

The International Journal of Transformative Touch

Volume 2 | Issue 1

Article 3

8-3-2022

Zero Balancing With the Dizzy Client

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Recommended Citation

Behrens, P.T., CZB, Mary L. (2022) "Zero Balancing With the Dizzy Client," *The International Journal of Transformative Touch*: Vol. 2: Iss. 1, Article 3.

Available at: <https://thekeep.eiu.edu/ijzbt/vol2/iss1/3>

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Zero Balancing With the Dizzy Client

Cover Page Footnote

The author would like to thank Dr. John Behrens for his assistance in this study.

Abstract

“Dizziness” is a colloquial term for the general experience individuals associate with a variety of problems with the vestibular system. Because “dizziness” is a general description of a symptom that may have a range of causes, seeking care from various medical specialists, the root problem is often missed, potentially leaving clients suffering for years. Over the last 10 years of clinical practice, I have found Zero Balancing to be an effective treatment for many clients referred for vestibular disorders.

The goal of this paper is to shed light on the reasons for my clinical decision making and understand the patterns of effectiveness in my work. To accomplish this, this paper is organized in 4 sections. In the first section, I provide background regarding the different causes of “dizziness” addressed in a vestibular physical therapy clinic. I focus particularly on Vestibular Migraine (VM) and Persistent Postural Perceptual Dizziness (3PD) as I believe these to be the conditions that most clearly benefit from Zero Balancing. The role of anxiety will also be addressed as it is a significant factor in some vestibular conditions. In the second section I explain the protocol I use in my clinical practice to navigate the labyrinth of decisions, information and clinical signs discussed in the first section. In this section I place the use of Zero Balancing as a treatment in the larger context of other possible treatments. In the third section I present an empirical analysis of some archival patient data collected over the last three years in which I seek to understand what can be learned from our current clinical data collection regarding the vestibular practice. This section addresses the profile of our clients and provides insights into Zero Balancing as a treatment modality. In the final section I discuss my conclusions from the paper and present my thoughts on the use of Zero Balancing in traditional Western-medicine clinical settings.

Section I: Introduction to Dizziness

Introduction

Clients can present in the clinic with a range of vestibular complaints including any combination of the following: imbalance, disequilibrium, nausea and vomiting, intermittent dizzy spells, ocular complaints, vestibular migraine, head pressure, tinnitus, ear fullness and positional vertigo. In many cases the clients aren't able to work or drive a car due to their problem, and feel like their quality of life has been altered. Clients who come to the vestibular physical therapy clinic have been evaluated by at least one physician, and in many cases have been hospitalized due to the severity of their episodes. It is generally assumed that medical causes such as low blood sugar, medication side effects, electrolyte imbalance, heart conditions or even impending stroke or other neurologic conditions have been ruled out.

Having eliminated those types of potential conditions, the most common causes for vestibular disorders are Benign Paroxysmal Positional Vertigo (BPPV), Vestibular Migraine (VM), Meniere's Disease (MD), Vestibular Neuritis (VN), and Persistent Perceptual Positional Vertigo (3PD). The various causes for vestibular issues and possible treatment approaches will be explored, along with the role of anxiety, which can result from a vestibular disorder, or be the root cause of one.

Benign Paroxysmal Positional Vertigo

BPPV is a mechanical issue caused by tiny calcium carbonate crystals becoming dislodged into one of the 3 semicircular canals of the inner ear, where they disrupt the normal messages to the brain about head position, and cause intense spinning when the person moves their head in certain directions such as looking up or down, getting into or out of bed and turning in bed. BPPV (Fetter, 2014) can be caused by a blow to the head, but usually comes on for no apparent reason. Figure 1 shows a picture of the vestibular organ, with the 3 semicircular canals (anterior, posterior and horizontal canals). When the person tilts their head back, the canals are also tipped, and if there are crystals in one of them (usually the posterior canal), the crystals will float in the fluid and cause abnormal signals to be sent to the brain about head position, causing involuntary eye movement, and intense spinning. The examiner determines which of the 3

canals is affected by observing the direction of eye movement, sometimes using specialized goggles that block vision for the person and make their eye movement easier to see. BPPV is seen with other conditions, such as vestibular migraine and vestibular neuronitis as well as concussion. (Eggers et al., 2014). Many assume that BPPV is the most common cause of vertigo, and is ruled out by the Dix Hallpike test (Fetter, 2014).

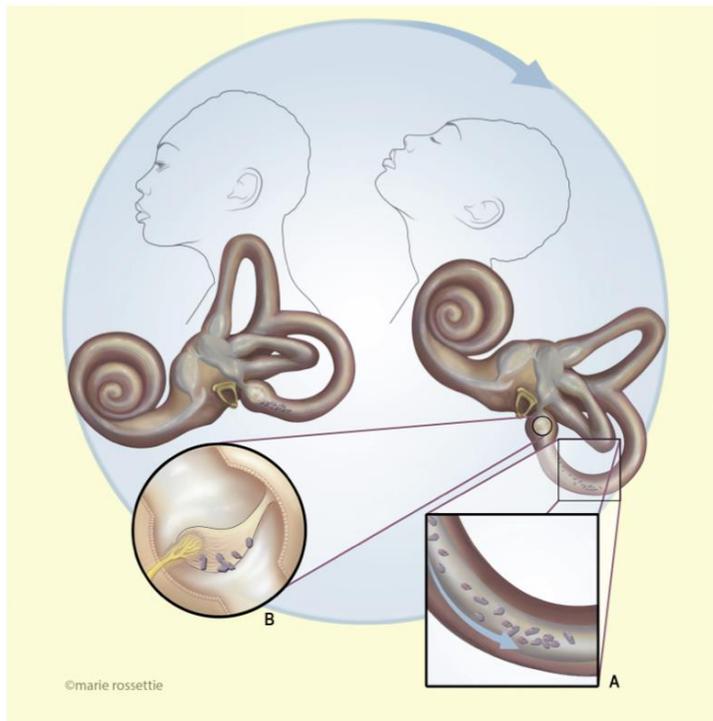


Figure 1. Depiction of semi-circular canals and crystals implicated in BPPV. (Edlow, 2018)

