TRANSLATION AND VALIDATION OF THE SELF ADMINISTERING

VESTIBULAR DISORDERS ACTIVITIES OF DAILY LIVING SCALE -

HINDI VERSION (VADL-H)

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A Dissertation Submitted in Part Fulfillment

of Degree of Master of Science (Audiology)

University of Mysore

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ALL INDIA INSTITUTE OF SPEECH AND HEARING

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August, 2022

CERTIFICATE

This is to certify that this dissertation entitled **"Translation and Validation of the self-administering Vestibular Disorders Activities of Daily Living Scale - Hindi version (VADL-H)"** is a bonafide work submitted in part fulfillment for degree of Master of Science (Audiology) of the student (Registration Number: 20AUD033). This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other University for award of any other Diploma or Degree.

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CERTIFICATE

This is to certify that this dissertation entitled **"Translation and Validation of the self-administering Vestibular Disorders Activities of Daily Living Scale - Hindi version (VADL-H)"** has been prepared under my supervision and guidance. It is also being certified that this dissertation has not been submitted earlier to any other University for the award of any other Diploma or Degree.

<table>
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DECLARATION

This is to certify that this dissertation entitled **"Translation and Validation of the self-administering Vestibular Disorders Activities of Daily Living Scale - Hindi version (VADL-H)"** is the result of my own study under the guidance of Dr. Mamatha N. M, Assistant professor, Department of Audiology, All India Institute of Speech and Hearing, Manasagangothri, Mysuru and has not been submitted earlier to any other University for award of any other Diploma or Degree.

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THIS

DISSERTATION

IS

SOLELY DEDICATED

TO MY

WORLD

MAA AND PAPA

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Abstract

Introduction: Vestibular Disorders Activities of Daily Living Scale (VADL) is a useful questionnaire which is used to assess individuals having vertigo/dizziness and mainly focuses on the functionality issues that occurs in an individual's daily routine activities.

Aim: The current study's aim was Translation and Validation of the self-administering Vestibular Disorders Activities of Daily Living Scale - Hindi version (VADL-H).

Methods: The study was conducted in 3 different phases: Phase I: Translation of VADL questionnaire to Hindi; Phase 2: Content validation of translated VADL (Hindi version); Phase 3: Translated and validated VADL-H was administered participants with vertigo/dizziness who were native Hindi speakers using a Google form through WhatsApp, and other social media platforms. Initially final VADL-H questionnaire was administered on 30 participants with dizziness and they were encouraged to assess each question on 11-point scale depending on the severity of vertigo/dizziness in various scenarios. Later to examine the test-retest mean score of the translated VADL questionnaire, the same procedure was followed after 15 days of the initial test on 50% of the participants.

Results: The results of the study indicated that the severity of dizziness/vertigo ranged from 3.44 to 4.14 (total scores ranged from 1 to 11) for the three segment of VADL-H questionnaire in individuals diagnosed with different vestibular dysfunctions. Comparatively, the performance of the participants was better with Functional subscale (3.44) followed by instrumental subscale (3.80) and ambulation subscale (4.14). The Test-retest mean score of the VADL-H questionnaire indicated strong correlation for

all 3 subscales (Functional subscale, Fα = 0.998, Ambulation subscale, Aα = 0.982 and instrumental subscale, Iα = 0.994) and indicates that the accuracy of the translated questionnaire (VADL-H) is found to be good and reliable.

Conclusions: The VADL-H can be used to assess various problems an individual is facing in day to day activities due to vestibular problems and provides appropriate guidance to patients suffering from giddiness to ensure their overall well-being and helps in evaluating post treatment changes.

Key words: VADL (Hindi version) questionnaire, translation, validation, dizziness/vertigo.

Chapter 1
Introduction

Vertigo, disorientation, and unsteadiness are the most common symptoms of vestibular disorders. These symptoms could become more common as people age (Whitney et al., 2005). Aging causes a number of anatomical and functional changes to the vestibular system, but these changes don't always make it difficult for healthy senior people to carry out daily tasks (Activities in daily living). However, the existence of vestibular problems in this population creates obstacles to carrying out Activities in daily living, necessitating the utilization of functional reserves in order to carry out such tasks effectively (Cohen et al., 2000).

Vertigo/dizziness, instability, imbalance, fluctuation, oscillation, and oscillopsia are examples of non-rotating symptoms of spatial disorientation symptoms classified as dizziness. These symptoms are typically brought on by oto-neurological injuries (Ganança et al., 2010). Dizziness may also impair a person's ability to do daily chores, such as those requiring swift movement and head and trunk flexion (Cohen, 1994). It may be vital to determine how much this impairment impacts the quality of life of patients with vestibular problems because they are more reliant on others to do their everyday activities (Aratani et al., 2011).

A review of the literature revealed ten questionnaires that have been designed particularly to evaluate patients having vertigo/dizziness or bodily imbalance. The Activities-Specific Balance Confidence (ABC) scale, the Vestibular Disorders Activities of Daily Living Scale, and the Dizziness Handicap Inventory (DHI) are the most often used in clinical practice and research (Duracinsky et al., 2007; Whitney et al., 2005). There are currently questionnaires to gauge how unsteady one feels and how

their body feels, which are essential for determining how much harm their symptoms have done in their daily activities.

The Vestibular Disorders Activities of Everyday Living scale (VADL), in addition to preceding questionnaires, may examine the level of independence in daily activities in patients with vestibular dysfunction. The VADL survey on individuals having giddiness was created by Cohen and Kimball (2000). In contrast to earlier surveys, VADL can assess patients' capacity to carry out activities of daily living. DHI, ABC, and VADL are the three questionnaires that are found to be more appropriate than the other test for measuring dizziness and unsteadiness (Cohen et al., 2000; Duracinsky et al., 2007).

The Persian translation of VADL followed to Persian cultural norms while maintaining a level of similarity to the original content and it has been characterized by high reliability and validity. Additionally, identifying the precise difficulties that people with vestibular disorders have with daily activities may help in better rehabilitation programs (Hashemi et al., 2021).

Other than VADL, few other questionnaires, such as the Dizziness Handicap Inventory and the University of California Los Angeles Dizziness Questionnaire (UCLA-DQ) were used to evaluate the vertigo/dizziness sufferer (DHI). The UCLA-DQ, the DHI, and the later Vestibular Rehabilitation Benefit Questionnaire are a few of the different scales mentioned in the text. However, aside from rating one's own level of personal satisfaction and recalling one or two questions about freedom for daily activities, none of these scales provide an assessment of one's autonomy in such activities (Duracinsky et al., 2007). In this way, the examiner or expert should call the

optimum measure is autonomy in day-to-day activities before selecting a scale to be used with patients.

