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To Know the Effectiveness of Brandt-Daroff Exercise to Reducing Dizziness and Improve the Balanceing Time and Positional Test for Vertigo (Bppv)

Dr.Rajitha K PT[1], Dr.Dhanraj M PT[2]

[1,2]Physiotherapy
[1]MPT cardio, MIAP, [2]MPT sports
[1]rajee.bpt12@gmail.com

ABSTRACT:

Benign paroxysmal positional vertigo (BPPV) is a common inner ear disorder that causes brief episodes of vertigo, a sensation of spinning or whirling, when the head is moved in certain positions. These episodes are typically triggered by head movements like rolling over in bed, looking up, or bending down. While BPPV can be unsettling, it is usually not serious and can be effectively treated with repositioning maneuvers.

Benign paroxysmal positional vertigo (BPPV)1is considered the most common peripheral vestibular disorder, affecting 64 of every 100,000 Americans. Women are more often affected and symptoms typically appear in the fourth and fifth decades of life. In 1980, Epley proposed that free-floating densities (canaliths) located in the semicircular canals deflect the cupula creating the sensation of vertigo.

This is well documented in his Canalithiasis Theory.Although these canaliths are most commonly located in the posterior semicircular canal, the lateral and superior canal may also be involved Patients with BPPV complain of vertigo with change in head position, rolling over, or getting out of bed, and the vertigo is often side specific.

The study is to know persons with vestibular disorders experience symptoms of dizziness and balance dysfunction, resulting in falls, as well as impairments of daily life.Various interventions

provided by physical therapists have been shown to decrease dizziness and improve postural control.In the present review, we will focus on the role of physical therapy in the management of BPPV symptoms of dizziness.

Brandt-Daroff exercises are a type of vestibular rehabilitation exercise used to treat vertigo, specifically benign paroxysmal positional vertigo (BPPV). These exercises help to reposition calcium crystals in the inner ear that can cause dizziness.

Balancing time vertigo refers to a sensation of unsteadiness or disorientation, often accompanied by the feeling that the environment is spinning or moving. Positional test used to diagnose benign paroxysmal positional vertigo (BPPV). It involves quickly moving a patient from a sitting position to a supine position with their head turned to the side and slightly extended, to observe for characteristic eye movements (nystagmus) and assess for vertigo.

Keywords: Brandt-Daroffexercises,Dizziness ,Balancing Time ,BPPV

1. INTRODUCTION

Brandt Daroff exercise is a form of physical therapy or vestibular physical exercise to treat vesibular disorders such as vertigo (Triyanti et al., 2018). Brandt daroff exercise is an exercise that aims to adapt the elderly to the increased gravitational response to cause dizziness when there is a change in head position. Brandt daroff exercise performed according to the correct dosage will reduce and even eliminate vertigo symptoms in the long term (Farida et al., 2017). Brandt Daroff exercise is a vertigo rehabilitation treatment that may be done at home, as opposed to other procedures that require supervision from a doctor or medical personnel. When the cause of vertigo is unclear, the Brandt-Daroff exercise approach is typically performed. This vertigo exercise increases blood flow to the brain, so improving the operation of the body's balancing mechanism and maximizing the functioning of the medical sensory system (Herlina & Ibrahim, 2018)

Benign paroxysmal positional vertigo (BPPV) is the most common cause of vertigo arising from peripheral vestibular disorders. It accounts for 20 to 30 percent of all patients seen for vertigo in clinics that specialise in dizziness.While the overall incidence of BPPV in the general population is around 2.5 percent, it is more common in older adults. Some studies show that 50 percent of older adults have BPPV. BPPV is a biomechanical problem that occurs when there is displacement of calcium-carbonate crystals or otoconia from the utricle into one of the three fluid-filled semicircular canals of the inner ear.

This causes the semi-circular canal (or canals) to be inappropriately excited, resulting in vertigo, nystagmus and occasionally nausea.For more information on the anatomy of the vestibular system, please click here.

Symptoms tend to be provoked by head movements, such as:

(1) Looking up (2)Lying down to a flat position quickly (3)Bending forwards(4)Rolling in bed

Aetiology:

It is not yet known what causes BPPV. The majority of cases are idiopathic[5], but it is more likely to occur in older adults.

