

**Validity and reliability of the Turkish Version of Stuttering-Parental Diagnostic Questionnaire**Şükrü TORUN,<sup>1</sup> Müzeyyen ÇİYİLTEPE,<sup>2</sup> Ahmet ÇEVİKASLAN<sup>3</sup>**ABSTRACT**

**Objective:** The purpose of the study was to determine the validity and reliability of the Turkish version of the Stuttering-Parental Diagnostic Questionnaire (S-PDQ-T). The questionnaire has three subscales, the child's speech behaviors from the perspective of the parents; parents' worries about their child's speech, and the parents' attitudes toward their child's speech. **Methods:** The original S-PDQ was translated and adapted into Turkish. The S-PDQ-T was administered to parents of 65 children who stutter (CWS) and of 196 children who do not stutter (CWNS). The questionnaire is a 4-point Likert type scale, and has 61-items. The reliability of the scale was made using internal consistency coefficient and test-retest correlation. The S-PDQ-T was also correlated with the Ways of Coping Questionnaire (WAYS), Parental Attitude Research Instrument (PARI) and State-Trait Anxiety Inventory (STAI) for the content validity. **Results:** The internal consistency coefficient was 93.9%, 95% and 79.1% for three subscales of the S-PDQ-T. The test-retests reliability at 10 weeks was high (0.97, 0.78, and 0.86 for subscale I, II, and III). Also, The S-PDQ was statistically and positively correlated with WAYS, PARI, and the STAI confirming concurrent validity. **Conclusion:** The results indicate that psychometric properties of the S-PDQ-T were at satisfactory levels. Knowing the parents' attitudes toward their child's speech behavior will enable clinicians to help them to cope with and prepare a stable, easy to speak environment. The S-PDQ-T can be used to obtain reliable information on parental attitudes for cooperation in stuttering management. (*Anatolian Journal of Psychiatry* 2016; 17(Suppl.1):85-92)

**Keywords:** S-PDQ, Turkish version, S-PDQ-T, stuttering, questionnaire, parental attitude, validity, reliability

**Kekemelik için Anne-Baba Tanısal Ölçeği Türkçe sürümünün geçerlilik ve güvenilirlik çalışması****ÖZ**

**Amaç:** Bu çalışmanın amacı, Kekemelik için Anne-Baba Tanısal Ölçeğinin Türkçe sürümünün (KA-BTÖ-T) geçerlilik ve güvenilirlik verilerini ortaya koymaktır. KA-BTÖ, çocuğun konuşma davranışlarını, konuşma davranışlarına ilişkin anne-baba kaygılarını ve tutumlarını değerlendiren üç alt ölçek içermektedir. **Yöntem:** Özgün ölçeğin Türkçe çeviri, geri çeviri, anlaşılabilirlik ve amaca uygunluk çalışmaları yapılmıştır. Çalışma grubu kekemeliği olan 65, kontrol grubu ise kekemeliği olmayan 196 çocuğun anne-babalarından oluşmuştur. Ölçek, 62 maddeden oluşan dördümlü Likert tipindedir. Ölçeğin güvenilirliği için, Cronbach alfa iç tutarlılık katsayısı ve test-tekrar test korelasyonu hesaplanmıştır. Aynı zamanda Stresle Başa Çıkma Tarzları Ölçeği, Aile Hayatı ve Çocuk Yetiştirme Tutumları Ölçeği ve Durumluk Kaygı Ölçeği ile korelasyonuna bakılarak Türkçe sürümünün içerik geçerliliği de değerlendirilmiştir.

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**Bulgular:** Çalışma grubu, yaş ortalaması 12.4±2.9 olan ve kekemeliği bulunan çocukların 65, kontrol grubu ise yaş ortalaması 12.6±2.5 olan ve kekemeliği bulunmayan çocukların 196 anne-babalarından oluşmuştur. KA-BTÖ-T'nin I, II ve III. alt ölçekleri için iç tutarlılık katsayıları (Cronbach alfa) sırasıyla %93.9, %95 ve %79 ve 10. haftadaki test-tekrar test korelasyonları 0.97, 0.78 ve 0.86 olarak bulunmuştur. **Sonuç:** Yapı, ayırt ettiricilik ve ölçüt geçerliliği yanında; toplam, alt ölçekler ve test-tekrar test güvenilirlik katsayıları, KA-BTÖ-T'nin psikometrik özelliklerinin tatminkâr düzeyde olduğunu göstermektedir. Günümüzde anne-babalar, kekemelik tedavisinin tüm aşamalarında ekibin güçlü bileşenleri olarak görülmektedir. Çocuklarının konuşma davranışı hakkındaki fikir ve tutumlarını bilmek, anne-baba ile klinisyenin işbirliğini ve evden başlayarak birlikte daha uygun bir konuşma çevresi hazırlamayı kolaylaştırır. Klinisyenler bu amaçla KA-BTÖ-T'yi kullanabilirler. (*Anadolu Psikiyatri Derg* 2016; 17(Ek.1):85-92)

