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Turkish Adaptation of the Narrative Assessment Scale for Preschool Children

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ABSTRACT

This study aimed to adapt the Narrative Assessment Protocol (NAP), which was developed to evaluate the narrative skills of children aged 2–7, to Turkish culture and laguage for preschool children. The study group of the research consisted of a total of 247 children, 128 males,– and 119 females, aged 36–66 months, who attended independent kindergartens in the Konak district of Izmir city center during 2018–2019 academic year. Denver II Developmental Screening test was used to determine the children with normal developmental characteristics in the formation of the study group. Narrative Assessment Protocol and a family information form were used as data collection tools. Exploratory factor analysis (EFA) and confirmatory factor analysis were used to test the construct validity of the data. For reliability, Cronbach's alpha and Test-retest reliability were used. ANOVA analysis was used to examine the difference between the scores of the children. EFA results showed that the protocol had a 3-dimensional structure. The Cronbach's alpha value of the Narrative Assessment Protocol was found to be .75. Test-retest reliability was calculated separately for factors and for the first factor it was .75, for the second factor it was .72, and for the third factor it was .69. The data obtained from children through the narrative evaluation protocol were found to be valid and reliable at an acceptable level. In addition, age had a significant effect between the children who were above and below 52 months of age, while gender was not significant ($p<0.05$). It has been concluded that the interaction effect of age and gender was not significant.

Key words: *narrative skills, language development, early childhood education*

Introduction

Children develop language skills to interact with the people around them from birth. Interactions provide children with information about the meaning of language, basic structures and the use of language[1,2]. Children begin to practice use storytelling in their interactions when they reach the age of 3 or 4, and develop these storytelling skills as they grow older[3]. Children's narrative skills are important since they can be a useful tool for the development of verbal language[4], build a bridge toward and predict academic success of written narratives[5,6] and support conceptual development[7,8] . Narratives in the form of stories require more complex language than everyday speech. Using various types of words to tell an event in the form of a story, supporting it with names, and including dependent clauses help children in developing their language skills[2,9]. Vygotsky claims that for children to construct a good story an understanding of temporal, causal, and adversative relations between story events is required resulting in conceptual and cognitive growth in children[8]. Also, studies show that supporting oral expressions of children helps improve their language, cognitive, and literacy skills and has been linked to school success[10–12].

Children's narrative content and structures are influenced by culture[13–16]; Applebee[7] states that the critical elements of centering (focusing on a topic) and chaining (sorting events) are important, and claims that the levels of these critical elements can be understood in developmental order between the ages of 2–6[17]. The structures in children's narratives in this age range show that the diversity of the structures and types of words they use increases during the period when they begin to form a full sentence[18,19]. New phrase structures such as qualifiers, allow children to create longer and more complex sentences that are appropriate for their age. Although children start using these phrases differently, the fact that they perceive different suffixes brought to groups of words and include them in their expression indicates that they distinguish verbs and nominals[20]. Children can differentiate

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the parts of speech and include various grammar rules when they talk in the early childhood period[21,22]. Since Turkish is an agglutinating language inflectional suffixes, possessive suffixes, adjective phrases are added to the end of words depending on the language structure. Accordingly, there are different opinions regarding children's use of tense markers. Some studies conclude that children use non-past tense more than past tense markers, while some studies indicate that children use past tense more[23,24]. In addition, they appear to include gerunds in complex sentences in their narratives[24]. It is stated that they gradually begin to use negative suffixes around the age of two in the form of "no" and "not", in cases where they reject something, and as denial of what they have done[24]. The use of interrogatives and interrogative particles when asking questions appears around the same age. Children add the interrogative particle to various places in a sentence during the process of understanding the interrogative sentences and answering them. The number of words they use when forming various sentences and the use of interrogative particles is directly proportional[17]. Children use multiple structures on average when they are 23–24 months old, for some children it can happen up to 28–30 months. It seems that the acquisition of pronouns begins with the pronoun "I" at the age of 2 and they include other person pronouns around the age of 2.5[22,23]. The inclusion of time expressions occurs in early childhood as sorting events with the words "before, now, after" in sentences[25]. It is stated that the correct use of time expressions or tense markers is proportional to age[26,27].

After learning about these semantic structures, children use conjunctions to connect their expressions or phrases[5,28]. First, they use the "and" in sentences, and then they use conjunctive words in forming sentences indicating the states of reason and contrast[29]. While the use of conjunctions begins in the first few years of early childhood, it is noted that the use of contrast conjunctions is acquired around the age of 5[30,31] .

