

Original Article

## Chilean Linguistic and Cross-Cultural Adaptation of the Voice Handicap Index (VHI) and the Voice Handicap Index 10 (VHI-10)

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### ABSTRACT

The present study aimed to linguistically and culturally adapt the North American vocal self-assessment questionnaire, Voice Handicap Index (VHI), to Chilean Spanish. To this end, four direct translations of the VHI were carried out independently into Chilean Spanish. Subsequently, a general translation (GT) was agreed upon based on the judgment of three speech-language therapists. This GT was back-translated into the original language and compared with the original version by the same group of speech therapy professionals, which resulted in the first version of the Chilean *Índice de Desventaja Vocal* [Vocal Disadvantage Index] (IDV-CI). This version was then applied to twenty people diagnosed with dysphonia, using a Likert scale for frequency. During the adaptation, it was deemed pertinent to make a note of the statements that were not understood or were culturally inappropriate for the Chilean vocabulary. The instrument was revised and modified based on the observations made by the participants, thus creating a second version of the IDV-CI, which was then applied to six people diagnosed with dysphonia. No new suggestions for change were made at this stage. The IDV-CI reflects the original version in English, both in the number of items and in the physical, functional, and emotional subcomponents that comprise it. Through the synthesis of this survey, it was also possible to obtain an abbreviated version, consisting of ten items (IDV-CI-10). In conclusion, the cultural and linguistic equivalence of the VHI questionnaire in Chilean Spanish is established, resulting in the IDV-CI and IDV-CI-10 versions of this instrument.

### Keywords:

Dysphonia; Surveys and Questionnaires; Quality of life

## Adaptación lingüística y cultural chilena del Voice Handicap Index (VHI) y del Voice Handicap Index 10 (VHI-10)

### RESUMEN

El presente estudio buscó adaptar lingüística y culturalmente el cuestionario de autovaloración vocal norteamericano Voice Handicap Index (VHI) al español chileno. Para esto se realizaron cuatro traducciones directas del VHI al español chileno de forma independiente. Luego, se consensuó una traducción general (TG) a partir del juicio de tres profesionales de la fonoaudiología. Esta TG fue traducida inversamente al idioma original para ser comparada con la versión original por el mismo grupo de profesionales de la fonoaudiología, llegando a la primera versión del Índice de Desventaja Vocal Chileno (IDV-CI). Esta versión fue aplicada a veinte personas con diagnóstico de disfonía, considerando una escala Likert de frecuencia. Durante la adaptación, se consideró pertinente dejar constancia de las consignas no comprendidas o que resultaron inapropiadas culturalmente para el vocabulario chileno. De acuerdo con las observaciones recogidas, se revisó y modificó el instrumento, dando paso a la segunda versión del IDV-CI, que fue aplicada a seis personas con diagnóstico de disfonía. En esta etapa no se plantearon nuevas sugerencias de cambio. El IDV-CI refleja la versión original del inglés, tanto en la cantidad de ítems, como en los subcomponentes físico, funcional y emocional que lo conforman. Mediante la síntesis de esta encuesta se pudo obtener también una versión abreviada, que consta de diez ítems (IDV-CI-10). En conclusión, se establece la equivalencia cultural y lingüística del cuestionario VHI en español chileno, del que se origina la versión IDV-CI e IDV-CI-10.

### Palabras clave:

Disfonía; Encuestas y Cuestionarios; Calidad de Vida

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## INTRODUCTION

The International Classification of Functioning, Disability and Health (ICF) is based on a systems approach to disability through human functioning (World Health Organization [WHO], 2001). This classification is framed by a biopsychosocial approach to health, based on which humans are considered complex beings that develop within different environments that influence their functioning (Cuenot, 2018). The functionality and disability model proposed by the ICF integrates the components of structure and function, activity, and participation, making it possible to assess the needs of people with vocal disturbances and establish therapeutic guidelines, always taking into account their multidirectional nature (Crisosto, 2021). It is for this reason that this approach should be considered in the different areas of speech-language therapy, including the area of voice and its disorders.

To determine the real impact that dysphonia has on the quality of life of people, considering the components of function, activity, and participation, it is fundamental to include the perspective of the person who has a vocal disorder since only they are able to provide such information (Deary et al., 2003). A widely used method for obtaining this information is vocal self-assessment questionnaires. These tools generally contain closed questions and are adapted to the language and culture of the person who is being evaluated (Ruiz & Pardo, 2005). In addition, they increase awareness of the effects of voice problems (Rosen et al., 2000).

In this regard, it has been observed that people with voice disorders who perceive a greater impact of it on their quality of life show more motivation for and adherence to voice therapy, an essential part of therapeutic success since active patient participation is required to achieve treatment goals (Ebersole et al., 2018). Accordingly, self-assessment questionnaires currently play a fundamental role in the vocal evaluations that speech-language therapists carry out to determine therapy objectives (Román et al., 2019).

One of the questionnaires most widely used worldwide for vocal self-assessment in clinical practice and research is the North American tool Voice Handicap Index (VHI) (Jacobson et al., 1997), currently considered the gold standard for self-assessment (Feige et al., 2020). This questionnaire consists of 30 items divided into functional, physical, and emotional subcomponents, using a 5-point Likert scale for frequency (0=never to 4=always). An abbreviated version of the VHI, called VHI-10, can be found as well, which is comprised only of the 10 most robust items of the original VHI, which have been clinically selected. This

instrument offers the same validity as the VHI with a shorter response time (Rosen et al., 2004). The VHI-10 shows an independent and significant correlation with adherence to voice therapy (Ebersole et al., 2018).