**Anahtar sözcükler:** S-PDQ, Türkçe sürüm, S-PDQ-T, KA-BTÖ-T, kekemelik, ölçek, anne-baba tutumu, başa çıkma, geçerlilik, güvenilirlik

## INTRODUCTION

The role of the environment is inconclusive to determine the onset and evolution of stuttering signs and symptoms. Although there is limited research to suggest that parental beliefs or behaviours differentiate stuttering and change its severity in children who stutter (CWS), clinical experiences emphasize the possible role of parental attitudes and behaviours in shaping stuttering behaviors.<sup>1-6</sup> Specific parental beliefs about their child's speech in CWS and how they act upon stuttering is not investigated in detail; even though the clinical emphasis on modifying linguistic demands in the environment of stuttering children is believed to be an important factor.<sup>7</sup> There has been some effort to describe specific behavioural characteristics of interactions between stuttering children and their parents. The studies of parent-child speech behaviors include speech rate and other temporal variables, linguistic characteristics of parental speech to stuttering children, and non-linguistic conversational patterns. However, most clinicians are not aware of how parental beliefs, feelings, or behaviour relate to childhood stuttering.<sup>8-14</sup>

Families have a powerful influence upon their members and can be a significant resource for clinicians to obtain information about their children. The way they approach and discuss their child's disfluency with their children have a great impact on the development of disfluent behaviors.<sup>15-17</sup> Previously parent ratings have been used to gather information in both speech characteristics and general behaviour in CWS.<sup>18-21</sup> Even though parents might need training to use rating scales efficiently, those ratings can be important sources of confirmation about the progress observed by clinicians. Although there has not been consistent agreement or strong definition of the role that parents should play in speech-language intervention,<sup>22</sup> the contribution of parents as a very important and even powerful

factor; has been recognized for many years.<sup>23-25</sup> Therefore, a number of programs that specifically target family members have been developed.<sup>26-29</sup> Among them, 'mindful parenting' have been utilized with the emphasis is on parent-child relationship.

The relationship between the family members of CWS and the health professional is considered more as general level by encouraging the use of counselling techniques to promote effective interaction between them.<sup>30-32</sup> However, for a better interaction between parent and child, good listening skills with giving full attention, being aware of secondary behaviours, and beware of their self-regulatory skills.<sup>33</sup> In Turkey, relationships between CWS and their parents have not been addressed even today. In only one study, St. Louis et al. examined public attitude toward cluttering and stuttering in four countries including Turkey.<sup>34</sup> It is reasonable to say that limited attention has been given to gathering characteristic data about parents of CWS receiving speech-language treatment services in our country. Awareness of family and lifestyle issues may increase the effectiveness of clinical interventions<sup>35</sup> by establishing methods for utilizing the resources of families, and identifying those families who would like to assume an active role or a partnership in the management process.

The Stuttering Parental Diagnostic Questionnaire (S-PDQ), originally developed by Tanner for gathering information on a descriptive speech characteristics as well as the determinatives of the parental attitudes are well described.<sup>36</sup> The psychometric properties of the S-PDQ were at satisfactory levels in an American sample; however, there is no reported research examining its psychometric properties in terms of validity and reliability in different cultures, namely the Turkish sample. Therefore, the purpose of the present study is to adapt S-PDQ into Turkish Language and measure its validity and reliability.

We had following three goals: to evaluate and obtain a scale for disfluent children rated by their parents, to gather information about the characteristics and attitudes of their families, and to describe the coping strategies of those parents.

## METHODS

### Sampling

The Turkish version of S-PDQ (S-PDQ-T) was administered to parents of 65 CWS and 196 children who do not stutter (CWNS). Most of the informants (77%) were the mothers.

