Effects of Vestibular Physical Therapy in Patients with Vertigo and Dizziness: A Systematic Review.

Carla Rivero-Rodriguez[1], Irene García-Rodríguez [2], Marlene García-Quintana[2*], Daniel David Álamo-Arce[2], Aníbal Báez-Suárez[1], Martín Vílchez-Barrera[1], Raquel Medina-Ramírez[2]

[1]Faculty of Health, University of Las Palmas de Gran Canaria, 35016 Las Palmas de Gran Canaria, Spain

[2]Research Group Soc-Dig., Medical and Surgical Sciences Department, Faculty of Health Sciences, University of Las Palmas de Gran Canaria, 35016 Las Palmas de Gran Canaria, Spain

***Corresponding Author**

DOI: https://doi.org/10.51244/IJRSI.2026.1307000241

Received: 29 July 2026; Accepted: 03 August 2026; Published: 09 August 2026

ABSTRACT

Background and purpose: Dizziness and vertigo are prevalent symptoms worldwide, ranking third among the most frequent consultations in Primary Care and Emergency Departments. These symptoms affect both sexes and tend to increase with age. In addition to their impact on health, they generate significant negative consequences on the quality of life of those who experience them, being a recurrent cause of functional dependence and work disability. The role of vestibular physiotherapy has grown considerably in recent years and has become essential in the therapeutic approach to vertigo and dizziness, playing a fundamental role in the readaptation of the vestibular system and contributing significantly to the improvement of these symptoms. The primary objective is to evaluate in the literature the effects of physiotherapeutic intervention as a treatment in patients with vertigo and/or dizziness. ***Methods:*** A systematic review of clinical trials was conducted using various databases including PubMed, Cochrane, ScienceDirect, Scopus, and Web of Science. The search was restricted to randomized clinical trials published in the last 10 years, written in English and Spanish, and focused on the study of vertigo and/or dizziness. This systematic review was conducted in accordance with the PRISMA guidelines. ***Results***: The results obtained indicate significant differences in the groups after the different vestibular physiotherapy interventions. Moreover, the combination with other methods proves to be beneficial in these patients. On the other hand, quality of life and mental health did not show statistically significant improvements in all studies. **Discussion:** Vestibular physiotherapy has shown positive results in patients with vertigo and dizziness. Whether applied alone or in combination with non-conventional approaches, this form of intervention not only alleviates the associated symptomatology but also significantly improves the quality of life of these patients.

Keywords: Dizziness; Physical Therapy; Physiotherapy; Vestibular Rehabilitation.

INTRODUCTION

Dizziness is one of the most common symptoms worldwide, affecting both sexes, with a higher prevalence in adults, particularly in the elderly (1,2). It is generally described as a non-specific symptom, characterized by an erroneous sensation of spatial orientation, instability, imbalance, or hallucination of movement. The most common type is vertigo, defined as a false sensation of movement of oneself or one's surroundings when there is no real movement (3).

The most common cause of vertigo and/or dizziness is a lesion or alteration of the vestibular system, which can be differentiated into two types according to their origin. Peripheral vestibular vertigo, the most common type, accounts for 75% of all cases and has an acute, intense onset that may impede daily activities. Central vestibular vertigo, originating from the VIII cranial pair, brain stem, and cerebellum, accounts for 25% of cases, is

characterized by its progressive nature, milder intensity, and longer duration (10). Additionally, there is psychogenic dizziness, which accompanies strong emotional sensations (11).

Maintaining balance and gaze stability requires the participation of the vestibular system (4,5), along with the muscular and osteoarticular apparatus of the legs and trunk, proprioceptive afferents, visual and vestibular sensory information, and complex integration in the central nervous system. Consequently, individuals can experience dizziness or vertigo in various physiological and pathological situations (5).

The fundamental basis for diagnosing vertigo and/or dizziness involves performing an anamnesis and physical examination of the vestibular system (6). Tests to examine the vestibulo-ocular and vestibulo-spinal pathways include the Barany test, Romberg test, Babinsky-Weil maneuver, and tandem gait (6). Vertigo affects 15-35% of the general population at some point in their lives (7). In Spain, nearly 2% of the population consults Primary Care annually for vertigo and/or dizziness (8).