The VHI and VHI-10 questionnaires have been translated and culturally adapted in different countries such as Taiwan (Hsiung et al., 2003), Italy (Schindler et al., 2010), Greece (Helidoni et al., 2010), Brazil (Behlau et al., 2011), Norway (Karlsen et al., 2012), Croatia (Bonetti & Bonetti, 2013), Lithuania (Trinite & Sokolovs, 2014), Serbia (Sotirović et al., 2016), Canada (Bourque et al., 2020), Slovakia (Frajkova et al., 2020), and Spain (Núñez-Batalla et al., 2007). Although there is currently a European Spanish version of the VHI, to be able to use it in Chile, it is necessary to submit the instrument to a strict methodological process of translation, as well as linguistic and cross-cultural adaptation. Furthermore, the questionnaire should be validated directly from the original test to guarantee that its interpretation is valid and reliable (Pernambuco et al., 2017). Thus, the objective of this work was to carry out the translation and linguistic and cross-cultural adaptation of the VHI into Chilean Spanish. There is currently no consensus regarding specific procedures to carry out translations and linguistic and cross-cultural adaptations (Epstein et al., 2015); for this particular research, the process was carried out following the principles established by the International Test Commission (International Test Commission [ITC], 2017), which considers the evaluation of the conceptual, linguistic, and cultural equivalence of the instrument to obtain empirical information about how questions are formulated in different cultures and languages (ITC, 2017).

## METHOD

This work was approved by the bioethics committee of *Universidad de Valparaíso*, with the number 11/2021. In addition, its use was legally approved by the intellectual property owners of the original versions of VHI and VHI-10.

The study design is psychometric. The methodology, based on the ITC guidelines (ITC, 2017), consisted of two stages; the first stage was the translation process, and the second was the application. Each stage is detailed below.

### Stage 1: Translation

Four independent direct translations of the Voice Handicap Index (VHI) self-assessment questionnaire were carried out into Chilean Spanish, by two bilingual (English-Spanish) Chilean speech-

language therapists and two Chilean English-Spanish translators who were not previously acquainted with the tool. Subsequently, to achieve a single general translation (GT), the 4 direct translations were reviewed, analyzed, and collected by a group of experts made up of one woman and two men, all of them bilingual (English-Spanish) Chilean speech therapists who specialized in the area of voice and had not participated in the translation stage. Next, a Chilean English-Spanish interpreter who did not know the original instrument carried out the back translation of the GT into English. Finally, the group of professional speech-language therapists reviewed and compared the back translation with the original VHI to make sure that there were no content discrepancies. As a result, the first version of the instrument which was linguistically and culturally adapted into Chilean Spanish was created. This instrument, called *Índice de Desventaja Vocal Chileno* (IDV-CI), maintained the original questionnaire's 30 items, all offering five response options for the frequency of each event, associated with a score (Never=0, Almost never=1, Sometimes=2, Almost always=3 and Always=4).

## Stage 2: Application

The following criteria were considered for the participants' selection at this stage: having been diagnosed with dysphonia by an ENT specialist; having been evaluated in the Voice area of *Centro de Atención fonoaudiológica* [Speech-Language Therapy Center] of Universidad de Valparaíso; being over 18 years old, and being of Chilean nationality.

The sample was obtained by convenience, taking into account the number of participants in other studies where linguistic and cultural adaptations to Chilean Spanish were performed (Contreras et al., 2019; Contreras-Ruston et al., 2021; Correa et al., 2018, 2020). A total of 26 people answered the IDV-CI, including 21 cisgender women (77%) and 5 cisgender men (23%), with an age range between 20 and 76 years and a mean of 38 years.

The questionnaire was applied in two phases, which are described below:

a) Phase one: A total of 20 people answered the IDV-CI, of which 15 were cisgender women (75%) and 5 cisgender men (25%), with an age range between 20 and 76 years and a mean of 36 years. Regarding their occupation, 5(25%) were non-artistic voice professionals (teachers) and 15(75%) were not voice professionals.

Concerning the ENT diagnoses, 8 (40%) presented muscle tension dysphonia, 2 (10%) presented vocal nodules, 1 (5%) had a vocal polyp, 1 (5%) a contact ulcer, 3 (15%) unilateral

cordal paresis, 4 (20%) unilateral cordal palsy, and 1 (5%) presented vocal sulcus. Based on the diagnostic nomenclature proposed by Cobeta et al. (2013) for voice pathologies, the sample was made up of 40% subjects with behavioral dysphonia without injury, 20% subjects with behavioral dysphonia with injury, and 40% subjects with organic dysphonia.

During this phase, the participants were required to answer the first version of the IDV-CI, using the Likert scale for frequency to register their responses (never, almost never, sometimes, almost always, and always). A space for observations was added to this scale during the adaptation process, in order to identify the statements that were not understood or were culturally inappropriate for the Chilean vocabulary. Next, based on the participants' responses, a group of 3 expert speech therapists reviewed and modified the instructions, generating a second version of the IDV-CI to be applied in the second phase.

b) Phase two: in this phase, 6 people answered the second version of the IDV-CI, all of whom were cisgender women (100%), with an age range between 38 and 50 years (mean of 45 years). Regarding their occupation, 2 (33.3%) were non-artistic voice professionals (teachers) and 4 (66.6%) were not voice professionals. Concerning their ENT diagnoses, 1 (16.6%) presented muscle tension dysphonia, 1 (16.6%) had bilateral keratotic lesions, 1 (16.6%) presented bilateral pseudosulcus and erythema, 2 (33, 3%) unilateral cordal paralysis, and 1 (16.6%) vocal sulcus. According to the diagnostic terminology previously mentioned, the sample was made up of 33.3% people with behavioral dysphonia without injury, 16.6% people with behavioral dysphonia with injury, and 50.1% people with organic dysphonia.

