

Parents' Evaluations of Their Children's Dysphonia: The Mamas and the Papas

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Summary: Objectives. This study aimed to evaluate the validity and reliability of a Hebrew translation of the Pediatric Voice Handicap Index (pVHI). It also examined differences between mothers and fathers in evaluating their child's dysphonia.

Study Design. Observational design.

Methods. The pVHI was first translated and adapted to Hebrew. The translated version was, then, administered to a group of 141 parents of children aged younger than 14 years. Fifty-eight parents had a dysphonic child, and 83 had a nondysphonic child. Based on the parents' responses to the pVHI, statistical analyses were performed, evaluating validity and reliability, as well as group differences. Following, a subset of the participants, in which only cases where the responses of both parents were available, was examined for evaluating differences between the responses of mothers ($n = 46$) and fathers ($n = 46$).

Results. Statistical analyses revealed high reliability of the Hebrew version of the pVHI (Cronbach alpha = .97). Parents of the dysphonic children rated their children significantly higher than parents of the nondysphonic group ($P < 0.001$). Mothers of the dysphonic children rated their children significantly higher than the fathers, on all subscales of the questionnaire ($\geq 0.001 P < 0.047$). In contrast, no significant differences were found between mothers and fathers of the nondysphonic children ($P > 0.05$).

Conclusions. The Hebrew version of the pVHI is a reliable tool for quantifying parents' perception of their child's voice handicap. Mothers of dysphonic children evaluate their children's voice handicap more severely than fathers, whereas both parents of nondysphonic children perform this evaluation similarly.

Key Words: Voice–Pediatric–Children–pVHI–Self-evaluation–Parents–Hebrew.

INTRODUCTION

Dysphonia is a common condition in children, which may affect the child's quality of life, psychologically, socially, interpersonally, and academically.^{1,2} Pediatric dysphonia is estimated to occur in 6–24% of children,^{3–9} and children at the age range of 8–15 years are at greater risk for developing dysphonia.⁶ Therefore, pediatric dysphonia is commonly encountered by physicians, laryngologists, and speech therapists.

Over the past years, the inclusion of subjective self-evaluation rating scales in adults' voice evaluation has become common practice. This is evident by the development of various self-assessment questionnaires, such as the Voice Symptom Scale,¹⁰ the Voice-Related Quality of Life Measure,¹¹ the Vocal Performance Questionnaire,¹² and the Voice Handicap Index.¹³ However, the importance of the inclusion of such standardized subjective scales in the evaluation of voice disorders in children has only recently been acknowledged. Unlike adults, children are often regarded as unreliable providers of medical information.¹⁴ This is attributed to their limited linguistic, cognitive, and introspective capabilities. Consequently, the child's ability to complete a self-report questionnaire is questionable. Ironically, in such cases, the child's subjective perception is

especially interesting. Nonetheless, because of these inherent limitations of pediatric self-reports, many voice-related questionnaires that target children are designed to be completed by their parents.¹⁵

After its publication, in 2007, the Pediatric Voice Handicap Index (pVHI)¹⁶ has become the most accepted tool for quantifying the impact of dysphonia in the pediatric population. Using this tool, parents are asked about their perception of the impact of the dysphonia on their child's quality of life. Since then, the pVHI was translated and adapted from its original English version into various languages, such as Korean,² German,¹⁷ Arabic,¹⁸ and Italian,¹⁹ maintaining high validity and reliability. Inspired by these studies, the initial motivation for the present study was to adapt the pVHI to Hebrew and to assess the reliability and validity of the Hebrew version. This was aimed to address the urgent need for a standardized clinical tool for quantifying voice handicap of Hebrew speaking children and to facilitate comparisons of local observations with global clinical findings.