Vestibular Migraine

While BPPV is commonly assumed to be the most prevalent, or only cause of episodic vestibular disorders, Vestibular Migraine (VM) is actually the most common cause of vertigo according to a study done in 2008 using CDC survey data, with lifetime prevalence of 2.7% of adults in the US (Lempert et al., 2012). The diagnosis of Vestibular Migraine (VM) is evolving. The condition of migraine headache associated with vestibular symptoms was first identified in the 19th century, but still there is no biomarker for the condition. Currently, it is listed as an appendix in the ICD-10.

VM is understandably underdiagnosed, due to the lack of biomarkers and variability in presentation. Episodes can last minutes, hours or days, and include imbalance, nausea, vomiting, noise or light sensitivity, ear fullness or tinnitus in addition to headache or head pressure. Women are more affected than men, with an average age of onset of 38-50 (Nowaczewska, 2020). It used to be thought that VM had to include headache for example, but now we know that head pressure, along with the other vestibular symptoms are often seen instead. This is most common in post-menopausal women, who experienced migraine headaches before menopause, but then after menopause experience episodic vestibular episodes instead. (Nowaczewska, 2020). In many of these cases, the client misinterprets the lack of head pain as an absence of migraine when in fact the migraine is presenting as vestibular disturbance alone. Often, an extended personal or family history of migraine can indicate the presence of the vestibular migraine. In addition to genetic predisposition, contributing factors include dietary triggers, disturbed sleep and emotional distress. Clients often identify weather changes, bright lights, busy visual environments and loud noises as triggers. In this clinician's experience, the referring diagnosis of VM is rarely seen, and was not observed in any of the 71 charts that qualified for the study. Rather, after interviewing and doing a physical therapy assessment, the clinical diagnosis of VM was given to 29 out of the 71 clients, to guide the therapy interventions which will be outlined below.

Because of the lack of understanding that VM can be present with only vestibular symptoms and an absence of "headache" like symptoms, these clients may go back and forth between family doctors, neurologists and ENTs with no definitive diagnosis. Further complicating the diagnosis, vestibular function tests are typically normal in between spells and exacerbate the under-diagnosis. (Nowaczewska, 2020). In addition, the co-morbidity of balance disorders, migraine and anxiety are well documented (Balaban et al., 2011) and the mechanism is understood as a complex interaction between sensory processing of visual and somatosensory information. We see this in the clinic when some of these clients who may also have motion sickness, display impaired balance reactions on computerized posturography, in particular with visual stimulation. Gorski et al. (2019) and Lim, et al. (2018) described this finding in their work. In many of these cases in my experience, posturography scores can improve with Zero Balancing (ZB) alone, though the mechanism is not well understood.

Current Physical Therapy Management of Vestibular Migraine

Vestibular Rehabilitation Therapy (VRT) is a specialty area in physical therapy that includes balance and gait exercises, eye/head coordination or gaze stabilization exercise and habituation (Herdman, 2014). Current Physical Therapy management of VM, according to a fact sheet published by the American Physical Therapy Association (APTA 2019), states that Physical Therapy (PT) can include work on gait, balance, and habituation exercises, done in between spells so as to not increase symptoms. Carvalho et al., (2020) suggest addressing limitations at the neck with joint mobilization and trigger point therapy. The Vestibular Disorders Association (VEDA) also describes the use of complementary methods such as those mentioned plus tai chi for balance and psychotherapy. In my practice the combination of ZB and vestibular exercises works well. It is my experience that many clients are not able to tolerate VRT until the headache/head pressure is under control. In fact, adding gaze stabilization exercises before the headache is resolved will increase vertigo symptoms. Some clients are not able to or do not wish to take medication. This group of clients benefits from Zero Balancing for headache/head pressure reduction and mitigation of anxiety that can be brought on with vestibular exercises.

Often, the addition of medications (antidepressants, blood pressure or anti-seizure) is needed to help control episodes and improve tolerance of therapy. Currently, there is no established clinical practice guideline for VM, due to the lack of randomized controlled trials. In fact, the presence of vestibular migraine and anxiety are both listed among other factors that negatively affect outcomes for peripheral vestibular hypofunction in the clinical practice guidelines. (Dunlap et al., 2019).

Physical therapists are in a good position to help educate and encourage this group with lifestyle modifications. Roberts et al., (2021), discusses the role of lifestyle modifications that are successful to manage VM. In their study clients were encouraged to improve restful sleep, exercise, eat at regulated mealtimes, and avoid dietary triggers. Participants were asked to maintain the modifications for at least 60 days. Significant improvements were made on scores of dizziness and headache intensity.

