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Research/Technical Note

Expert Collaboration Group of Medical Quality Control in Vestibular Migraine

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Abstract

Vestibular migraine (VM) is a common episodic vestibular disorder characterized by a high misdiagnosis rate. It substantially impairs patients' health-related quality of life and imposes considerable medical and socioeconomic burdens. In recent years, significant advances have been achieved globally and in China in the diagnosis and management of VM, laying a solid foundation for promoting standardized outpatient care and establishing a medical quality control evaluation system. Against this background, the Chinese Expert Collaboration Group for Medical Quality Control of Vestibular Migraine fully drew on international and domestic research evidence, closely integrated the current situation and clinical practice of dizziness and headache management in China, and strictly followed the Delphi procedure. The initial draft was formulated through systematic literature retrieval, and multiple rounds of anonymous questionnaires were conducted to extensively solicit opinions from national and regional experts, with continuous revisions until consensus was reached. The expert panel comprehensively reviewed relevant literature and guidelines worldwide, combined with expert interviews and multiple group discussions. After repeated demonstration and refinement, the panel finally established a complete set of 13 outpatient medical quality control indicators covering the whole clinical pathway of VM, including initial consultation, diagnosis, comorbidity evaluation, treatment and follow-up, among which 8 are assessment indicators and 5 are reference indicators. The present expert consensus embraces these indicators as a standardized tool to systematically promote the standardization and quality improvement of clinical practice for vestibular migraine.

Keywords

Vestibular Migraine, Medical Quality Control Indicator, Expert Consensus

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1. Introduction

Vestibular Migraine (VM) is a central vestibular disorder underpinned by the shared pathophysiological mechanisms of migraine, characterized primarily by episodic vestibular symptoms [1]. International epidemiological evidence demonstrates that the prevalence of VM ranges from 1.0% to 2.7% in the general population [2-4], representing 7% to 11% of patients in dizziness clinics [5-7], and reaching 10.3% to 21% among patients with migraine [8, 9]. Despite the absence of nationwide epidemiological surveys of VM, domestic regional studies suggest that the prevalence of VM in China may be comparable to those in Western countries [10].

Jointly developed by the Bárány Society and the International Headache Society [11], the diagnostic criteria for VM have been established and incorporated into the appendix of the International Classification of Headache Disorders, 3rd edition (ICHD-3) [12]. Meanwhile, the Bárány Society has also established the diagnostic framework for "probable vestibular migraine", collectively forming the current diagnostic system for VM.

The clinical manifestations of VM are highly heterogeneous: the duration of vestibular symptoms ranges from several seconds, minutes, and hours to even days [13], and some patients may exhibit persistent symptoms [14]. Notably, approximately 30.0% of vestibular symptom episodes occur without accompanying headache [15]. VM encompasses a spectrum of symptoms, including spontaneous or triggered vertigo [13], and may be complicated by otological symptoms such as tinnitus and hearing loss. These features render it prone to confusion with benign paroxysmal positional vertigo, Ménière's disease, posterior circulation ischemia, and other vestibular disorders [11].

Furthermore, some vestibular disorders are frequently comorbid with headache. For instance, studies have demonstrated that the prevalence of migraine in patients with Ménière's disease is twice that of the general population [16], which further complicates differential diagnosis and presents significant challenges to VM diagnosis.

Studies have demonstrated that nystagmus and/or ataxia are observed in approximately 20.0% during the interictal period [17, 18] and 70.0% of VM patients during symptom episodes [19]. These signs overlap with those of other vestibular conditions, further increasing the complexity of differential diagnosis.

Currently, there is a lack of specific diagnostic biomarkers for VM, and its diagnosis is one of exclusion, highly dependent on detailed and accurate clinical history taking. Although ancillary tests such as vestibular function tests and audiometric assessments are useful for differential diagnosis [16, 20, 21], a definitive diagnosis may require long-term follow-up in some cases.

Additionally, VM is often comorbid with multiple conditions: approximately 50.0% of patients have comorbid anxiety, depression, or motion sickness [22-24], and up to 24.0% may have comorbid Persistent Postural-Perceptual Dizziness (PPPD) [25]. These comorbidities not only significantly increase the difficulty of diagnosis and management, but also facilitate disease chronicity, resulting in frequent healthcare utilization and further exacerbating the disease burden.

