 0.95, CFI = 0.96, IFI = 0.96, RFI = 0.88, NFI = 0.91, and TLI = 0.95. The Cronbach alpha value for the entire parent version was 0.86, and the Cronbach alpha values for all sub-dimensions were determined to vary between 0.60 and 0.84. The adolescent version's overall cronbach alpha was determined to be 0.88, and the adolescent version's sub-dimension Cronbach alpha values were discovered to vary between 0.63 and 0.841.
Conclusion: As a result of the research, it was determined that the "Adolescent Food Parenting Questionnaire: Parent and Adolescent Version" is a valid and reliable measurement tool to be used specifically for Turkish society.

Keywords: Adolescent, food parenting practices, nutrition, validity, reliability

INTRODUCTION

Depending on the developmental stages children go through from birth to adolescence, their nutritional requirements, eating behaviors, and lifestyles may vary (1). For various reasons, unmet nutritional needs have a lifelong impact. In addition to individual

Table 1. Participants' descriptive characteristics

Descriptive characteristics	M±SD	Min-Max
Adolescent's age	13.22±3.82	12-16
Mother's age	41.48±7.37	25-55
Father's age	45.99±7.22	28-59
	n	**%**
Number of children in the family		
1	74	22.0
2	111	32.9
3	79	23.4
4	73	21.7
Gender		
Female	198	58.8
Male	139	41.2
Mother's educational status		
Illiterate	35	10.4
Primary school	58	17.2
Middle school	67	19.9
High school	110	32.6
University	60	17.8
Master's/PhD	7	2.1
Father's educational status		
Illiterate	8	2.4
Primary school	50	14.9
Middle school	38	11.3
High school	105	31.2
University	122	36.2
Master's/PhD	7	2.1
Income		
Income=expenses	172	51.0
Income>expenses	44	13.1
Income<expenses	121	35.9
Mother's employment status		
Working	65	19.3
Housewife	272	80.7
Father's job status		
Working	276	81.9
Not working	45	13.4
Retired	16	4.7
Participants' self-evaluation of weight		
Underweight	74	22.0
Normal	199	59.1
Overweight	64	19.0
Participants' self-evaluation of height		
Short	96	28.5
Normal	197	58.5
Tall	44	13.1
Participants' self-evaluation of having an adequate diet		
No	155	46.0
No idea	182	54.0

M= Mean, SD: Standart Deviation

factors, environmental and parental factors are also mentioned in the malnutrition of children and adolescents (2-6). Dietary and physical activity patterns that develop during childhood and adolescence become behavioral patterns that can affect life as a whole, but they can also affect life following adolescence (3-5). Therefore, children and adolescents must develop healthy eating behaviors (1). Adolescence is the most intricate and vibrant transitional period in life or at least one of them. During this period, some changes, namely, developmental, social, and physical may impact the adolescent's eating behaviors, causing them to be underweight or overweight (1,7,8).

Although adolescent food consumption and lifestyle choices have become more independent, most adolescents still rely on their parents for food (4, 9, 10). But even so adolescents are likely to be

susceptible to parental food choices regarding dietary behavior, food availability, setting limits, and modeling parental behavior (2, 4). However, parents have a crucial part to play in adolescent eating behaviors (9, 10) and weight status (11-13). Parents' perspectives on food and nutrition directly or indirectly affect their children's food preferences (9, 10). There may be a direct effect on the adolescent's food preference and eating behaviors, with the food not preferred by the adolescent being offered to him/her less frequently. An adverse reaction of the parents against a food may cause the adolescent to repeat that behavior by taking the food as a model (11-13). Therefore, adolescents' eating and nutritional habits cannot be considered apart from the influence of parents, who play a significant role in their development as they are adolescents' immediate primary environment (2). Food parenting practices affect healthy behavior in children and adolescents (6).

Parents' behaviors or actions specific to child feeding and affecting child eating practices are referred to as food parenting practices (5). In other words, they are context-specific parenting actions of food and eating designed for socializing children against particular behaviors. The behaviors of eating practices between parents and children reveal the general characteristics of these interactions (3, 5).