The UCLA-DQ, a 5-point ordinal self-evaluation scale that is found to assess daily activities' ability, which is score on "essentially no impact" to "subordinate." The use of that one question indicates the value of autonomy in daily activities to the individual's happiness, but it is not sufficient to determine about activities the patients is having trouble doing and how their performance is affected. The VADL and UCLA-DQ are not interchangeable terms (Cohen, 2014).

The DHI is a 25-thing, self-appraised; 3-point ordinal scale which has three subscales, one of the subscales has nine things that address work. The DHI is well defined and simple for staff and patients to utilize. Notwithstanding, the 3-point scale and brief rundown of utilitarian abilities limit its incentive for treatment arranging or in any event, for figuring out the nuances of patients' practical impediments (Jacobson & Newman, 1990).

The VADL is found to have more rating levels than the DHI. A one-unit change in the VADL was correlated with a twenty-unit change in the DHI because the VADL and the DHI are closely associated up to and including the third VADL. However, the DHI scores remained the same for VADL values equal or greater than four. In this way, the two scales effectively address self-saw execution for higher degrees of freedom, i.e. levels 1 to 3 on the VADL. The VADL is more sensitive compared to DHI for levels that exhibit less autonomy, despite this. Results of the two tests reveal that age has no bearing on the results. This finding seems legitimate given that becoming older is not a disability; rather, getting older is a disability caused by problems that occur more frequently (Cohen et al., 2000).

The way of approaching about health and disability is always evolving over time. The World Health Organization states that "disability is not a property of a person, but instead results from the interplay of context variables, such as environmental and personal factors, with health problems." This bio-psycho-social framework has an impact on how we interpret and assess health and impairment (World Report on Disability, 2011).

1.1 Need for the study

Patients with vestibular problems are less capable of taking care of themselves, they are less adaptable to changes and their practical constraints vary somewhat amongst messes. For instance, many patients with Meniere's infection are independent at calm times but have limited functional capacities during Meniere's attacks or during more active times of the illness. In fact, even individuals with benign paroxysmal positional vertigo (BPPV), whom a few specialists regard to be in good condition, report overt impairments in some movements and skills, such as head pitch turns (Thompson & Amedee, 2009). The common measurements of practical execution, such as the Klein-Bell or the Barthel Index, which are not assessing the simple issue with vestibular patients. Experts who offer vestibular recovery developed the Vestibular Disorders Activities of Daily Living scale (VADL) to use in assessment and therapy planning. The questionnaire was developed to bridge the gap between the clinical need and available scales (Cohen, 2014).

The VADL is found to examine the level of independence in daily activities in patients with vestibular dysfunction (Cohen & Kimball, 2000). In contrast to earlier questionnaire, VADL can assess patients' capacity to carry out activities of daily living. The Activities-Specific Balance Confidence (ABC) scale, the Vestibular Disorders

Activities of Daily Living Scale (VADL), and the Dizziness Handicap Inventory (DHI) are most often used for measuring dizziness and unsteadiness (Duracinsky et al., 2007; Whitney et al., 2005). The VADL is found to have more rating levels and more sensitive compared to DHI for levels that exhibit less autonomy.

However, in reviewing the literature, a questionnaire of the Hindi model to assess the self-perceived effects of dizziness is unavailable. Therefore, the present study aimed to translate, culturally validate the questionnaire in Hindi for using in Hindi-speaking population and to examine the test-retest mean score difference, and internal consistency of the questionnaire in the Hindi language. According to National Census of 2011 Hindi speakers make up 43.63 percent of the population of India and 4.43% of the world's population (Language Census 2011, 2018). India is a multilingual nation with a diverse cultural heritage. It is impossible to use the inventory available in English since most of the population relies on regional languages for everyday communication. Additionally, it is impossible to disregard the VADL's inaccurate and reliable translation due to a shortage of multilingual expertise. Hence, the current study was planned to translate VADL into regional Indian languages like Hindi.

1.2 Aim of the study

Translation and Validation of the self-administering Vestibular Disorders Activities of Daily Living Scale - Hindi version (VADL-H).

1.3 Objectives of the study

- To Translate VADL questionnaire in Hindi for assessing individuals with Dizziness.

- To validate the VADL questionnaire in Hindi for individuals with Dizziness.

Chapter 2
Review of Literature

The vestibule is the term for the inner ear system that assists with body balancing and spatial awareness. It has a tube filled with perilymph and endolymph fluid. Meniere's disease, vestibular neuritis, and nerve compression are some common examples of common vestibular illnesses. Vestibular dysfunction can be bilateral or unilateral affecting both sides of the body simultaneously (Strupp et al., 2020).

Common vestibular disorders

Vestibular injury is frequently permanent and irreversible. Vestibular rehabilitation helps the body's natural compensatory mechanisms, which minimize the primary and secondary symptoms of vestibular dysfunction (in the lacking of sensations and poor function). Dosage of vestibular depressants does not permit nervous system compensation in the case of chronic vestibular impairment. Therefore, for people with severe vestibular impairment, medication is not a realistic alternative. Because of this, vestibular rehabilitation therapy is preferable to chronic vestibular impairment. However, some drugs, such as benzodiazepines, anticholinergics, and antihistamines are found to aid in the acute condition by reducing nausea and other side effects within 5 days (Baloh et al., 2011).

Benign paroxysmal dizziness is the most prevalent vestibular disease (BPPV). Transient vertigo and impaired vision at a certain head position are the hallmarks of BPPV. BPPV may have an impact on the horizontal vestibular canal, vestibular, or both. In 80% of BPPV patients, the semicircular canals are the tubes that are most frequently impacted, according to the literature. Which canals are impacted by BPPV

can be determined by a number of position tests, including the dixhalpike, supine roll, and headshake nystagmus tests (Bhattacharyya et al., 2017).

Labyrinthitis: Inflammation of the membranous labyrinth of the inner ear is known as labyrinthitis, and it frequently causes vertigo, dizziness, nausea, vomiting, tinnitus, and/or hearing loss. Usually, a viral or bacterial illness is the cause. It may, however, occasionally be a symptom of a systemic autoimmune disorder or the human immunodeficiency virus. Although most patients fully recover, in some circumstances people may still have balance or hearing issues (Barkwill et al., 2021).

Vestibular neuritis: Vestibular neuritis, which is believed to be brought on by swallowing of the eighth cranial nerve, is characterized by vertigo, nausea, and unsteady gait. Despite the benign and self-limiting nature of the condition, it may take weeks or months for all vestibular symptoms to disappear. Typically, it is found to last a few days(Smith et al., 2022).

Meniere`s disease: People who have this condition experience abrupt episodes of vertigo, tinnitus (an ear condition marked by ringing, buzzing, or roaring noises), hearing loss, and a sense of fullness in the ear. The current diagnostic standards established by Lopez-Escamez et al. (2015) for the Barany society can clearly differentiate Meniere's disease. The Barany Society states that individuals with confirmed Meniere disorder have two or more occurrences of vertigo that last between 20 minutes and 12 hours each, low- to medium-frequency sensorineural hearing loss in one ear that has been audiometrically verified, and fluctuating auditory symptoms in the affected ear, including fullness, hearing, and tinnitus (Koenen & Andaloro, 2022).