VM is often described as a chameleon-like disorder owing to its diverse clinical manifestations. It can mimic the clinical manifestations of various central and peripheral vestibular disorders, and is frequently comorbid with other dizziness and vertigo disorders [26, 27].

Despite the fact that from the Bárány Society and the International Headache Society have systematically characterized this disease [11], its complex and variable symptoms continue to pose significant challenges to clinical diagnosis. Epidemiological evidence confirms that VM is one of the most common etiologies of recurrent vertigo [27, 28]. Due to its broad symptom spectrum, patients frequently present to neurology and otorhinolaryngology departments [29], resulting in a persistently high misdiagnosis rate. Studies have demonstrated that the misdiagnosis rate of VM can be as high as 80.0% [30], with only 20.0% of cases correctly diagnosed. Approximately 14.5% of neurologists and 19.0% of otorhinolaryngologists have never made a diagnosis of VM [31].

The pathophysiological mechanisms of VM are thought to involve the combined effects of central and peripheral pathways, encompassing both the trigeminovascular system and the vestibular system [32-35]. This unique mechanistic characteristic distinguishes the therapeutic strategies for VM from those for general dizziness and vertigo disorders. Findings from multiple clinical trials have shown that migraine preventive medications, including antiepileptic drugs, antidepressants, gepants, β-blockers, and calcium channel antagonists, exhibit varying degrees of efficacy in reducing the frequency and severity of VM attacks [36-40], and these agents are recommended as therapeutic options for VM in domestic and international consensus [41, 42]. Therefore, rational preventive treatment can be selected in routine clinical practice based on the latest research evidence. It is anticipated that additional data from randomized controlled trials and real-world studies will provide stronger evidence to support the clinical diagnosis and management of VM in the future.

Although several international consensus statements on the diagnosis and management of VM have been successively published worldwide [11, 12, 41, 42], it is also necessary for further improvement in the awareness and attention of both clinicians and patients regarding this disease. Given that the diagnosis of VM is highly dependent on clinical history, existing guidelines have not established quantifiable implementation indicators or a systematic quality control framework, leading to substantial variations in the standardized diagnosis, management, and long-term follow-up of VM across medical institutions at all levels, as well as a lack of unified, operable management standards.

Meanwhile, in response to the single-disease quality management requirements issued by the National Health Commission of China in 2020 [43], there is a clear policy direction to promote the standardization of VM diagnosis and management. Studies have shown that clinical practice for VM in China still faces practical challenges, including low diagnostic rates, inadequate targeted treatment, and insufficient standardized preventive medication use [44, 45]. These issues result in inadequate patient education and reduced follow-up adherence, further increasing the risk of disease chronicity and readmission rates, and exacerbating the individual and societal medical burden.

In this context, the establishment of a systematic quality management system for VM outpatient care has become a consensus demand across multidisciplinary fields. Experience has demonstrated that scientific quality control indicators are key tools for optimizing disease management, promoting disciplinary development, and continuously improving medical quality [43]. To this end, the Chinese Vestibular Migraine Medical Quality Control Working Group has developed a VM medical quality control protocol by systematically referencing domestic and international quality control standards for neurological diseases [46-50], and integrating the clinical reality in China, with recommendations formulated through expert consensus. This consensus aims to provide referenceable and evaluable quality control indicators for medical institutions at all levels, thereby promoting the standardization and homogenization of VM diagnosis and management, and ultimately improving patient clinical outcomes.

2. Consensus Development Methods

This consensus was jointly initiated by several university teaching hospitals in China.A national task force for the medical quality control of vestibular migraine (VM) was established, comprising multidisciplinary experts from the fields of neurology, otorhinolaryngology, research methodology, evidence-based medicine, and other related disciplines.This consensus was developed in strict accordance with the standard Delphi procedure. A preliminary draft was formulated through systematic literature review, and extensive expert feedback was solicited from national and international experts via multiple rounds of anonymous surveys. The draft was iteratively revised until a formal consensus was achieved.