Zero Balancing

Zero Balancing, developed around 50 years ago by Dr. Fritz Smith, a DO and acupuncturist, is a form of skilled touch that represents a holistic view of treatment (McCormick, 2021). It is particularly useful for those patients whose dizziness cannot be completely resolved with traditional VRT. Zero Balancing, uses light finger pressure along the bones and joints. Areas of held tension are palpated and when found, pressure is held for a few seconds, creating a stable point around which the body can reorient. ZB uses a set protocol lasting around 30 minutes for a full session with the patient lying clothed, supine on a massage table. This manual technique can be used for many physical pain issues and, since it is holistic, for overall mental, emotional, social and spiritual health and wellness. (Rhoads, 2021) In discussing why this form of touch therapy addressing the skeleton is effective, Rhoads et al (2020) also noted in their mixed methods pilot study, that feelings of significant overall wellness (including increased sense of calm and decreased anxiety) were achieved over the course of 4 ZB sessions.

ZB is effective in reducing anxiety and has no negative side effects. Once the client experiences relative relaxation, they are better able to tolerate VRT, as doing the exercises can bring on feelings of dizziness, increased heart rate and feelings of anxiety. In my experience, many clients do not realize they are having anxiety, as they have adapted to their current level of emotion. Often clients will ask after a session of ZB if their dizziness could be brought on by anxiety, because they realize they are not dizzy at the end of a session, when they are also feeling relaxed. Once the client experiences deep relaxation with ZB, they are then able to “reset” to a more relaxed state and therefore take part in coping strategies to support their nervous system such as cognitive behavior therapy or other forms of counseling, bodywork, meditation, regular exercise to name a few. This can also be the case with any cause of vestibular dysfunction, not isolated to vestibular migraine.

The assumption is that ZB works by increasing parasympathetic nervous activity, therefore decreasing anxiety, amongst other effects. During preliminary studies at the Neuro Synchrony Institute (2018) using EEG monitoring during a Zero Balancing session, the researchers found that “ZB Touch appeared to prompt a deep shift in quieter brain wave patterns in the recipient, not dissimilar to those reported during meditation.” After I experienced a few cases of

unsuccessful VRT for patients with episodic vertigo, I learned to ask the question about migraine history, and then if there is a positive history and the episodes sound like they are in that category, ZB was tried with good outcomes. Follow up education on lifestyle modifications empowers patients to self-manage their spells. By the time they come to us, they are very relieved that a solution is possible as they have come to believe they have to live with their condition.

For some clients with true positional vertigo, or BPPV there is a comorbidity of head pressure or headache that is still present once BPPV is resolved with positioning maneuvers. Eggers et. al, described comorbidities in vestibular migraine including BPPV, Meniere's and 3PD. As stated above, ZB works very well to reduce or eliminate this head pressure sometimes seen with recurrent BPPV. Then, further education re: lifestyle modification can be done to avoid this head pressure/headache cycle which can lead to recurrent BPPV.

Zero Balancing and Vestibular Migraine

I use ZB to treat a majority of the clients with VM for a number of reasons. First, using ZB for even 15-20 minutes at the end of the therapy session can decrease or eliminate head pressure/headache, nausea, or dizziness that are brought on by head motion activities. My rationale is that by using Zero Balancing along with VRT exercises, the clients are able to follow through more consistently. The head pressure or pain induced by vestibular exercises is typically reduced or eliminated with ZB. In addition, many times the clients are able to make the connection between levels of emotional stress in the case of VM. This has another effect of helping them follow through with lifestyle modifications, as described by other authors as having a positive effect on VM. In 2011, Varkey et al, described in a randomized controlled design study where migraine clients were treated with either migraine medication (topiramate), aerobic exercise, or mindfulness meditation, that all reported improvement at the same rate. I often note this study to encourage clients of the possibility of gaining control of their migraine episodes, and to highlight the potential that stress reduction can play. By adding a manual therapy technique such as ZB, symptoms can quickly be relieved, and then education as to how to maintain this state is easier to assimilate. One feature of ZB is that the relaxation achieved during a session can be similar to a meditative state, which is one way to mitigate migraine symptoms as

noted in the Varkey study. This author's approach came about after several unsuccessful bouts of VRT for patients with episodic vertigo, and after sending them for further testing at a specialty ENT center that resulted in the diagnosis of VM. Once ZB was used with good outcomes, follow up education on lifestyle modifications empowered clients to self-manage their migraines. By the time they are referred to me, they believe they have to live with their condition and are relieved to discover their symptoms can be managed, which gives them a sense of control.

Other Vestibular Diagnoses

Meniere's disease is less common, but is caused by a fluid imbalance in the inner ear. Usually, it is distinguished from VM by progressive hearing loss during episodes (Tusa, 2014). Vestibular neuritis is caused by a virus affecting the inner ear or the 8th cranial nerve and is characterized by a single severe episode of vertigo that progressively improves. Tests of vestibular function such as calorics and oculomotor tests can confirm the vestibular loss that occurs with vestibular neuritis (Fetter, 2014). Persistent Perceptual Positional Vertigo (3PD) is a condition that originates from a vestibular event with preexisting emotional factors that complicate normal recovery. Underlying anxiety and depression often accompany 3PD. Mal de Debarquement is less common, often occurring after being on a boat for long periods and is characterized by constant rocking sensation (Tusa, 2014).