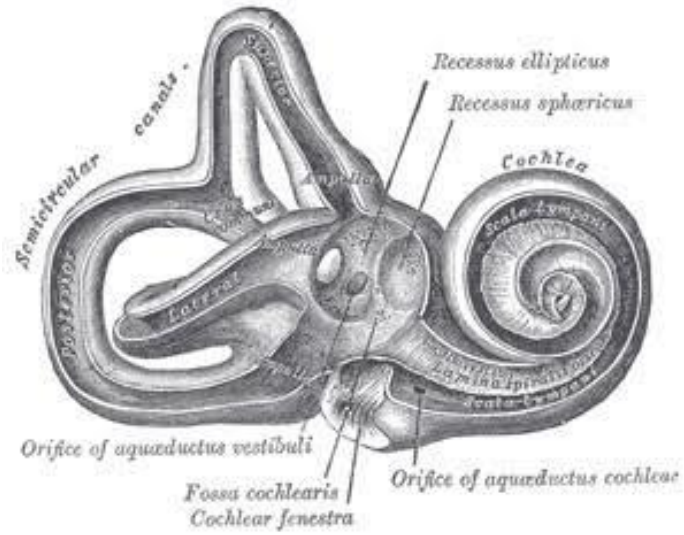
The two primary theories about its aetiology are that it is:

Related to ischaemia of the anterior vestibular artery and cardiovascular disease primarily involving the posterior circulation.

Related to vitamin D deficiency and calcium metabolism (seasonal variations may be present)

Predisposing factors include:

Head trauma in all age groups In a younger population, head trauma is a leading predisposing factor.The recurrence rate may be higher and treatment may not be as effective in this population.Surgical trauma to the inner ear.



Client characterist:

The patient is a 55 year old male who lives a relatively sedentary lifestyle and works as an accountant. He has high blood pressure which has been controlled by 40mg of Diovan daily. The patient also has high cholesterol in which he takes 5mg of Crestor daily to help control. The patient enjoys gardening, driving with his wife and walking his dog. He complains of nausea, dizziness and the feeling of the room spinning. He is planning on retiring and is nervous about not being able to do what he wants and enjoy his retirement because of his symptoms. He first noticed symptoms 2 weeks ago while turning his head quickly while driving. Following the onset, medications did not help symptoms and therefore he has since been getting treatment for BPPV. Sleeping has become increasingly difficult as any time he lays down he begins to feel dizzy

CLINICAL EXAMINATION:

Diagnostic :

Positional Tests:

A positional vertigo test, specifically the Dix-Hallpike maneuver, is used to diagnose benign paroxysmal positional vertigo (BPPV), a common cause of vertigo. This test involves specific head and body movements to trigger vertigo and observe for characteristic eye movements (nystagmus). The Dix-

Hallpike test is considered the gold standard for diagnosing BPPV. How the Dix-Hallpike maneuver is performed:

Starting position: The person sits on an examination table with their legs extended. Head rotation: The person's head is turned 45 degrees to one side. Rapid supine position: The person is quickly lowered backward so that their head is extended off the edge of the table, with the affected ear facing downward.

2. Observation:

The examiner observes for nystagmus (involuntary eye movements), specifically noting the direction and duration of the eye movements. Return to sitting: The person is returned to an upright sitting position, and the process is repeated on the other side if needed. Involved Canal Dix-Hallpike (DH) and Head Roll Test

Right posterior Up beating, right torsion

Right DH

Right anterior Down beating, right torsion

Left DH

Left anterior Down beating, left torsion

Right DH

Left posterior Up beating, left torsion

Left DH

Right / left horizontal Horizontal nystagmus, no torsion

canals,Head roll test

What the test results indicate:

Positive test:

If the test elicits vertigo and characteristic nystagmus (typically torsional and upbeating), it suggests BPPV in the posterior semicircular canal of the inner ear.

Negative test:

If no vertigo or nystagmus is observed, it suggests BPPV is not the cause of the vertigo, and further investigation may be needed.

