

Translation, Validity, and Reliability of the Persian Version of the Aging Voice Index

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Abstract: Objectives. The Aging Voice Index (AVI) was developed to study quality of life in older adults with voice disorders. The purpose of this study was to translate the original English version of the AVI to Persian version of Aging Voice Index (P-AVI) and validate the P-AVI for the Persian-speaking older adults with voice disorders.

Methods. A cross-sectional, descriptive, and methodological study was performed to translate and validate the Persian version of the AVI. The translation was performed in accordance with recommendations from the World Health Organization. Eighty-five treatment-seeking patients with voice disorders and 20 older adults without voice complaints were recruited for this study. Psychometric properties were investigated, including: different types of validity (content validity, construct validity, and criterion-related validity), reliability (test-retest and internal consistency), and item analysis of the Persian version of AVI. The relationship between total score of P-AVI and age, sex, and voice pathology were determined using multiple linear regression.

Results. A panel of three speech pathologists performed the content validity of the P-AVI and reached agreement on all of the items. Construct validity was confirmed by a significant difference in the mean of total score of the P-AVI was identified between the participants with voice disorders and those with no voice complaints ($P < 0.001$). There was high correlation between the total scores of the participants in the Persian version of the AVI and the Persian version of the voice-related quality of life ($r = 0.86$, $P < 0.001$). All reliability measures were found to be good with scores higher than 0.8. To assess the need for item reduction, a Cronbach's alpha coefficient remained constant with the elimination of each item; therefore, all no items were removed. Age and voice pathology were not predictive for the total P-AVI score, but a weak effect was identified for sex and the total score of P-AVI ($F = 18.75$, $P < 0.001$) with an R^2 of 0.21.

Conclusions. The Persian version of AVI is a valid and reliable questionnaire designed specifically for older adults that speech-language pathologists and otolaryngologists can use to objectively assess the impact of voice disorders in aging Persian-speaking patients.

Keywords: Voice-quality of life—Psychometric properties—Aging voice index—Persian.

INTRODUCTION

Substantial alterations associated with typical aging can occur across the body.¹⁻³ The vocal tract system, and specifically the larynx, is one area of the body that experiences significant changes with aging and has an impact on the functional ability to use voice effectively.⁴ Many physiologic changes including edema, bowing of the vocal cords, reduction in thickness of lamina propria, histological changes like ossification or calcification of cartilages of the larynx, and atrophy of primary muscles of the larynx lead to voice-related changes in aging.⁵ Older adults experience vocal symptoms like vocal fatigue, hoarseness, breathiness, changed pitch, and decrease in loudness. These voice changes are the consequences of physiological changes and pathologic conditions in this age stage.³

A number of epidemiological studies have reported increased rates for the prevalence of voice disorders in the aging population.^{6,7} Roy et al⁷ conducted a study on the prevalence of voice disorders in older adults and identified that 29.7% of older adults reported a voice disorder. Golub et al⁸ also studied the prevalence of dysphonia in the aging population and reported that 20% of older adults experience voice disorders. Golub et al showed that voice-related quality of life (V-RQOL) is significantly influenced by aging.

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Scores for aging adults on a V-RQOL instrument are significantly higher than reported values for younger adults (<65 years).⁹ In research by Benninger et al,¹⁰ older adults constituted 25% of treatment-seeking individuals. These studies highlight that not only is assessment and treatment of voice disorders of paramount importance in an aging population, but also that older adults might be a unique clinical subgroup within voice disorders.⁶ A variety of assessment procedures including acoustic analysis^{5,11-14}, aerodynamic assessment,¹⁵ physiological measures,¹⁶ and V-RQOL assessments¹⁷⁻¹⁹ have been used to study the effects of the aging on voice.

Measurement of V-RQOL helps practitioners to objectively investigate the consequences of voice disorders on life, including physical, emotional, and social factors that are not captured through other assessment measures.²⁰ A variety of questionnaires have been developed for assessment of V-RQOL, including the Voice Handicap Index,²¹ the V-RQOL,²² and the voice activity participation profile.²⁰ These questionnaires were created for general public use and are not specific to the voice characteristics or needs of an aging population. The lack of a specialized instrument to objectively measure quality of life in older adults with voice disorders limits access to consistent findings and may prevent clinicians from accurately detecting the effects of voice disorders on quality of life in older adults.³

When voice problems are chronic, they affect the V-RQOL in older adults.⁶ De Araújo Pernambuco et al³ highlighted the importance of developing and validating tools to study the V-RQOL in an aging population. Marino and Johns⁶ discussed how the treatment of voice disorder is an opportunity for otolaryngologists to improve the quality of life in elderly patients.⁶ Therefore, assessment of V-RQOL is crucial to speech language pathologists and otolaryngologists as they plan the most efficient and effective intervention procedures in this population.