The Role of Anxiety in Vestibular Disorders

Saman, et al., (2012), described the effect of anxiety on the central compensation of various vestibular disorders which can cause feelings of loss of control due to the unpredictable nature of the attacks. Some anxiety is expected, natural and even useful in the acute phase of recovery. However, excessive anxiety has been shown to prevent full recovery and can lead to chronic vestibular dysfunction. This can take the form of 3PD as stated above, or Mal De Debarquement syndrome. The use of anti-anxiety medication along with Cognitive Behavior Therapy (CBT) is considered part of best practices for chronic vestibular disorders. Emily Kostelnik, Ph.D, (2022) a former vestibular client herself and clinical psychologist, has developed a CBT program designed especially for vestibular clients. So, it can be the case that anxiety is a result of a vestibular event and can also be a contributing factor in a chronic condition.

The role of the vestibular therapist in assisting the client in recognizing and managing their anxiety can take several forms. Walker et al., (2018) describes a program including goal setting, graded exposure to challenging situations, pacing, relaxation, breath control, treatment diaries, mental imagery, worry diaries, and encouraging positive thinking. These authors also discuss the challenges this group of clients can present to the therapists when it seems they are not going to get better with vestibular exercises, or it feels like the referral could have been made to a psychologist when there is no underlying vestibular condition. In both these cases, ZB was effective in reducing client symptoms, while bringing great satisfaction as a clinician by successfully assisting in their recovery.

Section 2: Therapy Diagnosis

It is important to consider the clinical decision-making process for a therapy diagnosis before treatment. Up to 20 minutes of conversation happens before the physical examination to get a history of the problem. Establishing which medical professionals have examined the person and results of testing if any such as brain scans, VNG, EEG for example are discussed. Questions include:

- **Onset:** did this come on suddenly with one severe spell or was it gradual?
- **Timing** of the spells; how often do they occur and how long do the spells last?
- **Provoking movements**, if any, or can they happen spontaneously?
- **Quality** of the sensations felt, e.g., spinning, rocking, floating, swimming, lightheadedness, imbalance, fogginess, head pressure or pain? This can be hard for some patients to describe, so is not as necessary as the onset, timing and provoking movements. (Edlow, 2018)

Figure 2 describes in general the decision-making process I follow. It is greatly simplified from the original chart many vestibular therapists use (Herdman, 2017) for ease of explanation to those who aren't familiar with vestibular disorders. It also focuses on treatment approaches rather than diagnosis. Because the prevalence of VM is much higher than originally thought, it is placed fairly high on the decision-making process. Benign Paroxysmal Positional Vertigo

(BPPV) is suspected by episodes of spinning lasting seconds when the person moves their head in certain positions, but should always be ruled out. I test for BPPV at the first visit, and if positive, positioning maneuvers are done. If symptoms are resolved and there is no imbalance or gait disturbance or ocular complaints, the person no longer needs therapy.

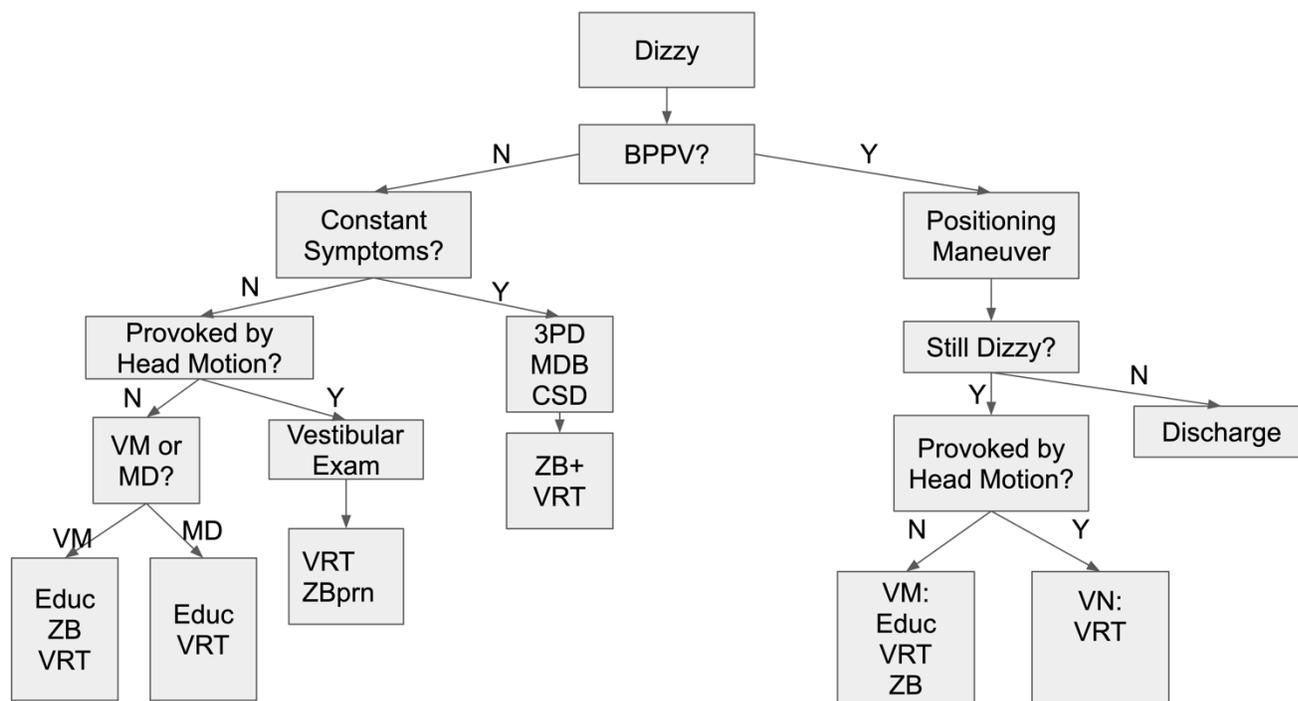


Figure 2: Clinical decision-making process (M. Behrens, 2022)