Hearing loss gets worse over time and, in some circumstances, becomes irreversible. Reducing your intake of sodium, coffee, and alcohol, as well as taking

medication, can all assist. Surgery could occasionally be required to ease symptoms. The affected inner ear has had some of its diseased tissue removed or amputated, stopping the brain from receiving erroneous balancing signals (Koenen & Andaloro, 2022).

Perilymphatic fistula (PLF): Perilymphatic fistula causes a leakage from the cochlea or vestibule to pass through the round or oval window (PLF), an improper connection between the perilymph-filled inner ear and the outer. A common cochlear and vestibular symptom of PLF is hearing loss. It results in ear structural integrity degeneration and vestibular discomfort. With tissue extracted from the outer region of the ear, openings or tears can be sealed (Sarna et al., 2020).

Functional restriction and impairment in people with vestibular diseases are being studied by clinicians, researchers, and patients to determine limitations and evaluate the efficacy of treatments. To assess the potential impact of vestibular disorders as a functional skill limitation, a variety of self-report measures have been created. However, the goals and content of these questionnaires differ (Hall et al., 2016). The UCLA Dizziness Questionnaire (UCLA-DQ) and the Dizziness Handicap Inventory (DHI) are two questionnaires that examine how dizziness affects people's daily lives. To gauge the dizziness effect on Quality of life, oriented from patients perspective, and its enhanced version, the Vestibular Rehabilitation Benefit Questionnaire (VRBQ) were developed most recently (Morris et al., 2009),. On the other hand, the Vertigo Handicap Questionnaire (VHQ) is specific to symptom that assesses the incapacitating effects of vestibular vertigo/dizziness. Other vestibular questionnaires, such as the Activity of Daily Living Questionnaire (ADLQ) (Kennedy et al., 2004) and the Activities-specific Balance Confidence (ABC) Scale (Powell & Myers, 1995) are more focused on daily activities of living assessment.

The Vestibular Disorders Activities of Daily Living Scale is one of a few self-assessed instruments that may be helpful for measuring the degree of useful limitation or handicap in patients with vestibular problems (VADL). A word-related advisor created the VADL to be used in therapeutic interventions for vestibular rehabilitation. The VADL places a strong emphasis on fundamentally valuable abilities, great versatility, and instrumental ability, unlike many other scales. The patient's perception of their level of personal autonomy, self-care, and basic portability are best assessed with this scale. It gives a blueprint to talking about instrumental exercises of day to day living (Cohen, 2014).

The VADL consists of 28 questions, which are divided into three subgroups: ambulation, instrumental abilities, and utilitarian abilities. The 12 functional abilities provide an organized list of personal care and coping skills that are expected of most adults in many communities. The nine ambulation skills represent typical adaptability for certain adults in most Western civilizations (Alshehri et al., 2021). Some people might not need some skills, such as using an elevator (A-21), if they don't frequent nearby multistory buildings or don't enter multistory buildings with lifts. Additionally, in other areas it was impossible to walk normally, such as on snow or ice. The astute clinician was conscious of the need to evaluate those skills during the assessment interaction. Seven assignments are kept in the instrumental area. Driving a car could seem excessive compared to doing local sightseeing (Item I-28). The two are combined because certain networks offer excellent public transportation that surpasses the use of private vehicles. In any event, the great majority drive their vehicles because there are just a few networks with minimal public transportation. Patients with low vision or other real limitations might not be able to drive, for example. The VADL's inventor

offers access to it in Spanish, as well as versions in Korean and Portuguese (Alshehri et al., 2021).

Alghwiri (2012) drew attention to the fact that 41 out of the 312 concepts from the International Classification of Functioning, Disability, and Health are included in the VADL (ICF). They also mentioned that the VADL includes two concepts, getting in and out of the shower or bath (Item F-7), which doesn't get included in the ICF. As a result, the VADL expanded on the World Health Organization's standard rundown to add new items to a proper assessment of self-care and mobility abilities.

If a single patient chooses not to participate in a particular action enlisted in the VADL that movement may be scored as NA and doesn't need to be included in the score. There were two techniques of outlining face authenticity. Patients received some information regarding their workouts. Following the creation of a basic list, a few members of the Texas Occupational Therapy Association - Gulf Coast District and other partners from across the United States kindly put aside some time to provide their expert opinions regarding the exercises listed in the scale (Alshehri et al., 2021).

The VADL uses a 10-point scale that was developed after patients who used a previous 5-point scale complained that it was overly restrictive and demanded more options. The responses of patients who later experienced vestibular recovery were used to establish the current 10-point scale, which has fine degrees at its low end. In this way, the scale accurately captures patients' experiences and understands how limited a patient may be with regard to every action or errand (N. A. Ricci et al., 2015).

The ordinal or intermediate scores advisers usually employ in the center, such as protective and inconsequential and maximal aid, determine the scoring. The earliest studies described using the middle values for the overall score and the three sub scores,

but subsequent work demonstrated that the mean scores produce similar results. As a result, the clinician may report either the mean or the middle. Depending on the needs of the patient and the doctor, either the full score or just a particular sub score may be used (Cohen, 1994; Cohen, 2014).

Regardless of the specific findings, the VADL was designed to be used to examine useful impediments. Without a doubt, the VADL has a poor relationship with dizziness proportions, does not separate among analyses, and has a poor relationship with scores that show changes in tangible weighting in patients with one-sided vestibular issues. Disequilibrium and vertigo are caused by a variety of issues. The VADL highlights differences between asymptomatic, stable controls, a diverse group of patients with persistent vertigo caused by vestibular issues, and a group of patients with BPPV. These findings show that the VADL does its intended task of evaluating useful limitations regardless of the underlying pathology.(Cohen, 2014; Cohen et al., 2000).

After receiving the right care for a few different disorders, the VADL is difficult to modify. After undergoing vestibular recovery with adjustment exercises, Cawthorne exercises, balance therapy, blended adjustments, look adjustments, equilibrium preparing exercises, and a mobile programme, patients with vestibular neuritis or labyrinthitis displayed further developed VADL scores. After receiving treatment for BPPV with canalith repositioning and liberatory motions, patients' VADL scores improved. After receiving medication, people with familial ataxic displayed improvement in the VADL. The scale is designed to address problems that sufferers of vestibular impedances usually bring up. It could be used with any patient who has a persistent vestibular impairment, regardless of whether the patient has co-grim conditions, because it isn't specifically designated for any condition. Given its emphasis

on the useful execution of specific assignments rather than for explicit analyses, it might even be used with patients whose primary complaints are related to other medical issues. The scale has been recommended for use with patients who, due to impact openness, cause terrible brain damage, including vestibular difficulties (Cohen, 2014; Cohen et al., 2000).