During the consensus development process, the expert panel conducted a comprehensive review of relevant domestic and international literature and guidelines. Integrating expert interviews and multiple panel meetings, the working group fully drew upon high-level international research evidence [11, 12, 41, 42], as well as the characteristics of the Chinese healthcare system and practical experience in the clinical management of headache and dizziness disorders [51].Following extensive deliberation and iterative revision, a 13-item outpatient medical quality control indicator system was ultimately established, covering the entire clinical workflow of diagnosis, comorbidity assessment, treatment and follow-up. The system includes 8 assessable indicators and 5 referential indicators.

Following multiple rounds of expert peer review, the final consensus draft was officially promulgated. It will be disseminated through diverse approaches, including publication in peer-reviewed academic journals and official interpretation at cross-regional and multidisciplinary academic conferences. Dynamic updates will be performed in accordance with the emergence of high-quality clinical evidence and evolving clinical practice needs, so as to achieve continuous optimization of the clinical guidance and technical standards. This consensus has been registered on the International Platform of Registered Practice Guidelines (Registration No.: PREPARE-2025CN996).

3. Evaluation Indicator System for Medical Quality Control of Vestibular Migraine

3.1. Purpose

To standardize the diagnosis and treatment behaviors of medical staff for patients with VM, improve the quality of medical services, and ensure that patients receive timely, accurate, and effective diagnosis and treatment, these quality control indicator standards are formulated, including assessment indicators and reference indicators.

3.2. Scope

This expert consensus specifies the quality control indicators for the diagnosis and management of vestibular migraine (VM).

This expert consensus is applicable to healthcare professionals in medical institutions at all levels who are engaged in the diagnosis and management of dizziness and headache, including those working in departments such as neurology and otorhinolaryngology, etc.

3.3. Quality Control Indicators for the Diagnosis and management of Vestibular Migraine

Quality Control of the Diagnostic Process for VM Patients

(i). Diagnostic Criteria for Vestibular Migraine (VM) [In Accordance with Bárány Society Criteria]

The diagnostic criteria for VM are formulated jointly by the Committee for Classification of Vestibular Disorders of the Bárány Society and the Migraine Classification Subcommittee of the International Headache Society (IHS), which are based on recurrent vestibular symptoms, a history of migraine,

a temporal association between vestibular symptoms and migraine symptoms, and exclusion of other causes of vestibular symptoms [1, 4]. The specific criteria are as follows:At least 5 episodes with vestibular symptoms of moderate to severe intensity, lasting 5 minutes to 72 hours. Vestibular symptoms include spontaneous vertigo (internal vertigo: a false sensation of self-motion; external vertigo: a false sensation that the visual surround is spinning or flowing), positional vertigo (occurring after a change of head position), visually-induced vertigo (triggered by a complex or large moving visual stimulus), head motion-induced vertigo (occurring during head motion), and head motion-induced dizziness with nausea [3, 6]. Vestibular symptoms are rated “moderate” when they interfere with but do not prohibit daily activities and “severe” when daily activities cannot be continued [3].

Current or past medical history of migraine with aura or migraine without aura, in accordance with the diagnostic criteria of the International Classification of Headache Disorders, 3rd edition (ICHD-3) [3, 6].

At least 50% of the vestibular episodes are accompanied by one or more of the following migraine features [3, 6]:

1) Headache with at least 2 of the following 4 characteristics:
   a) one sided location
   b) Pulsating quality
   c) Moderate or severe intensity
   d) Aggravation by routine physical activity
2) Photophobia and phonophobia
3) Visual aura

Not better accounted for by another diagnosis in ICHD-3 or another vestibular disorder [3, 6].

(ii). Diagnostic Criteria for Probable Vestibular Migraine [In Accordance with Bárány Society Criteria, 11,6]

At least 5 episodes with vestibular symptoms of moderate to severe intensity, lasting 5 minutes to 72 hours (the definition and severity grading of vestibular symptoms are consistent with those in the diagnostic criteria for vestibular migraine).

Fulfilling only one of the following two criteria (consistent with criteria B and Cfor vestibular migraine):

1) Current or past medical history of migraine with aura or migraine without aura (in accordance with ICHD-3 criteria);
2) At least 50% of the vestibular episodes are accompanied by one or more of the following migraine-like features (as specified in criterion Cfor vestibular migraine).