The incidence is higher in females than males, and nearly three times more frequent in the elderly than in young adults, affecting up to 20% of the population over 65 years of age (7,8). In children, the prevalence of rotatory dizziness is reported to be 6-18%, with vestibular and balance disorders accounting for 0.45%, with benign paroxysmal vertigo being the most common (19%) (8). The annual prevalence of vertigo and dizziness reaches 3% of the population, with the incidence increasing with age (8). Patients with this disorder report an inability to perform activities of daily living, resulting in a decrease in the quality of life (9).

In terms of treatment, pharmacological treatment aims to alleviate symptoms and prevent relapse (12). Surgery may be an option in certain cases such as hydrotropic inner ear disease and Menière's disease, indicated in just over 1% of patients (13).

Vestibular physiotherapy, a type of therapy mainly uses exercises like habituation to help patients get used to motion and reduce dizziness, as well as repositioning maneuvers like Epley for those with BPPV that has gained prominence in recent years (14). These techniques are used in patients with vestibular system disorders to improve balance, restore spatial orientation, and enhance quality of life (15). Specific exercises tailored to individual needs include habituation exercises (for sensitivity to movement), adaptation exercises (for vestibular-ocular reflex disorders), substitution exercises (to improve vestibular function with eye movements), and optokinetic exercises (to activate the vestibular system) (14,16). Physical therapists also work on improving gaze stability through specific eye–head coordination exercises. Balance training, often on unstable surfaces or with visual challenges, is key—especially for older adults and athletes recovering from concussion. The approach is always adapted to what each person needs most. (14,16).

Given the observed data and the prevalence and incidence rates of these vestibular alterations in society, there is a need to analyze the available treatments. Therefore, this study aims to gather the most up-to-date evidence on various physiotherapeutic methods as treatments for patients with vertigo and/or dizziness.

METHODS

We conducted a systematic review adhering to the guidelines of the Preferred Reporting Items for Systematic reviews and Meta-Analyses Extension for Scoping Review (PRISMA-ScR) (17). We utilized the following MeSH terms: "vestibular rehabilitation," "physical therapy," "physiotherapy," "dizziness," and "vertigo," along with the Boolean operators "AND" and "OR." This resulted in the following search equation: ((Vestibular Rehabilitation) OR (Physical Therapy) OR (Physiotherapy)) AND ((Dizziness) OR (Vertigo)). The bibliographic search methodology varied across databases: we searched by title and abstract in PubMed; by title, abstract, and keywords in Cochrane, ScienceDirect, and Scopus; and by subject in Web of Science. This systematic review was conducted in accordance with the PRISMA guidelines.

Selection of studies

The inclusion criteria for this review required that articles be published within 2013 and 2023 in Spanish or English, focusing on the study of vertigo and/or dizziness as symptoms of vestibular pathology, and exploring treatment techniques aimed at improving vertigo and/or dizziness.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VII July 2026

We excluded trials involving patients with dizziness and/or vertigo secondary to traumatic brain injury, articles focusing solely on dizziness and/or vertigo in a specific pathology, and articles examining only balance or other symptomatology related to the vestibular system aside from vertigo or dizziness.

A total of 1599 articles were initially identified. After removing duplicate articles, titles and abstracts were analyzed based on the inclusion and exclusion criteria. Ultimately, 8 articles were selected for inclusion in this review (Figure 1). All the articles selected have been approved by ethical committees.

To extract information from the selected articles, the following data points were considered: authors, year of publication, sample size, age range, number of sessions, duration of sessions, intervention techniques, outcome measures, results, and conclusions.