Changes in the VADL have been shown to correspond with practical, appealing changes in reverberation imaging during pay. This in-depth and rigorous review may have found its way to the field of neuro rehabilitation research. It is the first study to demonstrate that a healthy proportion of compensation is directly related to usable presentation. In summary, the VADL is simple to use for patients to rate their own condition, and it may also be used to plan a visit for a restoration assessment. Compared to other scales, it has more levels of evaluation and shows more functional skills. It is sensitive to change following therapy and is linked to changes in the brain caused by primary instruments of compensation (Cohen, 2014; Cohen et al., 2000; Ricci et al., 2015).

Chapter 3
Methods

The objective of the current study was to translate and validate Vestibular Disorders Activities of Daily Living Scale (VADL) available in English for the Hindi speakers. The following procedure was employed to ensure the accuracy and clarity during translation and validation of VADL-H questionnaire.

3.1 Participants

Thirty participants who were reported to have vertigo or dizziness aged between 18 and 60 were selected for the study. Participants with native Hindi speaking language were recruited for the study. Among all the participants' only literate participants, with at least having secondary education in Hindi medium, were selected for the study. All the participants were instructed to complete the questionnaire themselves or with the help of their family members. Only the participants diagnosed having Meniere's disease, BPPV, Vestibular neuritis from ENT doctor were considered for the study.

Mode of Assessment

The study was carried out online in accordance with AIISH academic standards because of Covid 19 pandemic restrictions. The VADL-H questionnaire that was required to be answered was disclosed to the participants and/or caretakers.

Source of the participants

The participants were selected from ENT AIISH (25 numbers) and military hospital, Nagpur (5 numbers). Google Forms was used to collect the information from the participants online. Before the administration of the questionnaire, the participants' consent to participate in the study was obtained.

3.2 Procedure

The VADL-H is a new tool used to explore the functional capacity of people with vestibular diseases and guide therapy planning and vestibular rehabilitation for Hindi speakers. In order to fulfill the aim, the study was divided into 4 different phases.

Phase I: Translation of VADL Questionnaire in the Hindi language

Phase II: Content Validation of translated VADL (Hindi version) questionnaire

Phase III: Administration of the translated & validated Questionnaire on individuals with dizziness

Phase IV: Analyzing the data
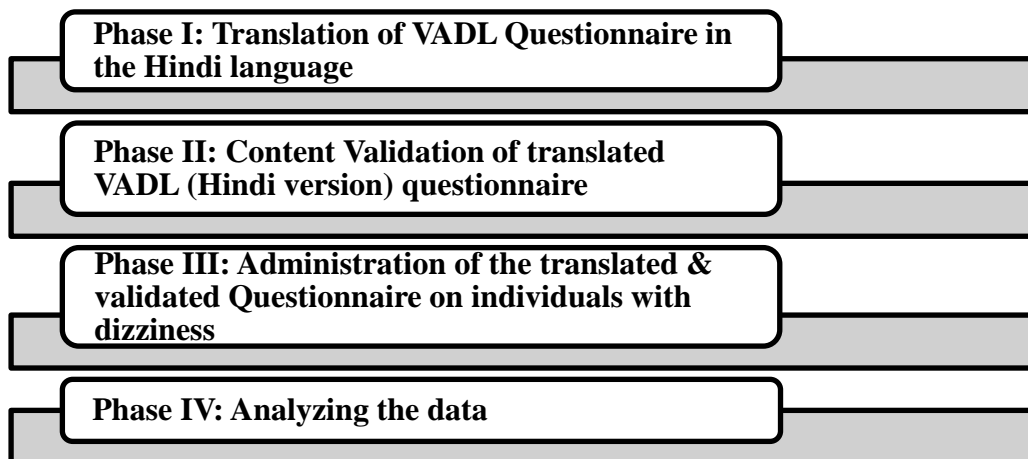
3.2.1 Phase I: Translation of VADL questionnaire

The American Association of Orthopedic Surgeons (AAOS) criteria (Beaton et al., 2000) including a forward-backward translation procedure were used to translate the questionnaire. The process of translation involved five different phases that are listed below:

1. Forward Translation

2. Synthesizing Popular Translation

3. Backward Translation

4. Analysis by the Expert Committee

5. Pre-Final Checking.

1. Forward translation

Initially translation of VADL questionnaire was done to produce 2 forward translations (Hambleton, 1993; Thammaiah et al., 2016) with the help of two adult bilingual translators who were proficient in both Hindi and English language (Medical Outcomes Trust, 1997). The translators who were familiar with the local culture, in-depth knowledge of the subject, and expertise of research techniques and translation procedures were considered (Beauford et al., 2009). This phase was done because it makes it simpler to identify semantic differences in ambiguous statements when there are several translators and, as a result, various forward translations (Wild et al., 2005).

2. Synthesizing Popular Translation

The forward translations was completed by two translators were combined into a single approved version. In this method the two forward translated versions was combined into one version with the help of two expert bilingual translators who were proficient in both Hindi and English language.

3. Backward translation

This translation process is used to verify the original-to-target language translation that assists in mapping the semantic equivalence of the translated original and target versions (Beck. 2003). In this step, the conceptual equivalence between the dutiful forward translation and the original text was established. Here two adult multilingual translators who are fluent in both Hindi and English languages were independently translated the consolidated approved version from Hindi into English. In this stage, it was taken into account that these specialists were not aware of the actual scale (VADL questionnaire). This stage of the current study was done to ensure that the

Hindi-translated questionnaire done in forward translation is accurate, legitimate, reliable, and free of linguistic biases.

4. Analysis by the Expert Committee

In this stage, expert committee consisting of two linguists who were expert in both Hindi and English language examined both the forward and back translations (Kristjansson et al., 2003). Here two linguists assessed whether the translation made was acceptable and if it follows the items original purpose. Here the consistency between the translated and original version was made by the committee made regarding any instructions or punctuation in the instrument that have been translated in four areas:

1. Semantic resemblance, which considers vocabulary and syntax as well as word meaning.

2. Idiomatic similarity, which considers common phrases and idioms that should be present in both languages.

3. Experimental similarity, also referred to as cultural equivalent, requires that the conditions depicted in the original versions of the objects match those found in the setting of the culture.

4. The validity of the hypothesis under study and the experiences the person reporting them in the questionnaire about the target culture are examples of conceptual similarity.