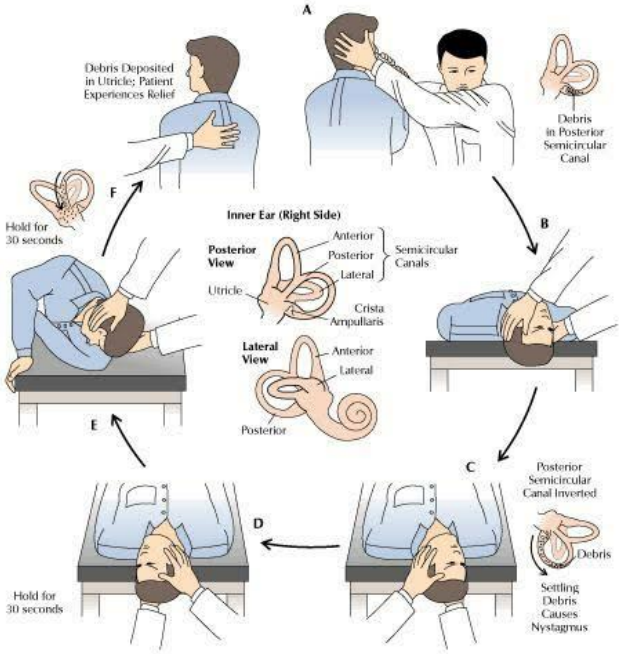
Horizontal canal BPPV:

The supine lateral head turn test (also called the supine roll test) is used to diagnose horizontal canal BPPV, where the patient is rapidly rolled from supine to each side while observing eye movements.

Visual analogue scale Test:

The Visual Vertigo Analogue Scale (VVAS) is a tool used to assess visual vertigo, a condition where dizziness is triggered by visual stimuli. Electronystagmography (ENG) or videonystagmography (VNG).

MRI scan and CT Scan.



AIM:

To know the effectiveness of Brandt-Daroff exercise Reducing dizziness and improve the balancing time and positional test for vertigo (BPPV) patients.

OBJECTIVE:

To study the effectiveness of Brandt-Daroff exercise to reduce the Dizziness and Improve balancing time and postinal test for vertigo(BPPV)patients

HYPOTHESIS:

Null Hypothesis:

There is no significant change in the effectiveness of Brandt-Daroff exercises for vertigo

Alternative hypothesis:

There will be siginificant changes in effectiveness of Brandt-Daroff exercise for vertigo

MATERIALS AND METHODS

Study design: Experimental study

Simple Method: Simple random sampling.

Source of study:

subjects selected for the study are those diagnosed and Tested

Sample size:

10 patients are randomly selected and the assigned into

5 members of males and 5 members of Males .

Duration of Study: 6 weeks study

Measuring Tools:Postinal test

Materials Used: bed or couch, and a flat surface like a mat,

Inclusion criteria :

Inclusion criteria were patients aged ≥ 50 years of age with a clinical history suggestive of idiopathic BPPV, supported by positive Dix Hallpike test and AMT ≥ 7.

Exclusion Criteria:

Including major neurocognitive impairment,sarcoidosis, metastatic disease (lymphoma, multiple myeloma), parathyroid disorders, known osteoporosis or osteopenia on high dose treatment (50,000 IU/week) Patients with significant cervical-spinal radiculopathy, spondylolisthesis, lordosis or kyphosis that would affect their ability to carry out CRP, disorders causing fat malabsorption (Short gut syndrome, Coeliac disease) that would affect dietary absorption of Vitamin D, myasthenia gravis, patients with unexplained hypercalcaemia and pregnant women.

Procedure:

The Brandt-Daroff exercise is a series of movements designed to help relieve vertigo, especially benign paroxysmal positional vertigo (BPPV). It involves turning the head and lying down to different

positions, holding each position for a specific duration. The exercises help habituate the vestibular system to the head positions that trigger vertigo.female patients and Males Patients

Starting Position: Sit upright on the edge of the bed with your head turned 45 degrees to the left.

First Side: Lie down on your right side, keeping your head in the same position.

Hold Position: Wait for 30 seconds, or until dizziness subsides, then wait an additional 30

seconds.

Second Side: Sit up and turn your head back to the center, then turn it 45 degrees to the right.

Lie Down: Lie down on your left side, keeping your head in the same position.