Not better accounted for by another diagnosis in ICHD-3 or another vestibular disorder.Note: For the sake of clarity and readability, the term VM as used hereinafter encompasses both vestibular migraine and probable vestibular migraine.It is important to note that probable vestibular migraine may be incorporated into future editions of the International Classification of Headache Disorders (ICHD) once further evidence has accumulated [1].

(iii). Initial Consultation and History Taking

Quality Requirements

Clinicians should obtain a detailed history characterizing vertigo/dizziness and headache, including their clinical features, attack frequency, duration, severity, triggering factors, aggravating and alleviating factors, associated symptoms, family history, and response to prior treatments [12, 41]. The diagnostic reasoning and key elements of differential diagnosis shall be clearly documented to optimize the diagnostic accuracy of vestibular migraine (VM).

Quality Assessment Indicators

Indicator 1: Number of VM Patients Encountered (Reference Indicator)

Definition: Average monthly total number of outpatient encounters for patients with VM.Significance: Average monthly patient volume constitutes a comprehensive indicator that directly reflects the clinical capacity and expertise in the diagnosis and management of vertigo and dizziness.

Indicator 2: Detection Rate of VM (Reference Indicator)Definition: The proportion of patients diagnosed with VM among all patients presenting with vertigo or dizziness as the chief complaint over a defined time period.

Formula:

$$\text{VM Detection rate} = \Sigma(\text{Number of patients diagnosed with VM}) / \Sigma(\text{Total number of patients with "vertigo/dizziness" as chief complaint}) \times 100\%$$

Significance: The VM detection rate reflects the ability to identify and diagnose VM in the outpatient setting and serves as a measure of diagnostic proficiency.

Indicator 3: VM History-Taking Standardized Rate (Assessable Indicator)

Definition: The proportion of randomly sampled outpatient records of patients with vestibular migraine in which history taking was completed in accordance with this consensus.

Formula:

$$\text{VM history-taking standardized rate} = \Sigma(\text{Number of VM patients with standardized history taking}) / \Sigma(\text{Total number of sampled VM patients}) \times 100\%$$

Significance: Standardized outpatient history taking reflects the capacity for the clinical evaluation and management of VM patients and has an impact on patient clinical outcomes.

Note: A comprehensive vestibular migraine history shall include:① Types and characteristics of vestibular and headache symptoms;② Attack frequency;③ Duration;④ Severity;⑤ Triggering, aggravating, and relieving factors;⑥ Presence of aura;⑦ Associated symptoms, such as nausea, vomiting, photophobia, phonophobia, tinnitus, aural fullness, hearing loss, etc.;⑧ Functional disability;⑨ History of migraine and motion sickness;⑩ Other relevant comorbid conditions, including persistent postural-perceptual dizziness (PPPD) [52], anxiety, depression, and sleep disorders [53];

⑪Treatment and treatment response assessment;⑫ Family history.

Indicator 4: VM Physical Examination Standardized Rate (Assessable Indicator)

Definition: Proportion of VM patients who underwent a complete and accurate physical examination with full documentation in the medical record.

Formula:

VM Physical Examination Standardized Rate = Σ(Number of VM patients with complete and accurate physical examination) / Σ(Total number of VM patients) × 100%

Significance: Physical examination for VM represents a core clinical skill in the diagnosis and management of dizziness and vertigo disorders, and provides critical information for differential diagnosis. A complete and accurate physical examination reflects diagnostic proficiency.

Note: A complete and accurate physical examination shall be performed in accordance with standard textbooks of neurology, otorhinolaryngology, head and neck surgery, as well as relevant national and international guidelines and expert consensuses on dizziness and vertigo. It shall align with standard clinical practice and be fully documented in the medical record.VM-related physical examination typically includes: assessment for nystagmus, head impulse test (HIT), positional testing, hearing assessment, coordination testing, and other neurological examinations (e.g., gait and posture assessment).