The field of voice and voice disorders has several examples of scales developed for specific subpopulations.²⁴⁻²⁷ Older adults with voice disorders is a growing population. These individuals have unique quality of life changes due to their voice disorders that younger individuals may not experience.⁹ Additionally, the components of experiences of older adults following voice disorders may not be covered by currently available V-RQOL *questionnaires*. Recently, Etter et al²³ developed and validated a questionnaire to measure the V-RQOL in English-speaking aging patients with voice disorders. This questionnaire, specifically designed for an aging population, is called the Aging Voice Index (AVI). The measure has 23 items that are rated on a five point Likert scale. They administered this scale on 72 older patients with voice disorders and 20 older adults without voice complaints. Satisfactory values were reported for test-retest reliability, internal consistency, and criterion-related validity. Evidence of construct validity was demonstrated by the statistically significant difference between older adults with and without voice disorders. One of the benefits of the AVI is that it was created using data collected

from semistructured qualitative interviews with older adults with voice disorders.²³ These items were then assessed using a separate sample of older adults to complete the reliability and validity data. Considering an increasing population of aging adults, especially in developing countries²⁸ like Iran, and the need to improve knowledge about the effects of aging on V-RQOL in Persian-speaking aging patients with voice disorders, the primary objective of this study was to translate and validate the Persian version of Aging Voice Index (P-AVI).

METHODS

The current study proceeded in two phases. In phase 1, the P-AVI was translated. In phase 2, the psychometric properties of the P-AVI were investigated.

Participants

A total of 105 aging adults were recruited in the present study; this includes 15 patients with dysphonia who participated in the pretesting stage. Research suggests three to seven people per item are needed to sufficiently investigate construct validity.²⁹ Therefore, a total of 90 participants were enrolled to complete the present study. Seventy patients with voice disorders and 20 people without voice complaints participated in this study. All of the patients were 60 years old or older and were selected from the otolaryngology center of AmirAlam hospital of Tehran in 2017-2018. All participants were free from known cognitive disorders based on their medical reports. Diagnosis of a voice disorder was made based on otolaryngologist's examination and video-laryngostroboscopy procedure. The control group of participants was recruited from universities in Tehran city and had no history of speech or voice disorder based on their report and examiner's evaluation. All of the participants were literate and could complete the questionnaires independently. None of the control participants had received prior voice therapy. Prior to completing the study, participants completed informed consent. After that, all participants were asked to complete the newly translated P-AVI and the Persian version of the V-RQOL.

Phase 1: Translation of P-AVI

The translation procedure of the P-AVI included several stages. First, as a courtesy, the first author asked permission from the developers of the P-AVI (Dr. N. Etter) to translate and validate the P-AVI. In the second stage, two native speakers of Persian who also spoke English and were experienced in translation and validation of V-RQOL tools, independently performed the translation of the P-AVI according to the guidelines of World Health Organization.³⁰ The authors asked each translator to consider conceptual equivalents rather than literal ones. Additionally, the translators were asked to select clear words and avoid writing long sentences. The first author merged and unified the two translations into a single document. Next, an expert panel

including three experienced voice therapists and a bilingual translator investigated the content validity of the translated version of the P-AVI. The authors asked the panel to comment on the phrases and wording for each item. In the next stage, a bilingual translator whose native language was English and did not have any knowledge about the questionnaire content and did not participate in the forward-translation of the AVI, performed the back-translation of the P-AVI. After preparation of the back-translated version of the P-AVI, this version was sent to the original developers to investigate the quality of the translation. Ultimately, the final version of the P-AVI was developed after making some suggestions proposed by the original developers.