Previous studies on the pVHI questionnaire combined the responses made by both mothers and fathers and did not entertain the possibility of gender differences between the responses made by the two parents. However, literature suggests that, on the one hand, abrupt changes are evident in the roles of mothers and fathers over the last few decades, resulting in an increased flexibility in the definitions of traditional parental roles. On the other hand, there are still consistent differences between the attitudes and reactions of mothers and fathers to children with disabilities, whether these are medical, physical, sensory, or cognitive disabilities.²⁰ For example, it was reported that having a child with cancer was experienced differently by the two parents.²¹ In that study, mothers reported on stress related to caring for the child and to the need to adhere to their parental tasks,

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whereas fathers expressed more concern about the need to maintain family income. Similar results were found in a different study, where mothers of children with Autism and Asperger syndrome were more focused on child care, whereas fathers were more focused on providing for the family.²² In addition, although both parents used similar adjustment strategies (ie, controlling and expressing emotions), mothers expressed more sadness, whereas fathers expressed more anger. Despite these differences, it appears that when parents are coping with a child with a disability, they experience similar levels of stress. However, mothers and fathers focus their stress on different facets of coping with the disability.²³

Only a limited number of studies examined potential differences between men and women in response to speech or hearing disorders. In most cases, no gender differences were found in the attitudes exhibited by men and women toward people with disorders in fluency, language, voice, and articulation.²⁴ Similarly, men and women were reported to exhibit similar stereotypes toward people with various communication disorders.²⁵ In contrast, some studies have suggested that women rate people who stutter more positively than men and rated their stuttering as less severe.²⁶

The specific attitude exhibited by listeners toward people with dysphonia was examined directly in a recent study.²⁷ In that study, dysphonic women were rated more negatively by listeners than dysphonic men, in most attributes. On the other hand, the listeners' gender did not affect their attitude toward speakers as men and women responded similarly to dysphonic speakers. Furthermore, our literature review failed to identify any study that examined differences between mothers and fathers, in the perception of their child's dysphonia. Therefore, the second aim of this study was to examine whether mothers and fathers evaluate their child's voice handicap differently.

METHODS

Translation and adaptation

The original version of the pVHI¹⁶ was translated from English to Hebrew using a similar procedure to that was performed previously in related studies in Hebrew²⁸ and in other languages.^{29,30} To that end, three native speakers of Hebrew, who are also highly proficient in written and spoken English, performed the English-to-Hebrew translation of the questionnaire. To avoid the use of professional terminology or jargon, these translators were laypersons with no professional knowledge in the fields of speech and voice. This resulted in three different Hebrew "working versions" of the pVHI. The three Hebrew versions were then translated back to English by three laypersons, native speakers of English, who are also highly proficient in written and spoken English. Following, a final version of the questionnaire was assembled by the items that translated accurately throughout this process. Finally, the assembled version was presented, along with the original version, to two English-Hebrew bilingual judges, who confirmed that the final Hebrew version (pVHI-*Heb*) is indeed clear, coherent, and comparable with the original English version. The final Hebrew version is presented in the [Appendix](#).

Participants

After obtaining the approval of our institutional review board and a signed informed consent from all participants, a total of 141 parents of children aged younger than 14 years were included in the study. All parents were recruited in the Tel-Aviv and surrounding area, and all were fluent speakers and readers of Hebrew.

Assignment of the parents to the two study groups (dysphonic and nondysphonic) was performed based on their subjective report in response to the question: "does your child have a voice problem?" Eighty-three parents (49 mothers and 34 fathers) reported that their children has no voice problem and were assigned to the nondysphonic group (mean child age: 8.96 years, standard deviation [SD] = 2.84). In contrast, 58 parents (32 mothers and 26 fathers) reported that their child has a voice problem. These parents were assigned to the dysphonic group (mean child age: 6.80 years, SD = 3.63).

Each parent independently completed the informed consent form first and then completed the pVHI-*Heb*, followed by a short anamnesis questionnaire.

Reliability and validity

The reliability of the Hebrew version of the questionnaire was examined, first, by analyzing the internal consistency using Cronbach alpha coefficients for each subscale. Cronbach alpha coefficients were high for all three subscales. Values ranged between $.966 < \alpha < .970$ for the functional subscale, between $.966 < \alpha < .967$ for the physical subscale, and between $.965 < \alpha < .967$ for the emotional subscale.