Typical food parenting actions are limiting some food types, shaping eating behaviors as a role model, making children eat, recompensing them for affirmative eating behaviors, and identifying readily available foods at home. Recent research on the examination of the nutritional environment at home suggests that parents can positively influence their children's body weights and eating habits by presenting and modeling healthy foods (6, 14). Food-related parenting practices, such as directing children to healthy foods and restricting their intake of foods with high energy content, have been identified as important determinants of children's eating behavior and body weight (12-15).

In addition, there may be a difference between adolescents' and parents' perceptions of food parenting. For example, a parent may make a great effort to encourage the child to eat vegetables, but the child may take the example of the parent eating snacks in front of the TV (12, 16). Parents and children frequently own distinct perspectives about eating-associated behavior and weight. Therefore, it is essential to understand their views of food parenting (12).

When studies on the evaluation of parents' and adolescents' perspectives on food parenting practices were examined, it was seen that there were very few standard scales with international validity and reliability (17). Moreover, it was found that there were no measurement tools to measure adolescent food parenting practices in terms of adolescents and parents. Making international comparisons requires scales with reliability and validity. Therefore, this study was carried out to do the Turkish adaptation of the Adolescent Food Parenting Questionnaire: Parent and Adolescent Version, whose original form was in the English language, and its reliability and validity studies.

MATERIAL AND METHODS

Research Design

A methodological design was employed.

Research Population and Sample

Adolescents aged 12 to 16 from Turkey's western, central, and eastern regions and their parents participated in the study between June to September 2022. When calculating the sample size in measurement tool adaptation studies, the size is recommended to be five to ten times the total count of items on the tool (18,19). The tool to be adapted in the present study had 16 items, and thus the sample was planned to include 160 participants, which is ten times the number of items.But, the study included adolescents and their parents who could be reached from the population using convenience sampling and who volunteered to participate. The study included 337 adolescents and their parents.

Data Collection Tools

A Child and Parent Data Form, which was designed by the researchers following a review of the literature, and the Adolescent Food Parenting Questionnaire: Parent and Adolescent Version were employed.

Child and Parent Data Form: This form was designed to be filled out by parents and adolescents to collect socio-demographic data. It has two parts: family and child. The family part has items about the mother's and father's age, education level, job, economic status, and number of children. The child part has

Table 2. Participants' descriptive characteristics

Item No.	Sub-Dimensional Factor Loads				
	Autonomy Support	Coercive Control	Aperative Structure	Healthy Structure	Modeling
PI1. I educate my child about nutrition for example talking about healthy and unhealthy food. **AI1.** My parents educate me about nutrition, for example talking about healthy and unhealthy food.	0.71 0.69				
PI2. I explain why I have certain rules about eating to my child. **AI2.** My parents explain why they have certain rules about eating to me.	0.69 0.75				
PI3. There are always fruit and vegetables at home for my children to eat. **AI3.** There are always fruit and vegetables at home for me to eat.				0.59 0.55	
PI4. I sometimes give my child something to eat as a distraction. **AI4.** My parents sometimes give me something to eat as a distraction.		0.32 0.37			
PI5. I give my child feedback related to their eating habits, for example if my child eats too quickly or doesn't eat enough vegetables. **AI5.** My parents give me feedback related to my eating habits, for example if I eat too quickly or don't eat enough vegetables.	0.64 0.69				
PI6. At home my child can easily eat vegetables as they are part of our daily meals. **AI6.** At home I can easily eat vegetables as they are part of our daily meals.				0.63 0.63	
PI7. I sometimes give my child something to eat as a reward. **AI7.** My parents sometimes give me something to eat as a reward.		0.39 0.45			
PI8. I let my child snack if he/she wants to. **AI8.** My parents let me snack if I want to.			0.55 0.42		
PI9. I discuss why it is important to eat fruit and vegetables with my child. **AI9.** My parents discuss why it is important to eat fruit and vegetables with me.	0.56 0.60				
PI10. I sometimes give my child something to eat when he/she does something right, for example when doing homework. **AI10.** My parents sometimes give me something to eat when I do something right. for example when doing my homework.		0.42 0.42			
PI11. I consciously eat vegetables or fruit when my child is around. **AI11.** My parents consciously eat vegetables or fruit when I am around.					0.52 0.61
PI12. I have clear rules about what my children can snack on for example 1 biscuit after school. **AI12.** My parents have clear rules about what I can snack on for example 1 biscuit after school.			0.51 0.45		
PI13. I make sure my child does not snack just before meals. **AI13.** My parents make sure I do not snack just before meals.			0.55 0.41		
PI14. I sometimes give my child a small snack as comfort. **AI14.** My parents sometimes give me a small snack as comfort.		0.39 0.46			
PI15. I try to consciously set a good example when it comes to eating fruit and vegetables. **AI15.** My parents try to consciously set a good example when it comes to eating fruit and vegetables.					0.55 0.64
PI16. I have rules about when my child is allowed to eat snacks and how much. **AI16.** My parents have rules about when I am allowed to eat snacks and how much.			0.61 0.49		
P-Explained Variance (%)	30.21	9.98	5.38	2.57	2.32
A-Explained Variance (%)	34.34	9.91	8.41	5.48	5.18
P-Total Explained Variance (%)	50.45				
A-Total Explained Variance (%)	63.31				

