Diagnosing the Dizzy Patient in Acute Care: Why Health Professionals Should Utilize the Physical Therapist



Introduction

Dizziness or vertigo accounts for approximately 2.6 million visits to the ED annually in the United States¹ and it is listed as one of the top ten symptoms physicians are presented with in the primary care setting². There are many possible causes for patients to experience dizziness; however, their symptoms can often overlap, making it difficult to correctly diagnose these patients in the ED and acute-care setting¹. There are key signs and symptoms that allow clinicians to differentiate between central (i.e. cerebral vascular accident, migraines) and peripheral vestibular disorders (i.e. vestibular neuritis, benign paroxysmal positional vertigo $(BPPV))^{1,3,4}.$

Dizziness and vertigo are a particularly challenging medical problem involving high costs due to the utilization of resources and reduced patient satisfaction and quality of life⁵. Assessing dizzy patients with CT and MRIs for central origins of dizziness have grown more rapidly than any other diagnostic test⁶. Simple bedside tests such as the Dix-Hallpike Test (DHT) and head thrust test are cost-efficient and reliable, however often underutilized in the acute care setting^{3,4}. Different types of clinicians are qualified to treat vestibular disorders, including the Physical Therapist (PT). There are a wide variety of continuing education courses available for PTs to further advance their knowledge in the field of diagnosis and treatment of vestibular dysfunctions⁷; additionally, PTs are able to obtain a Neurologic Clinical Specialist (NCS) certification.

The purpose of this review is to explore the reasons underlying the underutilization of the PT in the acute care setting to assist in the diagnosis of peripheral vestibular dysfunction in the dizzy patient. PTs are well-qualified medical professionals who can aid in accurate and timely diagnosis to reduce overall medical costs and increase quality of life in this patient population. Accurate diagnosis of the dizzy patient is paramount for implementing appropriate management strategies¹ to provide the most cost effective care and improve the patient's quality of life and overall function.

Figure 1



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Methods

The protocol used for this review was developed through PRISMA guidelines⁸. Several searches were conducted in September 2014 in the electronic database SCOPUS. Potentially relevant articles were found using combinations of keywords "vestibular", "dizziness", or "vertigo" and also included "acute", "hospital", or "emergency department".

The research team adopted a four-step approach to selecting articles for inclusion. Primary studies published in English within the last 15 years (1999-2014) and concerning acute care screening and diagnostic tests for peripheral vestibular disorders by PTs as well as opinions and descriptions concerning the PT's role in emergency departments were included in our review.

Search results were scrutinized for inclusion first by title, then by abstract. Full Text review was conducted by at least 2 researchers per potentially relevant research article, who then presented the article to the team with a recommendation to either include or exclude the article. Figure 1 details the selection process. Consensus was obtained through majority vote for final inclusion. Those studies passing consensus vote were evaluated based on the PEDRO scale⁹ and data were extracted to a results table. Four themes emerged following analysis of the nine core articles.

Results

Diagnosis and BPPV

- causing increased time to optimal management of impairments.
- only diagnosis in 22.9%¹¹
- Clinician training is correlated with variation in diagnostic procedures^{12,13} • Only 69% of clinicians included important history descriptions pertaining to dizziness during patient evaluations¹²
- neurological bedside assessments, which can contribute to extraneous hospital costs
- 71% of patients with a diagnosis of BPPV underwent MRI imaging¹⁴ • Patients with BPPV had a head CT in about 1:3 visits and the DHT was performed in 1:5¹¹
- MRI and CT use for all vestibular patients more than doubled from 1995-2000 to 2001-2005¹⁰
- Decrease use of the DHT can contribute to longer periods before a proper diagnosis is made. • 50% of the variation in DHT documentation was attributed to the health care providers¹¹

Referral Patterns

Acute care clinicians demonstrate low referral rates to vestibular specialists due to lack of interprofessional communication and knowledge of specialists' scope of practice.

- 3 patients were referred to PT^{12}
- 62% of patients saw 2+ providers for a diagnosis prior to referral for treatment¹⁴
- In one case study, 3 physicians were needed in order for proper referral to a specialist¹⁵
- vestibular problems"¹³

Barriers to PTs in the ED

- **Potential to impact departmental efficiency:**
- Patient management responsibilities can be passed on to the PT and the ED physician can be free to move on to the next patient, increasing throughput¹⁶
- Lack of physical space:
- PTs utilize a variety of equipment which can take up space¹⁶
- Gurneys are equipped with poles and monitoring equipment, limiting space for bedside diagnostic tests¹¹ **Profitability:**
- Physicians would like to prevent hidden costs passed on to the patient at discharge¹⁶
- **Unrecognized suitability of PTs in the ED:**
- Primarily from lack of knowledge¹⁶
- ED staff members require special characteristics due to the typical ED patient qualities and fast paced environment¹⁶