## Translation

When analyzing the direct translations, the expert judges considered it necessary to modify the instrument's name. This is because all four translators localized the word "handicap" as *discapacidad* (disability). However, the group of experts considered the word *desventaja* (disadvantage) to be more appropriate since "handicap" refers to a disadvantageous situation resulting from a deficiency or disability that hinders the functionality and social participation of the individual (Hernández Ríos, 2015; Redondo Ciruelos, 2014). On the other hand, the concept of *discapacidad* (disability) refers to negative aspects of the interaction between an individual with a health problem and the contextual factors in which it evolves. In other words, it does

not consider functional limitations but is solely based on the restrictions in social participation (Cuenot, 2018).

### Application

Phase one: During the first phase of the application, the participants made observations regarding the following five items: *Uso menos el teléfono de lo que me gustaría* [I use the phone less often than I would like] (Functional subcomponent); *Mi voz suena seca y rasposa* [My voice sounds creaky and dry] and *La claridad de mi voz es impredecible* [The clarity of my voice is unpredictable] (Physical subcomponent); *Me tenso cuando hablo con otros debido a mi voz debido a las alteraciones del rendimiento vocal* [I'm tense when talking with others because of my vocal performance disturbances] and *Mi voz me hace sentir en desventaja* [My voice makes me feel disadvantaged] (Emotional subcomponent).

Considering the remarks of the participants, the judging speech-language therapy professionals reviewed and modified the five items that presented discrepancies in order to improve their comprehensibility.

Item number 5 of the functional subcomponent (Fu.5), *Uso menos el teléfono de lo que me gustaría* [I use the phone less often than I would like], had observations from five out of the twenty participants, indicating that the statement was unclear and confusing since currently using a cell phone does not necessarily involve making calls. Taking this argument into account, the expert judges decided to improve the item. The result was *Hablo menos por teléfono de lo que me gustaría debido a mi calidad de voz* [I talk on the phone less often than I would like due to the quality of my voice], which includes the act of speaking in addition to the vocal cause. As mentioned above, this decision was made because phones currently offer multiple features and alternative communication options that are not limited to using the voice.

Item number 4 of the physical subcomponent (Fi.4), *Mi voz suena seca y rasposa* [My voice sounds creaky and dry], was questioned by two out of twenty participants, indicating that they did not understand the concept of "creaky" and proposing that it be changed to *ronca* [hoarse]. The group of expert judges considered this to be pertinent, because the concept of a "hoarse voice" is better understood by laypeople and is also a more technical vocal term.

Item number 6 of the physical subcomponent (Fi.6), *La claridad de mi voz es impredecible* [The clarity of my voice is

unpredictable], was questioned by four participants, who claimed that the word *claridad* [clarity] confused them. Therefore, *claridad* was changed to *calidad* [quality], considering that in English, the term "clarity" could refer to a clean and bright voice (hence, a good-quality voice).

Item number 1 of the emotional subcomponent (E.1), *Me tenso cuando hablo con otros debido a mi voz debido a las alteraciones del rendimiento vocal* [I'm tense when talking with others because of my vocal performance disturbances], was questioned by one participant who noted that the statement would be better understood if it started with "I feel tense...". The expert judges modified the sentence to *Me pongo tenso(a) cuando hablo con otros debido a mi voz* [I tense up when talking with others because of my voice], because the original statement did not include the verb "to feel", and also because this morphosyntactic form is more appropriate for Chilean culture.

Item number 6 of the emotional subcomponent (E.6) *Mi voz me hace sentir en desventaja* [My voice makes me feel disadvantaged] was questioned by one participant who did not understand what the specific disadvantage referred to, therefore, the expert judges decided to include the concept of "communication" to make the statement clearer, resulting in *Mi voz me hace sentir en desventaja para comunicarme* ["My voice makes me feel at a disadvantage to communicate"].

The modifications made by expert judgment had a semantic nature for statements Fi.4, Fi.6, and E.6, and a cultural nature for statements Fu.4 and E.1.

From this revision, a second version of the IDV-CI was generated, which was applied during phase two.

Phase two: During this stage, no item received observations, thus obtaining the final version of the *Índice de Desventaja Vocal Chileno* (IDV-CI). This questionnaire has the same number of items as the original (30), maintains the same response options with a Likert scale for frequency (0=never to 4=always), and the same 3 subcomponents corresponding to the Functional (Fu.), Physical (Fi.), and Emotional (E) domains, each comprised of 10 items. The *Índice de Desventaja Vocal Chileno -10* (IDV-CI-10) was also created, consisting of 10 items, of which five correspond to the Functional subcomponent, three to the Physical subcomponent, and two to the Emotional subcomponent. The IDV-CI-10 is a faithful representation of the original VHI-10 questionnaire.