Figure 1. Study selection process presented using the PRISMA 2020 flow diagram

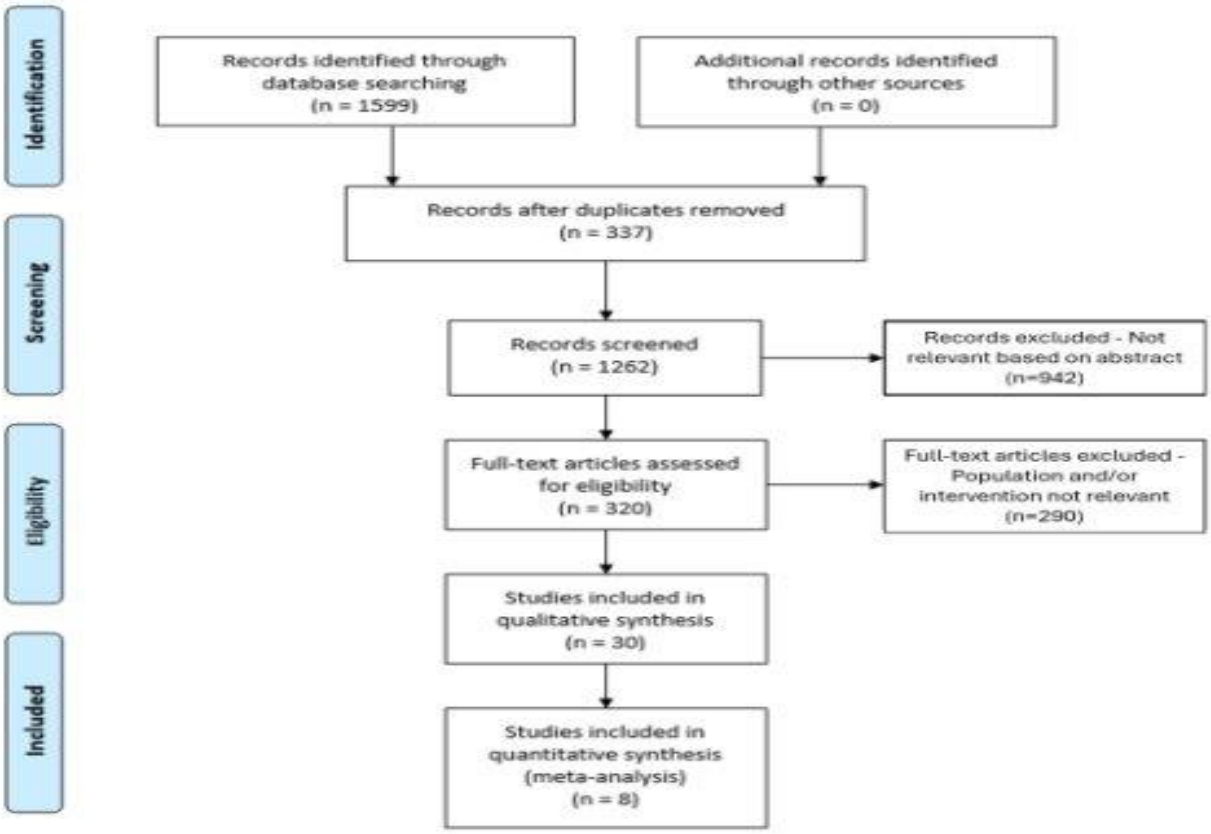

Figure 1. Flowchart which details the study selection. It summarises the phases of identification, pre-screening, eligibility and inclusion in the review. It was adapted from the PRISMA 2020 statement [17] and developed using the official template.

Evaluation of methodological quality and scientific evidence

To evaluate the methodological quality of the studies, we utilized the PEDro scale, a tool designed to assess external and internal validity, as well as statistical data, facilitating evidence-based clinical decisions (18).

Scoring ranged from 0 to 10 points, excluding the first item which pertains to external validity (19). Each item was rated as either "YES" or "NO" based on its fulfillment. A numerical score was then calculated, with "YES" being assigned a value of 1 and "NO" a value of 0. Higher scores indicate greater methodological quality, and results can be categorized as follows: < 4, poor; 4 - 5, acceptable; 6 - 8, good; and 9 - 10, excellent (20).

For assessing the level of evidence and recommendation, we employed the Oxford Centre for Evidence-Based Medicine (CEBM) scale, which allows evaluation of evidence based on the subject area, clinical situation, and type of research relevant to the clinical questions (21,22).

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VII July 2026

RESULTS/FINDINGS

The results of the methodological quality are shown in Table 1, evaluated using the Pedro scale. Regarding the evaluation of the levels of evidence, it was found that all the articles included show a level of evidence 1b with a recommendation grade A.