(iv). Diagnostic Accuracy

Quality Requirements

Clinicians shall perform standardized history-taking and physical examination for patients with vestibular migraine, and establish the diagnosis and differential diagnosis in accordance with the current VM diagnostic criteria developed by the Bárány Society and the International Headache Society.

Quality Assessment Indicators

Indicator 5: VM Correct Diagnosis Rate (Assessable Indicator)

Definition: Proportion of randomly sampled medical records with a primary diagnosis of VM in which diagnosis and differential diagnosis were conducted in accordance with relevant diagnostic guidelines.

Formula:

VM Correct Diagnosis Rate = Σ(Number of VM patients with correct diagnosis) / Σ(Total number of randomly sampled VM patients) × 100%

Significance: This indicator reflects the implementation of standardized VM diagnosis in clinical practice and contributes to improving the quality of diagnosis and differential diagnosis for vertigo and dizziness disorders.

Other Relevant Assessments

Quality Requirements

Clinicians shall standardize the collection of key clinical information for VM patients and conduct severity assessment when indicated to optimize patient management.

Quality Assessment Indicators

Indicator 6: Anxiety and Depression Comorbid Screening Rate in VM (Assessable Indicator)

Definition: Proportion of first-visit VM patients who completed anxiety and depression comorbid screening among all first-visit VM patients within the defined period.

Formula:

Anxiety and Depression Comorbid Screening Rate in VM = Σ(Number of first-visit VM patients who completed anxiety and depression screening) / Σ(Total number of first-visit VM patients within the defined period) × 100%

Significance: This indicator reflects the attention to comorbid anxiety and depression in patients with VM. Recommended screening tools include, but are not limited to: Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7).

Indicator 7: Sleep Disorder Comorbid Screening Rate in VM (Assessable Indicator)

Definition: Proportion of first-visit VM patients who completed sleep disorder comorbid screening among all first-visit VM patients within the defined period.

Formula:

Sleep disorders comorbid screening rate = Σ(Number of first-visit VM patients who completed sleep disorder screening / Σ(Total number of first-visit VM patients within the defined period) × 100%

Significance: This indicator reflects the attention to comorbid sleep disorders in VM patients. Recommended screening tool include, but are not limited to: Pittsburgh Sleep Quality Index (PSQI).

Indicator 8: PPPD comorbid screening Rate (Assessable Indicator)

Definition: Proportion of first-visit VM patients who completed comorbid PPPD screening among all first-visit VM patients within the defined period.

Formula:

PPPD comorbid screening rate= Σ(Number of first-visit VM patients who completed PPPD screening) / Σ(Total number of first-visit VM patients within the defined period) × 100%

Significance: This indicator reflects the attention to comorbid PPPD in patients with VM.

(v). Vestibular Symptom Scale Assessment

Quality Requirements

Clinicians shall systematically evaluate the severity of vestibular symptoms, functional disability, and quality of life impairment in VM patients. Vestibular symptom scales shall be administered when necessary to optimize patient management.

Indicator 9: Vestibular Symptom Scales Assessment Rate in VM (Reference Indicator)

Definition: Proportion of first-visit VM patients who completed vestibular symptom scale assessment among all first-visit VM patients within the defined period.Examples include: Dizziness Handicap Inventory (DHI) [54] (Appendix I), Vestibular Activities of Daily Living (VADL) [55] (Appendix II).

Formula:

Vestibular Symptom Scale Assessment Rate in VM= Σ(Number of first-visit VM patients who completed vestibular symptom scale assessment) / Σ(Total number of first-visit VM patients within the defined period) × 100%

Significance: This indicator reflects the standardization of quantitative assessment for vestibular symptom severity, functional disability, and quality of life impairment in VM patients, and facilitates the evaluation of treatment response and disease progression.

(vi). Patient Health Education Quality Control Indicators

Indicator 10: Health Education Rate in VM (Assessable Indicator)

Definition: Proportion of VM patients who received standardized health education among all VM patients within the defined period.

Formula:

Health education rate in VM = Σ(Number of VM patients who received standardized health education) / Σ(Total number of VM patients within the defined period) × 100%

Significance: Patient health education improves disease awareness and self-management capacity in VM patients. This indicator reflects the coverage of standardized health education in clinical practice.