In general, children learn the basic structures of their mother tongue in early childhood and begin to form sentence structures in their narratives in a way similar to adults**.** During this period, evaluation, development, and support of language-based skills such as complex sentence production, vocabulary, and expression knowledge become important in terms of providing the basis for children's academic skills. The linguistic and cognitive chapters of intelligence scales or developmental screening tests are used to measure children's language skills along with the scales that measure childrens' phonetic competence and pronunciation skills[32]. Various studies examine childrens' phonetic acquisitions, vocabulary, syntax, however, few studies investigate their narrative skills. Having assessment tools that measure children's narrative skills in early childhood will help evaluate, support, and develop these skills. In this context, it is important to develop or adapt a scale to evaluate the narrative skills of children 36–66 months-old. Therefore, the present study aims to adapt the Narrative Assessment Protocol[33] to the Turkish culture and language so that it can be used with native Turkish children.

Methodology

This study aimed to adapt the Narrative Assessment Protocol (NAP), which was developed to evaluate the narrative skills of 36–66 months-old children to Turkish using a survey model based on the selection of a sample to represent the population[34].

Study group

In the 2018–2019 academic year, children between 36–66 months who attended kindergartens affiliated with the Ministry of Education in the central districts of Izmir province and showed normal development constituted the population of the research. The convenience sampling method was used to determine the sample that would represent the population. Therefore, 263 native Turkish children with normal development who were between 36–66 months old and continued their education in 3 independent kindergartens located in Konak district, one of the central districts in Izmir, made up the participants of the study. Although their families signed a consent form to participate in the study, 3 children were not included in the study because they had a hearing impairment. Also, 13 children were removed from the study because their parents first volunteered to participate in the study and signed a consent form, but wanted to withdraw from the study before the study was completed. The study was completed with 247 children.

Of the children who participated in the study, 128 (51.8%) were girls and 119 (48.2%) were boys. 49 (19.8%) were in the 36–47 month-age group; 111 (44.9) were in the 48–59 month-age group, and 87 (35.2%) were in the 60–66 month-age group. 106 (42.9%) children participated from school A, 109 (44.1%) children were from school B and 32 (13%) children were from school C. 106 (42.9%) of children was in their first year of pre-school education, 109 (44.1%) attended pre-school for 1 to 2 years and 32 (13%) attended preschool for 3 years and above in preschool education. Mothers of 26 children (10.5%) were primary school graduates, 99 (40.1%) mothers were secondary school graduates and mothers of 122 (46.4%) were university graduates. Fathers of 43 children (17.4%) were primary school graduates, 80 (32.4%)were secondary school graduates and 119 (44.1%) were college graduates.

Data collection tools

Narrative Assessment Protocol (NAP) was developed by Justice et al.[33] for the purpose of evaluating oral narratives of children aged 2–7. The scale consists of three sequential stages: the practitioner instructions, four separate stories created for children to tell stories, and a scoring table. The first stage, the practitioner's instructions,

describes how to perform the practice with children and how the children's narratives should be rated. In the second part there are four separate stories. These stories consist only of black-and-white drawings without coloring. This is because colors could manipulate the children's narratives and the words they choose to tell the story. Each of the stories is written on a separate page. The stories have the same narrative flow, the same sentence structure, and consist of 16 sentences. Written texts are provided for the practitioner, and children only use pictures during their narration. In the scoring directive, which is the third stage, the scale is divided into two areas: microstructure and macrostructure. The microstructure is used to evaluate children's narratives and consists of 18 items in a 5 factor structure: Sentence structure (four items), phrase structure (three items), modifiers (two items), nouns (three items), verbs (six items). The number of items that children use in their narratives is marked. Each time the child uses a different frequency of items from these structures, the observed frequency (0, 1, 2, 3+) is selected from the table and marked. The macrostructure is still under development.

The reliability score of the NAP assessment tool is between .58 and .92. NAP is used to describe individual differences in the narrative skills of children of the same age and to describe the development of children in narrative language over time[33]. The scale was adapted to Spanish by Gorman et al[35].