Following, 44 participants completed the Hebrew version of the pVHI twice within a period of 10 days. Test-retest reliability was evaluated using paired sample *t* tests and a Pearson correlation between the first and repeated completion of the questionnaire. Results confirmed no statistically significant differences between the repeated completions of the questionnaire. These results were consistent for all three subscales, as well as for the total pVHI score (functional: $t_{(43)} = 1.42$, $P = 0.162$; physical: $t_{(43)} = 0.37$, $P = 0.710$; emotional: $t_{(43)} = 0.53$, $P = 0.599$; total: $t_{(43)} = 1.04$, $P = 0.305$). Pearson correlation coefficients between the two completions of the questionnaires yielded high values ($0.837 < r < 0.866$, $P < 0.001$). These results indicated that the Hebrew translation of the pVHI has a high stability and reproducibility over time.

For validation purposes, all parents responded to four general evaluation questions in addition to completing the pVHI questionnaire. The first question was "How concerned are you about your child's voice?" Parents responded to this question on a seven-point scale, in which 1 was labeled "not at all" and 7 was labeled "very much." The second question was "How concerned is your child about his/her voice?" and it was followed by a similar seven-point scale. The third question was "How much does your child speak daily?" which was followed by a seven-point scale, in which 1 was labeled "very little", and 7 was labeled "a lot." Finally, the fourth question was "How satisfied are you with your child's voice?" This question was followed by a 10-point rating scale, in which 1 was labeled "completely dissatisfied" and 10 as labeled "highly satisfied."

TABLE 1.
Group Means and Standard Deviations of the pVHI Subscales and Total Score for the Dysphonic and Nondysphonic Groups

Subscales	Nondysphonic	Dysphonic
Functional*	1.27 ± 2.20	8.78 ± 6.20
Physical*	1.65 ± 3.31	17.76 ± 8.10
Emotional*	0.40 ± 1.12	7.93 ± 5.98
Total*	3.31 ± 5.42	34.47 ± 16.81

* $P < 0.001$.

As described, the direction of the fourth rating scale was opposite to that of the first three scales. This was deemed desirable to reduce a possible bias effect, such that a high score on the first three questions represented a negative evaluation, and the opposite was true for the last question. This also replicates previously used methodology.²⁸ The validity of the questionnaire was assessed by computing Spearman correlation coefficients between the four general questions and the pVHI total score. Correlation between the total score and the first question (ie, parent's concern) was $r = 0.869$ ($P < 0.001$). Correlation between the total score and second question (ie, child's concern) was $r = 0.844$ ($P < 0.001$). Correlation between the total score and the third question (ie, talkativeness) was not statistically significant ($r = -0.106$, $P = 0.202$). Correlation between the total score and fourth question (ie, parent's satisfaction with the child's voice) was $r = -0.903$ ($P < 0.001$).

RESULTS

Group and parents' gender differences

Group means and SD of the pVHI-Heb subscales and total score are presented in Table 1 for the parents of the dysphonic and nondysphonic groups. Data show a consistent tendency for higher values of the pVHI-Heb subscales and total score for parents of the dysphonic children compared with those of the nondysphonic group.

Separate analyses of variance were conducted for the three subscales and for the total score. In these analyses, "group" and "parent's gender" were regarded as between-subject factors. Results revealed a significant main effect for group for the functional, physical, and emotional subscales, as well as for the total score ($[F_{1,137} = 99.43, P < 0.001]$, $[F_{1,137} = 258.32, P < 0.001]$, $[F_{1,137} = 128.01, P < 0.001]$, and $[F_{1,137} = 364.41, P < 0.001]$, respectively).

A significant main effect for parent's gender was found only for the emotional subscale ($F_{1,137} = 8.28, P = 0.005$), as mothers rated their children higher on this subscale than fathers (4.01 vs 2.80). All other subscales did not reveal significant differences between the responses of the mothers and fathers ($P > 0.05$).