**Table 1.** Observations of the participants regarding the modified items.

Item Number	Number of Participants	Statement for the First Application	Observations of the Participants	Item with Modifications for the Second Application and Final Version
Fu.4	5	<i>Uso menos el teléfono de lo que me gustaría</i> [I use the phone less often than I would like]	<p>“Unclear and confusing statement”</p> <p>The participant suggests: “I talk on the phone less” or “I use the phone to talk less frequently”</p> <p>“The context is confusing as it is not focused on speech”</p> <p>“This question is a bit confusing, it could specify if they talk less on the phone due to their dysphonia or something, besides, with the use of other forms of communication, phone calls have decreased and may not be related to the vocal difficulties”</p> <p>Suggestion: “talking on the phone”</p>	<i>Hablo menos por teléfono de lo que me gustaría debido a mi calidad de voz</i> [I talk on the phone less often than I would like due to the quality of my voice]
Fi.4	2	<i>Mi voz suena seca y rasposa</i> [My voice sounds creaky and dry]	<p>“I don’t understand what ‘dry and creaky voice’ means”</p> <p>They suggest: “hoarse”</p>	<i>Mi voz suena ronca y seca</i> [My voice sounds hoarse and dry]
Fi.6	4	<i>La claridad de mi voz es impredecible</i> [The clarity of my voice is unpredictable]	<p>“It could be simplified so everyone can understand”</p> <p>“It’s not very clear (quality of the voice)”</p> <p>“The word ‘clarity’ is a bit confusing: I assume it refers to the tone or quality of the voice, which seems clearer to me”</p> <p>“It’s hard for me to understand this question, but I don’t know how to explain it better”</p>	<i>La calidad de mi voz es impredecible</i> [The quality of my voice is unpredictable]
E.1	1	<i>Me tenso cuando hablo con otros debido a mi voz debido a las alteraciones del rendimiento vocal</i> [I’m tense when talking with others because of my vocal performance disturbances]	<p>“It would be easier to understand if, instead, it said: ‘I feel more tense’ or ‘I get nervous when...’”</p>	<i>Me pongo tenso(a) cuando hablo con otros debido a mi voz</i> [I tense up when talking with others because of my voice]
E.6	1	<i>Mi voz me hace sentir en desventaja</i> [My voice makes me feel disadvantaged]	<p>“Disadvantaged in what sense?”</p>	<i>Mi voz me hace sentir en desventaja para comunicarme</i> [“My voice makes me feel at a disadvantage to communicate”]

Note: The letter preceding each item number corresponds to the subscale (E = emotional subscale, Fu = functional subscale, Fi = physical subscale).



**Table 2.** Process of translation and cultural adaptation of the Voice Handicap Index [*Índice de Desventaja Vocal*] into Chilean Spanish.

Items	Original Version in English	Translations into Chilean Spanish	Observations from the Judgment by Speech Therapy Professionals: Cultural and Semantic Equivalences	General Translation into Chilean Spanish	Backward Translation into English
Title	Voice Handicap Index (VHI)	T1. <i>Índice de discapacidad de la voz</i> T2. <i>Índice de discapacidad vocal (IDV)</i> T3. <i>Índice de Discapacidad Vocal (IDV)</i> T4. <i>Índice de Incapacidad Vocal (IIV)</i>	The judgment by speech therapy professionals resulted in using the word <i>desventaja</i> (disadvantage) instead of <i>discapacidad</i> (disability) considering the biopsychosocial approach to diseases since dysphonia creates disadvantages in the person's participation, activity, and function. Moreover, the experts believe that the term "Disadvantage" will be better accepted by people with voice impairments, as it will allow them to understand that they can encounter difficulties in different aspects of their lives, without necessarily being categorized as what they understand as disabled.	<i>Índice de Desventaja Vocal</i>	Voice handicap index
Instructions	These are statements that many people have used to describe their voices and the effects of their voices on their lives. Circle the response that indicates how frequently you have the same experience.	T1. <i>Estos(as) son declaraciones que mucha gente ha usado para describir sus voces y los efectos de sus voces en sus vidas. Encierra en un círculo la respuesta que indica con qué frecuencia tienes la misma experiencia</i> T2. <i>Estas son declaraciones que muchas personas han usado para describir sus voces y los efectos de sus voces en sus vidas. Encierre en un círculo la respuesta que indique que tan frecuentemente tiene usted la misma experiencia.</i> T3. <i>Estas son declaraciones que muchas personas han usado para</i>		<i>Estas son afirmaciones que muchas personas han utilizado para describir sus voces y los efectos que estas producen en sus vidas. Encierre en un círculo la respuesta que indica qué tan frecuentemente Usted ha tenido la misma experiencia</i>	These are statements that many people have used to describe their voices and the effects they have on their lives. Circle the answer that indicates how often you have had the same experience

		<p>describir sus voces y los efectos de sus voces en sus vidas. Encierre en un círculo la respuesta que indica que tan frecuente ha tenido la misma experiencia</p> <p>T4. Estas son afirmaciones que muchas personas han utilizado para describir sus voces y los efectos que estas producen en sus vidas. Encierre en un círculo la respuesta que indica cuán frecuentemente usted ha tenido la misma experiencia.</p>		
Fu.1	My voice makes it difficult for people to hear me	<p>T1. Mi voz hace que la gente tenga dificultades para escucharme</p> <p>T2. Mi voz es difícil de escuchar por otras personas</p> <p>T3. Mi voz dificulta que la gente me escuche</p> <p>T4. A las personas les cuesta escucharme debido a mi voz</p>	A las personas les cuesta escucharme debido a mi voz	People find it hard to listen to me because of my voice
Fu.2	People have difficulty understanding me in a noisy room	<p>T1. La gente tiene dificultades para entenderme en una habitación ruidosa</p> <p>T2. La gente tiene dificultades para entenderme en un lugar ruidoso</p> <p>T3. Las personas tienen dificultad para entenderme en una habitación ruidosa</p> <p>T4. A las personas les cuesta entenderme en habitaciones ruidosas</p>	Las personas tienen dificultades para entenderme en un lugar ruidoso	People have difficulty understanding me in a noisy room
Fu.3	My family has difficulty hearing me when I call them throughout the house	<p>T1. Mi familia tiene dificultades para escucharme cuando los llamo por toda la casa</p> <p>T2. Mi familia tiene dificultades para escucharme cuando los llamo en la casa</p>	A mi familia le cuesta escucharme cuando los llamo desde otra parte de la casa	My family has difficulty hearing me when I call them throughout the house