The researchers who developed the scale were contacted and the necessary permissions were received via e-mail. The Narrative Assessment Protocol (NAP) was translated to Turkish by a Turkish native linguist who is fluent in English and was back-translated by another expert to reach language validity. The Turkish translation of the scale was checked by a linguist and corrected accordingly. A pilot study was conducted with 12 children; 4 children from each age group. The final version of the form was sent via e-mail to the researchers who developed the scale and their consent was received. Validity and reliability analyses were conducted after it was translated to Turkish.

Denver II Developmental Screening Test

The Denver II developmental screening test (DDST) is a measurement tool that provides information about the development of children[36]. The Denver II developmental screening test was developed by Frankenburg and Dodds[37] and the first standardization of the test was made in Turkey by Epir and Yalaz[38] in 1984. Later, Yalaz, Anlar & Bayoğlu[39] standardized the revised form and by adding new items, finalized the adaptation of the test. The standardized test was created to scan 4 separate developmental areas: personal – social, fine motor skills, language and gross motor skills, and consists of 134 items in total. In this study, the language section of the Denver Test was used to learn about the children's language development. One of the researchers participated in the" Denver II developmental screening test practitioner certificate" training, completed the training and received the practitioner certificate to use the DDST.

Family Information Form

This form was prepared with the purpose of collecting socio-demographic information about the children and their parents, such as their date of birth, gender and mother tongue, educational status of the parents, the impairment of the children (if any), etc.

Administration of the tests

Ethical approvals were received from the Ethical Board of the Ege University and from the Izmir Provincial Directorate of National Education before the collection of data. Later, informed parent consent form and family information form were signed by the parents who wanted to participate voluntarily in the research, and they were informed about the content and purpose of the study. Face-to-face interviews were carried out with families together with the aforementioned forms. Also, children provided their participation approval orally before the administration of the instruments.

At this stage, kindergarten principals, teachers and parents were interviewed and informed about the scope of the study. To begin with, DDST II was administered to the children, as it was assumed that the children who participated in the study would develop normally. One week was allocated for each school to implement DDST, and in total, the test was administered to all children in three weeks. The test was applied directly to the child when the child was with a relative. For the implementation of the NAP, the informed consent form was filled by the families of children with normal development based on DDST II.

In addition, the data was collected in the kindergartens when children attended the lessons. To get closer to the children, the researcher spent time with them in the classroom and participated in their games during the week in which DDST II was applied. Interviews were conducted with each child individually in the counseling office of the kindergartens. After the children were approved to participate the narration process began. The instructions of the protocol were followed during the application. The researcher and the children sat side by side throughout the narrations. This way, children could pay more attention to the story. One of the four stories in the Narrative Assessment Protocol was chosen randomly and given to the child, who was then asked to look at the story and pictures in it. After the child finished the narrative and closed the book, a verbal response was received that his narrative was finished, which ended the storytelling process. The implementation of the scale took an average of 15 minutes for each child. Each story was recorded with a voice recorder since note-taking would cause a loss of time and could be distracting for children. Later the recordings were transcribed by the researcher. Then all the recordings were re-listened and it was ensured that the written document and the audio

recordings were exactly the same. Transcribed stories were scored based on the NAP instructions. After completing the scoring process for each child, the scores were reviewed by a Turkish language expert. The scoring process was completed with the review of a field expert. Four weeks after the first application, 33 children were randomly selected from the participants and asked to retell the stories they told and scored again for the test-retest method. The scoring process was again revised by a field expert and the same operations were re-performed respectively.

Results

Validity of the Narrative Assessment Protocol

Language validity

The original form in English was translated into Turkish by two language experts, then back-translated to English for language validity. These translations were reviewed and evaluated by three field experts in linguistics, Turkish education, and preschool education. As a result of the necessary editing and proofreading by field experts, the sentences that include regular past tense and irregular past tense verbs were combined into one item in the past tense to ensure better understanding in the Turkish language. In addition, a total of four items were added: non-past tense verbs, pronouns, reduplications, verb+auxiliary verb. After these corrections, the scale was translated to English by another field expert. Both forms have been revised and compared by field experts. The comparison between the Turkish and the English version of the scale revealed no visible problem in terms of language in the translated version. The scale was applied with a total of 21 items.

Construct validity

Construct validity addresses the question of how accurately the items measure the intended construct. If the purpose of examining the construct validity is to reveal the factor structure of the scale, exploratory factor analysis is performed. If it aims to confirm the previously determined factor structure, confirmatory factor analysis is performed[34]. Both exploratory factor analysis and confirmatory factor analysis were performed for the construct validity of NAP in order to reveal both the existing structure of the scale and verify the factor structure.