Key- **BPPV**: Benign Paroxysmal Positional Vertigo, **VM**: Vestibular Migraine, **VRT**: Vestibular Rehabilitation Therapy, **3PD**: Persistent Postural Perceptual Dizziness, **MDB**: Mal De Debarquement Syndrome, **MD**: Meniere’s Disease, **VN**: Vestibular Neuritis, **ZB**: Zero Balancing

If, however, after the BPPV is resolved and they are still symptomatic, depending on the history and other findings, we treat accordingly with VRT which includes work on eye/head coordination, gait and balance. If the person does not have BPPV and the symptoms are constant, we suspect 3PD or Mal De Debarquement syndrome. If dizziness is not constant and provoked with head motion, we treat for vestibular neuritis with VRT, using ZB as needed. If symptoms are not provoked by head motion and are episodic, we treat for VM or MD which includes

education on dietary triggers, lifestyle modification in addition to VRT. VM especially can benefit from ZB. The only group that is questionable for ZB is MD, as it can exacerbate symptoms if the person is having a spell. When clients with MD are having an active spell, therapy is not indicated until the spell is over.

If the person is negative for BPPV, we discern if the symptoms are constant or intermittent, provoked by head motion and/or spontaneous and if there are signs of vestibular hypofunction or loss. VRT is begun at the first visit if appropriate, with balance and gaze stabilization exercises given to do at home. As stated above, Zero Balancing can be helpful for several of the possible sources of dizziness or imbalance, with the exception in my experience with Meniere's disease when the patient is having an active spell.

Section 3: Results of Empirical Analysis

To support my findings, I did an empirical analysis of patient records from my clinical work over the last 3 years. Because the study is retrospective and based on archival data, the findings are limited to the data on hand as collected in the daily routine of clinical practice. The study was undertaken to find out what I could about my patient population, the data collection methods currently used, and to find any discernible patterns regarding the testing done at evaluation, diagnosis or treatment that may inform future clinical or research activity. Formal approval for this study was sought through the Internal Review Board (IRB) of the Beacon Health System, and approval was given by the committee.

