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COMPARISON OF ADLs RESTRICTION IN PATIENTS OF CERVICALGIA AND BENIGN PROXYSMAL POSITIONAL VERTIGO

Dr. Komal[1], Dr. Arif Ali Rana[2], Dr. Faiza Amjad[3], Dr. Sumera Azam[4], Samara Shaukat[5], Hira Nawaz[6], Sheher Bano[7]

[1]DPT, MS in Physical Rehabilitation & Pain Management Physiotherapist at Superior University

[2]HOD Physical Therapy, Associate Professor & Principal at Central Park College of Allied Health Sciences

[3]Senior Lecturer at Riphah International University Gulberg Campus Lahore

[4]Lecturer at Riphah International University Gulberg Campus Lahore

[5]Lecturer and Consultant Physiotherapist at Afro Asian Institute + Sadiqua Medical Center

[6]Head of Department at Afro asian institute. Consultant physiotherapist at Noor Zainab rehabilitation center

[7]Lecturer at Afro Asian Institute

ABSTRACT

Cervicalgia is a worldwide frequent problem now a days. Many individuals and their families are significantly affected by neck pain. Cervicalgia is usually common among patients with vertigo and it has been associated with a reduced quality of life .**objective** : To find out that in which condition cervicalgia or benign proxysmal positional vertigo more ADLs restriction occurs. **Methods**: Cross-sectional study design was used .The study ran from March 1st, 2021- August 31st 2021.Sampling technique was Non-Probability Convenient Sampling. Sample size was 185. Patients between 20 to 60 years of age, having cervicalgia without positional vertigo, having dizziness without neck and were included. Patients who have neck pain and vertigo due to systemic causes were excluded . Study setting were different areas of Lahore. Statistical analysis was done using SPSS 25. Two questionnaires (Copenhagen Neck Disability Scale & The Dizziness Handicap Inventory) used to collect the data for assessment **Result:** Individuals with BPPV tend to experience more severe handicap on the Dizziness Handicap Inventory, with 38.7% reporting severe handicap compared to 15.1% in cervicalgia.The Copenhagen Neck Functional Disability Scale shows that individuals with BPPV have a higher proportion of moderate (48.4%) and severe (15.1%) disability compared to those with cervicalgia.The results indicate statistically significant associations between the type of condition (cervicalgia vs. BPPV) and the severity of handicap and functional disability. **Conclusion**: It was estimated that the patients with benign paroxysmal position vertigo have more difficulty (48.4%) in performing activities of daily living as compare to patients of cervicalgia (15.1%).

Keywords

Cervicalgia, Cervical spine, Benign paroxysmal positional vertigo, dizziness, vestibular disorder, disability, ADLs, quality of life.

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INTRODUCTION

The cervical spine is one of our body joints that allows the spine to move 600 times per hour(1). Cervicalgia is a pain or uneasiness in neck, particularly in back and edges of neck. Basically, cervicalgia is a pain that starts from the first vertebra to the seventh spinal vertebra. (2). Cervicalgia can affect anybody and is defined as aching of neck which is not spread to the further parts for example under the arms. Certain movements put pressure on the neck, either slowly or suddenly, and can cause discomfort. If the injury only occurs in the neck area then it is known as cervicalgia (3).Benign means that “this is not so critical”. You are not in risk. Paroxysmal is defined as that it starts abruptly, continues for a short period and comes and goes. The word position means that you activate vertigo with some posterity and through head movement. Benign paroxysmal positional vertigo (BPPV) is the condition of inner-ear, which is a very frequent reason of giddiness, a very definite type of unsteadiness, which produces the sensation that your surrounding is in a circular motion (4). The term BPPV is also characterized by alteration in head position in relation to gravity. BPPV including the posterior semicircular canal can be identified on the basis of nystagmus buildup in an ascendant and torsional way (5). One disorder that has only vestibular symptoms is BPPV, which is characterized by attacks of acute vertigo of short duration that occur when head is held in particular position gets changed (6, 7).Cervicalgia is becoming very usual globally, with significant effect on the health care systems and business of individuals and their families. In over-all population, the occurrence of neck pain has a range of 0.4% and 86.8%. Women usually has higher incidence of neck pain. (8).8% of people with BPPV presents with moderate or severe dizziness (9). It is expected that at least 20% of patients who goes to a doctor due to problem of dizziness have benign paroxysmal positional vertigo.(6, 10, 11). In most cases, the neck pain causes only mild discomfort (3, 12) BPPV has a significant impact on health-related quality of life in elderly patients on their emotional and physical states.(13, 14). Patients with cervicalgia often experience a decrease in neck mobility. As more than half of cervical spine movements occur in upper region of spine so decrease in mobility is mostly occurs in axial plane (15, 16) (7, 17). Cervicalgia is usually considered a possible cause of unexplained dizziness. The casual relationship between cervicalgia and positional vertigo has long been disputed. Still, the parallel occurrence of cervicalgia and vertigo is indefinite. Subjects who have prolonged cervicalgia and vertigo have been shown to have a worse quality of life than healthy population. There is a lack of knowledge about the basic difference between patients with cervicalgia and positional vertigo (18).Cervicalgia and benign paroxysmal positional vertigo, both conditions largely affect the daily routine events. So, purpose of this project is to evaluate cervicalgia patients and patients with benign paroxysmal positional vertigo. Additionally, we aim to compare these patients to find out that in which condition more ADLs restriction occurs. (7, 17).