Table 1. Assessment of methodological quality according to the PEDro scale

Authors	**Items**											**Total**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	
Koganemaru et al. (22)	1	1	1	1	0	0	0	1	1	1	1	7
Menant et al. (23)	1	1	1	1	0	0	0	0	1	1	1	6
Lamas et al. (24)	1	1	1	1	0	0	1	1	1	1	1	8
Van Vugt et al. (25)	1	1	1	1	0	0	0	0	1	1	1	6
Deshmukh et al. (26)	1	1	1	1	0	0	0	1	1	1	1	7
Aratani et al. (27)	1	1	1	1	0	0	0	0	1	1	1	7
Wang et al. (28)	1	1	1	1	0	0	0	1	1	1	1	7
Kanyilmaz et al. (29)	1	1	1	1	0	0	0	1	1	1	1	7

PEDro scale items: 1. Random assignment; 2. Concealed allocation; 3. Baseline comparability; 4. Participant blinding; 5. Therapist blinding; 6. Assessor blinding; 7. Follow-up; 8. Intention-to-treat analysis; 9. Between-group analysis; 10. Score and variability measures. The items have been categorized thought numbers (1 is "yes" and 0 is "no" in PeDro Scale answers)

The total number of participants across the 8 articles was 912 subjects, ranging in age from 18 to 92 years. Among these studies, 4 focused primarily on dizziness as the main condition (23,24,26,30), while 2 articles addressed vertigo (27,29), and the remaining 2 included patients with dizziness and/or vertigo (25,26).

All articles compared various methods for treating dizziness and/or vertigo with a standard vestibular physiotherapy approach. The interventions in the experimental groups included: transcranial direct current electrostimulation (tcDCS) (23), multifaceted interventions (24), lian gong (25), virtual reality (26,30), activation of the deep neck musculature (26), flexibility, cognition, sensory interaction, and muscle strengthening exercises (28), and pharmacological treatment combined with vestibular physiotherapy (29).

The total number of intervention sessions varied among the studies: 6 sessions (1 per week) (26), 12 sessions (1 per week) (25), 12 sessions (3 per week) (24,27), 15 sessions (3 per day) (23), 15 sessions (5 per week) (30), 16 sessions (2 per week) (28), and 84 sessions (3 per day) (29).

The most evaluated variables included vertigo and dizziness, quality of life, and depression and anxiety. Vertigo and dizziness were assessed in all trials, with the Dizziness Handicap Inventory (DHI) being the most used measure in 7 articles, showing significant improvements ($p < 0.05$) (23,24,26-30).

Lamas et al. (25) did not specify the measure used for this variable but concluded that symptomatology improved following the interventions.

In contrast, the quality of life was assessed in 5 of the articles. In 2 of them, the Geriatric Depression Scale (GDS) was utilized (28,30), while in another 2, the Patient Health Questionnaire (PHQ-9) was employed (24,26),

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VII July 2026

without yielding statistically significant results in any of them ($p > 0.05$). However, in the study by Lamas et al. (26), the SF-36 was used to assess this variable, resulting in significant differences ($p < 0.05$).

The third most studied variable among the trials was depression and anxiety, with the General Anxiety Disorder (GAD-7) being utilized in 2 of the articles (24,26), and the State-Trait Anxiety Inventory (STAI) in one study (23), without statistically significant differences found in any of them ($p > 0.05$). In contrast, in the study by Kanyilmaz et al. (30), where the Hamilton Anxiety Scale (HAS) was employed, the results indicated significant improvements after the interventions ($p < 0.05$). (See summary of results in Table 2)

Table 2. Summary of articles

AUTHORS	SAMPLE	SESSIONS	INTERVENTION	PERFORMANCE MEASURES	RESULTS
Koganemaru et al.	n = 16 Age: from 41 to 73 years old	3 sessions of 25 minutes every 4 hours	G1: Vestibular physiotherapy combined with tcDCS G2: Vestibular physiotherapy	DHI, STAI, SDS, TUG V_0 : initial V_1: 1 month	G1-G2: improvement in all parameters, significant difference in DHI ($p = 0.033$) for G1
Menant et al.	n = 305 Age: from 50 to 92 years old	3 sessions per week for 30 minutes	G1: Personalized multifaceted intervention G2: Usual care	DHI, CSRT, Coefficient of variation of step time in seconds, Tilt test, PPA, Dynamic balance tests, FES-I, GAD-7, PHQ-9, Reduced five-factor NEO inventory. V_0: initial V_1: 6 months	G1-G2: significant difference in IHD ($p = 0.003$) for G1
Lamas et al.	n = 33 Age: 18 years or older	Weekly 50-minute sessions	G1: Lian gong G2: Vestibular physical therapy G3: No treatment	SF36, SPPB V_0: initial V_1: 12 weeks	G1-G2: significant improvement in SF36 ($p < 0.05$).
Van Vugt et al.	n = 322 Age: 50 years or older	Weekly sessions of 10 to 20 minutes	G1: Virtual reality and routine medical care G2: Virtual Reality and vestibular physiotherapy G3: Usual care	VSS-SF, DHI, PHQ, GAD-7, PHQ-9 V_0: initial V_1: 3 months V_2: 6 months	G1-G2: significant improvement in VSS-SF ($p < 0.05$).
Deshmukh et al.	n = 20 Age: between 18	30 minutes per session, 3 days/week	G1: isometric exercises for deep neck muscle activation and	DHI, MSQ V_0: initial	G1-G2: significant differences ($p <$

