



EFFICACY OF PHYSIOTHERAPY IN BPPV PATIENTS IN TODAY'S WORLD: A REVIEW

Physiotherapy

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ABSTRACT

Objective: To study the effect of vestibular exercises and repositioning maneuvers on balance, dizziness and quality of life in BPPV patients. **Methodology:** Several studies have been taken from google scholar, pubmed, springer link, Physiotherapy Evidence Database (PEDro) and Taylor and Francis. Selection of study, extraction of data and assessment of methodological quality and clinical relevance were carried out independently by reviewers. **Result:** In order to synthesize the results, the data extraction is done through trials that are incorporated in the review. Therefore on the basis of incorporated articles the results are laid down. **Conclusion:** Although there are several procedures that can be used to treat BPPV. Physiotherapy especially vestibular exercises effectively used in alleviating symptoms and thus in improving quality of life. and was well tolerated by patients.

KEYWORDS

BPPV, Repositioning maneuvers, vestibular exercises, dizziness.

INTRODUCTION

BPPV is the marginal pathological condition that is related to the sense of Equilibrium and was first identified by Barany. BPPV is described as an abnormal sensation of movement, commonly elicits by abrupt head movements. BPPV is a usual disorder and specified by short events of unsteadiness, vertigo and nausea. Change in the orientation of head or body consistently accelerate these symptoms in relation to gravity. Usually positional changes occur during activities like lying down in bed or reaching up to retrieve an object from a high shelf. Generally, each vertigo attack lasts less than one minute. It has been illustrated in the literature that the incidence of BPPV can ranges/vary between 10.7–64/100,000 and the lifetime occurrence can reach 2.1%. BPPV can happen at any age, but it is most consistently identified between the 5th and 7th decades.^{1,2} The main reason of BPPV is still not clear, however it may be linked with several disorders of the inner ear or head trauma.³

The clinical physiology of Benign Paroxysmal Positional Vertigo is cupulolithiasis lies otolith that is sticking to the cupula or canalolithiasis implying hovering otolith inside fluid contained in the inner ear membranous labyrinth. The monitoring of to and fro movements of eye necessary to detect this condition. CRP is used to cure this condition as it advances otolith from the pretentious ear canal to utricle direct a sequence of alteration of head pose. Vestibular Exercises work to anchor recent ordering of marginal sensational facts, permitting recent boosting fashion needed for recent events in order to accord automatic. CCE is the most usual protocol for vestibular rehabilitation program, which incorporate balance centers, such as proprioceptive, visual and vestibular activities; also, it can be used in order to enhance the formation of new environmental sensory information and also it has the potential to improve balance responses,

and thus, decrease falls.^{4,5}

Rasteh et al. in 2009 found that CCE improves balance in the elderly.⁶ Also, the study results of Ribeiro et al. in 2005 illustrated that CCE improves balance and reduce falls in elderly women.⁵ Balance is a main component to carry out ADL's, dynamic living & it is self-reliant, so reduction in such potentials because of poor balance leads to dissatisfaction and decrease in Quality Of Life. Thus, it seems that by doing such exercises, the balance and Quality Of Life of elders improve. Several treatment maneuvers are accessible in posterior canal BPPV. The Gufoni maneuver was first illustrated by Gufoni in 1998.⁷ And Gufoni maneuver can treat patients with either a geotropic nystagmus or apogeotropic nystagmus.⁸ In order to treat HC-BPPV Gufoni maneuver is effective. The variableness regarding the resolution rates of HC-BPPV in earlier studies may be because of the distinctness in the follow-up time. Latest studies have found high rates of spontaneous resolution in BPPV. As compared to PC-BPPV spontaneous resolution occurs faster in HC-BPPV. Therefore, to highlight the impact of Gufoni maneuver and to reduce the confounding effect of spontaneous remission, its objective is to detect the rapid effect (within 24h) of Gufoni Maneuver for HC-BPPV.