Scoring of the P-AVI

The AVI includes 23 questions or items that are rated on a five-point Likert scale. The score of 0 was selected when the person “never” experiences that state or emotion and the score of 5 was selected when the person “always” experiences that state or emotion. The minimum and maximum raw total score of the AVI ranges from 0 to 92 such that a higher score indicates a worse or more severely impacted quality of life. To norm the scores of the P-AVI, The raw total score of the P-AVI was linearly transformed to the percentage score that ranges from 0 to 100. The percentage score was obtained by this formula:

$$\text{Percentage score} = \frac{\text{raw} - \text{min}}{\text{max} - \text{min}} \times 100$$

In the above formula, raw: the raw score of the participants in P-AVI, min: the minimum value of the participants in the P-AVI, max: the maximum value of the participants in the P-AVI.

There are some merits for linear transformation like the easier interpretation of the percentage score rather than raw scores across different scales.^{31,32} Therefore, this additional analysis was added to the P-AVI scale.

Phase 2: Investigation of psychometric properties

Validity

The content validity of the P-AVI was studied in a qualitative method. A panel of three speech-language pathologists each with 10 years' experience in assessment and treatment of voice disorders, and a bilingual translator, who did not participate in the forward translation of the questionnaire, performed the content validity of the P-AVI. Two members of the expert panel had experience in adaptation and validation of the health-related quality of life questionnaires. The scale was presented to all members of the panel and they were asked to review the questionnaire's items and comment on the wording and phrases of the items. They were asked to suggest alternative words and phrases for any ambiguous items.³³ The pretesting of the P-AVI was investigated by asking 15 aging patients with voice disorders (10 women and five men) to complete the P-AVI. The second author presented the questionnaire to each of the 15 participants

and interviewed each of them separately in this stage. The researcher asked each participant to read the items, respond to them and define the difficult and ambiguous items. In this critical stage, the researchers received participants' comments about the individual items in the P-AVI.

For the item analysis of the P-AVI, the discrimination coefficient was calculated. The discrimination coefficient is defined as the correlation between the total score of the scale and each questionnaire's item. A higher discrimination coefficient indicates an item is more discriminative.

Construct validity was also measured. The purpose of investigating construct validity is to determine if the developed scale can measure the specific concept it claims to measure. The total scores of the P-AVI from people with and without voice disorders were compared to identify the discriminant or clinical validity. Criterion-related validity is another common type of validity that compares the results of the scale with a criterion. In the present study, the criterion was another widely used instrument to assess V-RQOL - the Persian version of V-RQOL.³⁴ This scale was translated and validated for Persian patients with dysphonia by Moradi et al. They demonstrated that this questionnaire is a valid and reliable tool for investigating the V-RQOL in Persian-speaking adults. The correlation between mean total scores of participants in the P-AVI and the Persian version of V-RQOL were calculated for the criterion-related validity.

Reliability

Test-retest reliability is another method to assess consistency of the scale across multiple administrations.²⁴ The test-retest reliability of the P-AVI was performed by asking 20 patients to complete two administrations of the P-AVI with a two week interval between each test. Then the correlation between the two administrations was calculated. The intraclass correlation coefficient was used to compute test-retest reliability. Internal consistency is defined as the correlation among the scale's items that measures the one-dimensional behavior.³⁵ Cronbach's alpha coefficient was computed for the internal consistency and values higher than 0.7 were considered as satisfactory.

Multiple linear regression

Multiple linear regression was used to predict the relationship among total score of the P-AVI and age, sex, and voice pathology.

Statistical analysis

Statistical Package for the Social Sciences, version 24.0 (SPSS, Inc., Chicago, IL) (IBM Corp., Armonk, NY) was used for the statistical analysis of the data. Cronbach's alpha coefficient was used for item analysis and internal consistency. Intraclass correlation coefficient was used for test-retest reliability. The normality of the distribution of the data was investigated by the Kolmogorov-Smirnov test. Mann-

TABLE 1.
Demographic Information of the Participants

Demographic Characteristics	Patients With Voice Disorders	
	Group	Healthy Group
Number of participants in each group	85	20
Gender	32 women and 53 men	9 women and 11 men
Age: Mean (range)	67.60 (60-84)	67.80 (60-76)

Whitney *U* test for construct validity and the Spearman correlation coefficient was implemented to compute the criterion-related validity. The Kruskal-Wallis test was used to compare the mean value of the P-AVI and the Persian version of V-RQOL across different voice pathology groups. The stepwise multiple linear regression was utilized to model the linear relationship between the total score of the P-AVI as a dependent variable and age, sex, and voice pathologies as independent or predictive variables. The raw scores of the P-AVI were analyzed by linear transformation and transformed to a percentage score such that the range of the lowest and the highest of its percentage scores were from 0 to 100 respectively. This additional analysis was performed to determine the value from 0 to 100 for each of the participants. The significance level was set *a priori* at ($P < 0.05$).