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VII July 2026

	and 30 years old		vestibular physiotherapy. G2: vestibular physiotherapy	$V_{1:}$ 4 weeks	0.001) in both parameters.
Aratani et al.	Age: 65 years or older	2 sessions of 50 minutes per week	G1: Multimodal vestibular physical therapy of Cawthorne and Cooksey G2: Vestibular physical therapy (Cawthorne and Cooksey)	DHI, VAS, VADL, GDS, ABC V 0: initial V 1: 2 months	Not found significant differences in the groups (p < 0.01)
Wang et al.	n = 102 Age: between 18 and 85 years old	20 to 40 minutes, 3 times a day.	G1: vestibular physiotherapy and pharmacological treatment G2: pharmacological treatment	BBS, VSI, symptom changes before and after treatment, IHD, patient satisfaction V_0: initial V_1: 4 weeks	G1-G2: significant differences ($p < 0.001$) in BBS, VSI and DHI for G1.
Kanyilmaz et al.	n = 32 Age: 65 years or older	5 sessions of 35 minutes per week	G1: Vestibular physiotherapy using virtual reality. G2: Vestibular physical therapy	VSS, DHI, BBS, TUG, FES-I, GDS, HAS V_0 : initial V_1 : 6 months	G1-G2: significant differences ($p < 0.05$) in DHI, TUG, VSS and HAS for G1.

DHI: Dizziness Handicap Inventory; STAI: State-Trait Anxiety Inventory; SDS: Sheehan Disability Scale; TUG: Timed Up and Go Test; CSRT: Choice-Stepping Reaction Time; PPA: Physiological Profile Assessment; FES-I: Falls Efficacy Scale-International; GAD-7: General Anxiety Disorder-7; PHQ-9: Patient Health Questionnaire; SF-36: Short-Form Health Survey; SPPB: Short Physical Performance Battery; VSS-SF: Vertigo Symptom Scale-Short Form; MSQ: Minnesota Satisfaction Questionnaire; VAS: Visual Analogue Scale; VADL: Vestibular Disorders Activities of Daily Living Scale; GDS: Geriatric Depression Scale; ABC: Activities-Specific Balance Confidence Scale; BBS: Berg Balance Scale; VSI: Vestibular Symptom Index; HAS: Hamilton Anxiety Scale; V0: before treatment; V1: after treatment.

DISCUSSION

The aim of this review is to analyze the available literature to assess the effectiveness of vestibular physical therapy in patients suffering from vertigo and dizziness.

All included articles were randomized clinical trials, with methodological quality assessed using the PEDro scale, demonstrating a level of quality ranging from good to excellent. The total number of subjects evaluated across these trials was 912, enhancing the reliability of the review's results.

According to the findings, seven of the articles showed significant improvements in vertigo and dizziness. Various interventions were employed, all in conjunction with conventional vestibular physiotherapy. For

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VII July 2026

instance, Koganemaru et al. (23) utilized direct current electrostimulation (tcDCS), while Van Vugt et al. (26) and Kanyilmaz et al. (30) used virtual reality. These interventions promoted processes related to habituation and substitution of the vestibular system and postural control, leading to notable improvements when combined with conventional vestibular physiotherapy. Lamas et al. (25) utilized lian gong (therapeutic gymnastics), and Deshmukh et al. (27) employed activation of the deep neck musculature, enhancing subjects' integrity, postural stability, and flexibility, thereby alleviating symptomatology. Menant et al. (24) implemented multifaceted interventions, while Wang et al. (29) utilized pharmacological treatment. Individualized interventions in both studies resulted in a more effective and efficient approach, with high subject satisfaction levels. Consequently, significant improvements were observed in vertigo and dizziness in the seven described studies. However, Aratani et al. (28) did not observe significant differences, possibly due to the multimodal component used, increasing the potential for bias in the results. Additionally, the authors noted the subjective nature of dizziness perception, increasing the likelihood of result inaccuracies.