A significant group X parent's gender interaction was found for the emotional subscale ($F_{1,137} = 10.90, P = 0.001$) and for the total pVHI score ($F_{1,137} = 4.51, P = 0.036$). Inspection of these interactions demonstrates that, on these scales, children in the nondysphonic group were rated similarly by both parents; whereas dysphonic children were rated by their mothers signif-

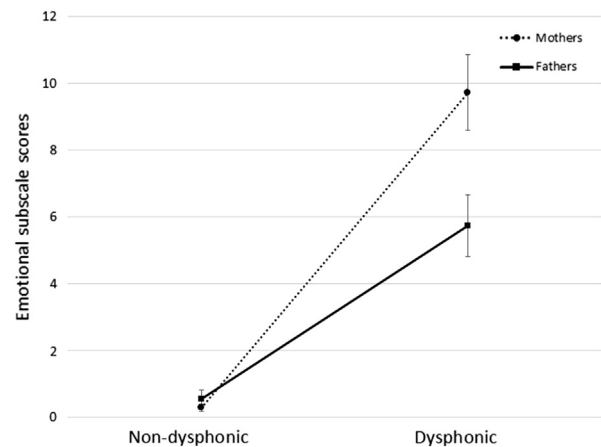


FIGURE 1. Mean scores (± 1 standard error bars) on the emotional subscale obtained by mothers and fathers of the dysphonic and nondysphonic groups.

icantly higher than by their fathers. This interaction is illustrated in Figure 1, for the emotional subscale.

To assess the magnitude of the relationship among the three pVHI subscales and the total score, Spearman correlation coefficients were calculated (Table 2). Results demonstrated a moderate-to-strong relationship among the three subscales and between each of them and the total score, ranging between $0.742 < r < 0.959$ ($P < 0.01$).

Comparing responses made by mothers and fathers

The second goal of this study was to explore potential differences in the responses of mothers and fathers to their dysphonic or nondysphonic children. To that end, a subset of the whole sample, consisting of 92 parents, was examined. These included both parents of 46 children (20 dysphonic and 26 nondysphonic), who completed the pVHI-Heb. Table 3 presents group means and SDs of the subscales and total scores obtained from the mothers and fathers of the children in the dysphonic and nondysphonic groups.

Separate analyses of variance were conducted for each subscale and for the total score. In these analyses, "group" was regarded as a between-subject factor, and "parent's gender" was regarded as a repeated measure. Initial inspection of the data shows that parents of the dysphonic children rated their children higher on all scales compared with the parents of the nondysphonic children. Accordingly, statistical analysis revealed a significant main effect for group for the functional, physical,

TABLE 2.
Correlation Matrix for the Three Subscales and for the Total pVHI-Heb Score

Subscale	Functional	Physical	Emotional	Total
Functional	—	0.747*	0.742*	0.868*
Physical	—	—	0.834*	0.959*
Emotional	—	—	—	0.877*

* $P < 0.01$.

TABLE 3.
Group Means and Standard Deviations of the pVHI-Heb Subscales and Total Score for Mothers and Fathers of the Children in the Dysphonic and Nondysphonic Groups

Subscales	Dysphonic		Nondysphonic	
	Mothers	Fathers	Mothers	Fathers
Functional	9.65 ± 7.09	7.70 ± 5.55	1.08 ± 2.17	1.04 ± 2.16
Physical	19.10 ± 8.12	12.90 ± 7.09	1.88 ± 3.87	2.00 ± 4.13
Emotional	9.80 ± 5.40	4.65 ± 4.39	0.46 ± 0.91	0.73 ± 1.69
Total	38.55 ± 17.30	25.25 ± 14.19	3.42 ± 5.74	4.15 ± 6.99

and emotional subscales, as well as for the total score ($[F_{1,44} = 36.50, P < 0.001]$, $[F_{1,44} = 83.22, P < 0.001]$, $[F_{1,44} = 71.60, P < 0.001]$ and $[F_{1,44} = 84.83, P < 0.001]$, respectively).

A significant main effect for parent's gender was found for all subscales (functional $[F_{1,44} = 5.12, P = 0.029]$; physical $[F_{1,44} = 14.30, P < 0.001]$; emotional $[F_{1,44} = 14.78, P < 0.001]$; and total score $[F_{1,44} = 17.14, P < 0.001]$). In addition, a significant group X parent's gender interaction was found for all subscales (functional $[F_{1,44} = 4.73, P = 0.035]$; physical $[F_{1,44} = 15.40, P < 0.001]$; emotional $[F_{1,44} = 18.22, P < 0.001]$; and total score $[F_{1,44} = 21.36, P < 0.001]$).

