



## THE EFFECTIVENESS OF BRANDT DAROFF EXERCISES ON VERTIGO EVENTS IN SUBJECTS OF VERTIGO PATIENTS

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### ABSTRACT

Brandt daroff exercises is vestibular rehabilitation as a self-contained exercise at home for sufferers of vertigo. Physiologically brandt daroff plays a role in the process of adaptation of the vestibular system. The goal, to find out the effectiveness of exercise therapy brandt daroff against repair impaired balance vertigo sufferers. Methods: the study of the introduction to the design of a quasi experiment with the number of samples 28 people as subjek research obtained for consecutive sampling, men and women aged 20- 60 years. Random research subjects are divided into two groups, the control group respondents and 14 persons group treatment 14 mealkukan respondents to practice independently at each after the first demonstrated the technique training will be done. Further data obtained after observation of pre and post therapy, the symptoms severity score (SSS) were analyzed using t-test. results: meaningful differences obtained on a given exercise brandt daroff to decrease interference vertigo sufferers with balance value ( $p < 0.05$ ) in 14 subjects researchers as a group treatment. no meaningful differences were found ( $p 0.005 >$ ) in 14 subjects researchers who are not given exercise brandt daroff. Conclusion: there is a meaningful difference value of SSS who are faster on a given exercise group brandt daroff compared to groups who are not given the treatment of exercise therapy.

**Key Word:** Brandt daroff, vertigo, effect

### INTRODUCTION

Head, and stroke (Sumarilyah, 2010 cit., widiantoro, 2010). Generally Vertigo is one of the most common disorders and troubles most people. In general, vertigo occurs due to stress, tired eyes and certain foods and drinks. In addition, vertigo can be functional and has nothing to do with changes in organs in the brain. The brain itself is not sensitive to pain. This means that generally vertigo is not caused by damage that occurs in the brain. However, a tension or pressure on the lining of the brain or large blood vessels in the head can cause intense pain in the head (Iskandar Junaidi 2013)

Vertigo is a common complaint in practice which is described as a feeling of spinning, dizziness, instability (giddiness, unsteadiness) or dizziness (dizziness) .The prevalence of vertigo in Germany, aged 18 years to 79 years is 30%, 24% assumed to be

due to vestibular abnormalities. . A French study found 12 months later a vertigo prevalence of 48% (Grill et al., 2013 cit., Bissdorf, 2013). The prevalence in America, vestibular dysfunction is about 35% of the population with the age of 40 years and over (Grill et al., 2013). Subjects who experience vestibular vertigo, 75% have peripheral vertigo disorders and 25% experience central vertigo (Chakeret al., 2012).

In Indonesia, the incidence of vertigo is very high, in 2010 from the age of 40 to 50 years about 50% which is the third most frequently complained of complaints by sufferers who come to general practice, after pain

vertigo is found in 15% of the total population and only 4% - 7% are seen by a doctor

(Sumarilyah,2010).

Vertigo is a disorder of orientation or body balance towards a room that makes the



patient feel moving or rotating. Age is one of the risk factors for peripheral vertigo.

The results of a study conducted by Abraham (2014) in India, namely that of 54 patients with peripheral vertigo, there were 20 people over 60 years of age. The results of descriptive analysis can be concluded that the older a person is, the more risk of peripheral vertigo.

Vertigo can also be caused by a balance disturbance in the inner ear or vestibular region and may be caused by disorders of the brain. The vestibular is a system of the inner ear that functions as a balance tool. According to Neurologychannel (in the book *Love the Brain*, 2011), the vestibular system is responsible for connecting sensory stimuli with body movement and keeping an object in focus when the body moves. Apart from being caused by disorders of the vestibular system and disorders of the brain, vertigo can also be caused by idiopathic, trauma, physiological factors, drug consumption and other diseases or syndromes such as Meniere's (Dewant, et al. 2009). According to Wratsongko (2006), Vertigo usually occurs accompanied by nausea and vomiting, there can also be accompanied by diarrhea. As a result, vertigo can cause dehydration and falls.

There are many actions or therapies that are often used by someone who has vertigo. One of them is pharmacological or drug therapy. Like the efforts that have been made in the doctor's independent practice to be studied, namely giving drugs to relieve vertigo. Someone who experiences vertigo usually takes drugs to reduce or eliminate vertigo symptoms. However, the drugs that are consumed certainly have side effects. There are many other therapies besides pharmacology.