A variety of outcome measures were employed across the 8 articles studied. For vertigo and dizziness, the most common scale was the Dizziness Handicap Inventory (DHI), used in 7 studies, except Van Vugt et al. (26), who utilized the Vertigo Symptoms Scale (VSS-SF) with significant outcomes. The difference in results may be attributed to VSS-SF's adaptability to virtual reality treatments. Although Lamas et al. (25) did not use a specific tool for vertigo/dizziness assessment, the observed improvement in subjects' quality of life suggests symptomatology enhancement.

Furthermore, five articles investigated anxiety and depression, with Kanyilmaz et al. (30) reporting significant post-treatment differences. The diversity of scales used across other articles, coupled with differences in sample sizes, may explain insignificant results in these variables and increase the potential for bias.

Regarding the results, the studies included in the review show a clear trend towards greater effectiveness of interventions that combine vestibular physiotherapy with other complementary techniques. In most trials, the experimental group showed statistically significant improvements compared to the control groups, as in the studies by Koganemaru (23), Menant (24), Deshmukh (27), Wang (29), and Kanyilmaz (30). For example, Kanyilmaz et al. (30) found significant improvements on multiple functional scales such as DHI, TUG, and BBS when incorporating virtual reality into therapy. Similarly, Menant et al. (24) found a significant improvement in the Dizziness Handicap Index (DHI) with multifaceted interventions. These data support the efficacy of combined or innovative approaches over traditional vestibular physiotherapy.

According to the literature, vertigo and dizziness significantly impact the quality of life of affected individuals, leading to impairment in various aspects of daily functioning, including work, social interactions, and activities of daily living (32-34). However, only two of the studies analyzed this aspect. Lamas et al. (25) utilized the SF-36 Health Questionnaire, demonstrating statistically significant improvements in quality-of-life following interventions. This improvement can be attributed to high treatment adherence, highlighted by decreased pain and increased confidence among subjects, resulting in positive effects on vertigo and dizziness symptomatology.

Wang et al. (30) also reported enhanced quality of life among study subjects but did not specify the measurement scale employed. Although other articles did not directly assess quality of life, its enhancement is presumed to be inversely related to improvements in vertigo and dizziness symptoms, indicating a positive development in subjects' overall well-being.

This systematic review study has several limitations, notably the small number of articles analyzed, considerable variation in interventions performed, the variable age range of the participants in the studies included and diversity in outcome measures used. Additionally, some studies had small sample sizes, ranging from 16 to 40 patients, potentially leading to less precise and statistically insignificant results. However, despite these limitations, analysis of the eight articles confirms the effectiveness of vestibular physical therapy for these patients. Furthermore, the incorporation of complementary methods, as described in these studies, contributes to symptom improvement, and addresses other negative factors such as anxiety and depression.

Given the high prevalence of vertigo and dizziness in contemporary society, further research is warranted, particularly larger clinical trials. Additionally, conducting studies with more specific age classifications would

provide insight into the efficacy of physiotherapy treatment across different life stages. Such studies could consider age-related comorbidities that may impact vertiginous symptomatology adversely.

The outcomes of this systematic review demonstrate the efficacy of vestibular physical therapy for individuals suffering from vertigo and dizziness. Additionally, the integration of complementary therapies alongside it enhances symptom management, positively influencing associated factors such as quality of life, depression, and anxiety.

Furthermore, it is advisable to conduct further studies with expanded sample sizes and refined age stratification. This approach is crucial as age-related comorbidities can impact patients differently, necessitating a more nuanced understanding of treatment effectiveness across various life stages.

Implications On Physiotherapy Practice

Vestibular physiotherapy brings new approaches to the treatment of patients with secondary or primary balance disorders. This review provides a current view of the techniques being studied in this area of physical therapy and opens a light for future studies in the field. In addition, vestibular physical therapy helps in the treatment of cervical disorders that secondarily affect the patient's balance. This review provides information to focus on vestibular treatment in physical therapy and at the same time helps the professional to keep updated on the quality of evidence in this field.