To further explore these significant interactions, a paired-sample *t* test was performed for each subscale, comparing the responses of the mothers and fathers of the children within each group (dysphonic and nondysphonic) separately. Results confirmed that the mothers of the dysphonic group rated their children significantly higher than the fathers on all subscales (functional $[t_{(19)} = 2.12, P = 0.047]$; physical $[t_{(19)} = 3.71, P = 0.001]$; emotional $[t_{(19)} = 3.64, P = 0.002]$; and total score $[t_{(19)} = 4.20, P < 0.001]$). In contrast, no significant differences were found between the responses of the mothers and the fathers of the children in the nondysphonic group (functional $[t_{(25)} = 0.12, P = 0.90]$; physical $[t_{(25)} = 0.19, P = 0.85]$; emotional $[t_{(25)} = 1.07, P = 0.30]$; total score $[t_{(25)} = 0.67, P = 0.51]$).

Finally, the correlation between the pVHI total scores obtained from the fathers and mothers within each group was calculated using Pearson correlation coefficients. These correlations are illustrated in Figure 2. The correlation between the fathers and the mothers within the dysphonic group was $r = 0.61$ ($P = 0.004$). Similarly, the correlation within the nondysphonic group was $r = 0.63$ ($P = 0.001$).

DISCUSSION

This study was conducted with two goals in mind. First, it was intended to present an adapted Hebrew version of the pVHI. The second goal of the study was to examine differences between mothers and fathers, in their evaluation of the impact of the effect of the dysphonia on their children. Results show that the Hebrew version of the questionnaire maintained its high reliability. The questionnaire differentiated dysphonic children from their nondysphonic peers. Specifically, dysphonic children were rated by their parents significantly higher

on all three subscales, as well as on the total score, than nondysphonic children. In addition, Cronbach's alpha coefficients that were calculated for all three subscales were consistently high, and ranged between .966 and .970. The questionnaire's validity was also evaluated in comparison with four general evaluation questions. Parents' responses to three of these questions were highly correlated with their responses to the questionnaire. These questions targeted (a) the parents' concern about the child's dysphonia, (b) the parents' perception of the child's concern about his/her dysphonia, and (c) the parent's overall satisfaction with their child's voice. Results demonstrated that, despite the deliberate methodological difference in the construction of these questions, similar correlation coefficients were obtained between these questions and the pVHI total score. In contrast, a weak and nonsignificant correlation was found between the pVHI total score and the parents' evaluation of their child talkativeness. This result indicates that the results obtained from the questionnaire may be seen as a reliable indication of the parents' perception of their child's voice-related quality of life, and that these responses are not biased by the child's talkativeness, as it is perceived by the parents.

This study was the first to inspect the effect of parents' gender on their responses to the pVHI. Our data reveal differences between mothers and fathers in their responses to the

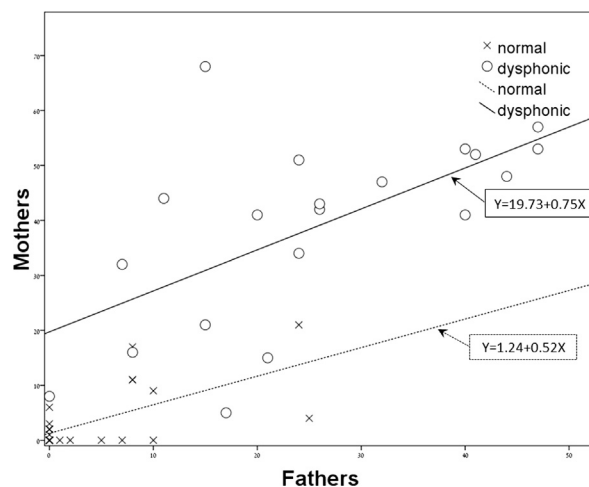


FIGURE 2. A scatter plot of the correlation between total pVHI scores obtained from the fathers and from the mothers of the children in the dysphonic and nondysphonic groups.