		<p>T3. <i>Mi familia tiene dificultad para escucharme cuando los llamo por toda la casa</i></p> <p>T4. <i>A mi familia le cuesta escucharme cuando la llamo desde otra habitación</i></p>		
Fu.4	I use the phone less often than I would like	<p>T1. <i>Uso el teléfono con menos frecuencia de lo que me gustaría</i></p> <p>T2. <i>Uso el teléfono con menos frecuencia de lo que me gustaría</i></p> <p>T3. <i>Uso el teléfono con menos frecuencia de lo que me gustaría.</i></p> <p>T4. <i>Uso el teléfono menos de lo que me gustaría</i></p>	<i>Uso el teléfono con menos frecuencia de lo que me gustaría</i>	I use the phone less often than I would like to
Fu.5	I tend to avoid groups of people because of my voice	<p>T1. <i>Tiendo a evadir grupos de personas debido a mi voz</i></p> <p>T2. <i>Tiendo a evitar grupos de personas debido a mi voz</i></p> <p>T3. <i>Tiendo a evitar grupos de personas a causa de mi voz.</i></p> <p>T4. <i>Tiendo a evitar los grupos de personas debido a mi voz</i></p>	<i>Tiendo a evitar los grupos de personas debido a mi voz</i>	I tend to avoid groups of people because of my voice
Fu.6	I speak with friends, neighbors, or relatives less often because of my voice	<p>T1. <i>Hablo con amigos, vecinos o parientes con menor frecuencia debido a mi voz</i></p> <p>T2. <i>Hablo con menos frecuencia con mis amigos, vecinos o parientes debido a mi voz</i></p> <p>T3. <i>Hablo con menos frecuencia con amigos, vecinos o parientes debido a mi voz</i></p> <p>T4. <i>Hablo menos con mis amistades, vecinos y vecinas, y otras personas cercanas, debido a mi voz</i></p>	<i>Hablo menos con amigos, vecinos o parientes debido a mi voz</i>	I speak with friends, neighbors, or relatives less often because of my voice
Fu.7	People ask me to repeat myself when speaking face-to-face	<p>T1. <i>La gente me pide que les repita cuando hablo cara a cara</i></p> <p>T2. <i>Las personas me piden que repita lo que dije cuando hablo cara a cara</i></p>	<i>Las personas me piden que repita lo que digo cuando hablo frente a frente</i>	People ask me to repeat myself when speaking face-to-face



		T3. <i>La gente me pide que repita lo que digo al hablar frente a frente</i> T4. <i>La gente me pide repetir lo que dije cuando les hablo</i>		
Fu.8	My voice difficulties restrict my personal and social life	T1. <i>Mis dificultades de voz restringen mi vida personal y social</i> T2. <i>Mis dificultades con la voz restringen mi vida personal y social</i> T3. <i>Mis dificultades con la voz restringen mi vida personal y social</i> T4. <i>Mis problemas vocales restringen mi vida personal y social</i>	<i>Mis dificultades de voz limitan mi vida personal y social</i>	My voice difficulties restrict personal and social life
Fu.9	I feel left out of conversations because of my voice	T1. <i>Me siento dejado fuera de conversaciones debido a mi voz</i> T2. <i>Me siento excluido de conversaciones debido a mi voz</i> T3. <i>Me siento excluido(a) de las conversaciones debido a mi voz</i> T4. <i>Me siento excluido(a) de las conversaciones debido a mi voz</i>	<i>Me siento excluido(a) de las conversaciones debido a mi voz</i>	I feel left out of conversations because of my voice
Fu.10	My voice problem causes me to lose income	T1. <i>Mi problema de voz me hace perder ingresos</i> T2. <i>Mi problema a la voz me genera pérdida de ingresos</i> T3. <i>Mi problema de voz me hace perder ingresos</i> T4. <i>Mi problema de voz hace que pierda dinero</i>	<i>Mi problema de voz me genera pérdida de ingresos</i>	My voice problem is causing me to lose income
Fi.1	I run out of air when I talk	T1. <i>Me quedo sin aire cuando hablo</i> T2. <i>Me quedo sin aire cuando hablo</i> T3. <i>Me quedo sin aire cuando hablo</i> T4. <i>Se me acaba el aire cuando hablo</i>	<i>Me quedo sin aire cuando hablo</i>	I run out of air when I talk
Fi.2	The sound of my voice varies throughout the day	T1. <i>El sonido de mi voz varía a lo largo del día</i> T2. <i>El sonido de mi voz varía durante el día</i> T3. <i>El sonido de mi voz varía a lo largo del día</i>	<i>El sonido de mi voz varía a lo largo del día</i>	The sound of my voice varies throughout the day