Author Contributions: Conceptualization, I.G.Q. and C..; methodology, I.G.R.; software, C.; validation, C., M.G.Q. and R.M.R.; formal analysis, C.; investigation, C.; resources, R.M.R.; data curation, C.;.; writing—original draft preparation, C.;, D.A.A. and R.M.R.; writing—review and editing, M.G.Q., D.A.A. and R.M.R.; visualization, I.G.R., M.G.Q., and R.M.R.; supervision, M.G.Q., and R.M.R.; project administration, D.A.A. and R.M.R.; funding acquisition, not applicable. All authors have read and agreed to the published version of the manuscript.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

Institutional Review Board Statement: Not applicable

Informed Consent Statement: Not applicable.

Data Availability Statement: All data from the studies are shown in the tables and in the written work.

Conflicts of Interest: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

1. Romero AC, Hayashi MS, Kishi MS, Cardoso AC, Frizzo AC. Dizziness handicap inventory-in a group of patients undergoing customized vestibular rehabilitation. Rev CEFAC. 2015;17(3):792-800.
2. Guerra-Jiménez G, Arenas Rodríguez A, Falcón González JC, Pérez Plasencia D, Ramos Macías Á. Epidemiology of vestibular disorders in the otoneurology consultation. Acta Otorrinolaringológica Esp. 2017;68(6):317-22.
3. Fife TD. Dizziness in the Outpatient Care Setting. Contin Minneap Minn. 2017;23(2, Selected Topics in Outpatient Neurology):359-95.
4. Suárez Nieto C, Gil-Carcedo García LM, Medina JE, Marco Algarra J, Ortega del Álamo P, Trinidad Pinedo J. Tratado de Otorrinolaringología y Cirugía de Cabeza y Cuello. 2nd ed. 2nd ed. Vol. 2. Oviedo: Editorial Medica Panamericana, S. A.; 2007. 955 p.
5. Zarranz Imirizaldu JJ. Neurology. 5th ed. Basque Country: Fotoletra, S.A; 2013. 736 p.

