

## To Know The Effectiveness Of Experimental Protocol Vs Brandt Daroff Exercises On Dizziness In Benign Paroxysmal Positional Vertigo

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**Abstract:** Background and Aim: Benign paroxysmal positional vertigo (BPPV)<sup>1</sup> is 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<sup>4,5</sup>. 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. Aim of 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. Methodology: In the procedure Firstly ,patients will divided into two groups Group A and Group B and all the patient were assessed the pretreatment score and post treatment i.e (0 Weeks and 3 week and 6 weeks) by using the DHI ,The Patients will be randomly allocated Group A Patients was receive exercise protocol, Group B Was given the Brandt daroff exercise .this exercises were given on daily basis .After completion of 6 weeks of the treatment ,Both Group A and Group B were compared Statistical software: statistical software namely SPSS 15.0. Results and Conclusion: The study concluded that designed exercise protocol is effective to reducing dizziness in BPPV patients by measuring the DHI Scale. [Shahanawaz SD NJIRM 2015; 6(6):24-26] **Key Words:** BPPV,DHI,Brandtdaroff exercises, exercise protocol, Dizziness.

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**Introduction:**Benign paroxysmal positional vertigo (BPPV)<sup>1</sup> is 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<sup>4,5</sup>. 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.

Vertigo<sup>5</sup> occurs suddenly and lasts for less than 1 minute. Attacks are separated by remissions; however, patients may complain of constant light-headedness between episodes.

### OBJECTIVE

- 1.To develop and validate the exercise protocol
- 2.To Compare the effectiveness of Designed exercise Protocol with the Brandtdaroff exercises

### Null Hypothesis (H0):

H0: There will be no significant effect of Exercise Designed protocol Vs Brandt daroff exercises on dizziness in BPPV.

### Alternate Hypothesis (H1)

H1: There will be significant effect of Exercise Designed protocol over the Brandt daroff

**Material and Methods:** The study was ethically approved by research ethics committee Dr.D.Y.PatilVidyapeeth,Pune and also the exercise protocol was reviewed and approved by the ethical committee. Study protocol is register with CTRI no :CTRI/2015/10/006308 The exercise protocol consisted an items of visual ,vestibular ,and proprioceptive components the items and its components was based on previous evidence literature and clinical therapists practical experience. It includes, Straight the head, Turn your head towards 60degrees right , Turn your head towards 60 degrees left,gaze exercises Close your eyes and imagine a blank back ground, Close your eyes busy back ground checker board, Single leg stance-right side , Single leg

stance -left side , Heel and toe raises and perturbation training<sup>5,6,12,13</sup>. (Table -1)

**Table 1: Exercise Protocol for the Dizziness Patients**

1	Straight the head 3 times 30 seconds		
2	Turn your head towards 45 degrees right 3 times 30 seconds		
3	Turn your head towards 45 degrees left 3 times 30seconds		
4	Gaze exercises 3 times 30 seconds		
5	Close your eyes and imagine a blank back ground 1 time 30 seconds		
6	Close your eyes busy back ground checker board 1 time 30 seconds		
7	Single leg stance-right side	1 time	30 seconds
8	Single leg stance –left side	1 time	30 seconds
9	Heel and toe raises	1 time	30 seconds
10	Pertubation training	1 time	30 seconds

The content validity was obtained by means of systematic observation of exercise protocol by the experts.

30 subjects were explained about the study , and all written consent was obtained .Patients were evaluated by neurophysician, and ENT Surgeon were included in this study and data was collected from the Dr.D.YPatil Medical College and Research Institute and Dr.D.Y.Patil Physiotherapy Department. In the procedure Firstly ,patients will divided into two groups Group A and Group B and all the patient was assessed the pretreatment score and post treatment score i.e (0 Weeks and Completion of 3 Week) by using the DHI ,The Patients were randomly allocated Group A patients was receive exercise protocol designed ( Visual,Vestibular,Proprioceptive Components are included in the exercises), Group B patients was given the Brandt daroff on daily basis for 2 session per day after completion of 3 Weeks of the treatment.

Both Group A and Group B were compared Statistical software: statistical software namely SPSS 15.0 with the statistical independent T-test

**Results:**The Pre mean age of group A=42.45 and Group B=44.5 , and pre DHI score of Group A (n=15) (exercise protocol) and Group B (Brandt daroff exercises) (n=15) is 42.93 and 44.94 .

The post treatment mean of DHI score for A (experimental group) and group B (controlled group ) is 29.11 and 34.92.

By using the Independent statistical T-test when assessed the Group A results the mean of 8.40 with standard deviation of 2.613 and standard error mean of 0.065 and the obtained table value of Independent T-test was 1.84 when it observed at statistical value of T-test with 95% confidence interval p value shows the 0.04 ,which shows the significant.

Independent statistical T-test when assessed the Group B results the mean of 0.40 with standard deviation of 0.828 and standard error mean of 0.214 and the obtained table value of Independent T-test was 1.214 when it observed at statistical value of T-test with 95% confidence interval p value shows the 0.235 , which shows the not significant.

**Discussion:** The response of reducing the dizziness by using the exercises designed protocol (Group A ) was it includes all (Visual, vestibular, Proprioceptive set of exercises).The potential mechanisms<sup>9,12,13</sup> by which exercise protocol can relive the dizziness in BPPV patients were the effectiveness of habituation and gaze stability exercises in unilateral vestibular Hypo function. In this study it was also observed that most important sensory trigger to maintain balance was somatosensory input and visual input. It is interesting that improvement was observed on physical and functional subscale of the DHI in group A ,compared to the DHI in Group B ,The reason was this group includes set of exercises like visual and proprioceptive ,whereas the group B includes only the brandtdaroff exercises.

In group B [n = 15] brandtdaroff exercises were the 8th and 13th subject was observed that the intensity of dizziness is increased moderately to severe. The reason<sup>9,10</sup>is that, this patients are having the neck stiffness problem ,so they are having difficulty in performing the brandtdaroff was responsible.

**Conclusion:** The study concluded that designed exercise protocol is effective to reducing dizziness in BPPV patients by measuring the DHI Scale. The study shows that Physical and functional components of DHI subscale is improved. There is less improvement in DHI emotional subscale. Therefore designed exercise

protocol is recommended in patients with dizziness in BPPV.

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