5. Pre-Final Checking

The cognitive interviewing/debriefing stage included the pre-final version of Questionnaire VADL (Hindi version) that was administered to the target population sample to obtain their opinion/feedback on the acceptance and interpretation of the

questions (Thammaiah et al., 2016). The patients were instructed to mark each topic as relevant and understandable by selecting an option for the 11-point scale form of the VADL questionnaire. Based on their suggestion, appropriate changes were made to the Questionnaire. After incorporating the suggestions from the target population, the final translated Questionnaire, was distributed to patients experiencing vertigo or dizziness through Gmail, WhatsApp, and social media platforms through a Google form that describes the purpose of the questionnaire and completion instructions for administration.

3.2.2 Phase II: Content Validation of translated VADL (Hindi version) questionnaire

In this stage, five native Hindi speakers who were language experts reviewed the pre final translated VADL questionnaire that had been prepared in Hindi for content validity. The five native Hindi speakers were fluent in both reading and writing and were instructed to grade on a 5-point Likert scale (van Stiphout et al., 2022) with one being the worst and five being the best (excellent). The experts were asked to evaluate each item and recommend adjustments if needed. After incorporating the suggestions from five native Hindi speakers during content validation the final questionnaire was prepared. The Vestibular Disorders Activities of Daily Living Scale (Hindi version) VADL-H questionnaire is attached in APPENDIX A and Validation form used for the content validation test is given in APPENDIX- B.

Scoring

After administering the translated Questionnaire (VADL) to adult patients with complaint of dizziness/vertigo, the total scores, and mean score of each subscales (Functionality, ambulation, and instrumental) were obtained using SPSS software.

Scoring for each question was ranked between one to eleven, where 1 indicates absence of difficulty while performing mentioned activities and 10 indicates extreme difficulty in performing mentioned activities. Score of 11 indicates that the particular activity is not done by the individual or does not prefer to answer.

3.2.3 Phase III: Administration of the translated VADL Questionnaire on individuals with dizziness

Once the participants were satisfied with the requirements of the current study, participants were informed about the purpose, necessity and goals of the study. The consent was taken from the participants when they were decided to participate in the study. The final translated and validated VADL-Hindi version questionnaire was given to the participants with vertigo/dizziness who were native Hindi speakers using a Google form through WhatsApp, and other social media platforms. Although the questionnaire was meant to be self-administered, if required the patients were suggested to take assistance from the care taker while answering the questions. Participants were encouraged to assess each query on an 11-point scale depending on how severe the vertigo/dizziness was in various scenarios. Initially final VADL-H questionnaire was administered on 30 participants with dizziness. Later to examine the test-retest mean score difference of the translated VADL, the same procedure was followed after 15 days of the initial test on 50% of the participants.

Inventory description

Participants were provided with Hindi translated version (VADL-H) to measure the effect of functional limitation and disability of the individuals due to giddiness across several situations. It has 28 questions to assess and consists of three different

subscales (Functionality, ambulation and instrumental). Each question has an 11-point rating scale from 1 to 11, wherein ten means more severe and 11 indicates that the participants do not usually perform the particular activity or does not prefer the answer the question. The questionnaire was given to participants through Google form. The participants had to tick the most suitable/appropriate option out of it. Participants had to read the questionnaire and mark appropriately by themselves and return it to the researcher.

3.2.4 Phase IV: Analyzing the data

Each participant received an individual numerical score as their response for the questionnaire (VADL-H). For statistical purposes, the raw scores were tabulated using SPSS software. To examine how people with vertigo/dizziness performed on different domains of the VADL, the data was analyzed through appropriate statistical analysis. The mean, median, and standard deviation (SD) scores for the 3 subscales of the questionnaire (Functionality, Ambulation and Instrumental) were calculated. Cronbach's alpha test was used to formulate the internal consistency of the translated VADL-H questionnaire.

Chapter 4

Results and Discussion

The aim of the current study was to translate and evaluate the Vestibular Disorders Activities of Daily Living Scale (VADL) questionnaire for using in Hindi-speaking people. Thirty individuals aged from 18 to 60 years were given the translated questionnaire. The translated questionnaire (VADL) was sent to the validators for the content validity of the translated questionnaire. Each item was assigned a score between 1 and 11, with 1 denoting less severe experience and 11 denoting worst experience. A lowest total score obtained in VADL questionnaire suggests a more excellent quality of life for the patients compared to highest score. The scores obtained from the translated questionnaire (VADL) from the participants was statistically analyzed using SPSS software (version 25). The comparison was done between the mean score of each subscale and the Cronbach's alpha (α) for internal consistency of the translated Vestibular Disorders Activities of Daily Living Scale (VADL) questionnaire.

4.1 Content validation of the translated VADL-H questionnaire

The final translated questionnaire (VADL-H) was given to 5 validators for the content validation. Content validation of the translated VADL-H questionnaire was done by five different validators who were expert and fluent in both Hindi and English languages. The translated VADL (Hindi version) content was verified on different aspects such as grammar of the sentences, sentence structure, socio-cultural aspects and reader friendliness. The questionnaire was scored using a three-point Likert scale (1-inappropriate, 2-somewhat appropriate, & 3-more appropriate (Lawshe, 1975). The information about content validation ratings obtained from five validators for instructions and 28 questions of VADL-H questionnaire are given in Table 4.1.

Table 4.1

Content Validation scores obtained from Validators for each question of the VADL-H

questionnaire

	Validator 1	Validator 2	Validator 3	Validator 4	Validator 5
Questionnaire instructions	SA	MA	MA	MA	MA
Q1	SA	MA	MA	MA	MA
Q2	SA	MA	MA	MA	SA
Q3	MA	MA	MA	MA	MA
Q4	SA	SA	SA	SA	MA
Q5	SA	MA	MA	MA	MA
Q6	MA	MA	SA	MA	MA
Q7	SA	MA	MA	MA	MA
Q8	MA	MA	MA	MA	MA
Q9	MA	MA	MA	MA	MA
Q10	MA	SA	MA	MA	MA
Q11	MA	MA	MA	MA	MA
Q12	MA	MA	MA	MA	MA
Q13	MA	MA	MA	MA	MA

Q14	SA	MA	MA	MA	MA
Q15	SA	MA	MA	MA	SA
Q16	MA	MA	MA	MA	MA
Q17	SA	SA	MA	MA	MA
Q18	MA	MA	MA	MA	MA
Q19	MA	MA	MA	MA	MA
Q20	MA	MA	MA	MA	MA
Q21	MA	SA	SA	MA	MA
Q22	MA	MA	MA	MA	MA
Q23	SA	MA	MA	MA	MA
Q24	SA	SA	MA	MA	MA
Q25	MA	SA	MA	MA	MA
Q26	SA	MA	MA	MA	MA
Q27	MA	MA	MA	SA	MA
Q28	MA	MA	SA	MA	SA

Note- MA- More Appropriate, Note- MA- More Appropriate, SA- Somewhat Appropriate, IA- Inappropriate, Q - Questions 1-28.