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METHODS

Cross-sectional study design was used .The study ran from March 1st, 2021- August 31st 2021.Sampling technique was Non-Probability Convenient Sampling. Sample size was 185 estimated from below mentioned formula was (18).

$$N = \frac{Z^2 p (1 - p)}{d^2}$$

$Z = (1.96)^2$
P = 59%
d = 0.0050

$$N = \frac{(1.96)^2 (0.59) (1 - 0.59)}{0.0050}$$

N = 185

Patients between 20 to 60 years of age, having cervicalgia without positional vertigo, having dizziness without neck and have coexisting cervicalgia and vertigo were included (18).Patients who have neck pain and vertigo due to systemic causes, with history of cervical dislocation having of cervical spondylosis were excluded . Whole study was done on patients of cervicalgia and BPPV from different area of Lahore. Statistical analysis was done using IBM SPSS statistics 25. Two questionnaires (Copenhagen Neck Disability Scale & The Dizziness Handicap Inventory) used to collect the data for assessment and then assumptions will be done accordingly (19) frequency tables, cross tabulation used were used (20).

RESULTS

Table 1 :Mean ±SD of age within cervicalgia (neck pain) and benign paroxysmal positional vertigo (BPPV)

Age			
	Mean	N	Std. Deviation
Cervicalgia	34.7634	93	2.06101
Benign paroxysmal positional vertigo	34.7097	93	1.61232
Total	34.7366	186	1.84551

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Based on the provided data, the mean age for individuals with cervicalgia (neck pain) is approximately 34.76 years with a standard deviation of 2.06 years. For individuals with benign paroxysmal positional vertigo (BPPV), the mean age is approximately 34.71 years with a standard deviation of 1.61 years.

The overall mean age across both conditions is approximately 34.74 years, with a standard deviation of 1.85 years.

Table 2 :Frequency Distribution of gender within cervicalgia (neck pain) and benign paroxysmal positional vertigo (BPPV).

		Cervicalgia		Benign paroxysmal positional vertigo			
		N	%	N	%	N	%
Gender	Male	37	39.8%	40	43.0%	77	41.4%
	Female	56	60.2%	53	57.0%	109	58.6%
Total		93	100.0%	93	100.0%	186	100.0%

The table presents the gender distribution within two medical conditions: cervicalgia (neck pain) and benign paroxysmal positional vertigo (BPPV). In the cervicalgia group, out of 93 individuals, 37 (39.8%) are male, and 56 (60.2%) are female. Similarly, in the BPPV group, out of 93 individuals, 40 (43.0%) are male, and 53 (57.0%) are female.