Explanatory factor analysis (EFA) was used to collect variables that measure the same structure together under the same factor. The value measured by KMO (Kaiser-Meyer-Olkin) test should be greater than .60 and the Bartlett sphericity test should be significant less than 0.05 to perform EFA[40]. Table 1 shows that the result of the KMO test is 0.706, Bartlett sphericity value is 552.635 ($p<0.000$), which is significant. These results revealed a multivariate normal distribution and that the data were suitable for factor analysis.

TABLE 1

KMO AND BARLETT'S SPHERECITY TEST RESULTS

Kaiser-Meyer-Olkin Sampling Adequacy		.706
Bartlett's test of Sphericity	Chi-square value	552.635
	S.Degree	120
	P	.000

Varimax rotation technique was used in the procedure. According to the results of the principal components analysis (PCA), it was found that the protocol consists of three sub-dimensions with an eigenvalue greater than 1. The results showed that out of the three sub-dimensions, the first one explained 19.04% of the total variance, while the second one explained 10.12% and the last one explained 8.6% of the total variance. As a result, the three sub-dimensions accounted for 37.83% of the total variance.

Two original items of NAP were combined into one with the permission of the developers and four items were added to the adapted version of the scale. The final version of the scale consists of 21 items. Regular past tense verbs and irregular past tense verbs were combined as past tense verbs in the 'verbs' factor of the adapted version. In addition to this arrangement, reduplications were added to the modifiers factor, and pronouns were added to the nouns factor. The items of the protocol include sentence structure with 4 items (compound sentences, complex sentences, negative sentences, interrogatives), phrase structure with 3 items (prepositional phrases, modifiers), nouns with 4 items (plural nouns, pronouns, possessive pronouns) and verbs with 7 items (main verbs, copulatives, past tense verbs, non-past tense verbs, compound verbs, auxiliary verbs). In the study, it was observed that children did not include negative sentences, interrogatives, compound nouns, reduplications, verb+auxiliary verb items in their stories, and therefore these items were removed from the protocol with expert approval before the data analysis. Exploratory factor analysis showed a 3-factor structure with 16 items. Monte Carlo PCA parallel analysis results also confirmed the three-factor structure of the protocol, therefore the instrument was used with three factors. The factor loadings of the protocol are shown in Table 3.

Table 3 shows that the 'verbs' factor includes 6 items (E4, E1, E3, E2, E4, E5); 'sentence and word structure' factor includes 5 items (T1,T2, T3, T4, T5); 'names and qualifiers' factor includes 5 items (N2, N5, N3, N1, N4). The threshold for factor loadings was calculated as .32. While the original scale consisted of 18 items with a 5-factor structure, our analyses and tests showed that the Turkish version consisted of 16 items with a 3-factor structure. Three factors of the scale are coherent with the structure of the Turkish language.

Items from 1 to 6 on the first factor include non-past tense verbs, main verb + copulative, past tense verb +cop-

TABLE 2

EIGENVALUES OF THE ITEMS OF THE NARRATIVE ASSESSMENT PROTOCOL AND THEIR VARIANCE RATIOS

Factors	Initial Eigenvalues			Rotated Sums Of Factor Loads		
	Total	Variance %	Cumulative %	Total	Variance %	Cumulative %
1	3.046	19.037	19.037	3.046	19.037	19.037
2	1.620	10.126	29.163	1.620	10.126	29.163
3	1.386	8.662	37.825	1.386	8.662	37.825
4	1.193	7.458	45.283			
5	1.071	6.693	51.976			
6	1.036	6.476	58.452			
7	0.962	6.010	64.462			
8	0.906	5.661	70.123			
9	0.832	5.200	75.323			
10	0.710	4.438	79.761			
11	0.686	4.290	84.051			
12	0.636	3.974	88.025			
13	0.581	3.631	91.656			
14	0.518	3.240	94.897			
15	0.469	2.933	97.829			
16	0.347	2.171	100.000			

TABLE 3

EXPLANATORY FACTOR ANALYSIS (TBA) RESULTS

Item	Sub-Factors		
	Verbs	Word and Sentence Stucture	Nouns and Modifiers
E4	.662		
E1	.635		
E3	.631		
E2	.572		
E6	.460		
E5	.381		
T1		.755	
T2		.594	
T3		.555	
T4		.526	
T5		.463	
N2			.663
N5			.544
N3			.485
N1			.443
N4			.432

ulative, compound/ gerunds and Tier 2 verbs. The second factor includes (items 7 to 11) compound sentences, complex sentences, determiners, pronouns, preposition phrases. The third factor includes (items 12 to 16) modifiers, Tier 2 verbs, possessive pronouns, plural nouns, complex noun phrases.