As it can be seen from Table 4.1 that nearly every question received a rating between more appropriate and fairly appropriate. The validators' opinions and recommendations, such as modifications in grammatical form, question length,

appropriate level of abstraction about socio-cultural context of modification were taken into consideration when developing the translated questionnaire to make it more clear for Hindi speaking (VADL-H) individual having dizziness/vertigo.

For most of the questions of VADL-H questionnaire, the rating given by Validator 1 was 46% for somewhat appropriate (SA) and 54% for more appropriate (MA) response. For Validator 2 rating was 21% for somewhat appropriate and 79% for more appropriate response. Similarly, rating given by Validator 3 was 86% for more appropriate and 14% for somewhat appropriate response. For Validator 4 rating was 7% for somewhat appropriate and 93% for more appropriate responses. For Validator 5 rating was 11% for somewhat appropriate and 89% for more appropriate response.

To make VADL-H more comprehensible for Hindi speakers and in accordance with the quality assessment, major improvements were made in the questions. These changes were done once the expert panel took part in the translation and content validation process. The whole sentence was modified including "sitting up from lying down", "dressing the upper body", "dressing lower body", "reaching overhead" in the functional subscale, "going down stairs", "driving a car" in ambulation subscale, and " heavy household chore" as per the comprehensibility. These are the examples given in English for Hindi words that were actually modified. Also a few minor changes as per the grammar and the change in sentence formation in Hindi language such as in "using elevators',' light household chores',' occupational role" was done.

The five content validators gave the overall test content ratings that ranged from more appropriate to inappropriate across all the three domains of the questionnaire. The validators' suggestions and recommendations were considered and the questions in the

VADL-H questionnaire was modified and finalized. VADL-H has three subscales, which includes functionality, ambulation and instrumental. The subscale involves the questions regarding self-maintenance, productivity and leisure. The final translated and validated VADL questionnaire in Hindi (VADL-H) is included in appendix A.

Previously, Cohen et al. (2000) the authors of the VADL questionnaire, believed that the Not applicable (NA) option (i.e., I do not normally execute this task or I prefer not to respond to this question) was present because patients might prefer not to answer some questions or the task might not be pertinent to their daily lives. For instance, they discovered that most patients checked NA on I-28 (I means instrumental in instrumental subscale), "Traveling around the neighborhood (auto, bus, train)," because buses were not frequently used in public transportation systems and the train was not included in this item. In contrast, language experts changed the sentence structure according to the culture and use of Hindi speakers. Hence, like other studies few changes were required to get better understanding in current study.

Comparison of mean scores for three subscales of VADL-H questionnaire

The responses of VADL-H questionnaire administered on patients with dizziness/vertigo symptoms was scored and mean scores for each subscale was obtained. The mean scores obtained for the functionality subscale for the participants was 3.44. The mean scores of second segment of VADL-H questionnaire (ambulation subscale) obtained for the participants was 4.14. For the Instrumental subscale of VADL-H segment the mean scores obtained for the participants was 3.80. The mean, median and SD scores obtained for three subscales namely functional, ambulation and instrumental during both test and retest condition are given in the Table 4.2.

Table 4.2

Mean, Median and SD scores (Pre & posttest) for three subscales of VADL-H

questionnaire

	Mean scores	Median scores	SD
F test	3.44	2.91	1.56
F retest	3.48	3.00	1.53
A test	4.14	4.30	1.62
A retest	4.00	4.19	1.42
I test	3.80	3.00	1.80
I retest	3.75	3.00	1.76

Note: F test – Functional subscale first test response, F retest – Functional subscale retest response, A test – Ambulation first test response, A retest – Ambulation retest response, I test – Instrumental first test response, I retest – Instrumental retest response, SD - Standard Deviation.

From the Table 4.2 it can be noted that the mean scores obtained for the three segment of VADL-H questionnaire ranged from 3.44 to 4.14. Hence, it can be concluded that the severity of dizziness/vertigo varied from 3.44 to 4.14 (total scores ranged from 1 to 11) in subscales of VADL-H questionnaire in individuals diagnosed with different vestibular dysfunctions (Benign paroxysmal positional vertigo, Meniere's disorder).

Comparatively, the performance of the participants was better with Functional subscale (3.44) followed by instrumental subscale (3.80) and ambulation subscale (4.14). Similar to current study, Ricci et al. (2014) reported low performance that is slightly higher mean scores in the ambulation subscale compared to other subscales and

this could be because most of the ambulation activities are performed outside the home (Ricci et al., 2014). Other studies which translated VADL to any other language got different result, low performance was seen in Functionality subscale in Kannada version (Rao et al., 2022), low performance in instrumental subscale in Arabic subscale (Alshehri et al., 2021), low performance in ambulation subscale in brazilian version (Aratani et al., 2013). This could be due to the responses of participants who have dizziness/vertigo were either overestimated or underestimated in comparison to their real performance, hence it is critical to understand how patients feel about how dizziness interferes with their daily life (Aratani et al., 2020).

Test-retest reliability of VADL-H questionnaire

The Mean, Median and Standard Deviation (SD) of pretest and posttest scores obtained for functional domain, ambulation and instrumental of VADL-H questionnaire were calculated and are shown in Table. 4.2. From the table 4.2 it can be observed that the test-retest mean scores of functional subscales was found to be 3.44 and 3.48; ambulation subscale was 4.14 and 4.00 and instrumental subscale was found to be 3.80 and 3.75 respectively. By observing the test retest mean scores obtained for all 3 subscales of VADL-H, it can be observed that there is not much difference in mean scores obtained between two evaluations for individuals with vestibular dysfunctions.

The difference between the mean scores of VADL-H questionnaire when first administered and re administered after 15 days is found to be very less for each of the 28 questions of 3 subscales. This indicates that the accuracy of the translated questionnaire (VADL) is found to be good. The findings of the current study are supported by Alshehri et al. (2021), who has translated VADL English version to Arabic language. The authors have reported similar mean scores for all the segments of

VADL questionnaire (Arabic language) when they first administered the questionnaire and again re administered the questionnaire after a week.

Further, after the analysis of test and re test mean scores of VADL questionnaire for each subscale, internal consistency was assessed and reliability of the VADL-H questionnaire was evaluated using Cronbach's Alpha test. This test was administered on the patients who had completed the questionnaire for the first time and were again re administered the questionnaire after a gap of 15 days without showing the form they had previously completed.

The results of Cronbach's Alpha test i.e., internal consistency of the VADL-H questionnaire obtained two times (test & re test) was found to be significantly strong for all 3 subscales (Functional subscale, Fα = 0.998, Ambulation subscale, Aα = 0.982 and instrumental subscale, Iα = 0.994,).