I: Item P: Parent A: Adolescent

Table 3. Model fit ındices of the parent and adolescent versions of the adolescent food parenting questionnaire (n=337)

Scales	RMSEA	GFI	CFI	IFI	RFI	NFI	TLI	χ^2	DF	χ^2/DF
Parent Version	0.055	0.94	0.95	0.95	0.87	0.90	0.93	190.832	94	2.030
Adolescent Version	0.045	0.95	0.96	0.96	0.88	0.91	0.95	157.211	94	1.672

RMSEA: Root Mean Square Error of Approximation; GFI: Goodness of Fit Index; CFI: Comparative Fit Index; IFI: Incremental Fit Index; RFI: Relative Fit Index; NFI: Normed Fit Index; TLI: Trucker-lewis Index; χ2: Chi-Square; DF: Degree of Free (References: 20, 22).

items on the child's age, gender, class, financial position, assessment of their height and weight, and having a balanced and adequate diet. Parents filled out the family data form, and adolescents filled out the child data form.

Adolescent Food Parenting Questionnaire: Parent and Adolescent Version: Koning et al. (2021) created the Adolescent Food Parenting Questionnaire: Parent and Adolescent Version to assess the food parenting practices of adolescents and their parents. There are 16 items on the questionnaire, all of which are in a five-point Likert-type evaluation structure (1 = Disagree, 2 = Disagree somewhat, 3 = Undecided, 4 = Agree somewhat, and 5 = Agree). The eighth item on the scale is reverse-scored.

Descriptive and confirmatory factor analysis was employed to analyse the construct validity of the tool. According to the explanatory factor analysis, the total explained variance was 61.6% for the parent sample (*AFPQ-p*) and 61.4% for the adolescent sample (*AFPQ-a*). The questionnaire has five sub-dimensions: autonomy support, coercive control, snack structure, healthy structure, and modeling. Items 1, 2, 5, and 9 make up the first factor, "Autonomy Support." Items 4, 7, 10, and 14 make up the second factor, "Compulsive Control." Items 8, 12, 13, and 16 make up the third factor, "Snack Structure." The third and sixth items make up the fourth factor, "Healthy Structure." The 11^{th} and 15^{th} items are included in the fifth factor, "Modeling." All fit indices, such as CFI, BIC, and RMSEA, were more significant than 0.80 for both the Parent and Adolescent Versions according to the confirmatory factor analysis. The questionnaire was confirmed to have validity and reliability and could be employed to assess the food parenting practices of adolescents and their parents (17). Cronbach's alpha coefficient was utilized to assess the reliability of the questionnaire. The alpha values of the sub-dimensions for parent and adolescent versions were found as follows: 0.79 - 0.82, autonomy support (AFPQ-p; AFPQ-a); 0.85-0.83, compulsive control (AFPQ-p; AFPQ-a), 0.79-0.75, snack structure (AFPQ-p; AFPQ-a); 0.78 and 0.88, healthy structure (AFPQ-p; AFPQ-a); 0.69-0.74, modeling (AFPQ-p; AFPQ-a). Both parents and adolescents responded to the survey. Results indicated that the questionnaire developed was good and dependable and that it could be employed to assess the food parenting practices of adolescents and their parents (17).