Note: Patient education shall be documented in the medical record, including: advice on diet, sleep, aerobic exercise, and trigger avoidance; information that standardized management can effectively reduce attack frequency and severity; and the prognosis of VM.

(vii). Treatment Process Quality Control for VM Patients

Quality Requirements

Patients shall prescribe treatment supported by high-level evidence of efficacy and safety from VM-specific clinical trials. Treatment selection shall be individualized based on vertigo severity, associated symptoms, attack frequency, attack frequency, prior medication use and treatment response, comorbid conditions, and other relevant factors.

Quality Assessment Indicators

Indicator 11: Preventive Medication Rational Use Rate in VM (Assessable Indicator)

Definition: Proportion of patients who received appropriate preventive pharmacotherapy among those with indications for preventive treatment in randomly sampled outpatient medical records of VM patients.

Formula:

Preventive Medication Appropriate Use Rate in VM = Σ(Number of VM patients with appropriate use of preventive medications) / Σ(Total number of VM patients with indications for and receipt of preventive medications) × 100%

Significance: Preventive treatment is recommended for eligible patients to reduce attack frequency, duration, and severity, alleviate VM-related functional disability, and improve quality of life [15]. Rational use of preventive medications is essential in the management of VM.

(viii). Patient Follow-Up Quality Control Indicators

Indicator 12: Treatment Efficacy Follow-Up Rate in VM (Reference Indicator)

Definition: Proportion of patients who completed standardized efficacy follow-up within 3 months after the first visit in randomly sampled outpatient medical records of VM patients.

Formula:

Treatment Efficacy Follow-Up Rate in VM = Σ(Number of first-visit VM patients who initiated treatment and completed efficacy assessment within 3 months) / Σ(Total number of first-visit VM patients who initiated treatment within the defined period) ×100%

Significance: This indicator reflects the capacity for standardized VM management in clinical practice. Regular and structured follow-up is strongly associated with patient prognosis and provides valuable information for the differential diagnosis of VM.

Note: Reference indicators for efficacy assessment include: attack frequency and severity of vestibular symptoms; monthly days with vestibular symptoms; DHI and VADL scores.

Formula (1):

Indicator 13: Vertigo/Dizziness and Headache Diary Completion Rate in VM (Reference Indicator)

Definition: Proportion of follow-up VM patients who maintained a vertigo/dizziness and headache diary among all follow-up VM outpatients within the defined period.

Vertigo/dizziness diary Completion Rate in VM = Σ(Number of follow-up VM patients with completed vertigo/dizziness diary) / Σ(Total number of follow-up VM patients within the defined period) ×100%

Formula (2):

Headache diary Completion Rate in VM= Σ(Number of follow-up VM patients with completed headache diary) / Σ(Total number of follow-up VM patients with headache within the defined period) ×100%

Significance: This indicator reflects the implementation of standardized diagnosis and management for vestibular migraine. Diaries provide detailed clinical information to assist diagnosis and evaluate response to preventive treatment. Patient education and diary completion shall be documented in outpatient records. Diaries may be paper-based, electronic, or in other equivalent formats [56].

4. Conclusion

This consensus aims to systematically advance standardized clinical practice for the diagnosis and management of vestibular migraine (VM). The core objective of this consensus is to establish a quality control framework comprising 13 indicators, forming a standardized evaluation system that covers the entire clinical continuum of diagnosis, management, prevention, and follow-up. It is anticipated that the publication of this consensus will assist healthcare professionals and medical institutions at all levels in gaining a thorough understanding of the key components and quality requirements for VM diagnosis and management. Moreover, it is also expected to facilitate the effective integration of these standards into routine clinical practice, thereby comprehensively improving the diagnostic accuracy of VM and the overall level of standardized clinical care.

Future efforts will focus on regional implementation adaptation within this unified framework, taking into account the available medical resources and local practical conditions across different regions. Through multi-center collaboration and a mechanism for continuous iterative revision, we will progressively advance the standardization and homogenization of VM diagnosis and management. Ultimately, this consensus seeks to reduce patient disease burden, improve long-term prognosis, and enhance health-related quality of life. It will also provide an evidence-based foundation for the development of relevant health policies and support the implementation of the Healthy China initiative.