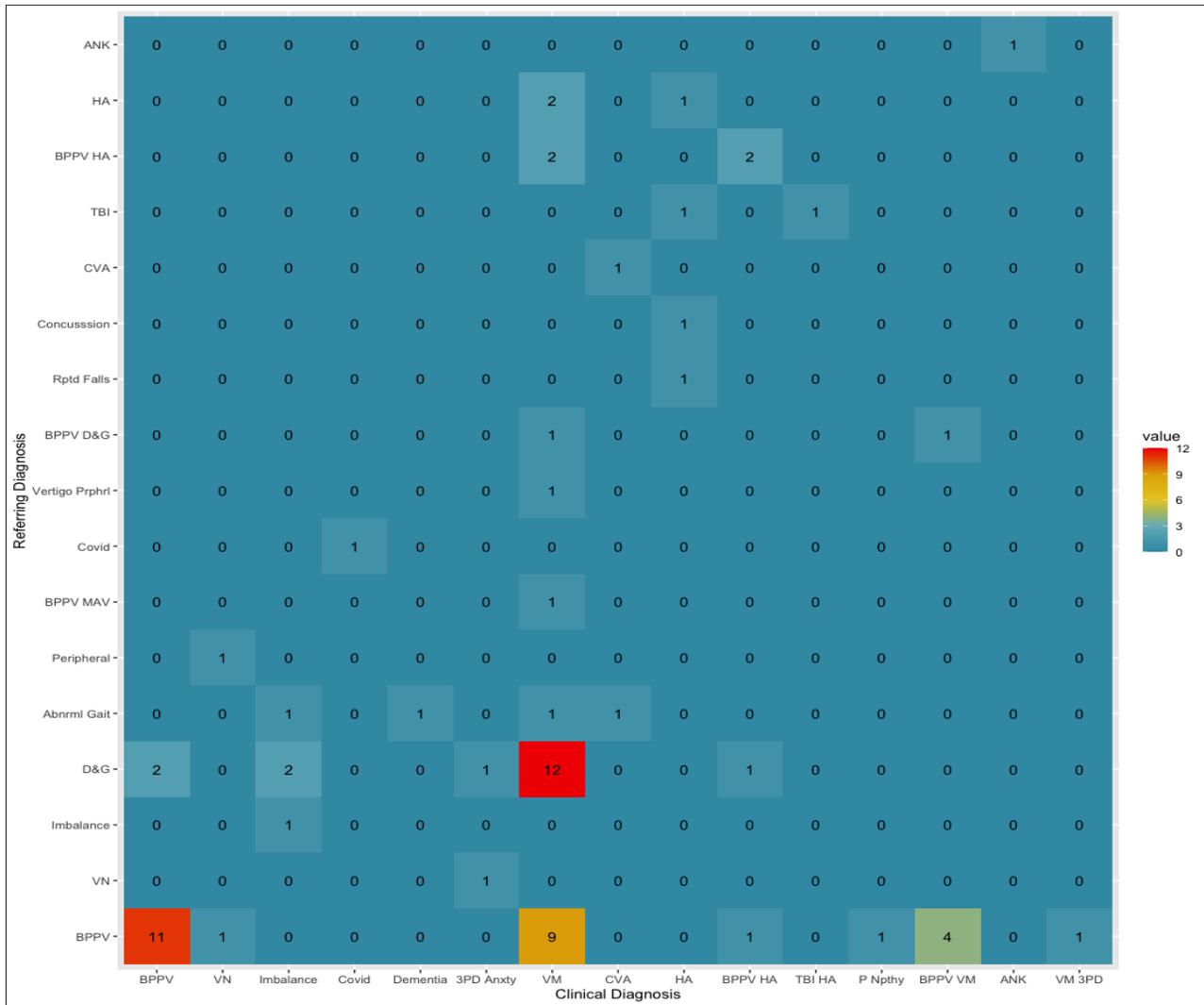
Method for Archival Clinical Data

Data was collected from charts of patients treated from 2018-2021. The diagnosis given by the referring practitioner is listed, as well as the therapy diagnosis. Pre and post scores of the Dizziness Handicap Inventory (DHI) were used as a measure of subjective improvement. Tests of gait and balance were also completed, but due to the lack of sufficient post treatment data are not included here. The DHI is a 25-item questionnaire that gives us a picture of how disabled the person feels because of their dizziness. Scores range from 0-100, with a higher score indicating higher level of perceived disability due to dizziness. The questions include 3 categories: physical, functional, and emotional. Accordingly, clients can only have very high DHI scores

when they report symptoms in all three areas. Most complete data was available for the DHI which will be the focus of this report.

Relationship Between Referral Diagnosis and Clinical Diagnosis

Figure 3 is a heatmap of a diagnostic matrix which lists the referring diagnoses on the vertical axis and the diagnosis I gave following completion of the protocol in Section 2. The square cells are colored from light to dark, with darker colors indicating a higher number of patients. A number of observations can be made from this data. First, there are a wide array of types of referrals. Out of 71 patients, there were 17 different diagnoses, listed on the vertical axis. My clinical diagnosis (15 total) are listed on the horizontal axis. Second, consistent with the literature, there were a significant number (29 total) of patients with various referral diagnoses which actually meet the criteria for VM. With regard to differences in the referral diagnosis and the clinical diagnosis, the reader can see that the largest difference is for patients referred for “dizziness and giddiness” and BPPV, but who were re-classified as having VM following a full clinical evaluation.



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Figure 3: Confusion Matrix between diagnosis driving referral and clinical diagnosis

Distribution of Dizziness Handicap Inventory Pre-Scores:

Figure 4 shows pre-treatment DHI scores across all diagnoses. Each rectangle represents the score of one patient according to their value on the DHI pre-test indicated along the horizontal axis. Separate rows are shown for each type of diagnosis and the rectangles are colored red if the patient did not receive Zero Balancing and blue if they did. Taller columns represent stacked rectangles in which multiple patients obtained the same, or very similar scores. Some diagnoses

show no data because while that type of diagnosis occurs in the clinic, there were not pretest scores for that type of patient.