pVHI. Specifically, when all parents were examined, a significant difference was found between the responses obtained by mothers and fathers on the emotional subscale. This result was further supported by the significant group X parent's gender interaction. Evidently, both parents of the nondysphonic children rated their children similarly, while on the other hand, mothers of dysphonic children rated their children significantly higher on the emotional subscale than fathers. The fact that mothers of dysphonic children rated their children higher than fathers only on the "emotional" subscale, but not on the other subscales may be interpreted as an illustration of gender differences in the way women and men address a disability in general and disabled children particularly. Nonetheless, it was noted that, at this point, our cohort of parents was not balanced. Of the 141 parents who enrolled in the study, 92 were both parents of 46 children, whereas the remaining 49 parents enrolled in the study were not matched by a parental partner. Thus, although some children were rated by both of their parents, others were rated by a single parent. Therefore, to eliminate this bias, a subset of the parents was examined, in which only children for which both parent's responses available were included.

As noted previously, the second goal of this study was to examine potential differences in the way mothers and fathers rate their children's dysphonia. When both (matched) parents of the children were examined, results revealed two major findings. First, dysphonic children were rated significantly higher than nondysphonic children on all subscales. Second, and more importantly, mothers rated their dysphonic children higher on all subscales than the fathers. In other words, when both parents of each child are included, thus controlling for various factors such as voice pathology, background, environment, or child's personality; results confirm the significant effect of parents' gender on their evaluation of their dysphonic children. Moreover, results indicate that these differences are significant in all subscales and not only for the "emotional" subscale.

This finding is in agreement with previous reports on differences between the attitudes and coping strategies exhibited by fathers and mothers of children with various developmental difficulties or disabilities.²⁰⁻²² In these studies, mothers expressed more concern than the fathers about the child's emotional wellbeing, whereas fathers expressed an obligation to provide for the child and for the family. In addition, while coping with and adjusting for their child disability, mothers and fathers expressed different emotions.²² Therefore, it appears that the gender differences observed here, and the fact that these differences are manifested only in response to dysphonic children, but not in response to nondysphonic children, are not specific to the field of voice disorders. It suggests that this stems from an inherent difference between men and women in the way they perceive their parental role and in response to a child with a disability. Furthermore, it demonstrates that parents of children with dysphonia indeed perceive their child as having a disability. Therefore, the child's emotional, physical, and functional difficulties as well as the parents' coping strategies must not be overlooked during the initial process of evaluation and during the therapeutic process.

Finally, two potential limitations of this study should be considered. First, our results are based on a relatively small sample size (n = 141). Despite the fact that the present study included a larger number of parents than the original pVHI study¹⁶ (n = 78) and than both adaptation studies to Italian¹⁹ (n = 73), Korean² (n = 101), and Arabic¹⁸ (n = 125), it is recommended that future studies include a larger sample size. This would facilitate a more in-depth analysis of additional potential interfering factors. Second, results of this study should be confirmed and replicated in different languages and cultures because the effect of parent's gender as well as the perception of traditional versus contemporary parental roles may differ across cultures.

CONCLUSIONS

This study introduced the Hebrew version of the pVHI and demonstrated its validity and reliability. Furthermore, mothers of dysphonic children were shown to rate their children higher than the fathers using the pVHI-Heb. This finding stresses the need to consider parent's gender differences in the evaluation of pediatric dysphonia and to account for that when comparing parents' responses to this questionnaire. From a clinical perspective, we showed that the Hebrew version of the pVHI provides a valuable insight of the parents' perception of their child's dysphonia. This information should be incorporated with other medical, physical, and perceptual measures, to assist in choosing the appropriate clinical approach for increasing therapy efficiency and effectiveness.