RESULTS

Participants

Demographic characteristics of participants are given in Table 1.

Descriptive statistics of the raw and percentage scores of the P-AVI

The descriptive statistics of the raw and percentage scores of P-AVI are provided in Table 2.

Results of psychometric properties of P-AVI

Validity

For content validity, members of the expert panel were in full agreement about the scale's items except for the use of

TABLE 2.
Descriptive Statistics of the Raw and Percentage Scores of the P-AVI

Type of Score	Minimum	Maximum	Mean (SD)
Raw score	0	66	30.33 (18.35)
Percentage score	0	71.74	32.97 (19.95)

TABLE 3.
Evidence of the Construct Validity for the P-AVI

Group	Mean	SD	<i>P</i> value
Elderly with voice disorders group	38.70	10.71	<0.001*
Vocally healthy group	1.05	1.05	

Note: * $P < 0.05$, Mean values are row scores.

three adjectives. These adjectives were discussed until the panel reached a consensus. In the pretesting step, all of the 15 subjects were able to answer the items without assistance. None of the items needed more explanation for the participants to respond.

The results of the item analysis showed that Cronbach's alpha coefficient value was not higher than 0.82 after removing each item. As shown in Table 3, evidence of the construct validity was supported by the statistically significant difference of the mean scores between the two groups ($P < 0.001$) of participants with and without voice disorders. The findings of the administration of the P-AVI and V-RQOL across different voice pathology groups are provided in Table 4.

The range of total value in the P-AVI is from 0 to 92 such that a higher score indicates there are more effects of the voice disorder on quality of life. Five groups showed no statistically significant difference in the mean total value of the P-AVI ($P = 0.27$). Voice Pathology groups also had no significant difference for the mean value in the Persian version of V-RQOL ($P = 0.14$). For the criterion-related validity, we found a significant and high correlation between the total scores of the participants in the P-AVI and the Persian version of V-RQOL ($r = 0.86$, $P < 0.001$). Additionally, there was a significant value for the correlation between total score of P-AVI and physical functioning subscale of V-RQOL ($r = 0.81$, $P < 0.001$). The value for the correlation between the total score of P-AVI and social-emotional subscale of V-RQOL was calculated ($r = 0.66$, $P < 0.001$).

Reliability

The calculated value for test-retest reliability was 0.95 (95% confidence with a range from 0.88 to 0.98). For the internal consistency, all of the items had high correlation as evidenced by a good value for Cronbach's alpha coefficient ($\alpha = 0.83$). As provided in Table 5, deletion of each item did not reduce the Cronbach's alpha coefficient less than 0.8.

Multiple linear regression

Multiple linear regression was used to predict participants' total score of P-AVI based on their age, sex, and type of voice pathology. A significant, but low regression equation was obtained ($F = 18.75$, $P < 0.001$) for the effect of sex on total score of the participants with an R^2 of 0.21. Neither age nor voice pathology could be used to predict the total score of participants in P-AVI.

TABLE 4.
Mean Total Value of the Raw Scores of P-AVI and the Persian Version of V-RQOL Across Different Voice Pathology Groups

Voice Pathology Group	Number	Percentage	Mean (SD) In P-AVI	Mean (SD) in the Persian Version of V-RQOL
Muscle tension dysphonia	17	24.30	42.59 (11.97)	26.47 (10.06)
Benign midmembranous vocal fold	10	14.30	33.40 (12.29)	19.50 (14.88)
Neurogenic	3	4.30	42 (11.53)	22 (2)
Presbylaryngis	29	41.40	37.72 (9.96)	23.52 (6.92)
Inflammatory	11	15.70	33.90 (11.53)	20.40 (7.09)

Note: * $P < 0.05$ **TABLE 5.**
Internal Consistency of the P-AVI

Item	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	0.49	0.81
2	0.34	0.82
3	0.65	0.80
4	0.46	0.81
5	0.67	0.80
6	0.66	0.80
7	0.34	0.82
8	0.44	0.81
9	0.70	0.80
10	0.49	0.81
11	0.60	0.81
12	0.74	0.80
13	0.44	0.81
14	0.49	0.81
15	0.70	0.80
16	0.74	0.80
17	0.39	0.82
18	0.67	0.80
19	0.37	0.84
20	0.47	0.85
21	0.46	0.84
22	0.53	0.83
23	0.41	0.84

DISCUSSION

The purpose of this study was to translate and validate a (P-AVI). This work is clinically significant because it provides speech language pathologists and otolaryngologists a means of objectively measuring the impact of a voice disorder on quality of life for aging adults.