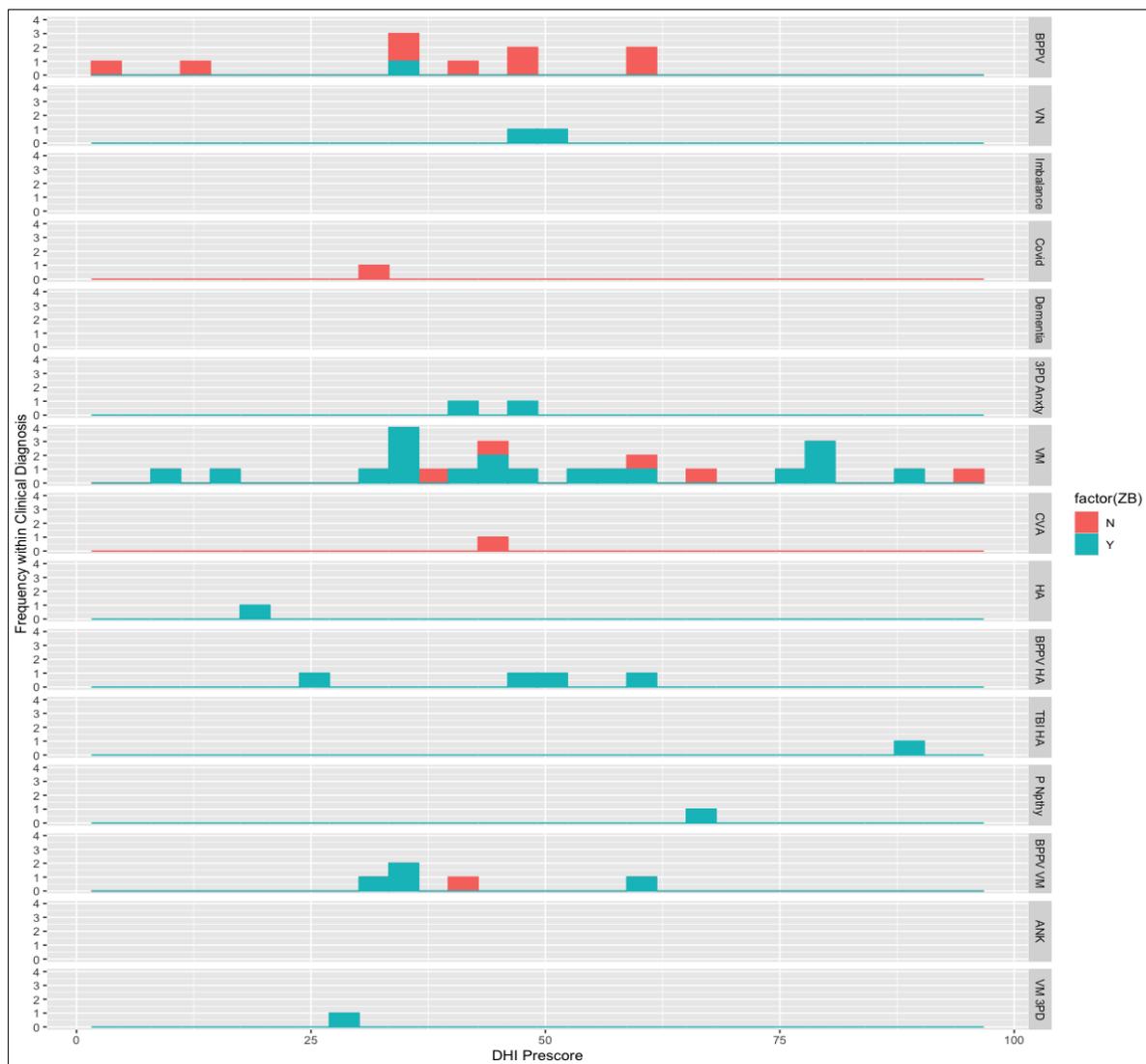


Figure 4: Prescore of patients on the Dizziness Handicap Inventory by Clinical Diagnosis Category

The greatest number of scores is seen with the diagnosis of VM, listed on the vertical axis as that is the most frequent diagnosis seen, followed by BPPV and BPPV with either Headache or VM.

The reader can see in Figure 4 that the highest DHI scores are associated with VM, as high as 96/100 indicating the presence of functional, physical, and emotional factors for some clients. It is also clear that VM has the widest variability in scores with a range of 86 points between the

highest and lowest scores. Also note that VM likewise has significant variability in the use of ZB. This is often caused by a lack of treatment follow up in this group.

BPPV likewise shows significant variability with scores from 4 to 60 but without any scores in the highest ranges as we see with VM. Only one BPPV patient received ZB because these client's symptoms are typically resolved with repositioning maneuvers alone. The reader will note a number of clients with combined diagnosis of BPPV, Headache, VM.

Figure 5 presents the DHI score change from pre and post treatment data following the same graphical format used in Figure 4 with blue rectangles indicating treatment using ZB, and red if they did not, with separate lines for each diagnostic type. The numbers of clients reported here differ from Figure 4 because this result requires individuals to fill out both the pre and post surveys and patients often stop coming to therapy when the symptoms are resolved between sessions. Changes of 17 points or more are considered significant on the DHI.