Confirmatory factor analysis (CFA) was used for testing the hypothesized factor structure for construct validity[41,42]. In the present study, confirmatory factor analysis was performed using the Lisrel program. Below are the modification indices of the confirmatory factor analysis collected from 111 participants. NAP factor analysis results were reported for each age group. CFA indicated that there were no correlations between measurement errors and that the items did not overlap under different factors.

Table 4 shows the CFA results with the modification indices. Different modification indices were examined to see if the model is confirmed. The following criteria of model fit were considered for the modification indices: ≤0.08 good fit and ≤0.05 perfect fit for RMSEA[40]; χ:≤2.5 perfect fit for 2 /s.d[41] ≥0.90 good fit for NNFI, CFI and IFI[42,43], ≥0.90 good fit for GFI[44,45].

For the results in 36–47 month old children, RMSEA (0.07), and x2/s, with s.d (1.37) values show good fit. NNFI (0.73), CFI (0.77), IFI (0.80) and GFI (0.76) are below acceptable levels, however, it is possible to say that there is an indicator of fit, since the sample (n=111) is small and the modification indices are close to 1. For the results in 48–59 month old children, similar to the previous age group, RMSEA (0.06) and χ2 / s.d (1.54) fit well.

TABLE 4

MODIFICATION INDİCES FOR CONFIRMATORY FACTOR ANALYSIS

Age Groups	RMSEA	/ s.d	NNFI	CFI	IFI	GFI
36–47 months	0.07	1.37	0.73	77	0.80	0.76
48–59 months	0.06	1.54	0.81	.84	0.85	0.86
60–66 months	0.03	1.14	0.89	.91	0.91	0.93

NNFI (0.81), CFI (0.84), IFI (0.85), and GFI (0.86) showed no good model fit, however, their fit levels were considered acceptable since the sample (n=111) is small and the modification indices are close to 1. For the results in 60–66 month-old children, RMSEA (0.03) and $\chi 2$ / s.d (1,14) values appear to fit perfectly and NNFI (0.89), CFI (0.91), IFI (0.91) and GFI (0.93) fell within the acceptable range. In general, it seems that the modification indices observed in the factor analysis show acceptable levels of model fit.

Compared to everyday colloquial language, storytelling requires a more complex language structure. For their language development, it is important for children to acquire complex structures[46], to use complex sentence structures while talking[40], to follow the grammar rules of their native tongue[21], to start to use storytelling from age 4[46]. Considering that the period of 4 years is the basic period in which children acquire complex structures in language, it was appropriate to divide them into two groups of children: above 52 months of age and below. The results for each language factor in the protocol were analyzed for each age group respectively.

Table 5 shows the descriptive statistics related to the three sub-dimensions of NAP presented separately for children above 52 months of age and below. It can be seen that the mean scores of the children over 52 months in all three sub-dimensions are higher than the mean scores of children less than 52 months of age.

One-way analysis of variance (ANOVA) was performed to see whether there was a statistically significant difference in the frequency of items of the 4 stories between the two age groups. Table 6 shows the descriptive statistics for each story for both groups. It can be seen from the table that children older than 52 months of age had higher item frequency means in all four stories.

Table 7 presents the ANOVA results and shows that there was no statistically significant difference in the item frequency of both age groups between the four stories ($p>.05$). In other words, although 4 different stories were used for storytelling, it seems that younger and older chil-

TABLE 5

DESCRIPTIVE STATISTICS ON THE DIMENSIONS OF THE NARRATIVE ASSESSMENT PROTOCOL

		Mean	95% G.A for mean	Standard deviation	Minimum	Maximum
52 months and younger	Verbs	5.75	5.34 – 6.15	2.06	1	12
	Sentence and word structure	6.46	5.73 – 7.19	2.70	0	12
	Nouns and modifiers	4.33	3.80 – 4.86	2.70	0	12
older than 52 months	Verbs	5.88	5.47 – 6.28	2.44	1	12
	Sentence and word structure	7.69	7.18 – 8.19	3.07	0	13
	Nouns and modifiers	4.76	4.34 – 5.18	2.54	0	11