6. Abellán Van Kan G, Abizanda Soler P, Alastuey Giménez C, Albó Poquí A, Alfaro Acha A, Alonso Renedo M. Geriatrics treatise for residents. Madrid: Spanish Society of Geriatrics and Gerontology; 2007. 820 p.
7. Neuhauser HK. The epidemiology of dizziness and vertigo. Handb Clin Neurol. 2016;137:67-82.
8. García García E, González Compta X. Update in the management of vertigo. AMF. 2019;15(4):184-91.
9. Spanish Society of Otorhinolaryngology and Head and Neck Surgery. 80% of Spaniards have suffered at least one episode of vertigo in their lives [Internet]. Las Palmas de Gran Canaria; 2022.
10. Alcalá Villalón T, Lambert García M, Suárez Landrean A. Clinical approach to vertigo from Primary Health Care. Rev Habanera Medical Sciences. 2014;13(3):394-405.
11. Espinosa Sánchez JM, Cerveza Paz J. The patient with vertigo in the emergency department. Revista Medica Universidad de Navarra. 2003;47(4):77-81.
12. Kumar Swain S. Pharmacotherapy for vertigo: a current perspective. Int J Otorhinolaryngol Head Neck Surg. 2020;6(7):1400-6.
13. Volkenstein S, Dazert S. Recent surgical options for vestibular vertigo. GMS Curr Top Otorhinolaryngol Head Neck Surg. 2017;16.
14. Whitney SL, Alghwiri AA, Alghadir A. An overview of vestibular rehabilitation. Handb Clin Neurol. 2016;137:187-205.
15. Resende CR, Taguchi CK, Almeida JG de, Fujita RR. Vestibular rehabilitation in elderly patients with benign paroxysmal positional vertigo. Rev Bras Otorrinolaringol. August 2003;69:535-40.
16. Aligene K, Lin E. Vestibular and balance treatment of the concussed athlete. NeuroRehabilitation. 2013;32(3):543-53.
17. Andrea C. Tricco, Erin Lillie, Wasifa Zarin, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med.2018;169:467-473.
18. PEDro Statistics - PEDro [Internet]. 2012 [cited July 25, 2023]. Available from: https://pedro.org.au/spanish/learn/pedro-statistics/
19. Sherrington C, Herbert RD, Maher CG, Moseley AM. PEDro. A database of randomized trials and systematic reviews in physiotherapy. Man Ther. November 2000;5(4):223-6.
20. Moseley, A. M., Rahman, P., Wells, G. A., Zadro, J. R., Sherrington, C., Toupin-April, K., & Brosseau, L. (2019). Agreement between the Cochrane risk of bias tool and Physiotherapy Evidence Database (PEDro) scale: A meta-epidemiological study of randomized controlled trials of physical therapy interventions. PloS one, 14(9), e0222770. https://doi.org/10.1371/journal.pone.0222770
21. Mella Sousa M, Zamora Navas P, Mella Laborde M, Ballester Alfaro JJ, Uceda Carrascosa P. Levels of Clinical Evidence and Grades of Recommendation. Rev S And Traum And Ort. 2012;29(1/2):59-72.
22. Oxford Centre for Evidence-Based Medicine: Levels of Evidence (March 2009) [Internet]. [cited 2023 Oct 28, 2023]. Available from: https://www.cebm.ox.ac.uk/resources/levels-of-evidence/oxford-centre-for-evidence-based-medicine-levels-of-evidence-march-2009
23. Koganemaru S, Goto F, Arai M, Toshikuni K, Hosoya M, Wakabayashi T, et al. Effects of vestibular rehabilitation combined with transcranial cerebellar direct current stimulation in patients with chronic dizziness: An exploratory study. Brain Stimulat. 2017;10(3):576-8.
24. Menant JC, Migliaccio AA, Sturnieks DL, Hicks C, Lo J, Ratanapongleka M, et al. Reducing the burden of dizziness in middle-aged and older people: A multifactorial, tailored, single-blind randomized controlled trial. PLoS Med. July 2018;15(7):e1002620.
25. Lamas Lopes A, Aguiar Lemos SM, Scheidt Figueiredo PH, Nunes Santos J. Impact of lian gong on the quality of life of individuals with dizziness in primary care. Rev Saude Publica. 2019;53:73.
26. Van Vugt VA, Van der Wouden JC, Essery R, Yardley L, Twisk JWR, Van der Horst HE, et al. Internet based vestibular rehabilitation with and without physiotherapy support for adults aged 50 and older with a chronic vestibular syndrome in general practice: three armed randomised controlled trial. BMJ.2019;367:l5922.
27. Deshmukh AA, Kanase SB. Effect of activation of deep neck muscles as an adjunct to vestibular rehabilitation in Vertigo. Indian J Public Health Res Dev. 2020;11(2):701-7.
28. Aratani MC, Ricci NA, Caovilla HH, Ganança FF. Benefits of vestibular rehabilitation on patient-reported outcomes in older adults with vestibular disorders: a randomized clinical trial. Braz J Phys Ther. 2020;24(6):550-9.

29. Wang J, Gong J, Sui X, Wang L, Zhu L, Sun D. An effect analysis of vestibular rehabilitation training in vertigo treatment. Am J Transl Res. 2021;13(4):3494-500.
30. Kanyılmaz T, Topuz O, Ardıç FN, Alkan H, Öztekin SNS, Topuz B, et al. Effectiveness of conventional versus virtual reality-based vestibular rehabilitation exercises in elderly patients with dizziness: a randomized controlled study with 6-month follow-up. Braz J Otorhinolaryngol. 2022;88 (Suppl 3):S41-9.
31. Montero Monterroso JL, Pérula de Torres LÁ, Larrea Barroso MJ. Dizziness and its relationship with anxiety and depression in a primary care emergency department. Aten Primaria. Sep 15, 2006;38(4):200-5.
32. Franco I, Uricel Y, Valencia S, Castillo-Bustamante M, Madrigal J. Quality of life in patients with vestibular disorders: a narrative review. International Journal of Otorhinolaryngology and Head and Neck Surgery. Apr 26, 2023;9(5):426-34.
33. Petri M, Chirilă M, Bolboacă SD, Cosgarea M. Health-related quality of life and disability in patients with acute unilateral peripheral vestibular disorders. Braz J Otorhinolaryngol. 2017;83(6):611-8.
34. Möhwald K, Hadzhikolev S, Bardins S, Becker-Bense S, Brandt T, Grill E, et al. Health-related quality of life and functional impairment in acute vestibular disorders. 2020;27(10):2089-98.