Physical Therapy

- PT's are not being utilized to aid in the diagnosis of dizzy patients in the acute care setting¹² • Otolaryngologists, with specialized training in vestibular impairments, were the only physicians found to reliably refer their patients to PT when necessary¹²
- One physician stated "... if you have just dizziness with some nystagmus, I would just refer to ENT dizzy clinic. I have never referred one for physical therapy."¹³
- PTs demonstrate proficiency with diagnostic testing consistent with that of ED physicians • Both an ED physician and a PT conducted the DHT and came to the same diagnostic conclusion¹⁷
- **Once implemented, ED physicians** acknowledge usefulness of the PT the department...But now that they're here I can't imagine working in a department without them."¹⁶
- One physician stated "I had never thought of using PT for BPPV or vertigo, but there are definitely some PTs that are comfortable with those maneuvers."¹⁶

Variations in clinician training and experience can lead to symptomatic diagnoses rather than an identified pathological disorder,

• 22.1% of dizzy patients presenting to ED received a symptomatic diagnosis of dizziness vs. 7.4% were given a vestibular diagnosis¹⁰ • Dizziness or vertigo not otherwise specified: was at least one of the diagnoses in 81.7% of ED visits, primary diagnosis in 71.7%,

There is an over-reliance on imaging as a diagnostic tool for multiple peripheral vestibular impairments, rather than the use of

• 22% of patients by primary care physicians, 17% by geriatricians, and only 16% by ED physicians were referred to a specialist. Only

• "In matters of patient referrals...a primary care provider may not know which medical subspecialty in a facility typically evaluated

• PTs typically work daytime hours, however, ED physicians wanted expansion of PT hours where PTs are available for consults¹⁶

Most general ED physicians do not recognize the use of PTs in the differential diagnosis and management of the dizzy patient

• One medical director stated "I think [PT services are] an unrecognized need. I certainly never would have sought out PT services for

Discussion and Conclusion

Current literature suggests that the PT, with proper vestibular training, has the ability to help improve the accuracy of diagnosis, elevate patient satisfaction and quality of life, and ultimately help guide the patient along the most efficient treatment route. Some physicians have expressed unfamiliarity with the common bedside exams used in the diagnosis of the dizzy patient due to lack of formal education, experience and knowledge in combination with a generally decreased confidence level and self-efficacy in patient treatment^{2,11,13}.

Physicians have noted that an accurate and succinct history during the examination of a dizzy patient is of utmost importance^{13,14,18}; however, due to time constraints, this may not always be feasible and/or adequately reimbursed. The ability to immediately and effectively treat a vestibular impairment relies upon accurate diagnoses. Diagnostic imaging is often unnecessarily obtained and patients are often mistreated with medications, prolonging their recovery^{10,13,14,15,17}. Consequently, this mismanagement of the dizzy patient may negatively affect both health care costs and quality of care¹⁰. While trained PTs are capable of assisting in the differential diagnosis of vestibular impairments utilizing tests such as the DHT, head thrust, saccades, and smooth pursuit¹⁹, they are often underutilized due to several barriers and lack of knowledge of PT scope of practice. Training includes recommended baseline education in vestibular management, followed by opportunities for continuing education and to obtain an NCS certification^{7,20}.

Some physicians have expressed that they most often consult a PT for their patients with musculoskeletal conditions; however, PT's provide additional valuable insight regarding pain control, vertigo management, wound care, mobility training, and patient education implementing a more comprehensive interdisciplinary approach. For these reasons, among many others, PTs should advocate themselves to physicians as a useful team member in the management of a patient with a peripheral vestibular dysfunction.

Limitations of this review include decreased research on peripheral vestibular impairments due to an increased focus in the literature on central vestibular disorders. Overall, there is lack of research on the utilization of PTs for assisting physicians in the diagnoses of patients with vestibular impairments in the acute care setting. Most of the studies focused on dizzy patient management in the ED, but did not fully encompass the acute care setting as a whole.

In conclusion, further research is needed to explore the breadth of possibilities for PTs to assist physicians with vestibular impairments. Physical therapists are underutilized in aiding with the diagnosis of the dizzy patient in the acute care setting and the emergency department. This may be due to a lack of clinician knowledge with vestibular impairments, unfamiliarity with Physical Therapy scope of practice, and several barriers to establishing a PT program. However, PTs may optimize departmental efficiency, decrease medical costs to the patient and the department, increase the quality of care, and improve patient satisfaction with their extensive vestibular knowledge, experience, and their systemic approach to patient management.

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