### Instruments

The original S-PDQ was chosen because of its examination of three variables: speech behavior subscale (SBS) asking for the disfluent symptoms of children with 41 questions, parental worry subscale (PWS) asking for the parents' level of worries about these symptoms with 24 questions, and parental attitude subscale (PAS) asking for the parents' attitude towards their children's speech behaviours with 16 questions. The questionnaire is not intended to be used solely for diagnosis but rather to be able to provide a parent an insight as well as a structured system to record the child's stuttering behavior that they have observed and their response to those behaviours.<sup>36</sup> The S-PDQ was translated into Turkish language initially, and then back translated into English language by a professional translator.

After a detailed evaluation performed by a linguist, a speech pathologist, a psychologist and a child psychiatrist, the S-PDQ-T was obtained. The same subscales were kept like the original S-PDQ. However, due to the language and cultural differences in descriptive use of the Turkish language some adaptations were made. The number of the items of SBS subscale decreased to 24 items, and the PWS to 21. The PAS items remained in the same number<sup>37</sup> (Appendix). The response scale for total 61 items of the S-PDQ-T was designed as 4-point Likert-type scale.

The concurrent validity was assessed using three additional questionnaires: Ways of Coping Questionnaire<sup>38</sup> (WAYS), Parental Attitude Research Instrument<sup>39</sup> (PARI), and State-Trait Anxiety Inventory<sup>40</sup> (STAI). The PARI comprises 60 Likert-type items, and utilizes a 4-point response format ranging from strongly agree to strongly disagree. In all, 5 subscales are measured, each being evaluated by virtue of five

items. Subscales include overprotective mother, rejection of the homemaking role, democratic, inconsiderateness of the husband, and oppressive.<sup>41</sup> The STAI is a validated 40-item self-report assessment device, which includes separate measures of state and trait anxiety. Each STAI item is given a weighted score of 1-4. Scores for both the State-Anxiety (20 items) and the Trait-Anxiety (20 items) scales can vary from a minimum of 20 to a maximum of 80. High score indicates high level of anxiety, and the low score indicates limited or no anxiety.<sup>42,43</sup> The WAYS measures coping processes,<sup>44</sup> which can be used as a stimulus for discussion in clinical, training, and workshop settings. It has 30 Likert-type items. The previously adapted Turkish version of the WAYS has five factors including: self-controlling, seeking social support, confrontive coping, positive reappraisal and escape-avoidance.<sup>38</sup>

### Procedure

The study was conducted in the child psychiatry department of Gulhane Medical Military Academy, and Anadolu University Health Sciences faculty, Speech Pathology Department. The scales were applied to the parents of CWS and CWNS. Participation was on a volunteer basis among those who came to our clinics for the management of their children's disfluencies. Parents were informed about the study and their written permission was obtained. The CWNS were recruited from day-care center of our university. The illiterate parents and the parents of children who are in special education or neurologically impaired ones (such as cerebral palsy, traumatic brain injury) were not included in the study. Also, the parents of the children receiving speech therapy or medication were excluded. The participants were given a set of questionnaires including: the S-PDQ-T, the WAYS, the PARI and STAI. Two hundred and sixty-one parents completed the questionnaires. The retest was done with the parents of CWS group only.

### Statistical analysis

The data were evaluated with SPSS for Windows v.20.00 (Statistical Package for Social Sciences Inc., Chicago, IL, USA). Shapiro-Wilk test and the graphical views were used to determine the normal distribution of the data. Since the data was not normally distributed; data was analysed through non-parametrical statistical measures. In addition to the descriptive statistics (mean, standard deviation, percentile),

Mann Whitney-U test was used to evaluate the differences between groups in all three subscales, the Cronbach's alpha coefficient<sup>45</sup> were calculated to estimate the internal consistency reliability. For comparing groups, alpha values of 0.7 to 0.8 are regarded as satisfactory. Concurrent validity was assessed with the Spearman rank correlation coefficient. For CWS group, the test-retest reliability of the S-PDQ-T was investigated by estimating Pearson correlation coefficient.

**RESULTS**

**Demographics**

The parents of 65 CWS (15 girls, 50 boys with a mean age of 12.4±2.9 years, ranging between 3-17 years), and the parents of 196 CWNS (49 girls and 147 boys with mean age of 12.6±2.5 years, ranging between 8-17 years) were included in this study. The age range was 25-43 years (mean

34.6±3.48 years) for the mothers and 34-48 years (mean 39.3±4.18 years) for the fathers who completed the S-PDQ-T.