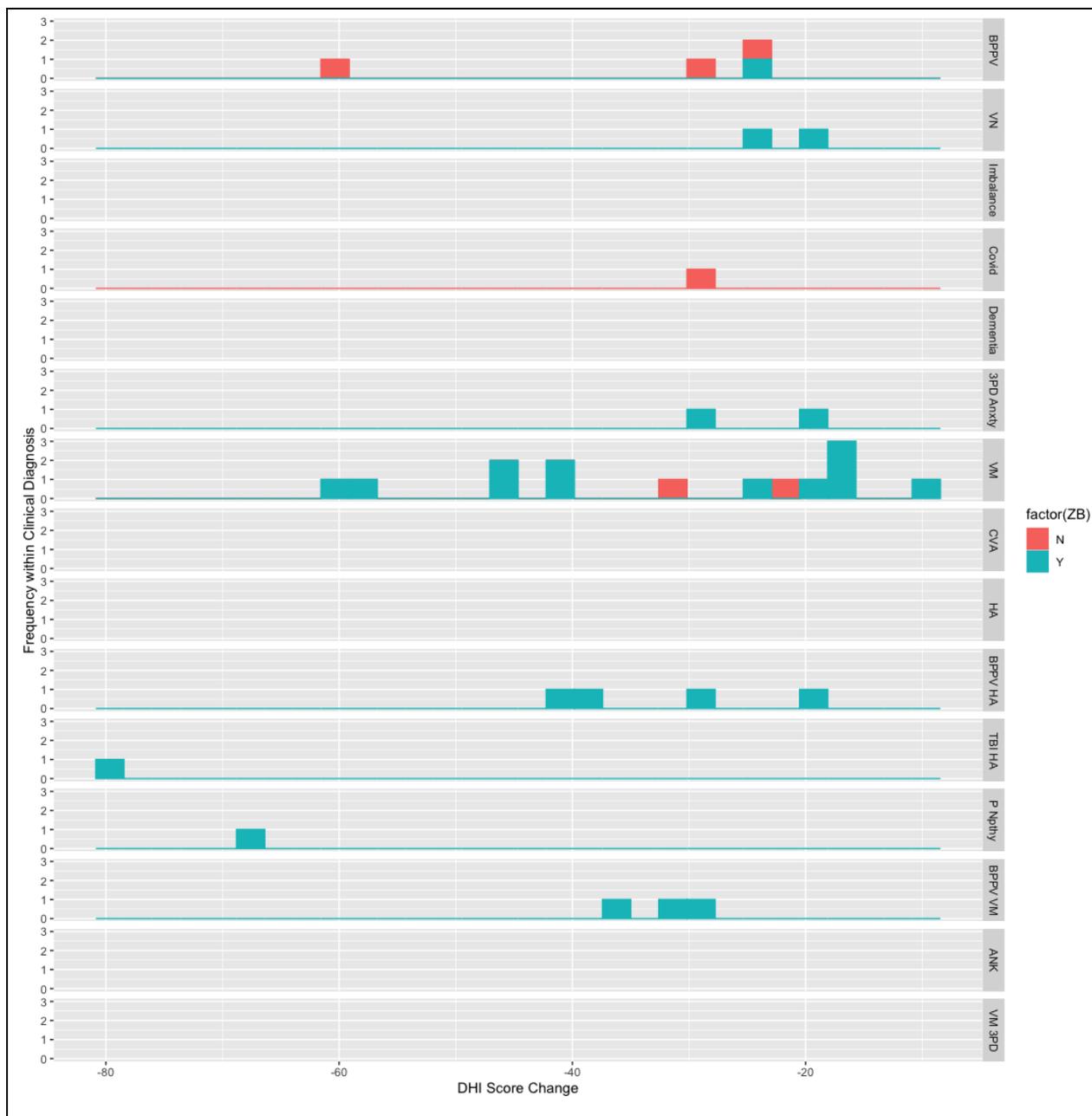


Figure 5. DHI Change Scores for patients of various diagnoses and treatment types.

All change scores are negative, indicating improvement in the patient’s level of perceived impairment due to dizziness. The greatest change is seen with a client who suffered a traumatic brain injury and also had significant anxiety who received a few sessions of ZB towards the end of his rehab, and the next had a diagnosis of polyneuropathy and also received ZB as part of the rehab. Those with any type of headache, with or without BPPV also had a large change in

scores. It is important to note that those with 3PD/anxiety showed significant improvement on DHI. The literature describes and it is my experience that clients that have these issues can be challenging to treat. A few of the VM clients had big changes in DHI score and did not receive ZB.

Section 4: Discussion

This retrospective study was intended as an expansion of a single case study where a client with the clinical diagnosis of VM was treated with only ZB and made significant improvement in balance scores and DHI. Although most of the clients in this current study were treated with a combination of interventions typical in VRT, the use of ZB was shown to be a useful addition, especially in those with VM or 3PD. This study suggests ZB can be effective for a wide range of vestibular disorders.

It is the case that many clients with symptoms consistent with VM or 3PD have difficulty with the physical sensation of vestibular rehab with or without pharmacological treatment, as the head motions involved in VRT can trigger nausea, headache and in some cases anxiety. It is well known that emotional factors are most prevalent with this group, and ZB can be very useful both to add extra support, and to decrease symptoms brought on by VRT exercises, without the use of medication. When ZB is added to the therapy program, clients leave feeling better than when they came. This can lead to greater follow through with exercises, and perhaps quicker recovery.

The three main insights gained from this study are as follows:

1. The condition of Vestibular Migraine is largely undiagnosed. Figure 3 shows the variety of diagnoses on the vertical axis, yet once examined by the author, 29 of the total 71 referred were found to have symptoms consistent with VM. I was surprised to have my clinical experience confirmed by the literature review. A large number of clients come to our clinic after being seen for VRT elsewhere with modest gains, and the core issue of VM has not been addressed. At the outset the typical response is “no one mentioned this could be migraine” which is consistent with the literature.

2. It is my suggestion that a PT clinical practice guideline (CPG) for VM include some sort of bodywork or manual therapy to address the head pressure/headache experienced by these clients in addition to VRT, as it is the primary reason for their symptoms.
3. The use of ZB with some vestibular clients, such as those with significant anxiety, 3PD or Mal de Debarquement syndrome, many of whom seem not to have a physical basis for their symptoms, allows the vestibular PT some sense of accomplishment and satisfaction when their complaints are reduced or eliminated, and they feel they no longer need therapy after a few sessions in some cases.

Future studies could use randomized controlled trials to compare the use of ZB to other types of support such as counseling and/or medication along with VRT. This may give insights into the role ZB can play, especially when the client does not wish to take medication for anxiety. Zero Balancing is believed to be effective for addressing migraine related concerns as well as anxiety. If this approach were validated, it would add to our clinical understanding of treating vestibular patients with these issues.

Conclusion

Vestibular Rehabilitation has proven to be helpful for a variety of vestibular diagnoses. The condition of vestibular migraine is emerging as the most common cause of episodic vertigo, and currently there is no PT clinical practice guideline for it due to several factors. This study indicates that the use of skilled manual therapy, namely Zero Balancing, can be a useful addition to treatment of this condition.

Acknowledgments

The author would like to thank Dr. John Behrens for his assistance in this study.

Mary Behrens is a Physical Therapist and Zero Balancing Faculty member, who works as a clinical specialist in Vestibular Rehabilitation at Memorial Outpatient Therapy Services in South

Bend, Indiana. Mary has practiced in the specialty area of vestibular rehabilitation since 2011 and earned her vestibular competency from the Emory certification program in 2017. Her perspective is also strongly influenced by movement practices such as yoga and Feldenkrais. She treats a wide range of vestibular impairments in both clinical and private practice. Address questions or comments to mbehrens@beaconhealthsystem.org.

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