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Turkish Adaptation of the Pediatric Voice Related Quality of Life Survey: A validity and reliability study



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ABSTRACT

Objectives: Childhood voice disorders have increased in recent years reduce not only communication of the child, but also; the quality of life by affecting the socio-emotional state.

Methods: In the study, it is aimed to test validity and reliability of Pediatric Voice Related Quality of Life Survey (PVRQOL)'s Turkish adaptation. A total of 223 individuals aged between 2 years and 18 years, with and without voice problems were involved in this study.

Results: Statistically significant differences were found between study and control groups for total score and sub domain scores for PVRQOL ($p < 0,001$). Total score of quality of life was higher in the control group. Cronbach alpha coefficient for overall PVRQOL was 0,922; dimension of physical function was 0,894 and socio-emotional domain was 0,804. In the test-retest reliability test, overall PVRQOL was found to be 0,732; physical functional sub domain was 0,734; socio-emotional sub domain was 0,721. The validity of the questionnaire was determined by factor analysis.

Conclusion: The results suggest that the Turkish version of the PVRQOL has reliability and validity, and may play a crucial role in evaluating children with voice disorders.

1. Introduction

Voice disorders are among the most common communication disorders in children and adults [1]. Voice disorders in children can occur due to environmental, behavioral, psychological and organic causes. The most common of these is the habit of speaking loudly, which is among behavioral causes [1,2]. The prevalence of voice disorders in children ranges from 1% to 23% due to differences in the assessment methods used [3]. It was found that voice disorders are higher in males (7.5%) compared to females (4.6%) [4,5]. Childhood voice disorders which have increased in the recent years reduce not only the communication of the child, but also the quality of life by affecting the socio-emotional state. Because of this, it has become increasingly important to assess the effects of voice disorders on children's quality of life [11]. Evaluating the quality of life helps in determining the place and importance of voice disorders in the child's life, greatly contributes to the treatment process and the clinician in terms of guiding their choices and changes the point of view of the clinician. There are different questionnaires developed to evaluate the quality of life in children and these need to be filled with the help of their parents [6].

Pediatric Voice Outcome Survey (PVOS), Pediatric Voice Related Quality of Life Survey (PVRQOL) and Pediatric Voice Handicap Index (Pediatric Voice) are used to determine the effect of voice disorders on the quality of life in children. Among these surveys, only the PVHI's Turkish validity and reliability study was carried out. Insufficient number of questionnaires adapted to Turkish limits the studies to be carried out. The purpose of this study is to determine the effect of voice disorders on children's quality of life and prepare the Turkish Adaptation of *Pediatric Voice- Quality of Life Survey* which will guide the treatment process.

1.1. Pediatric voice- Quality of Life Survey

Pediatric Voice Related Quality of Life Survey (PVRQOL) was developed in 2006 by Boseley, Cunningham, Volk and Hartnick (see Appendix A). It is a questionnaire populated by parents of children between 2 and 18 years of age with voice disorders. It consists of 10 questions. There are two domains: physical-functional and social-emotional. Social emotional sub-domain consist of four questions and the physical function sub-area consist of six questions. Each question

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has an answer option up to 6 from 1. The total score is 100. As the score goes higher, quality of life gets higher. Answer options and scoring are as follow [3].

Answer options	Scores
1 = None, not a problem	10
2 = A small amount	7,5
3 = A moderate amount	5
4 = A lot	2,5
5 = Problem is “as bad as it can be”	0
6 = Not applicable	0

2. Materials and methods

2.1. The development of PVRQOL's Turkish version

Study was approved by Gazi University, Clinical Research Ethic Board. For the adaptation of the PVRQOL to Turkish, the items of the original version were first translated to Turkish by three speech language pathologists and translated back to English by an assistant professor from the Gazi University, English Language and Literature Department. Finally, the evaluation committee consisting of three speech language pathologists gave the final form to the translated survey. The final survey was pilot tested with parents of dysphonic/non dysphonic twenty children. Items 3 and 9 in the survey were rearranged because they were not understood by the majority. The sixth answer option “not applicable” has been translated into Turkish as “a problem that is not a solution”, but it has been removed because it was not understood by the parents and the survey has been finalized. Finally, PSİYKA were obtained by translating into Turkish without distorting the original meaning of the PVRQOL (see [Appendix A](#)).