The findings of the current study has been supported in the literature by Hashemi et al. (2021) who has reported Cronbach's alpha value of 0.90, 0.88, and 0.85 respectively for functional, ambulation, and instrumental subscales for all 28 items in the Persian questionnaire. Similarly, Cronbach's alpha value of 0.89 for the functional, 0.86 for ambulation and lowest score of 0.56 for instrumental sub-scale has been reported for the Brazilian questionnaire (Aratani et al., 2013). They have also discovered that 10% of Brazilians could not grasp "require physical assistance" in a pilot research for the rating scale in the Brazilian version of the VADL scale, but they did not change the term (Aratani et al., 2013). This could be because the patients understood the terms in the section of the explanation rating scale.

Similar to current study, cronbach's alpha value for internal consistency were 0.91, 0.94 and 0.86 for functional, ambulation and instrumental subscale has been reported for the Arabic subscale (Alshehri et al., 2021), in which the gap between the

first administered translated questionnaire and re administered translated questionnaire was a week.

Hence, considering the content validators responses and the results of statistical analysis (mean, median scores & Cronbach's alpha value) the VADL-H can be considered to evaluate the activities related difficulty for Hindi speaking individuals with vertigo.

Chapter 5

Summary and Conclusions

In the current study, with the guidance of a linguist, the VADL English version is modified and translated to Hindi and validated (VADL-H). Later, it was verified by language experts to see if the questions translated into Hindi had the same meaning as the English version, and appropriate changes were made. 30 Participants were considered in the study who were native Hindi speakers, aged between 18 and 60 years, and were diagnosed with various vestibular pathology causing vertigo.

The study was conducted in 3 different phases. In Phase I translation of VADL questionnaire to Hindi was done. In Phase 2 content validation of translated VADL (Hindi version) was carried out. In Phase 3, translated and validated VADL-H was administered on participants with vertigo/dizziness who were native Hindi speakers using a Google form through Whats App, and other social media platforms. Participants were asked to assess each query on an 11-point scale depending on how severe the vertigo/dizziness was in various scenarios. The questionnaire has 3 subscales namely, Functional, Ambulation and Instrumental subscale. Initially final VADL-H questionnaire was administered on 30 participants with dizziness. Later to examine the test-retest mean score for the subscale in the questionnaire, the same procedure was followed after 15 days of the initial test on 50% of the participants.

The results of the study indicated that the mean scores obtained for the functionality subscale, ambulation subscale and Instrumental subscale for the participants was found to be 3.44, 4.14 and 3.80 respectively. Comparatively, the performance of the participants was better with Functional subscale followed by instrumental subscale and ambulation subscale. The severity of dizziness/vertigo

ranged from 3.44 to 4.14 (total scores ranged from 1 to 11) for the three segment of VADL-H questionnaire in individuals diagnosed with different vestibular dysfunctions (Benign paroxysmal positional vertigo, Meniere's disorder).

The test-retest mean scores of functional subscales were found to be 3.44 and 3.48; ambulation subscale was 4.14 and 4.00 and instrumental subscale was found to be 3.80 and 3.75 respectively. These results indicate that there is not much difference in mean scores obtained between two evaluations for individuals with vestibular dysfunctions and hence indicates that the accuracy of the translated questionnaire (VADL-H) is found to be good.

Internal consistency of the VADL-H questionnaire was assessed using Cronbach's Alpha test. The results of Cronbach's Alpha test i.e., internal consistency of the VADL-H questionnaire that was obtained twice (test & re test) was found to be strong for all the 3 subscales (Functional subscale, $F\alpha = 0.998$, Ambulation subscale, $A\alpha = 0.982$ and instrumental subscale, $I\alpha = 0.994$).

To conclude, the translated VADL questionnaire in Hindi can be used to assess the various problems an individual is facing during regular day to day activities due to vestibular problems. Therefore, the VADL-H questionnaire provides clinician appropriate guidance to patients suffering from dizziness/vertigo to ensure their overall well-being.

5.1 Implications of the study

- VADL-H questionnaire can assist a clinician or audiological professional in comprehending vertigo related issues and provides space to organize vertigo therapy actions in accordance with the circumstances.

- The VADL-H questionnaire can be widely utilized to assess the prognosis of the patient having dizziness/vertigo after vestibular rehabilitation therapy.

- The VADL-H questionnaire can be used to compare the quality of life and level of disability of people suffering from vestibular problems in Hindi speaking people.

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APPENDIX-A

Vestibular Disorders Activities of Daily Living Scale - Hindi version (VADL-H)

नाम/पहचान - _____   करदाता -_____
तारीख़ - _____

यह पैमाना दैनिक जीवन की नियमित गतिविधियों में स्वतंत्रता पर चक्कर और संतुलन विकारों के प्रभावों का मूल्यांकन करता है। कृपया प्रत्येक आइटम पर अपने प्रदर्शन का मूल्यांकन करें। यदि आपका प्रदर्शन रुक-रुक कर चक्कर आने या संतुलन की समस्याओं के कारण बदलता रहता है, तो कृपया विकलांगता के उच्चतम स्तर का उपयोग करें। प्रत्येक कार्य के लिए उस स्तर को टिक करें जो सबसे सटीक रूप से वर्णन करता है कि आप कार्य कैसे करते हैं। यदि आप कभी कोई विशेष कार्य नहीं करते हैं, तो कृपया कॉलम NA में बॉक्स को टिक करें। रेटिंग पैमानों को पृष्ठ के नीचे समझाया गया है।

कार्य	1.स्वतंत्र मैं विकलांग नहीं हूं। मेरे प्रदर्शन में कोई बदलाव नहीं दिखता है।	2. मैं गतिविधि को करने में असहज महसूस कर रहा हूं लेकिन अपने प्रदर्शन की गुणवत्ता में कोई अंतर नहीं महसूस करता हूं।	3. मुझे अपने प्रदर्शन की गुणवत्ता में कमी महसूस होती है, लेकिन मैंने अपने प्रदर्शन के तरीके को नहीं बदला है।	4. मैंने अपने प्रदर्शन के तरीके को बदल दिया है, उदाहरण के लिए, मैं चीजों को पहले की तुलना में अधिक धीरे या सावधानी से करता हूं, या	5. मैं सहायता के लिए पर्यावरण में एक साधारण वस्तु का उपयोग करना पसंद करता हूं (उदाहरण के लिए, सीढ़ी रेलिंग), लेकिन मैं गतिविधि करने के लिए वस्तु या उपकरण पर निर्भर नहीं हूं।	6. मुझे सहायता के लिए पर्यावरण में एक सामान्य वस्तु का उपयोग करना चाहिए, लेकिन मैंने विशेष गतिविधि के लिए विशेष रूप से	7. मुझे विशेष गतिविधि के लिए डिज़ाइन किए गए अनुकूली उपकरणों का उपयोग करना (जैसे, ग्रैब बार, केन, रीचर्स, लिफ्ट वाली बस, केज स्टिक।)	8. मुझे शारीरिक सहायता के लिए किसी अन्य व्यक्ति की आवश्यकता है या, 2 लोगों को शामिल करने वाली गतिविधि के लिए, मुझे असामान्य शारीरिक सहायता की आवश्यकता है	9. मैं गतिविधि करने के लिए किसी अन्य व्यक्ति पर निर्भर हूं।	10. चक्कर या संतुलन की समस्या के कारण मैं अब गतिविधि नहीं करता।	11. NA मैं आमतौर पर यह कार्य नहीं करता हूं या मैं इस प्रश्न का उत्तर नहीं देना पसंद करता हूं।
F-1 लेटने के बाद उठकर बैठना											
F-2 बिस्तर या कुर्सी पर बैठकर उठ खड़ा होना											
F-3 शरीर के ऊपरी भाग में पहनना (जैसे शर्ट, चोली, अंडरशर्ट)											
F-4 शरीर के निचले भाग में पहनना (जैसे पैंट, स्कर्ट, जांघिया)											