Kaplan et al. illustrated that the patients with BPPV negative were observed to be BPPV positive as a result of the applying DM with headshaking. The cause for this was the rise in the movement of complying otoliths, and when DM was performed with head-shaking, the exact diagnosis rate increased by 14.8%.⁹ Ma et al constituted that applying DM after head-shaking maneuver will anchor to make an exact diagnosis.¹⁰ Song et al. found that in the lateral canal apogeotropic BPPV, otoliths on the utricular side would be released by head-shaking and then with barbecue maneuvers effectively treated.¹¹

Review of Literature

Author	Study	Objective	Conclusion
Tapani Rahko et al (2002)	A Prospective Study	To evaluate the treatment methods for vertigo management due to Superior vestibular canal related BPPV.	BPPV symptoms were relieved. ¹²
Kazunori Sekin, Takao Imai et al (2005)	A Comparative Study	To find out the efficacy of Epley Maneuver versus Lempert Maneuvers.	Epley maneuver was effective for curing Posterior canal BPPV whereas efficacy of Lempert Maneuver for H-BPPV was limited. Revocation of vertigo due to alteration of pose in untreated H-BPPV subjects were found. ¹³
Duygu Geler Kulcu, Burcu Yanik et al (2008)	A Comparative Study	To compare the efficacy of Medication Vs Exercise.	Exercises were found to be better choice of treatment than medication. ¹⁴
Roberto Teggi, Leone Giordano et al (2011)	Cross-Sectional Study	To determine the prevalence and clinical factors associated with surplus dizziness in Elderly patients.	Before dizziness, higher anxiety levels are linked with longer symptom duration. ¹⁵

Trinidad-Ruiz G., Batuecas-Caletrio A. et al (2013)	Retrospective cohort study	To evaluate main clinical factors, time to consult for the problem, vertigo characteristics, treatment and follow-up of BPPV patients.	To detect recurrences, repositioning maneuvers and prolonged follow-up is needed. ¹⁶
Eliana Teixeira Maranhao, Pericles Maranhao-Filho et al 2015	A Comparative Study	To highlight the clinical factors, diagnostic examination and treatment in patients with H-BPPV.	It was concluded that Repositioning maneuvers helps in improving BPPV symptoms. ¹⁷
YahavOron, Smadar Cohen-Atsmoni et al (2015)	A Comparative Study	To determine the pathophysiology of horizontal canal benign paroxysmal positional vertigo	When it comes to apogeotropic nystagmus, the comparable success rates were found in case of Barbecue and Gufoni Maneuvers. ¹⁸
Cenk Evren Nevzat et al (2017)	The study consists of 207 patients. The Dix-Hallpike and Roll maneuvers are used to diagnose BPPV. Post-treatment success and patient satisfaction is evaluated by performing Dizziness Handicap Inventory (DHI) at first admittance and two weeks after treatment in all patients with BPPV.	Diagnostic value of repeated Dix-Hallpike and Roll maneuvers in BPPV	It was concluded that the diagnostic maneuvers only one more time in vertigo patients in the first clinical evaluation increases the diagnosis success in BPPV. Canalith repositioning maneuvers are effective and satisfactory treatment methods in BPPV. ¹⁹
Abolghasem Fallahzadeh Abarghuei, Mahsa Fadavi-Ghaffarietal(2018)	Participants completed a demographic form. Then, balance and QoL were assessed using Berg Balance Scale Questionnaire and SF36 Questionnaire, respectively, before the intervention. The intervention group performed CCE in 60-minute sessions 3 days a week for 2 months. All assessments were repeated for the 2 groups after 2 months. Also, the participants in the control group received rote exercises, such as music therapy, exercise therapy, and reminiscence.	Efficacy of CCE on balance and quality of life in 60 to 80 year-old individuals in Shiraz.	It is concluded that CCE had a positive effect on QoL and balance of 60 to 80 year- old Shirazians. Thus, bearing in mind the low cost, easy implementation, and considerable impact of these exercises, they could be used to prevent and treat balance disorders in the elderly. ²⁰
Wojciech Smolka, Katarzyna Smolka et al (2020)	A Prospective Study	Efficacy of vestibular rehabilitation in people with chronic unilateral vestibular dysfunction	It was concluded that the compensation achieved after supervised outpatient rehabilitation program was superior to the results of the home-based unsupervised CCE and balance exercises. ²¹
Ekin Tacalan, H Serapinal et al (2021)	A Comparative Study	To evaluate the efficacy of CCE versus Epley Maneuver in P-BPPV treatment.	It was concluded that the Epley maneuver can be the first option compared to CCE vestibular exercises. ²²
Vanessa Hwu, Arielle K Burris et al (2022)	The methods applied in the case of a male patient, 72 years old, who had dizziness, was able to safely discharge himself from the emergency department (ED), and underwent a Lempert maneuver (barbecue roll). The methods applied in the case of a male patient, 72 years old, who had dizziness, was able to safely discharge himself from the emergency department (ED), and underwent a Lempert maneuver (barbecue roll).	The Repositioning procedure, which includes the Lempert procedure, is used for BPPV in the emergency department. The Repositioning procedure, which includes the Lempert procedure, is used for BPPV in the emergency department.	It was determined that the Lempert (BBQ roll) maneuver is an effective way to reduce BPPV symptoms. Due to its ease of use and speedy symptom relief, the Lempert maneuver can assist to decrease ED overcrowding by minimizing ED duration of stay in BPPV patients. As such, it ought to be taken into account when treating BPPV patients in an emergency department. Apart from these advantages, offering patients a quicker resolution of symptoms for a very distressing illness like BPPV enhances the patient experience and the standard of treatment they obtained. ²³