REFERENCES

1. Carroll LM, Mudd P, Zur KB. Severity of voice handicap in children diagnosed with elevated lesions. *Otolaryngol Head Neck Surg.* 2013;149:628-632.
2. Park SS, Kwon TK, Choi SH, et al. Reliability and validity of the Korean version of Pediatric Voice Handicap Index: in school age children. *Int J Pediatr Otorhinolaryngol.* 2013;77:107-112.
3. Von Leden HV. Vocal nodules in children. *Ear Nose Throat J.* 1985;64:473-480.
4. Connor NP, Cohen SB, Theis SM, Thibeault SL, Heatley DG, Bless DM. Attitudes of children with dysphonia. *J Voice.* 2008;22:197-209.
5. Maddern BR, Campbell TF, Stool S. Pediatric voice disorders. *Otolaryngol Clin North Am.* 1991;24:1125-1140.
6. Angelillo N, DiCostanzo B, Angelillo M. Epidemiological study of vocal disorders in paediatric age. *J Prev Med Hyg.* 2008;49:1-5.
7. Bonet M, Casan P. Evaluation of dysphonia in children's choir. *Folia Phoniatr Logop.* 1994;46:27-34.
8. Carding PN, Roulstone S, Northstone K, ALSPAC Study Team. The prevalence of childhood dysphonia: a cross-sectional study. *J Voice.* 2006;20:623-630.
9. Duff MC, Proctor A, Yairi E. Prevalence of voice disorders in African American and European American preschoolers. *J Voice.* 2004;18:348-353.
10. Deary IJ, Wilson JA, Carding PN, MacKenzie K. VoiSS: a patient-derived voice symptom scale. *J Psychosom Res.* 2003;54:483-489.
11. Murry T, Medrado R, Hogikyan ND, Aviv JE. The relationship between ratings of voice quality and quality of life measures. *J Voice.* 2004;18:183-192.
12. Deary IJ, Webb A, Mackenzie K, Wilson JA, Carding JA. Short, self-report voice symptoms scales: psychometric characteristics of the Voice Handicap Index-10 and the Vocal Performance Questionnaire. *Otolaryngol Head Neck Surg.* 2004;131:232-235.
13. Jacobson BH, Johnson A, Grywalski C, et al. The voice handicap index (VHI): development and validation. *Am J Speech Lang Pathol.* 1997;6:66-70.

14. Eiser C, Morse R. Can parents rate their child's health-related quality of life? Results of a systematic review. *Qual Life Res.* 2001;10:347–357.
15. Cohen W, Wardrop A, Wynne D, Kubba H, McCartney E. Development of a minimum protocol for assessment in the pediatric voice clinic. Part 2: subjective measurement of symptoms of voice disorders. *Logoped Phoniatr Vocol.* 2012;37:39–44.
16. Zur KB, Cotton S, Kelchner L, Baker S, Weinrich B, Lee L. Pediatric voice handicap index (pVHI): a new tool for evaluating pediatric dysphonia. *Int J Pediatr Otorhinolaryngol.* 2007;71:77–82.
17. Bylund H, Eriksson S. *Oversättning och validering av pediatric voice handicap index.* Linköping, Sweden: Linköping University Electronic Press; 2010. Available at: <http://www.diva-portal.org/smash/get/diva2:324786/FULLTEXT01.pdf>. Accessed July 7, 2014.
18. Shoeib RM, Malki KH, Mesallam TA, Farahat M, Shehata YA. Development and validation of the Arabic pediatric voice handicap index. *Int J Pediatr Otorhinolaryngol.* 2012;76:1297–1303.
19. Schindler A, Tiddia C, Chiara G, Nerone V, Albera R, Ottaviani F. Adaptation and validation of the Italian Pediatric Voice Handicap Index. *Folia Phoniatr Logop.* 2011;63:9–14.
20. Pelchat D, Lefebvre H, Levert MJ. Gender differences and similarities in the experience of parenting a child with a health problem: current state of knowledge. *J Child Health Care.* 2007;11:112–131.
21. Brown KAE, Barbarin OA. Gender differences in parenting a child with cancer. *Soc Work Health Care.* 1996;22:53–71.
22. Gray DE. Gender and coping: the parents of children with high functioning autism. *Soc Sci Med.* 2003;56:631–642.
23. Keler D, Honig AS. Maternal and paternal stress in families with school-aged children with disabilities. *Am J Orthopsychiatry.* 2004;74:337–378.
24. Williams D, Dietrich S. Perceptions of communicative disorders verification and specification of rater variables. *J Commun Dis.* 2001;34:355–366.
25. Allard E, Williams D. Listeners' perception of speech and language disorders. *J Commun Dis.* 2007;41:108–123.
26. Burley P, Rinaldi W. Effects of sex of listener and of stutterer on rating of stuttering speakers. *J Fluency Disord.* 1986;17:329–333.
27. Amir O, Levine-Yundof R. Listeners' attitude toward people with dysphonia. *J Voice.* 2013;27:524.e1–524.e10.
28. Amir O, Ashkenazi O, Leibovitz T, Michael O, Tavor Y, Wolf M. Applying the voice handicap index (VHI) to dysphonic and nondysphonic Hebrew speakers. *J Voice.* 2006;20:318–324.
29. Nawaka T, Weismann U, Gonnermann U. Validierung des Voice Handicap Index (VHI) in der deutschen fassung. *HNO.* 2003;51:921–929.
30. Guimarães I, Abberton E. An investigation of the Voice Handicap Index with speakers of Portuguese: preliminary data. *J Voice.* 2004;18:71–82.