Fi.3	People ask, "What's wrong with your voice?"	<p>T4. <i>El sonido de mi voz varía a lo largo del día</i></p> <p>T1. <i>La gente pregunta, "¿Qué hay de mal con tu voz?"</i></p> <p>T2. <i>Las personas me preguntan ¿Qué le pasa a tu voz?</i></p> <p>T3. <i>Las personas preguntan: "¿Qué le pasa a tu voz?"</i></p> <p>T4. <i>La gente me pregunta "¿Qué le pasa a tu voz?"</i></p>	<i>Las personas me preguntan ¿qué le pasa a tu voz?</i>	People ask, "What's wrong with your voice?"
Fi.4	My voice sounds creaky and dry	<p>T1. <i>Mi voz suena chirriante y seca</i></p> <p>T2. <i>Mi voz suena seca y chirriante (quebradiza/rasposa)</i></p> <p>T3. <i>Mi voz suena seca y rasposa</i></p> <p>T4. <i>Mi voz suena quebrada y seca</i></p>	<i>Mi voz suena seca y rasposa</i>	My voice sounds creaky and dry
Fi.5	I feel as though I have to strain to produce voice	<p>T1. <i>Siento que tengo que esforzarme para producir voz</i></p> <p>T2. <i>Siento que tengo que hacer esfuerzo para producir voz</i></p> <p>T3. <i>Siento que tengo que esforzarme para sacar la voz</i></p> <p>T4. <i>Siento que tengo que forzar mi voz cuando la uso</i></p>	<i>Siento como si tuviera que tensar para producir voz</i>	I feel as though I have to strain to produce voice
Fi.6	The clarity of my voice is unpredictable	<p>T1. <i>La claridad de mi voz es impredecible</i></p> <p>T2. <i>La claridad (nitidez/precisión) de mi voz es impredecible</i></p> <p>T3. <i>La claridad de mi voz es impredecible</i></p> <p>T4. <i>La claridad de mi voz es impredecible</i></p>	<i>La claridad de mi voz es impredecible</i>	The clarity of my voice is unpredictable
Fi.7	I try to change my voice to sound different	<p>T1. <i>Trato de cambiar mi voz para sonar diferente</i></p> <p>T2. <i>Trato de cambiar mi voz para sonar diferente</i></p> <p>T3. <i>Trato de cambiar mi voz para sonar distinto</i></p> <p>T4. <i>Intento cambiar mi voz para sonar diferente</i></p>	<i>Trato de cambiar mi voz para sonar diferente</i>	I try to change my voice to sound different
Fi.8	I use a great deal of effort to speak	T1. <i>Uso una gran cantidad de esfuerzo para hablar</i>	<i>Me esfuerzo mucho para hablar</i>	I use a great effort when I speak

		T2. <i>Me esfuerzo mucho para hablar</i> T3. <i>Me esfuerzo mucho para hablar</i> T4. <i>Me esfuerzo mucho para hablar</i>		
Fi.9	My voice is worse in the evening	T1. <i>Mi voz está peor en la noche</i> T2. <i>Mi voz empeora en la noche</i> T3. <i>Mi voz empeora en la noche</i> T4. <i>Mi voz empeora hacia al final del día</i>	<i>Mi voz está peor en la noche</i>	My voice is worse at night
Fi.10	My voice “gives out” on me in the middle of speaking	T1. <i>Mi voz “se da por vencida” en medio del habla</i> T2. <i>Mi voz me “falla” a la mitad de cuando estoy hablando.</i> T3. <i>Mi voz “se agota” a la mitad de una conversación</i> T4. <i>Mi voz se “agota” al medio de una conversación</i>	<i>Mi voz se cansa a la mitad de una conversación</i>	My voice gets tired in the middle of a conversation
E.1	I’m tense when talking with others because of my voice	T1. <i>Estoy tenso(a) cuando hablo con otros debido a mi voz</i> T2. <i>Estoy tenso cuando hablo con otros debido a mi voz.</i> T3. <i>Me siento tenso(a) cuando hablo con otros a causa de mi voz</i> T4. <i>Me pongo tenso(a) cuando hablo con otras personas debido a mi voz</i>	<i>Me tenso cuando hablo con otros debido a mi voz</i>	I’m tense when talking to others because of my voice
E.2	People seem irritated with my voice	T1. <i>La gente parece irritada con mi voz</i> T2. <i>Las personas parecieran irritarse con mi voz.</i> T3. <i>Las personas parecen irritadas con mi voz</i> T4. <i>A la gente parece molestarles mi voz</i>	<i>A las personas parece molestarles mi voz</i>	People seem irritated with my voice
E.3	I find other people don’t understand my voice problem	T1. <i>Encuentro que otras personas no entienden mi problema de voz</i> T2. <i>Me pasa que otras personas no entienden mi problema de voz</i> T3. <i>Siento que otras personas no entienden mi</i>	<i>Encuentro que otras personas no entienden mi problema de voz</i>	I find other people don’t understand my voice problem