Research Steps

To achieve the linguistic equivalence of the Adolescent Food Parent Questionnaire, the researchers and three Turkish-native English linguists, fluent in both languages, cultures, and terminology, translated the scale items into Turkish. The researchers created the Turkish form of the scale by selecting the most appropriate expressions from the translations of the Adolescent Food Parenting Questionnaire. Regarding language and content validity, the English and Turkish versions were presented to 11 experts (Child Health and Disease Nursing, Psychiatric Nursing, Nutrition, and Dietetics specialists who speak English). The experts were asked to assess the consistency between the original form and the Turkish translation of the scale and do the content validity evaluation of the items. The Davis Technique was employed to assess content validity. The necessary corrections were made based on the raters' suggestions. Two linguists translated the approved scale items back into English. They had not seen the English copy of the questionnaire. So as to determine the clarity and comprehensibility of scale items, a pilot study was conducted on 20 parents and 20 adolescents who were not involved in the sample group. Adolescents and parents stated after the pilot application that the Adolescent Food Parenting Questionnaire statements were clear and understandable. Accordingly, the scale items were finalized. A questionnaire involving the data collection forms was created on Google Forms, and data were collected online. The adolescents and their parents first submitted consent about participation in the study on the first page of the online questionnaire and then begun to respond to the items. No personal information or emails were collected from the participants.

Ethical Considerations

For the adaptation of the Adolescent Food Parenting Questionnaire to Turkish, the permit of the scale owner who improved the scale was gotten via email. Ethical approval was obtained from Hakkari University Scientific Research and Publication Ethics Committee (Date: 02/06/2022, Decision No:2022/58-1) before starting the research practice. The written consent of the participants was taken after they were apprised about the goal of the research.

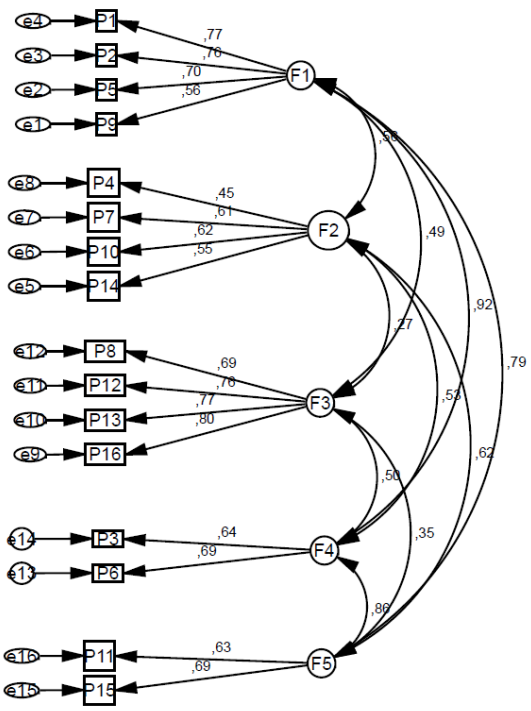

Figure 1. Confirmatory factor analysis of the parent version of the adolescent food parenting questionnaire.

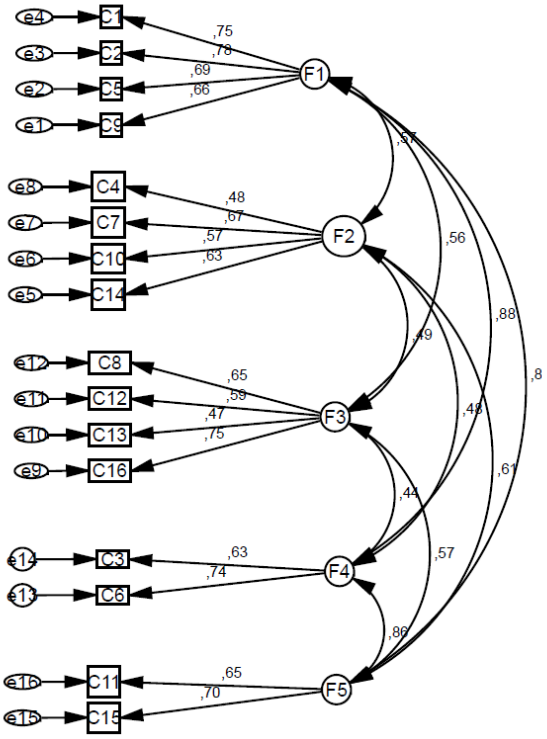

Figure 2. Confirmatory factor analysis of the adolescent version of the adolescent food parenting questionnaire.