2.2. Participants

All participants were examined by the ENT physician. A total of 223 voluntary individuals (97 female and 126 male) aged between 2 years and 18 years, with and without voice problems were involved in this study. Children with physical, mental and psychological disorders and children under the age of 2 and older than 18 were not included in the study. The study group consisted of individuals with voice problems and the control group consisted of individuals without voice problems. A total of 97 female and 126 male individuals from the study and control groups participated in the study.

2.3. Statistical method

The PSİYKA data of 223 individuals was transmitted to the electronic environment. The data was evaluated with *IBM SPSS Statistics 21* (Chicago, Illinois, ABD). Firstly, in the descriptive statistics, the mean and standard deviation was calculated for the quantitative (age, score) summed up data and then the observation number (b) and percentages (%) were calculated for the qualitative (gender, age groups, diagnosis) summed up data. Within this scope, the sample created to evaluate the PSİYKA score which consists of the data of 223 individuals was analyzed. In order to test whether the variances of the groups to be compared were homogenous or not, Levene's variance equality test was applied. For the homogenous variances, the independent two samples *t*-test under the homogenous variance and for variances which were not homogenous the independent two samples *t*-test were applied. On addition, in order to compare the age group and quality of life scores, the one-way analysis of variance (One Way ANOVA) test which is used in more than two group comparisons was used. The internal reliability of the survey was calculated with the *Cronbach alpha* coefficient. For the

Table 1
Demographic characteristics.

		Average age \pm SD (min; max)	Percentage	Frequency
Study Group	Female	9,4 \pm 3,7 (min:3; max:18)	25,7	26
	Male	10 \pm 3,3 (min:3; max:18)	74,3	75
	Total	9,9	100	101
Control Group	Female	10,4 \pm 4,3 (min:3; max:18)	58,2	71
	Male	10,4 \pm 3,8 (min:4; max:18)	41,8	51
	Total	10,4	100	122

test-retest reliability analysis, the Pearson correlation analysis was used. Additionally, the rate of the items' compared to their total correlation coefficients were calculated and commented on. The validity of the survey which was adapted to Turkish was determined with Factor Analysis. With the purpose of testing the statistical significance of the hypothesis results, $p < 0,001$ has been accepted.

3. Results

3.1. Demographics

Quantitative data of the participants is shown in [Table 1](#). The individuals were examined in two levels in accordance with the diagnoses put on them. According to this; 92.1% of the study group consisted of vocal cord nodules and 8.9% had mutational falsetto diagnosed cases. The control group consisted of individuals without voice disorders and with natural vocal cords. Individuals who participated in the study were separated into 3 age categories as pre-school, school and adolescent group. Quantitative data on these age categories are shown in [Table 2](#).

3.2. PSİYKA values of the individuals

PSİYKA values of the individuals is shown in [Table 3](#). There was statistically no significant difference between the female and male individuals in the study group in terms of both total and sub-domains ($p > 0,001$).

There was statistically no significant difference between the male and female individuals in the control group ($p > 0,001$).

When the total and sub domain scores of these two groups were compared were examined without gender differences; it was found that the control group had a high score and created a statistically significant difference compared to the study group ($p < 0,001$).

There was no statistically significant difference between the three age groups in terms of total and sub domain scores in the study group ($p > 0,001$). Similarly, no significant difference was observed in the control group ($p > 0,001$). When each of the three age groups in the study and control groups were evaluated mutually, there was a

Table 2
Distribution of the age groups.

		Age Category	Average Age \pm SD	Percentage	Frequency
Study Group	Preschool (2–5 years old 11 months)		4,68 \pm 0,47;	15,8	16
	School (6–11 years old 11 months)		9,05 \pm 1,55	60,4	61
	Adolescent Group (12–18 years old 11 months)		14,79 \pm 1,86	23,8	24
Control Group	Preschool (2–5 years old 11 months)		4,30 \pm 0,47	18,9	23
	School (6–11 years old 11 months)		9,38 \pm 1,67	45,1	55
	Adolescent Group (12–18 years old 11 months)		10,39 \pm 4,14	36,1	44

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