Previously, to assess the quality of life for patients with voice disorders, clinicians and researchers have used V-RQOL. Although, this instrument is a well-respected and excellent tool for assessing the effects of dysphonia on life, it is important to note it was developed primarily for a younger population. When developing this measure, the average age of participants with voice disorders was 51.2 years.²³ Hogikyan et al²² recruited a broad age range in their validation study and reported the participants' age ranged from

19 to 85 years. Studying the effects of dysphonia on quality of life led to develop a questionnaire that contained general items and mostly targeted social-emotional and physical functioning domains. In contrast, the items included in the AVI were obtained using a qualitative procedure. Etter et al conducted semistructured interviews with aging adults with voice disorders to be able to use the words and thoughts of the participants for development of AVI leading to a more comprehensive and more accurate perception of the impact of dysphonia on V-RQOL in older adults.²³

WHO guidelines are frequently used to cross-culturally adapt questionnaires. The method described by WHO includes four main phases: forward translation, expert panel, backward translation, and administration of the questionnaire on a small sample size before developing the final version of the questionnaire.³⁰ All of these stages were performed fully in the present study.

Three types of validity were investigated in this study. The evidence for the discriminant validity of the P-AVI was shown by the difference in mean of total scores between patients group and vocally healthy group.³⁶ This finding is in accordance with Etter et al.²³ They reported that patients had higher scores than the control group. Additionally in a longitudinal study about the effects of vocal aging on quality of life, Verdonck-de Leeuw and Mahieu¹⁷ reported that voice changes that were related to aging, negatively impact quality of life. It seems that aging causes deterioration in the quality of voice and consequently a decrease in V-RQOL. For example, older adults experience unpleasant physical and emotional feelings like voice discomfort, frustration, and anxiety while speaking that are related to the V-RQOL.⁷ There was a significant correlation between the total scores of the participants in the P-AVI and the Persian version of V-RQOL. Investigation of the criterion-related validity is carried out using an external criterion.³⁷ In our study, V-RQOL was considered as a criterion. The developers of the original version of the AVI also reported a high value for the criterion-related validity.²³ This finding demonstrates that both the V-RQOL and P-AVI measure the effects of dysphonia on quality of life.

The obtained value for the test-retest reliability of the P-AVI was a high value. Etter et al²³ also reported similar findings. High value for test-retest implies that the intended scale is able to measure the aging voice stably.³⁶ Measures

of internal consistency were also good, consistent with results from Etter et al.²³ The calculated value for the internal consistency in their study was an excellent value. High value for the internal consistency indicates that there is a high correlation among the scale's items³⁶ and the P-AVI really measures the V-RQOL in the aging population.

Different voice pathology groups had similar scores for total value of the P-AVI and the Persian version of V-RQOL. This result is also in agreement with the Etter et al study.²³

The results of multiple linear regression showed that age and voice pathology could not predict the score of P-AVI. The effects of age and sex on V-RQOL in older adults have been studied by other instruments, like V-RQOL. This finding is in line with a number of studies^{38,39} that reported there was no association between V-RQOL and age in older adults. Additionally we identified a weak effect (21%) between sex and the total score of the P-AVI. This finding is in agreement with the previous studies that showed there was no significant difference between men and women in V-RQOL assessments.^{38,39}

Eighty-five older adult patients with dysphonia were recruited in the current study. Dysphonia in aging patients is a multi-factorial disorder⁶ and many factors may contribute to form or maintain quality of life in this population. Identification and investigation of contributing factors that lead to the development of voice disorders in aging adults may help practitioners to have more efficient treatment options for these patients. There is some evidence implying that age is an important factor for treatment outcome and treatment satisfaction by patients with voice disorder. For example, in older patients with adductor spasmodic

dysphonia, it was found that older patients reported less effects of Botulinum injection, while this is not the case for younger patients.^{40,41} Because of the potential differences in the assessment and treatment of older adults with voice disorders, using an age-specific tool as part of the assessment could be very helpful and leads to better evaluation of patients' status in clinical settings.^{1,42-44}

Future studies using the P-AVI may help to determine its ability to measure treatment outcomes. Additionally, studies have found that older adults with dysphonia are less likely to refer to specialists to treat their condition.³ Thus, using this new instrument, specifically designed to assess the impact of voice changes on older adults, may help clinicians to identify older adults that do not seek treatment for their voice disorder.