One of them is vestibular rehabilitation therapy, namely epley maneuvers, semount maneuvers and brandt daroff or brandt daroff exercise. Vestibular rehabilitation

therapy, an exercise or rehabilitation in the subject of vertigo, which aims to remove debris from the semicircular canal which is the cause of vertigo.

The Brandt-Daroff exercise method is a rehabilitation method for vertigo cases that can be done at home, in contrast to other exercise methods that must be done under the supervision of a doctor or medical personnel. The Brandt-Daroff exercise method is usually used when the side of the vertigo is unclear. This vertigo exercise has the effect of increasing blood to the brain so that it can improve the function of the body's balance and maximize the work of the sensory system.

According to Joesoef (2006) in the research journal Sumarliyah, et al (2011) "Visual input provides objects in the form of spatial orientation". On the anatomy of the system There is Lubuk Crocodile Padang Health Center (data is taken from the medical records of Lubuk Coste Health Center). From the description above and based on the phenomenon and the high incidence of vertigo in society, the authors are interested in conducting a study entitled "the effectiveness of brandt daroff training on the incidence of vertigo in subjects with vertigo".

## **MATERIAL AND METHODS**

The design of this study was a quasi-experimental study. In this study, the research variables were exercise training and clinical degrees of vertigo. The research was conducted in the working area of the puskesmas estrogen levels affect the internal structure of the otolith. The influence of hormones on calcium metabolism also plays a role in the appearance of symptoms of vertigo balance disorders. Increased concentration of calcium in the endolymph is associated with increased calcium resorption which will reduce the ability of otolith to be released.



Data analysis to compare the mean scores before and after giving Daroff brandt exercise therapy.

Table 1. Comparison of the mean scores of complaints and clinical symptoms (SSS) of vertigo pre and post Daroff's brandt exercise therapy. Lubuk Crocodile Padang, starting from April to October 2017. Population in this study were all respondents with vertigo who did exercise therapy at home independent with 28 respondents person. With a total sample of 14 people as the treatment group and 14 people as the control group with treatment members for 5 weeks

## RESULTS

Of the 28 respondents as research subjects, the researcher found no significant differences ( $p > 0.005$ ) for the variables of gender, age, occupation, previous history of vertigo and the onset of vertigo complaints in both the control group and the treatment group. The findings prove that both the intervention group and the control group are homogeneous. Women suffer more vertigo than men, migraine is one of the predisposing factors for the incidence of vertigo. Hormonal influences, such as decreases

According to a comparative analysis of The mean score of the initial examination before being given Daroff brandt exercise therapy for four weeks, the mean clinical grade of vertigo complaints experienced by the study subjects was 2.64. The mean score of clinical degree score of vertigo balance disorder after being given Daroff brandt exercise therapy by means of the subject sitting upright on the edge of the bed with both legs depending on the next two eyes closed, then the subject lies quickly to one side, the subject maintains for 30 seconds. After that sit back for 30 seconds. Lie back quickly to the other side, hold for 30 seconds then sit

back down. This exercise is done 2 sets per day (morning and evening) which is carried out 3 times a week for 5 weeks. In each set, perform the maneuvers described above 5 times. Generally, improvement is obtained after 30 sets.

After the brandt Daroff exercise was carried out for five weeks, the average clinical degree experienced by the subjects was 2.05, this was a change in balance in the incidence of vertigo and increased blood flow to the brain so that there was an improvement in the function of the body's balance apparatus and maximizing the work of the sensory system by giving exercise this maneuver. This is also evidenced by the statistically significant value ( $p < 0.005$ ), namely 0.000.

Daroff's brandt exercises play a role in enhancing the adaptation and habituation effects of the vestibular system. Brandt Daroff's exercises that are performed repeatedly and regularly influence the adaptation process at the level of sensory integration. Sensory integration also works in realigning the input imbalance between the vestibular organ systems and other sensory perceptions. Daroff's brandt exercise movement disperses otolith clots into small particles thereby reducing complaints of vertigo and the incidence of nystagmus.

## CONCLUSION

After implementing it for 5 weeks to the respondents, there was a significant improvement in the treatment group who were given brandt daroff training therapy to decrease the clinical degree of the incidence of vertigo. To be able to find meaningful effectiveness values, it is necessary to increase the motivation of family members to discipline and assist family members who experience them vertigo balance disorder to do routine and continuous exercise and do exercises with appropriate and correct movements. This is related to changes in the position of the otolith in the canal, so that it



can be repositioned and does not cause vertigo symptoms anymore.

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