Statistical Analysis

Data were analysed on the SPSS 24.0 and AMOS 20.0 software packages. Mean, standard deviation, percentage statistics, and frequency values were employed to present descriptive data. The following methods were employed for the Turkish adaptation of the Adolescent Food Parenting Questionnaire: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) for construct validity; item-total correlation tests for the language content validity index; Davis technique; Cronbach's alpha value for internal consistency. The predictive level of the independent variables on the parent and adolescent version scores of the scale for determining food parenting practices between adolescents and their parents was evaluated by linear regression analysis. A confidence interval of 95% and a $p<0.05$ significance level were taken as criteria in the analyses.

RESULTS

Descriptive Characteristics of Children and Parents

The mean age was found as 41.48±7.37 for the mothers, 45.99±7.22 for the fathers, and 13.22±3.82 for the adolescents. Of the parents, 32.9% (n=111) had two children. Of the adolescents in the study, 58.8% (n=198) were female, 41.2% (n=139) were male, 59.1% (n=199) evaluated their height and 58.5% (n=197) weight as normal, and 54.0% (n=182) did not know enough about adequate and balanced nutrition. Also, 32.6% (n=110) of the mothers were high school graduates, 36.2% of the fathers (n=122) were university graduates, 80.7% (n=272) were housewives, and 81.9% (n=276) of fathers had a job. Regarding financial status, 51.0% (n=172) of the parents stated that their income was equal to their expenses (Table 1).

Validity Analysis Results of Adolescent Food Parenting Questionnaire

Eleven experts in the field were consulted for the form generated in the study, and a validity analysis was done to evaluate the scores provided by them. The item-level content validity index (I-CVI) varied between 0.89 and 1.00, and the scale-level content validity index (S-CVI) was 0.98 for the parent form. The I-CVI value varied from 0.99 to 1.00 and the S-CVI was 0.99 for the adolescent form.

The construct validity of the Adolescent Food Parenting Questionnaire was assessed with EFA and CFA.

The adequacy of the study sample for factor analysis was examined using Bartlett's Test of Sphericity (BTS) and Kaiser-Meyer-Olkin (KMO) analyses. The test results of the parent version were 0.871 (KMO) and 1848.530 (BTS), which were statistically significant ($p<0.05$). The EFA results expressed that the parent and adolescent versions of the Adolescent Food Parenting Questionnaire contained five factors (autonomy support, compulsive control, snack structure, healthy snacking), and the total explained variance ratio for the five-factor version in the parent version was 50.45%. The study indicated that the KMO test score of the adolescent version was 0.894, and the BTS test score was 1686.278, which were statistically significant ($p<0.05$). The explained variance ratio for the total adolescent version of the five-factor structure was 63.31 percent. The variance rates and factor load values explained for the sub-dimensions of the scale in the parent and adolescent version are given in Table 2.

CFA was utilized to interpret the construct validity of the Turkish-adapted version of the Adolescent Food Parenting Questionnaire. The fit indices obtained from the analysis were RMSEA=0.055, GFI=0.94, CFI=0.95, IFI=0.95, RFI=0.87, NFI=0.90, TLI=0.93, $\chi2$=190.832, DF=94, $\chi2$/DF=2.030 for the parent version and RMSEA=0.045, GFI=0.95, CFI=0.96, IFI=0.96, RFI=0.88, NFI=0.91, TLI=0.95, $\chi2$=157.211, DF=94, and $\chi2$/DF=1.672 for the adolescent version (Table 3).

According to the CFA results, the factor loading values of the parent version of the scale ranged between 0.56-0.77 for autonomy support, 0.45-0.62 for coercive control, 0.69-0.80 for snack structure, 0.64-0.69 for healthy structure, and 0.63-0.69 for modeling (Figure 1). The factor loading values of the adolescent version of the scale varied were 0.66-0.78 for autonomy support, 0.48-0.67 for coercive control, 0.47-0.75 for snack structure, 0.63-0.74 for healthy structure, and 0.65-0.70 for modeling (Figure 2).