		<i>problema de voz</i> T4. <i>Siento que la gente no entiende mi problema de voz</i>			
E.4	My voice problem upsets me	T1. <i>Mi problema de voz me molesta</i> T2. <i>Mi problema a la voz me molesta</i> T3. <i>Mi problema de voz me molesta</i> T4. <i>Mi problema de voz me disgusta</i>		<i>Mi problema de voz me molesta</i>	My voice problem bothers me
E.5	I am less outgoing because of my voice problem	T1. <i>Soy menos extrovertido(a) debido a mi problema de voz</i> T2. <i>Soy menos extrovertido debido a mi problema a la voz</i> T3. <i>Soy menos extrovertido(a) debido a mi problema de voz</i> T4. <i>Soy menos extrovertido(a) debido a mi problema de voz</i>		<i>Soy menos extrovertido(a) debido a mi problema de voz</i>	I am less outgoing because of my voice problem
E.6	My voice makes me feel handicapped	T1. <i>Mi problema de voz me hace sentir discapacitado(a).</i> T2. <i>Mi problema a la voz me hace sentir discapacitado</i> T3. <i>Mi voz me hace sentir discapacitado(a)</i> T4. <i>Mi voz me hace sentir que tengo una discapacidad</i>	The judgment by speech therapy professionals resulted in the decision to use the word <i>desventaja</i> (disadvantage) rather than <i>discapacidad</i> (disability), considering the biopsychosocial approach to diseases, since dysphonia creates disadvantages in the person's participation, activity, and function. Moreover, they considered that the term <i>desventaja</i> would be better accepted by patients, allowing them to understand their difficulties in different aspects of their life, without necessarily being categorized as what is understood by "disabled".	<i>Mi voz me hace sentir en desventaja</i>	My voice makes me feel at a disadvantage
E.7	I feel annoyed when people ask me to repeat	T1. <i>Me siento molesto(a) cuando la gente me pide que repita</i> T2. <i>Me molesta cuando la gente me pida que repita</i> T3. <i>Me siento molesto(a) cuando la gente me pide que repita</i>		<i>Me molesta cuando las personas me piden que repita</i>	I feel annoyed when people ask me to repeat myself

E.8	I feel embarrassed when people ask me to repeat.	<p>T4. <i>Me disgusta cuando la gente me pide que repita lo que he dicho</i></p> <p><i>Me siento avergonzado(a) cuando la gente me pide que repita</i></p> <p>T2. <i>Me avergüenza que la gente me pida que repita</i></p> <p>T3. <i>Me siento avergonzado(a) cuando la gente me pide que repita</i></p> <p>T4. <i>Me da vergüenza cuando la gente me pide que repita lo que he dicho</i></p>	<i>Me da vergüenza cuando las personas me piden que repita</i>	I feel embarrassed when people ask me to repeat myself
E.9	My voice makes me feel incompetent	<p>T1. <i>Mi voz me hace sentir incompetente</i></p> <p>T2. <i>Mi voz me hace sentir incompetente (incapaz)</i></p> <p>T3. <i>Mi voz me hace sentir incompetente</i></p> <p>T4. <i>Mi voz me hace sentir incompetente</i></p>	<i>Mi voz me hace sentir incompetente</i>	My voice makes me feel incompetent
E.10	I'm ashamed of my voice problem	<p>T1. <i>Me avergüenzo de mi problema de voz</i></p> <p>T2. <i>Me avergüenza mi problema a la voz</i></p> <p>T3. <i>Estoy avergonzado(a) de mi problema de voz</i></p> <p>T4. <i>Mi problema de voz me avergüenza</i></p>	<i>Mi problema de voz me da vergüenza</i>	My voice problem makes me embarrassed
Response Scale	Never	<p>T1. <i>Nunca</i></p> <p>T2. <i>Nunca</i></p> <p>T3. <i>Nunca</i></p> <p>T4. <i>Nunca</i></p>	<i>Nunca</i>	Never
	Almost Never	<p>T1. <i>Casi nunca</i></p> <p>T2. <i>Casi nunca</i></p> <p>T3. <i>Casi nunca</i></p> <p>T4. <i>Casi nunca</i></p>	<i>Casi Nunca</i>	Hardly ever
	Sometimes	<p>T1. <i>Algunas veces</i></p> <p>T2. <i>A veces</i></p> <p>T3. <i>A veces</i></p> <p>T4. <i>A veces</i></p>	<i>A veces</i>	Sometimes
	Almost always	<p>T1. <i>Casi siempre</i></p> <p>T2. <i>Casi siempre</i></p> <p>T2. <i>Casi siempre</i></p> <p>T4. <i>Casi siempre</i></p>	<i>Casi siempre</i>	Almost always
	Always	<p>T1. <i>Siempre</i></p> <p>T2. <i>Siempre</i></p> <p>T3. <i>Siempre</i></p> <p>T4. <i>Siempre</i></p>	<i>Siempre</i>	Always

## DISCUSSION

In Chile, processes of linguistic and cross-cultural adaptation in the voice field are in full development. Currently, several adapted tests can be found, including *Escala de Síntomas Vocales* [Voice Symptoms Scale] (Ruston et al., 2016), *Índice de Desventaja para el Canto Popular* [Modern Singing Handicap Index] (Correa et al., 2018), *Medición de la Calidad de Vida relacionada con la Voz* [Voice-Related Quality of Life] (Contreras et al., 2019), EASE Chile (Correa et al., 2020), and *Perfil de Participación y Actividad Vocal* [Voice Activity and Participation Profile] (Contreras-Ruston et al., 2021).

However, despite the fact that VHI is one of the first questionnaires that was created for vocal self-assessment –and one of the most widely used– it had not gone through this methodological process in Chile until now. Although European Spanish versions of the VHI and VHI-10 can be found (Núñez-Batalla et al., 2007), the recommendations by the Scientific Advisory Committee (SAC) (Lohr, 2002) indicate that the methodological process for adapting instruments to a different language should be based on the original questionnaire, rather than on one that has already been translated.