TABLE 6

DESCRIPTIVE STATISTICS RELATED TO STORIES

Age – Story		Number of people	Mean	Standard deviation	95% G.A for mean Treshold – Upper limit		Minimum	Maximum
Below 52 month	1.00	23	15.48	5.06	13.29	17.66	4.00	23.00
	2.00	28	15.61	6.03	13.27	17.95	6.00	26.00
	3.00	31	18.26	5.360	16.29	20.22	10.00	29.00
	4.00	21	16.38	6.89	13.25	19.52	6.00	30.00
	Total	103	16.53	5.86	15.39	17.68	4.00	30.00
Below 52 Months	1.00	37	17.92	5.10	16.22	19.62	6.00	26.00
	2.00	34	16.65	4.96	14.92	18.38	6.00	29.00
	3.00	36	19.56	5.29	17.77	21.34	6.00	31.00
	4.00	37	19.08	5.44	17,27	20.89	9.00	30.00
	Total	144	18.33	5.27	17.46	19.19	6.00	31.00

TABLE 7

T-TEST RESULTS OF NAP

Age	Source of Variance	Sum Of Squares	sd	Mean Square	F	P
under 52 months	Between groups	142.326	3	47.442	1.399	0.248
	In-Group	3357.306	99	33.912		
	Total	3499.631	102			
older than 52 months	Between groups	177.493	3	59.164	2.185	0.092
	In-Group	3790.167	140	27.073		
	Total	3967.660	143			

dren had similar scores across them in their own groups. Two-way ANOVA was performed to see whether the levels of item frequencies differed based on gender and age (under 52 months and older), and to determine interaction effects of these variables. Descriptive statistics of the item frequency in children is shown in Table 8. Table 8 shows that there is a significant difference in the mean scores of item frequencies between the children aged under 52 months (16.53) and older (18.33) ($p=0.012$, $p<0.05$). Table 8 reveals that item frequencies of the children older than 52 months of age are higher than those of the children less than 52 months of age.

Table 9 shows the ANOVA results for the means of gender and age group. It demonstrates that there is no statistically significant difference based on gender ($p=0.056$, $p>0.05$). In addition, Table 9 shows that the interaction effect of gender and age group was not significant ($p=0.407$, $p>0.05$). In other words, children in the same gender and age group scored higher or lower than the other groups. Although there was no significant difference in children's narratives by gender, females had a head start and finished with a higher score compared to males. In conclusion, the results of the analyses showed that females had better narrative skills than the males and scored higher in both age groups.

TABLE 8

DESCRIPTIVE STATISTICS OF NAP BASED ON GENDER

Gender		Mean	Standard deviation	Number of people
Male	under 52 months	16.17	6.21	54
	older than 52 months	17.38	4.91	74
	Total	16.87	5.51	128
Female	under 52 months	16.94	5.47	49
	older than 52 months	19.33	5.48	70
	Total	18.34	5.58	119
Total	under 52 months	16.53	5.86	103
	older than 52 months	18.33	5.27	144
	Total	17.58	5.58	247

TABLE 9

ANOVA RESULTS OF NAP BY GENDER AND AGE

Source of Variance	Mean Square	Sd	Mean Square	F	Sig.
Gender	111.07	1	111.07	3.69	0.056
Age group	194.39	1	194.39	6.46	0.012
Gender* age group	20.80	1	20.80	0.69	0.407
Error	7315.17	243	30.10		
Total	83988.00	247			

Discussion

The present study was performed to adapt the Narrative Assessment Protocol[33] to the Turkish language and culture so that it can be used with native Turkish children. To this end, the validity, reliability and factor structure were examined to adapt the scale for 36–66- month aged Turkish children. The original NAP (Narrative Assessment Protocol) was developed with 18 items and 5 factors[33]. NAP was adapted to the Spanish language in 2016, and as a result of the necessary analyses the factor structure was preserved with 27 items[35]. Adaptation of the NAP to Turkish was carried out with 16 items in a 3 factor structure. In the original scale, items that measured sentence and word structure were considered under separate factors. In the Spanish version, the number of items and factor structure was preserved in the same form as the original[35]. But in the analysis of the main components conducted in our study, it was found that children did not use negative and interrogative sentences in their narratives, and therefore, these two items were removed from the scale. As a reason why children do not use these two items, depending on the flow and process of the stories, it can be assumed that they do not perform their narratives in an interactive way, therefore do not ask questions. In addition, the items contained in the sentence structure and phrase structure factors were combined into one fac-