CONCLUSIONS

With the accomplishment of all necessary stages for validating the P-AVI and satisfactory values for different types of validity and reliability, Persian speech therapists and other specialists in the field of otolaryngology now have a valid and reliable assessment tool to measure the V-RQOL for the clinical evaluation of voice and research purposes in older adults.

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APPENDIX

Appendix A: The P-AVI

سوالات	هرگز 0	به ندرت 1	گاهی اوقات 2	معمولا 3	همیشه 4
1					مردم می پرسند، "صدایت چه مشکلی دارد؟"
2					به دلیل مشکل صدایم، مردم صدای من را نمی شنوند.
3					مشکل صدایم مرا ناامید می کند.
4					مشکل صدایم باعث می شود تا وقتی صحبت می کنم نفس کم بیاورم.
5					من از تغییرات صدای خود سرخورده می شوم.
6					مردم به خاطر مشکل صدایم فکر می کنند من مریض هستم.
7					به دلیل مشکل صدایم، کمتر صحبت می کنم.
8					صحبت کردن من، زحمت می برد.
9					وقتی که صدایم خوب نیست این موضوع مرا آزار می دهد.
10					مشکل صدایم بر آنچه که می خواهم انجام دهم تأثیر می گذارد.
11					مردم بر اساس صدایم قضاوت منفی در مورد من می کنند.
12					من در مورد صدایم نگران هستم.
13					من مجبور شدم به دلیل مشکل صدایم، شرکت در فعالیت هایی مانند (آواز، داوطلب شدن، کار و غیره) که برای من مهم است را متوقف کنم.
14					به خاطر مشکل صدایم، دیگران به جای من صحبت می کنند.
15					من صدایم را دوست ندارم.
16					مشکل صدایم من را ناراحت می کند.
17					من صدایم را کاملا از دست می دهم.
18					به دلیل مشکل صدایم احساس ضعیف بودن می کنم.
با اینکه اختلال صدا دارم					
19					هر چه قدر بخواهم با تلفن صحبت می کنم.
20					من صدایم را دوست دارم.
21					من میتوانم هر چه قدر که بخواهم صحبت کنم.
22					وقتی که صحبت میکنم خانواده ام و دوستان نزدیکم می فهمند چه می گویم.
23					صدای من همان قدر که می خواهم خوب است.

Appendix B: The back-translated version of P-AVI

Aging Voice Index		Never	Rarely	Sometime	Usually	Always
1	People are asking, "What is the problem with your sound?"	0	1	2	3	4
2	Because of my voice difficulty, people cannot hear me.	0	1	2	3	4
3	The problem with my voice is disappointing.	0	1	2	3	4
4	My voice causes me to breathe little while talking.	0	1	2	3	4
5	I've been nervous about my voice change	0	1	2	3	4
6	People think that I am ill because of my problem.	0	1	2	3	4
7	Because of voice problem, I talk less.	0	1	2	3	4
8	I'm having trouble talking.	0	1	2	3	4
9	When my sound does not work well, it annoys me.	0	1	2	3	4
10	The problem with my voice distresses what I want to do.	0	1	2	3	4
11	People make negative conclusions about me based on my voice.	0	1	2	3	4
12	I'm worried about my sound.	0	1	2	3	4
13	I had to stop participating in activities (singing, volunteering, work, etc.), which is important to me, due to my voice problem.	0	1	2	3	4
14	Because of my voice, others talk for me.	0	1	2	3	4
15	I do not like my voice sound.	0	1	2	3	4
16	My voice problem makes me unhappy.	0	1	2	3	4
17	I entirely fail with my voice	0	1	2	3	4
18	I feel left behind owing to my voice problem even though I have a voice impairment	0	1	2	3	4
9	I can talk on the phone however much I like.	0	1	2	3	4
20	I love my voice sound.	0	1	2	3	4
21	I can speak as much as or as lengthy as I want.	0	1	2	3	4
22	When I talk, my family and my close friends understand what I say.	0	1	2	3	4
23	My voice is as suitable as I want.	0	1	2	3	4

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