Consequently, the objective of this study was to translate, as well as to carry out the linguistic and cross-cultural adaptation of VHI into Chilean Spanish. The results show that people of a wide age range, including both voice professionals and non-professionals, who were diagnosed with various types of dysphonia, were able to successfully understand and answer *Índice de Desventaja Vocal Chileno – IDV-CI*, thus demonstrating the cultural and linguistic equivalence of the instrument. We conclude that the IDV-CI (Appendix 1) and IDV-10 (Appendix 2) can be applied to the Chilean population with dysphonia. Having instruments like the IDV-CI and IDV-CI-10 is tremendously useful for the clinical practice of professionals specializing in the voice field, since they are currently the most widely used questionnaires worldwide (Feige et al., 2020).

As a factorial analysis was not included in this work, it is not possible to consider cut-off points. Consequently, a qualitative analysis of results should be carried out when applying this tool, making it a useful resource for intra-individual comparisons within the process of voice therapy.

The projection of this work considers continuing the process of validation of the IDV-CI and IDV-CI-10 questionnaires, to obtain cut-off scores for the Chilean population.

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**APPENDIX**

**Appendix 1.** Final version of *Índice de Desventaja Vocal*, adapted to Chilean Spanish from its original version in English, Vocal Handicap Index (Jacobson et al., 1997).

**INDICE DE DESVENTAJA VOCAL CHILENO (IDV-CI)**

Estas son afirmaciones que muchas personas han utilizado para describir sus voces y los efectos que estas producen en sus vidas. Encierre en un círculo la respuesta que indica qué tan frecuentemente Usted ha tenido la misma experiencia, considerando que 0 corresponde a nunca, 1 a casi nunca, 2 a veces, 3 a casi siempre y 4 a siempre.

<b>PARTE I. FUNCIONAL</b>						
<b>Fu.1</b>	A las personas les cuesta escucharme debido a mi voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.2</b>	Las personas tienen dificultades para entenderme en un lugar ruidoso	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.3</b>	A mi familia le cuesta escucharme cuando los llamo desde otra parte de la casa	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.4</b>	Hablo menos por teléfono de lo que me gustaría debido a mi calidad de voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.5</b>	Tiendo a evitar los grupos de personas debido a mi voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.6</b>	Hablo menos con amigos, vecinos o parientes debido a mi voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.7</b>	Las personas me piden que repita lo que digo cuando hablo frente a frente	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.8</b>	Mis dificultades de voz limitan mi vida personal y social	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.9</b>	Me siento excluido(a) de las conversaciones debido a mi voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.10</b>	Mi problema de voz me genera pérdida de ingresos	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Parte II. FÍSICA</b>						
<b>Fi.1</b>	Me quedo sin aire cuando hablo	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.2</b>	El sonido de mi voz varía a lo largo del día	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.3</b>	Las personas me preguntan ¿qué le pasa a tu voz?	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.4</b>	Mi voz suena ronca y seca	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.5</b>	Siento como si tuviera que tensar para producir voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.6</b>	La calidad de mi voz es impredecible	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.7</b>	Trato de cambiar mi voz para sonar diferente	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.8</b>	Me esfuerzo mucho para hablar	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.9</b>	Mi voz está peor en la noche	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.10</b>	Mi voz se cansa a la mitad de una conversación	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Parte III. EMOCIONAL</b>						
<b>E.1</b>	Me pongo tenso(a) cuando hablo con otros debido a mi voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.2</b>	A las personas parece molestarles mi voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.3</b>	Encuentro que otras personas no entienden mi problema de voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.4</b>	Mi problema de voz me molesta	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.5</b>	Soy menos extrovertido(a) debido a mi problema de voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.6</b>	Mi voz me hace sentir en desventaja para comunicarme	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.7</b>	Me molesta cuando las personas me piden que repita	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.8</b>	Me da vergüenza cuando las personas me piden que repita	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.9</b>	Mi voz me hace sentir incompetente	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.10</b>	Mi problema de voz me da vergüenza	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

Note: The letter that precedes each item number corresponds to the subscale (E = emotional subscale, Fu = functional subscale, Fi = physical subscale).

**Appendix 2.** Final version of *Índice de Desventaja Vocal 10*, adapted to Chilean Spanish from its original version in English, Vocal Handicap Index-10 (Rosen et al., 2004).

### INDICE DE DESVENTAJA VOCAL CHILENO - 10 (IDV-CI-10)

Estas son afirmaciones que muchas personas han utilizado para describir sus voces y los efectos que estas producen en sus vidas. Encierre en un círculo la respuesta que indica qué tan frecuentemente Usted ha tenido la misma experiencia, considerando que 0 corresponde a nunca, 1 a casi nunca, 2 a veces, 3 a casi siempre y 4 a siempre.

PARTE I. FUNCIONAL						
<b>Fu.1</b>	A las personas les cuesta escucharme debido a mi voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.2</b>	Las personas tienen dificultades para entenderme en un lugar ruidoso	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.8</b>	Mis dificultades de voz limitan mi vida personal y social	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.9</b>	Me siento excluido(a) de las conversaciones debido a mi voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fu.10</b>	Mi problema de voz me genera pérdida de ingresos	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Parte II. FÍSICA						
<b>Fi.3</b>	Las personas me preguntan ¿qué le pasa a tu voz?	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.5</b>	Siento como si tuviera que tensar para producir voz	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Fi.6</b>	La calidad de mi voz es impredecible	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Parte III. EMOCIONAL						
<b>E.4</b>	Mi problema de voz me molesta	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>E.6</b>	Mi voz me hace sentir en desventaja para comunicarme	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

Note: The letter that precedes each item number corresponds to the subscale (E = emotional subscale, Fu = functional subscale, Fi = physical subscale).