F-5 मोज़े/मोज़ा पहनना											
F-6 जूते पहनना											
F-7 बाथटब या शॉवर के अंदर/बाहर जाना											
F-8 अपने आप को बाथटब या शॉवर में नहलान											
F-9 अपने सर से ऊपर रखे हुए सामान तक पहुंचना (उदाहरण के लिए एक अलमारी या दराज़ में)											
F-10 नीचे पहुंचना/झुकना (जैसे फर्श)											
F-11 खाना बनाना											
F-12 अंतरंग गतिविधि (जैसे फोरप्ले, यौन गतिविधि)											
A-13 समतल सतहों पर चलना											
A-14 असमान सतहों पर चलना											
A-15 सीढ़ियाँ चढ़ना											
A-16 सीढ़ियो से निचे उतरना											
A-17 संकरी जगहों पर चलना (जैसे गलियारा, किराने की दुकान का गलियारा)											
A-18 खुली जगहों पर चलना											
A-19 भीड़ में चलना											
A-20 लिफ्ट का उपयोग करना											
A-21 एस्केलेटर का उपयोग करना											
A-22 कार चलाना											
I-23 चलते समय सामान ले जाने में (जैसे पैकेज, कचरा बैग)											
A-24 घर के हल्के काम करने में (जैसे धूल झाड़ना, सामान दूर रखना)											
I-25 भारी घरेलू काम करना (जैसे वैक्यूम करना, फर्नीचर को सही जगह रखना)											
I-26 सक्रिय मनोरंजन (जैसे खेल, बागवानी)											
I-27 व्यावसायिक भूमिका (जैसे नौकरी, बच्चे की देखभाल, घर संभालना , छात्र)											
I-28 समुदाय के आसपास यात्रा करना (जैसे कार, बस)											

यह पैमाना हमें यह निर्धारित करने में मदद करेगा कि आंतरिक कान की समस्याएं प्रत्येक कार्य को करने की आपकी क्षमता को कैसे प्रभावित करती हैं। कृपया प्रत्येक कार्य पर अपने वर्तमान प्रदर्शन को इंगित करें, पृष्ठ के केंद्र में किसी एक कॉलम को चेक करके, आंतरिक कान की

समस्या विकसित करने से पहले अपने प्रदर्शन की तुलना में। वह उत्तर चुनें जो सबसे सटीक रूप से वर्णन करता है कि आप कार्य कैसे करते हैं।

1. स्वतंत्र। मैं विकलांग नहीं हूं। मेरे प्रदर्शन में कोई बदलाव नहीं दिखता है|

2. मैं गतिविधि को करने में असहज महसूस कर रहा हूं लेकिन अपने प्रदर्शन की गुणवत्ता में कोई अंतर नहीं महसूस करता हूं।

3. क्षमता में कमी, प्रदर्शन के तरीके में कोई बदलाव नहीं। मुझे अपने प्रदर्शन की गुणवत्ता में कमी महसूस होती है, लेकिन मैंने अपने प्रदर्शन के तरीके को नहीं बदला है|

4. धीमा, सतर्क, अधिक सावधान। मैंने अपने प्रदर्शन के तरीके को बदल दिया है, यानी मैं चीजों को अधिक धीरे-धीरे करता हूं या पहले की तुलना में सावधानी से, या मैं बिना झुके चीजों को करता हूं।

5. मैं सहायता के लिए पर्यावरण में एक साधारण वस्तु का उपयोग करना पसंद करता हूं (उदाहरण के लिए, सीढ़ी रेलिंग) लेकिन मैं गतिविधि करने के लिए वस्तु या उपकरण पर निर्भर नहीं हूं।

6. मुझे सहायता के लिए पर्यावरण में एक सामान्य वस्तु का उपयोग करना चाहिए, लेकिन मैंने विशेष गतिविधि के लिए विशेष रूप से डिज़ाइन किया गया उपकरण प्राप्त नहीं किया है।

7. मुझे विशेष गतिविधि के लिए डिज़ाइन किए गए अनुकूली उपकरणों का उपयोग करना पड़ता है (जैसे, ग्रैब बार, केन, रीचर्स, लिफ्ट वाली बस, वेज पिलो)।

8. मुझे शारीरिक सहायता के लिए किसी अन्य व्यक्ति की आवश्यकता है या, 2 लोगों को शामिल करने वाली गतिविधि के लिए, मुझे असामान्य शारीरिक सहायता की आवश्यकता है।

9. मैं गतिविधि करने के लिए किसी अन्य व्यक्ति पर निर्भर हूं।

10. चक्कर या संतुलन की समस्या के कारण मैं अब गतिविधि नहीं करता। चक्कर या संतुलन की समस्या के कारण मैं अब गतिविधि नहीं करता।

11. NA. लागू नहीं मैं आमतौर पर यह गतिविधि नहीं करता या मैं इस प्रश्न का उत्तर नहीं देना पसंद करता हूँ|

APPENDIX- B

Validation form used for the content validation test

<u>VALIDATION SHEET</u>

Name:

Designation:

Proposed Title: Translation and Validation of the self-administering Vestibular Disorders Activities of Daily Living Scale - Hindi version (VADL-H)

Aim of the study: To translate and validate the VADL in Hindi for assessing individuals with Dizziness.

Questions No.	More appropriate	Inappropriate	Somewhat appropriate	(remarks)
Demographic details				
Questions no. 1				
Questions no. 2				
Questions no. 3				
Questions no. 4				
Questions no. 5				
Questions no. 6				
Questions no. 7				
Questions no. 8				
Questions no. 9				
Questions no. 10				
Questions no. 11				
Questions no. 12				

Questions no. 13

Questions no. 14

Questions no. 15

Questions no. 16

Questions no. 17

Questions no. 18

Questions no. 19

Questions no. 20

Questions no. 21

Questions no. 22

Questions no. 23

Questions no. 24