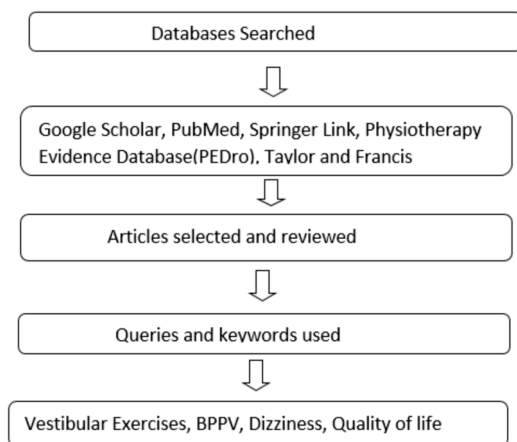
Methodology/Approach

Several Research articles are reclaimed from google scholar, pubmed & springer link, Physiotherapy Evidence Database (PEDro), Taylor and Francis.

RESULT

There are 80 articles reclaimed from google scholar, pubmed &

springer link, PEDRO, Francis & Taylor. Not any other extra acceptable studies were reclaimed from consecutive electronic database or biographic searches. The results of whole study is that vestibular exercises and repositioning maneuvers are very effective in treating BPPV patients. The 12 studies were defined and met the inclusion criteria.



DISCUSSION

The aim of this study was to review the efficacy of Physiotherapy especially vestibular exercises and repositioning maneuver in treatment of BPPV patients. For this many studies were selected from pubmed , google scholar, Physiotherapy Evidence Database (PEDro), and Taylor and Francis through various trials. There are various studies that shows the efficacy of Physiotherapy especially vestibular exercises and repositioning maneuvers to improve quality of life and dizziness in patients suffering from BPPV.

BPPV is the marginal pathological condition that is related to the sense of Equilibrium and was first identified by Barany. BPPV is described as an abnormal sensation of movement, commonly elicits by abrupt head movements. BPPV is a usual disorder and specified by short events of unsteadiness, vertigo and nausea. Change in the orientation of head or body consistently accelerate these symptoms in relation to gravity. Usually positional changes occur during activities like lying down in bed or reaching up to retrieve an object from a high shelf. Generally, each vertigo attack lasts less than one minute. Decline of balance in the elderly would increase their risk of fall. As falls can affect performance and independence, identifying those at risk of falls and developing diagnostic and treatment methods can improve Quality Of Life and independence, and can also reduce health care costs. Vestibular Exercises work to anchor recent ordering of marginal sensational facts, permitting recent boosting fashion needed for recent events in order to accord automatic.

Shahanawaz SD, Priyanshu.V.Rathod et al (2015) did a study to evaluate the effectiveness of Physiotherapy Exercises on dizziness and vertigo patients and illuminate vestibular rehabilitation as attainable cure for varying dizziness etiology. It was concluded that Epley maneuver, Semont and Gans maneuver and also brand droff exercises are helpful in treating the BPPV. All the studies showing the improvement of BPPV or dizziness and vertigo patients.²⁶

CONCLUSION

As illustrated in several studies that Physiotherapy specifically vestibular rehabilitation exercises are broadly being used for treatment of patients with BPPV. Although there are several procedures that can be used to treat BPPV. Physiotherapy specifically vestibular exercises was well tolerated by patients and was effective in alleviating symptoms and improving quality of life.

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