Reliability Analysis Results of the Adolescent Food Parenting Questionnaire

Cronbach's alpha for the total parent version was 0.86. The alpha coefficients for the sub-dimensions were 0.79 for autonomy support, 0.64 for coercive control, 0.84 for snack structure, 0.62 for healthy structure, and 0.60 for modeling. Cronbach's alpha values for the first and second halves were 0.78 and 0.72, respectively. The Spearman-Brown coefficient was 0.88, the Guttman split-half coefficient was 0.87, and the split-half analysis indicated that the correlation coefficient between the two halves was 0.78 (Table 4). Hotelling's T^2 was identified to be 114.190, F=7.295, and p=0.000.

Cronbach's alpha value of the total adolescent version was 0.88. The alpha coefficients of the sub-dimensions were 0.81 for autonomy support, 0.67 for coercive control, 0.70 for snack structure, 0.64 for healthy structure, and 0.63 for modeling. Cronbach's alpha values of the first and second haves were 0.80 and 0.74, respectively. The Spearman-Brown coefficient was 0.86, the Guttman split-half coefficient was 0.86, and the split-half analysis showed that the correlation coefficient between the two halves was 0.75 (Table 5). Hotelling's T^2 was 133.983, F=8.560, and p=0.000.

The item-total scale score correlations of the parent version varied between 0.31 and 0.65, and the correlations were between 0.34 and 0.70 for the item-sub-dimension score ($p<0.001$). The item-total scale score correlations of the adolescent version ranged from 0.36-0.67, and the correlations ranged between

Table 4. Reliability analysis results of the parent version and sub-dimensions of the adolescent food parenting questionnaire (n=337)

	Total Scale	Autonomy Support Sub-Dimension	Coercive Control Sub-Dimension	Snack Structure Sub-Dimension	Healthy Structure Sub-Dimension	Modeling Sub-Dimension
Cronbach α	0.86	0.79	0.64	0.84	0.62	0.60
First Half Cronbach α	0.78					
Second Half Cronbach α	0.72					
Spearman-Brown	0.88					
Guttman Split-Half	0.87					
Correlation Between Two Halves	0.78					

0.37 and 0.67 for the item-sub-dimension score ($p<0.001$) (Table 6).

A significant relationship was found between the adolescent food parenting questionnaire ($p<0.01$) between the adolescent version and the parent version ($r=.715$).

When examining which independent variables predicted adolescent and parent food practices scale scores, it was determined that adolescents' age, gender, class, economic status, adolescent's body weight, adolescent's height, mother and father's age, and mother and father's education level significantly predicted the scale score ($p<0.05$). It was determined that these independent variables explained 33.6% of the adolescent scale score ($R^2=0.336$, $p<0.05$) and 27.3% of the parent scale score ($R^2=0.273$, $p<0.05$) (Table 7). When the independent variables were examined one by one, it was determined that the only variables that significantly predicted the parent scale score were grade, adolescent's age and mother's age, respectively ($p <0.05$). In the adolescent form, only the age of the adolescent was found to be a significant predictor ($p<0.05$).

DISCUSSION

Validity Analysis of the Adolescent Food Parenting Questionnaire

The translation, expert evaluation, back translation, and pilot implementation procedures were followed to adapt the scale to Turkish. The first step in adapting a scale to another society is language validity. After the translation, expert evaluation, back translation, and pilot phases were completed, the final Turkish version was created (18-21). The content validity index was computed using the opinions of eleven experts so that content validity could be assessed. The consequences of the original study by Koning et al. (2021) could not be compared to our results because content validity was not provided in that study (17).

EFA is performed to establish the construct validity of a scale (18, 20, 22, 23). It was determined that content validity was achieved in this study ($p<0.05$).The consequences of the original study by Koning et al. (2021) could not be compared to our consequences because content validity was not performed in that study. Since information on sample size was not given, the consequences of the original study by Koning et al. (2021) could not be compared with our consequences (17). In this study, it was determined that the total variance explained for the parent and adolescent version was over 40% (19, 22, 24). Koning et al. (2021) also found that the total variance value explained for the parent and adolescent version was over 40% (17). These results are similar to our study. In this study, factor loadings for the parent and adolescent versions were determined to be above 0.30 (20, 21). In our study, when all factor loadings in both parent and adolescent versions were examined, it was determined that only three items were below 0.40, and these items are thought to have lower factor loadings because food parenting practices by parents and adolescents are not common behaviors. Factor loadings were found to be 0.30 or higher for both the parent and adolescent versions in the original study by Koning et al. in 2021 (17). Our results and these results are similar. As a result of EFA, it was determined that the sub-dimensions of the scale can adequately measure food parenting practices and adequately measure the conceptual structure in Turkish culture.