**Data analysis**

For the first subscale SBS of the S-PDQ-T, Cronbach's alpha coefficient was calculated as 0.91 for the CWNS group and 0.93 for the CWS group yielding 93.9% internal consistency for total (n=261). For the second subscale PWS, the Cronbach's alpha coefficient was 0.96 for CWNS group and 0.93 for CWS group yielding 95% internal consistency. For the final subscale PAS, Cronbach's alpha coefficient was calculated as 0.80 for CWNS and 0.79 for CWS yielding 79.1% internal consistency.

The means and standard deviations of the S-PDQ-T, WAYS, STAI and PARI and the comparison of the groups are presented in Table 1. The score of SBS subtest of the S-PDQ-T is higher

**Table 1.** Comparison of the groups on the scores of all the applied tests

	CWS (n=65)		CWNS (n=196)		z scores	p
	Mean±SD	Mean rank	Mean±SD	Mean rank		
SBS*	51.94±11.05	200.85	35.87±9.04	107.83	8.61	<0.001
PWS*	43.06±11.46	121.04	46.30±15.02	134.30	1.22	0.219
PAS*	30.60±7.40	123.67	31.29±7.02	133.43	0.9	0.366
STAI	80.86±14.82	145.13	75.59±17.95	125.72	3.0	0.003
WAYS	73.23±11.21	82.70	74.21±9.28	98.23	0.36	0.719
PARI	99.48±21.04	92.35	109.87±15.80	142.36	4.40	<0.001

\* Subtests of S-PDQ-T,

**Table 2.** Concurrent validity of the S-PDQ-T subtests with the WAYS, PARI and STAI

	PWS		PAS		STAI		WAYS		PARI	
	R <sup>2</sup>	p								
CWNS-SBS	0.26	<0.001	0.36	<0.001	0.35	<0.001	0.11	0.116	0.23	<0.001
CWNS-PWS	5		3	1	3	1	3	0.129	4	1
CWNS-PAS			0.20	0.004	0.04	0.548	0.10	0.008	0.001	0.955
			3		3	0.107	9		4	<0.001
					0.11		0.19		0.32	1
					5		0		5	
CWS-SBS	0.001*	0.986	0.06	0.610	0.03	0.780	0.40	<0.001	0.15	0.226
CWS-PWS	2		5	0.12	6	0.164	0	1	4	0.014
CWS-PAS			0.31		0.17	0.541	0.29	0.017	0.30	0.173
			1		6		8	0.019	6	
					0.07		0.29		0.17	
					8		3		2	

R<sup>2</sup>=Spearman's rank correlation coefficient

in the CWS group ( $z=8.62$ ,  $p<0.001$ ); whereas, the scores of the PARI is higher in the CWNS group ( $z=4.41$ ;  $p<0.001$ ).

Concurrent validity of the S-PDQ-T with the WAYS, PARI and the STAI was good (Table 2). There were significant and positive correlations between the subtests of the S-PDQ-T. The parents' responses for the PDQ-T were consistent for the other questionnaires given as well.

The Pearson correlation coefficient of SBS, PWS and PAS in the parents of CWS indicated that the test-retest correlation coefficients 10 weeks apart were highly reliable ( $r=0.97$ ,  $p<0.001$ ;  $r=0.78$ ,  $p<0.001$ ; and  $r=0.86$ ,  $p<0.001$ , respectively).

## DISCUSSION

Stuttering therapy that focuses on both speech fluency modification and family attitudes may have a better success rate. Therefore, it is very important for the clinicians those involved with the treatment of stuttering to be informed about the parents' attitudes. The rating scales like the S-PDQ-T may ease to verify parents' behaviours and attitudes toward their child's disfluent speech. Further, a supportive involvement of parents in the treatment process appears to reduce the negative life impacts of stuttering. Attitudes start with the close environment that is the family and friends. Therefore, by knowing the parent's attitude, the clinician will be able to prepare a better management plan for intervention.