Abbreviations

VM	Vestibular Migraine
ICHD-3	International Classification of Headache Disorders, 3rd edition
PPPD	Persistent Postural-Perceptual Dizziness
DHI	Dizziness Handicap Inventory
VADL	Vestibular Activities of Daily Living

PHQ-9 Patient Health Questionnaire-9
GAD-7 Generalized Anxiety Disorder-7
PSQI Pittsburgh Sleep Quality Index

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Conflicts of Interest

The authors report no conflicts of interest in this work.

Appendix

Appendix I: Dizziness Handicap Inventory (DHI)

Name/ID: _____ Assessor: _____ Date: ____ / ____ / _____

Instructions: Answer each question according to how you feel when diziness or unsteadiness occurs. Mark one response for each item. Scoring: Yes = 4, Sometimes = 2, No = 0.

Item	Question	Yes	Sometimes	No	Score
P1	Does looking up increase your dizziness or unsteadiness?	□	□	□	
E2	Because of your dizziness or unsteadiness, do you feel frustrated?	□	□	□	
F3	Because of your dizziness or unsteadiness, do you restrict your travel for business or recreation?	□	□	□	
P4	Does walking down the aisle of a supermarket increase your dizziness or unsteadiness?	□	□	□	
F5	Because of your dizziness or unsteadiness, do you have difficulty getting into or out of bed?	□	□	□	
F6	Because of your dizziness or unsteadiness, do you restrict your participation in social activities, such as going out to dinner, going to the movies, dancing, or attending parties?	□	□	□	
F7	Because of your dizziness or unsteadiness, do you have difficulty reading?	□	□	□	
P8	Does performing more ambitious activities, such as sports, dancing, or household chores, increase your dizziness or unsteadiness?	□	□	□	
E9	Because of your dizziness or unsteadiness, are you afraid to leave home without someone accompanying you?	□	□	□	
E10	Because of your dizziness or unsteadiness, have you felt embarrassed in front of others?	□	□	□	
P11	Do quick movements of your head increase your dizziness or unsteadiness?	□	□	□	
F12	Because of your dizziness or unsteadiness, do you avoid heights?	□	□	□	
P13	Does turning over in bed increase your dizziness or unsteadiness?	□	□	□	
F14	Because of your dizziness or unsteadiness, is it difficult for you to do strenuous housework or physical work?	□	□	□	
E15	Because of your dizziness or unsteadiness, are you afraid that people may think you are intoxicated?	□	□	□	
F16	Because of your dizziness or unsteadiness, is it difficult for you to go for a walk by yourself?	□	□	□	
P17	Does walking down a sidewalk increase your dizziness or unsteadiness?	□	□	□	
E18	Because of your dizziness or unsteadiness, is it difficult for you to concentrate?	□	□	□	
F19	Because of your dizziness or unsteadiness, is it difficult for you to walk around your home in the	□	□	□	

Item	Question	Yes	Some-times	No	Score
	dark?				
E20	Because of your dizziness or unsteadiness, are you afraid to stay home alone?	□	□	□	
E21	Because of your dizziness or unsteadiness, do you feel disabled?	□	□	□	
E22	Because of your dizziness or unsteadiness, has stress been placed on your relationships with family members or friends?	□	□	□	
E23	Because of your dizziness or unsteadiness, do you feel depressed?	□	□	□	
F24	Has your dizziness or unsteadiness interfered with your job or household responsibilities?	□	□	□	
P25	Does bending over increase your dizziness or unsteadiness?	□	□	□	

Total DHI: _____ / 100 Physical (DHI-P): _____ / 28

Emotional (DHI-E): _____ / 36 Functional (DHI-F): _____ / 36

Interpretation: 0-30 = mild handicap; 31-60 = moderate handicap; 61-100 = severe handicap. Higher scores indicate greater perceived disability related to dizziness or balance problems.

Appendix II: Vestibular Disorders Activities of Daily Living Scale (VADL)

Name/ID: _____ Assessor: _____ Date: ____ / ____ / _____

Instructions: This scale assesses how dizziness and balance problems affect independence in routine daily activities. Rate your current performance compared with your performance before the vestibular or balance problem began. If your ability varies because symptoms are intermittent, rate the worst level of disability. Mark one response for each task. Select NA if you do not usually perform the task or prefer not to answer.