In this study, it was determined that the goodness of fit index values for the parent and adolescent versions showed an acceptable level of agreement in CFA (20,22). When the goodness of fit indices for both the parental version and the adolescent version were

Table 5. Reliability analysis results of adolescent food parenting questionnaire adolescent version and sub-dimensions (n=337)

	Total Scale	Autonomy Support Sub-Dimension	Coercive Control Sub-Dimension	Snack Structure Sub-Dimension	Healthy Structure Sub-Dimension	Modeling Sub-Dimension
Cronbach α	0.88	0.81	0.67	0.70	0.64	0.63
First Half Cronbach α	0.80					
Second Half Cronbach α	0.74					
Spearman-Brown	0.86					
Guttman Split-Half	0.86					
Correlation Between Two Halves	0.75					

examined in the original study by Koning et al. (2021). The CFA outcomes indicated that the data were consistent with the model, the structure determined by EFA was confirmed, the sub-dimensions were compatible with the scale, and that the items were adequately related to their sub-dimensions.

Reliability Analysis of the Adolescent Food Parenting Questionnaire

In Likert-type measurement tools, the reliability criterion known as Cronbach's alpha coefficient is employed to assess the internal consistency of a scale (19, 22, 24). In this study, the Cronbach's alpha coefficient of all sub-dimensions except three sub-dimensions of the scale and the Cronbach's alpha coefficient as a result of split-half analysis were found to be above 0.70 and the scale was found to be highly reliable (20,21,23). Cronbach's alpha coefficients of the three sub-dimensions are also above 0.60. When we look at the literature, in many sources, the Cronbach alpha reliability coefficient of the sub-dimensions being over 0.60 indicates that it is an acceptable reliability coefficient (19, 20, 22, 24). It is thought that the Cronbach's alpha coefficients in the sub-dimensions are within acceptable limits due to the fact that food parenting practices of a few items in this sub-dimension are uncommon behaviors. The original study conducted by Koning et al. (2021) indicated that Cronbach's alpha reliability coefficients for both the parent and adolescent versions and sub-dimensions were higher than 0.60 (17). These results are similar to our study. Since information about the split-half analysis was not included in the original study by Koning et al. (2021), no comparison could be made with our results (17).

Item-total score analysis indicates whether the items on a scale measure the concept to be measured (19, 22). It is recommended that the item-total score correlation be at least 0.30 (21, 23). In this study, the correlations between the items in the parent version and the adolescent version with both the total scale score and the total sub-dimension score were found to be greater than 0.30. The results of this study revealed that the items were pertain to both the scale and the sub-dimensions, the scale adequately measured the subject, and that the reliableness of the items on the scale was high. The item-total score analysis of the scale and its sub-dimensions was not presented in the original study developed by Koning et al. (2021) (17), so no comparison could be made with our study results. As a result of the reliability analysis, it was determined that it was able to adequately show the food parenting practices

Table 6. Item scale total score and sub-dimension total score correlations of the adolescent food parenting questionnaire parent and adolescent versions (n=337)

Subscales	Items	Item-Total Score Correlation (r)* Parent-Adolescent	Item-Subscale Total Score Correlation (r)* Parent-Adolescent
Autonomy Support	I1	0.65-0.62	0.65-0.67
	I2	0.63-0.67	0.64-0.64
	I5	0.59-0.61	0.62-0.61
	I9	0.49-0.53	0.49-0.59
Coercive Control	I4	0.31-0.36	0.34-0.37
	I7	0.38-0.44	0.45-0.52
	I10	0.38-0.41	0.47-0.45
	I14	0.37-0.44	0.41 -0.48
Snack Structure	I8	0.48-0.42	0.63-0.51
	I12	0.44-0.44	0.68 -0.47
	I13	0.48-0.39	0.69-0.38
	I16	0.52-0.48	0.70-0.58
Healthy Structure	I3	0.48-0.50	0.45 -0.47
	I6	0.57-0.56	0.45 -0.47
Modelling	I11	0.47-0.56	0.43-0.46
	I15	0.51-0.58	0.43-0.46