tor and included 5 items (compound sentence, complex sentence, determiners, pronoun, preposition) due to the language structure of the Turkish. Pronouns can be used instead of other parts of speech in Turkish[46] and there are cases where prepositions can replace determiners or adjectives because of the language structure. In a more general sense, the items under the phrase structure factor constitute the parts of speech, and these are used interchangeably if needed[47]. And because of the need for these parts of speech to form various sentence structures[46,47], these items are gathered under the same factor. In addition, the literature review also suggests that it is better to combine these two factors into one[48–50]. Moreover, since complex phrases item in the phrase structure factor consists of nominals, it was moved to the nouns and modifiers factor following the expert opinion. In the original scale, there are items in two separate factors as nouns and modifiers. In the Spanish adaptation, the factor structure was not changed but additions were made to the items[46]. In addition, experts of the Turkish language suggested that the modifiers' factor and determiners factor should be in the "Phrase and word structure" factor.

The rotated factor matrix shows that "Sentence structure" and "Word structure" factors in the original scale were combined into one factor as "Sentence and word structure" and included five items: "advanced modifiers, plural nouns, complex phrases, and possessive pronouns". It is known that the smallest unit of a word is the root of that word with semantic content. New and complex words appear with suffixes added to root words. Although there is no significant semantic difference between these emerging words, they share a common meaning background. All the items under the "Word structure" factor are nominals and their meanings may change with the affixes[51]. Therefore, using it as one factor was suggested by a Turkish language expert. Also, some studies have emphasized that treating these two factors as a single factor is appropriate[47,52].

Under the “Verbs” factor in the original version of the scale the main verb+ copulative, ... + copulative, irregular past tense verb, regular past tense verb, Tier 2 verb, combined/serial verb were collected in 6 items, while new items were added in the Spanish version which includes 12 items[35]. In the present study, items were preserved under one factor due to the language structure. In the original version of the scale, there were two items for past tense verbs as regular and irregular past tense verbs due to the structure of English. Since there are no irregular past tense verbs in Turkish[53] these two items were combined into one as "past tense verbs". Additionally, the non-past tense verb item is added considering the expression of children in their stories.

It seems that NAP has an acceptable level of reliability values based on the reliability analysis. Norm-referenced measurement tools are used to measure narrative skills[54] for reasons such as the difference between the content of the stories because of the cultural differences[13,55] the difference between language structures, and the difference in the language acquisition steps[47]. In other words, it seems that acceptable reliability coefficients reflect the structural elements shared by all languages[46].

The first factor of NAP includes six items of verbs. Aksu-Koç[23] examined the development of meta-linguistic consciousness in children, and found that children aged 3–4 years have included past and non-past tenses in their narratives. In the same study, 5-year-old children began to understand the differences in language structures and used this skill correctly in their narratives. Ogel-Balaban et al.[56] found that all age group children use the *–dI* affix, which is a past tense marker, correctly, while the correct use of the-mış and *–(I)mış* affix increases as the children get older. Allen et al.[57] stated that children use verb structures and complex language structures in their fictional stories. All in all, these studies show that children include verbs and verb varieties in their narratives[23] and items in the 'Verbs' factor in NAP support these studies.

"Sentence and word structure", which is the second factor of the scale, includes five items: a total of combined sentences, complex sentences, deteminers, pronouns, and prepositional phrases. Slobin and Talay[27] concluded that pronouns are included in the narratives of 2–5-year-old children, while Yildiz and Çiçekler[58] revealed that the use of markers, possessive construction and different sentence structures increases with the age of the children and the socioeconomic status of their families. Dickinson and Tabors[59] conducted a longitudinal study and found that children's narrative language skills and literacy levels in fourth and seventh grade were associated with the stories they produced, their vocabulary knowledge, and the variety of words they used at the age of three and four. Güleryüz and Baykoç Dönmez[31] concluded that children often use positive and simple sentence structures in their narratives, but use negative sentence structures less. Güler and Baykoç Dönmez[60] claimed that children's use of pronouns and temporal language structures starts at the 48th month. In these studies, it is believed that NAP is associated with items contained in the sentence and word structure factor, that they include sentence and word diversity in the expressions of 36–66 month old children, and that the sentence word structures of children can be evaluated with these items. The items in these factors support the findings in the studies that examine the different sentence use of the children and the richness of the vocabulary[27,55,57].