APPENDIX

Hebrew version of the Pediatric Voice Handicap Index (pVHI-Heb)

הנחיות: המשפטים הבאים נאמרו על ידי אנשים רבים, כדי לתאר את הקול של ילדיהם, ואת ההשפעה שיש לכך על חייהם. נא להקיף בעיגול את המספר המתאר באיזו תדירות המשפט נכון עבורך.

תמיד=4	3=לעיתים קרובות	2=לפעמים	1=לעיתים רחוקות	0=אף פעם	
חלק I-F					
4	3	2	1	0	1. הקול של הילד שלי מקשה על אנשים לשמוע אותו
4	3	2	1	0	2. לאנשים קשה להבין את הילד שלי בחדר רועש
4	3	2	1	0	3. בבית, קשה לנו לשמוע את הילד כאשר הוא קורא לנו
4	3	2	1	0	4. הילד שלי נוטה להמנע מתקשורת בגלל הקול שלו
4	3	2	1	0	5. הילד שלי מדבר פחות עם חברים, שכנים או קרובים, בגלל הקול שלו
4	3	2	1	0	6. אנשים מבקשים מהילד שלי לחזור על דבריו, בשיחה פנים-אל-פנים
4	3	2	1	0	7. קשיי הקול של הילד שלי מגבילים את הפעילות האישית, חינוכית וחברתית שלו
חלק II-P					
4	3	2	1	0	8. לילד שלי נגמר האוויר כשהוא מדבר
4	3	2	1	0	9. הקול של הילד שלי משתנה במהלך היום
4	3	2	1	0	10. אנשים שואלים, "מה לא בסדר בקול של הילד שלך?"
4	3	2	1	0	11. הקול של הילד שלי נשמע יבש, מחוספס ו/או צרוד
4	3	2	1	0	12. לא ניתן לצפות מראש את איכות הקול של הילד שלי
4	3	2	1	0	13. הילד שלי מתאמץ מאוד כדי לדבר
4	3	2	1	0	14. הקול של הילד שלי גרוע יותר בערב
4	3	2	1	0	15. הקול של הילד שלי "נגמר" כשהוא מדבר
4	3	2	1	0	16. הילד שלי צריך לצעוק כדי שישמעו אותו
חלק III-E					
4	3	2	1	0	17. הילד שלי נראה מתוח כשהוא מדבר עם אחרים בגלל הקול שלו
4	3	2	1	0	18. אנשים מוטרדים מהקול של הילד שלי
4	3	2	1	0	19. אני חושב שאנשים לא מבינים את בעית הקול של הילד שלי
4	3	2	1	0	20. הילד שלי מתוסכל מבעית הקול שלו
4	3	2	1	0	21. הילד שלי פחות חברותי בגלל בעית הקול שלו
4	3	2	1	0	22. הילד שלי מתרגז כשמבקשים ממנו לחזור על דבריו
4	3	2	1	0	23. הילד שלי נבוך כשמבקשים ממנו לחזור על דבריו