* p<.001

Table 7. Independent Variables that predict the scores of the adolescent food parenting questionnaire parent and adolescent versions

Variables-P						%95 CI	
	Beta	Standard Error	β*	t**	p	Lower	Upper
Constant	49.286	10.694		4.609	0.000	27.958	70.614
Adolescent age	1.111	0.318	0.395	3.488	0.000	0.476	1.746
Adolescent's class	0.736	0.208	0.423	3.530	0.000	0.320	1.151
Economical situation	2.849	1.717	0.185	1.659	0.102	-0.576	6.273
Adolescent's body weight	-0.011	0.070	-0.017	-0.150	0.881	-0.151	0.130
Mother's age	-0.572	0.275	-0.333	-2.080	0.041	-1.120	-0.024
Father's age	-0.133	0.285	-0.075	-0.469	0.641	-0.701	0.434
Mother's education level	0.775	1.548	0.062	0.501	0.618	-2.313	3.863
Father's education level	1.063	1.665	0.080	0.639	0.525	-2.257	4.384
P: R*** 0.579, R^{2****} 0.336, F***** 4.422, p=0.000, DW****** 2.158							
Variables-A						%95 CI	
	Beta	Standard Error	β*	t**	p	Lower	Upper
Constant	20.729	9.545		2.172	0.032	1.804	39.653
Adolescent age	0.494	0.218	0.249	2.270	0.025	0.062	0.926
Adolescent's gender	3.497	2.007	0.150	1.742	0.084	-0.483	7.477
Economical situation	0.716	1.424	0.044	0.503	0.616	-2.107	3.539
Adolescent's body weight	0.008	0.072	0.011	0.105	0.917	-0.135	0.150
Adolescent's height	0.020	0.017	0.111	1.150	0.253	-0.014	0.054
Mother's age	-0.085	0.252	-0.069	-0.339	0.736	-0.585	0.415
Father's age	0.409	0.235	0.340	1.740	0.085	-0.057	0.875
Mother's education level	2.656	1.364	0.193	1.947	0.054	-0.048	5.360
Father's education level	-1.172	1.552	-0.085	-0.755	0.452	-4.249	1.905
A: R*** 0.522, R^{2****} 0.273, F***** 4.423, p=0.000, DW****** 1.611							

Abbreviations: *β, Standartized Beta; ** t, t-test value; ***R, correlation co-efficient; **** R^2, R Square; *****F, Anova Value, ******DW, Durbin-Watson, P: Parent, A: Adolescent

between adolescents and their parents and that the items were related to each other.

In this study, it was observed that the adolescent's age, grade, and mother's age were significant predictors for both adolescent and parent scale scores. It was observed that as the age and grade of the adolescents increased, the scale scores also increased. Additionally, it was determined that there was a decrease in the scale score as the age of the parent increased. In the literature, it is seen that the factors affecting food parenting practices between adolescents and their parents are the gender of the adolescent, the education level of the parent, parenting styles, the family's illness experience and parental motivation (25-27). In this study, it is thought that the increase in positive nutrition scores, especially with increasing age and grade, may be due to the adolescent's increased awareness of nutrition, the diversification of nutritional preferences offered by the family, the fact that they have nutritional preferences in different environments, and the increase in communication with their parents about nutrition. It is thought that the decrease in the scale score as the mother's age increases may be due to the fact that she has more up-to-date information about nutrition, is able to empathize with her child because she is closer in age, and can offer more appropriate nutritional choices to the adolescent (26-29).

Limitations

The limitation of this study is that the convenience sampling method was used, which means that only those who agreed to fill in the questionnaire were

included in the study. The inability to compare and interpret the results in the intercultural dimension is another limitation. There are no studies on the adaptation of the original scale to different cultures.

CONCLUSION

According to the analyses and evaluations conducted in this study, the Adolescent Food Parenting Questionnaire: Parent and Adolescent Version is a reliable and valid measure for the Turkish sample. Researchers can identify adolescents' and parents' food parenting practices using this scale, reduce negative behaviors such as unhealthy food consumption and improper eating habits, and develop programs to address these issues. Additionally, they might detect the rising prevalence of overweight and obesity in adolescents before it happens. They can also conduct cross-cultural comparative studies by using this scale.

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