“Nouns and modifiers” include five items: advanced modifier word, second-level noun, possessive noun, plural noun, complex noun phrase Acarlar[61] and Turkay[62] stated that children use nouns, markers, and possessive nouns in their narratives. In addition, Sofu[63], Ozdemir[64] stated that children use nouns more than verbs in their narratives, while Gokmen[65] concluded that they use more verbs than nouns. Although these studies compared the use of nouns and modifiers with the use of verbs, the results show that these items were acquired in preschool. It is believed that the way children use nouns and modifiers in their narratives identified by the items in this factor. In addition, the frequency, and the variety of use of these items are in line with the studies that investigate the ac-

quisition of the nouns and modifiers depending on the age[58–62].

Also, there are studies that examine the acquisition and use of various types of words and the effect of early learning of language structures on their later life. Moreover, the effect of educational settings on the acquisition of the language structures of children, and the effect of learning the language structures from an early age on the metacognitive skills of children were also examined[63–66]. These studies generally used NAP since it is believed that children's narrative skills can be evaluated with these items in NAP.

In this regard, the present study investigated whether the total scores for factors showed significant differences by age and gender. Children earn complex structures and grammar of the language and start using narrative structures around the age of 4[65], therefore, the children were divided into two groups in the present study as under 52 months of age and older. The results of the study showed a significant difference in favor of children older than 52 months. Studies investigating the level of language development of children according to age groups also support this result[60]. An increase in the number and diversity of words in children's language development depending on age[64], and the acquisition of different and complex sentence structures[17,60,67] can be the reason for this difference. In addition, although children used four different stories in their narrative, there was no significant difference in the overall scores they received from the stories. The reason for this can be the similarity of the narrative flows and the plot of the stories.

The study also examined the effect of gender on the use of item frequencies and found no significant difference between NAP scores depending on gender. However, the mean scores of item frequencies of females were higher than those of males. This could be because the narrative skills in girls develop earlier than in boys'[68] and therefore include different language structures in their narrative at an earlier time. There are studies that contrast this finding and indicate that boys have higher language skills than girls[57,60].

Conclusion

As a result of validity and reliability analyses, the adapted version of NAP is found to be reliable and valid for use in the Turkish culture. The present study proves to be useful in terms of providing an adapted version of the NAP to be used in educational settings and future studies about examining the narrative skills of Turkish children.

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PRILAGODBA SKALE ZA OCJENJIVANJE NARACIJE ZA TURSKU DJECU PREDŠKOLSKE DOBI

S A Ž E T A K

Ova studija imala je za cilj prilagoditi Protokol za procjenu naracije (NAP), koji je razvijen za evaluaciju narativnih vještina djece u dobi od 2–7 godina, turskoj kulturi i jeziku. Studijsku grupu istraživanja činilo je ukupno 247 djece, 128 dječaka i 119 djevojčica, u dobi od 36–66 mjeseci, koji su pohađali vrtiće u četvrti Konak u centru grada Izmira tijekom akademske godine 2018–2019. Denver II test razvoja korišten je za određivanje djece s normalnim razvojnim karakteristikama u formiranju studijske skupine. Protokol za procjenu naracije i informativni obrazac o obitelji korišteni su kao alati za prikupljanje podataka. Eksplorativna faktorska analiza (EFA) i konfirmatorna faktorska analiza korištene su za testiranje konstruktivne valjanosti podataka. Za provjeru pouzdanosti korišteni su Cronbachova alfa i Test-retest pouzdanosti. ANOVA analiza korištena je za ispitivanje razlike između postignutih rezultata djece. Rezultati EFA pokazali su da protokol ima 3-dimenzionalnu strukturu. Utvrđeno je da je Cronbachova alfa vrijednost Protokola za procjenu naracije 0,75. Pouzdanost test-retesta izračunata je odvojeno za faktore i za prvi faktor je iznosila 0,75, za drugi faktor 0,72, a za treći faktor 0,69. Utvrđeno je da su podaci dobiveni od djece putem protokola ocjenjivanja naracije valjani i pouzdani na prihvatljivoj razini. Osim toga, dob je imala značajan utjecaj na razlike između djece iznad i ispod 52 mjeseca starosti, dok spol nije bio značajan ($p<0,05$). Zaključeno je da interakcijski učinak dobi i spola nije značajan.