Hold Position: Wait for 30 seconds, or until dizziness subsides, then wait an additional 30

seconds.

Repeat: This is one repetition. Repeat the sequence five times.

Frequency: Perform the exercises three times a day for a period of time, usually 2-3 weeks, or

until vertigo symptoms are gone for at least two consecutive days.

Brandt-Daroff Exercise:

The Brandt-Daroff exercise uses gravity to help guide the crystals out of the semicircular canals and back into the utricle.

Steps of the Exercise:

Starting Position: Sit upright on the edge of a bed or chair with your feet on the floor.

Turn Head and Lie Down:

Turn your head 45 degrees to the side of the affected ear (the ear where the vertigo is felt). Quickly lie down on the side opposite the affected ear, keeping your head in the 45-degree position.

Hold Position: Remain in this position until the dizziness subsides (or for at least 30 seconds).

Return to Sitting: Quickly sit back up, keeping your head in the 45-degree position.

Repeat on the Other Side: Repeat steps 2-4 on the opposite side.

Repetitions: Typically, 5-10 repetitions of each side are done, 2-3 times a day about 6 weeks. r

Balancing Time for Vertigo:

While they can be effective in reducing vertigo symptoms, the time it takes for balance to improve can vary, with some experiencing relief within a few days to a few weeks.

Vestibular Rehabilitation:

Brandt-Daroff exercises are a component of vestibular rehabilitation, which aims to improve balance and reduce dizziness.

Individual Variation:

The time it takes to see improvements can vary significantly depending on the individual, the severity of their vertigo, and their adherence to the exercise program.

General Timeline:

Some people experience relief within a few days or weeks, while others may take longer.

Importance of Consistency:

Adhering to the prescribed exercise routine and following the guidance of a healthcare professional is crucial for optimal results.

3. DATA ANALYSIS

Brandt-Daroff exercises respectively. The recovery rates were similar for both groups. The average follow-up duration was 6 weeks. In 5 patients (20%) and in 5 patients (25%) had recurrence.

Paired t-test:

This test is used when comparing the same group of individuals before and after treatment with Brandt-Daroff exercises. It assesses whether there is a statistically significant difference in a measured variable (e.g., dizziness severity, balance time).

A paired t-test could then be used to determine if the mean VAS score significantly decreased

after the exercises.

The results of this study are reinforced by the results of the difference through the Wilcoxon difference test value obtained p-value = 0.007 <0.05, which means it has a very meaningful or very significant difference in value.

4. Results:

Outcome:

Reduced Dizziness ,improve the balance time,Postinal test used Negative and positive vertigo BPPV patients outcomes.

The study is to find out the effectiveness of Brandt-Daroff exercise reduce dizziness improve the Balancing time and postinal test for vertigo (BPPV) patients

The data from 10 patients was analyzed with 5 patients. (Brandt-Daroff exercises) respectively. The Brandt-Daroff exercise(Males and females). 1Week (20%), 2Week (25%), 3Week (35%),4 week (68%), 5 week(88%),6 weeks(100%) recovery rates.

5. CONCLUSION:

The study showed a significant difference in the balance of vertigo patients before and after undergoing Brandt Daroff exercise. This proves that Brandt Daroff exercise has a positive influence on the balance of vertigo patients, helps reduce symptoms, and accelerates the recovery process.

Patients who have been discharged from treatment are advised to continue Brandt Daroff exercise at home to reduce vertigo symptoms, increase comfort, and prevent recurrence. In addition, hospital management is expected to provide training and counseling to nurses, as well as education to patients to increase their knowledge in an effort to manage and reduce symptoms of vertigo.

The Brandt-Daroff exercise(Males and females).1 Week (64%), 2 Week (88%), 3 Week (100%)recovery rates.

6. SUMMARY:

This was a Experimental evaluate study conducted at hospitals.

The study included 10 subjects 5 in each subject

5 subjects fèmales as given Brandt-Daroff exercises.

5 subjects Males a givèn Brandt-Daroff exercises.

The postinal test recovery measurement were noted with help of postinal test values. postinal test values of showed significant. Improve the balancing time and reduce the dizziness ,Vertigo (BPPV)patients.

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