There is little published information on the parental attitudes toward CWS in Turkey. On the other hand, in the States for example, various studies utilizing video observations<sup>46</sup> and taking classes<sup>47</sup> indicate an impact on the parental attitudes. Previous studies also indicate that initially parents of CWS are not different from parents of CWNS in terms of speech rate during communication,<sup>48,49</sup> response time latencies,<sup>49</sup>

interrupting behaviors,<sup>50</sup> levels of assertiveness and responsiveness,<sup>51</sup> and interaction style.<sup>52</sup> Once the child's stuttering becomes more permanent, however, parents of CWS exhibit faster speech rate,<sup>11</sup> interrupt more frequently,<sup>10</sup> and become more anxious<sup>53</sup> when interacting with their children. There is a single study<sup>54</sup> in Turkey, which examined the verbal behaviour pattern of the parents of CWS and CWNS by videotaping their constructed speech sample and analysed the data accordingly. The results of this study indicated that looking at the factors related to communication between parents and their including commands, questions, verbal praise, verbal acknowledgements, critical statements and interruptions the only significant difference was that the mothers of the CWS used more words during their interaction. In order to get more reliable insight about Turkish parents' attitudes on their child's speech, a useful instrument is in need. We assume that the S-PDQ-T will meet this need as being a valid and reliable questionnaire.

## CONCLUSION

The results obtained from this study indicate that psychometric properties of the Turkish version of the S-PDQ are adequate and it is a valid and reliable scale that can be applied to assess the attitudes of the parents of CWS. The proven validity and reliability of the scale enables its widespread use. Implementation of this scale to the parents having various sociocultural backgrounds may help us for better understanding about parental attitudes influencing stuttering. Providing an insight of the parental attitudes in management of disfluency, especially with the younger children, parent focused therapy is as much important as child focused intervention. We suggest that the S-PDQ-T can be use as a practical and useful questionnaire for gathering parental information in the practice of stuttering management in Turkey.

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## APPENDIX

### THE S-PDQ-T SUBSCALE ITEMS

#### Speech Behaviors Subscale (SBS)

1. Repetition the first syllables and the first words more than two
2. Broken words or incomplete word
3. Voice pitch changes
4. Long pauses before speaking
5. Emphasise the improper parts of the words
6. Struggle to complete the word at once or after pause
7. Avoiding eye contact
8. Begins to speak, stops and begins again
9. Uneasy and tense speaking
10. Fluency change from day to day
11. Long pauses and gaps within/between words
12. Avoiding to speak in public/with people
13. Frustration because of improper speaking
14. Improper prolongations with the words
15. Word substitutions

16. Tense feeling in throat
17. Breath interrupting or speaking at the end of breathing
18. Harsh voice quality
19. Repetating or prolonging the 'schwa'
20. Making faces, tremors, exaggerated tongue movements
21. Monotonous voice tone, improper voice tone changes
22. Avoiding with short phrases or facial mimics
23. Profanity
24. Speaking as if busy with something in his/her mouth.

**Parental Worry Subscale (PWS)**

1. If speaks slower or faster than normal
2. If struggles to complete the word at once or after pause
3. If speaks with broken words or incomplete words
4. If speaks with voice pitch changes
5. If repeats or prolongs the 'schwa'
6. If speaks with monotonous voice tone, improper voice tone changes
7. If frustrates because of improper speaking
8. If experiences difficulty to regulate breathe
9. If repeats the voices, syllables, words improperly
10. If pauses or gaps
11. If speaks uneasy/tense when speaking
12. If emphasizes the improper parts of the words
13. If voice tone becomes harsh
14. If prolongs the voices, syllables, words improperly
15. If makes faces, tremors, exaggerates tongue movements
16. If avoids to speak in public/with people
17. If substitutes the words
18. If speaks profanity
19. If complains tense feeling and uneasiness in throat
20. If avoids with short phrases or facial mimics
21. If speaks as if busy with something in his/her mouth.

**Parental Attitudes Subscale (PAS)**

1. Correcting the improper word by saying the true one
2. Remembering not to hesitate
3. Making repeat the inaccurate word
4. Expecting to speak accurately
5. Making fun of speech errors
6. Remembering to speak softly and slower
7. Imitating the speech error
8. Remembering to think before speaking
9. Remembering to speak faster
10. More attention if speaks improperly
11. Allowing him/her to know when annoyed
12. Completing the wrong word or the whole sentence instead of child
13. Considering the error as cute
14. Teaching to speak by uttering the syllables, without broken part, with proper voice
15. Making repeat the whole sentence from the beginning if struggles
16. Becoming impatient for the errors.