Independence Rating Key

1	Independent; no difficulty or change in performance.	7	Must use special equipment or an assistive device designed for the task.
2	Uncomfortable, but no change in ability or quality of performance.	8	Requires physical assistance from another person.
3	Reduced ability or quality of performance, but the method of performing the task is unchanged.	9	Dependent on another person to complete the task.
4	Performs the task more slowly, cautiously, or carefully, or modifies the method of performing it.	10	Unable to perform the task because of dizziness or balance problems.
5	Prefers to use an ordinary object in the environment for support, but does not depend on it.	NA	Not applicable: the task is not usually performed, or the respondent prefers not to answer.
6	Must use an ordinary object in the environment for support.		

Task Ratings

Task		1	2	3	4	5	6	7	8	9	10	NA
F-1	Moving from lying down to sitting up	□	□	□	□	□	□	□	□	□	□	□
F-2	Standing up from a bed or chair	□	□	□	□	□	□	□	□	□	□	□
F-3	Dressing the upper body (e.g., shirt, bra, undershirt)	□	□	□	□	□	□	□	□	□	□	□
F-4	Dressing the lower body (e.g., trousers, skirt, underwear)	□	□	□	□	□	□	□	□	□	□	□
F-5	Putting on socks or stockings	□	□	□	□	□	□	□	□	□	□	□
F-6	Putting on shoes	□	□	□	□	□	□	□	□	□	□	□
F-7	Getting into and out of a bathtub or shower	□	□	□	□	□	□	□	□	□	□	□

Task	1	2	3	4	5	6	7	8	9	10	NA
F-8 Bathing in a bathtub or shower	□	□	□	□	□	□	□	□	□	□	□
F-9 Reaching for an item above your head (e.g., in a cupboard or on a shelf)	□	□	□	□	□	□	□	□	□	□	□
F-10 Reaching for an item low down (e.g., on the floor or a lower shelf)	□	□	□	□	□	□	□	□	□	□	□
F-11 Preparing a meal	□	□	□	□	□	□	□	□	□	□	□
F-12 Intimate activity (e.g., foreplay or sexual activity)	□	□	□	□	□	□	□	□	□	□	□
A-13 Walking on a level surface	□	□	□	□	□	□	□	□	□	□	□
A-14 Walking on an uneven surface	□	□	□	□	□	□	□	□	□	□	□
A-15 Walking up stairs	□	□	□	□	□	□	□	□	□	□	□
A-16 Walking down stairs	□	□	□	□	□	□	□	□	□	□	□
A-17 Walking in narrow spaces (e.g., hallways or supermarket aisles)	□	□	□	□	□	□	□	□	□	□	□
A-18 Walking in open spaces	□	□	□	□	□	□	□	□	□	□	□
A-19 Walking in a crowd	□	□	□	□	□	□	□	□	□	□	□
A-20 Riding in an elevator	□	□	□	□	□	□	□	□	□	□	□
A-21 Using an escalator	□	□	□	□	□	□	□	□	□	□	□
I-22 Driving a car	□	□	□	□	□	□	□	□	□	□	□
I-23 Carrying items while walking (e.g., a package or bag of rubbish)	□	□	□	□	□	□	□	□	□	□	□
I-24 Performing light household tasks (e.g., dusting, putting items away, or clearing a table)	□	□	□	□	□	□	□	□	□	□	□
I-25 Performing heavy household tasks (e.g., vacuuming or moving furniture)	□	□	□	□	□	□	□	□	□	□	□
I-26 Participating in active recreation (e.g., exercise, morning activities, or walking a dog)	□	□	□	□	□	□	□	□	□	□	□
I-27 Fulfilling an occupational role (e.g., working, caring for children, or studying)	□	□	□	□	□	□	□	□	□	□	□
I-28 Traveling between places in the community (e.g., by car or bus)	□	□	□	□	□	□	□	□	□	□	□

Category codes: F = Functional activities; A = Ambulation activities; I = Instrumental activities.

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