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Table 3 :of Dizziness Handicap Inventory (DHI) among individuals with Cervicalgia and Benign Paroxysmal Positional Vertigo

						Total	
		Cervicalgia		Benign paroxysmal positional vertigo			
		N	%	N	%	N	%
The Dizziness Handicap Inventory	Mild Handicap	50	53.8%	25	26.9%	75	40.3%
	Moderate handicap	29	31.2%	32	34.4%	61	32.8%
	Severe handicap	14	15.1%	36	38.7%	50	26.9%
Total		93	100.0%	93	100.0%	186	100.0%
Chi Square Test							
				Value		P value	
Pearson chi square				18.161		<.001	

The table presents the distribution of handicap severity as measured by the Dizziness Handicap Inventory (DHI) among individuals with Cervicalgia and Benign Paroxysmal Positional Vertigo (BPPV). The DHI categorizes handicaps into mild, moderate, and severe. In the Cervicalgia group, 53.8% (50 out of 93) reported a mild handicap, 31.2% (29 out of 93) reported a moderate handicap, and 15.1% (14 out of 93) reported a severe handicap. Conversely, in the BPPV group, 26.9% (25 out of 93) reported a mild handicap, 34.4% (32 out of 93) reported a moderate handicap, and 38.7% (36 out of 93) reported a severe handicap. The total number of participants across both conditions is 186, with an even split of 93 participants in each group. The chi-square test was conducted to determine if there is a significant association between the type of condition (Cervicalgia vs. BPPV) and the severity of the handicap. The Pearson chi-square value is 18.161, with a p-value of less than 0.001.

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This result indicates a statistically significant difference in the distribution of handicap severity between the two conditions.

Figure 1: Dizziness Handicap Inventory bar chart

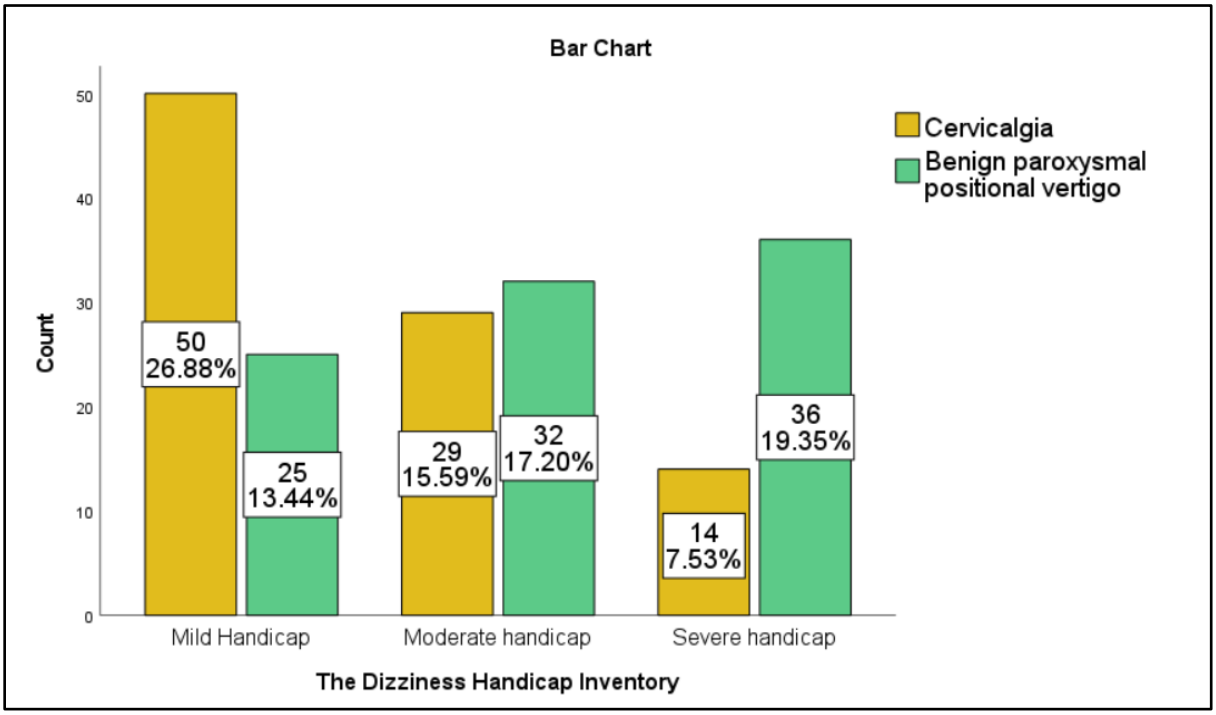

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Table 4: Association of The Copenhagen Neck Functional Disability Scale among individuals with Cervicalgia and Benign Paroxysmal Positional Vertigo

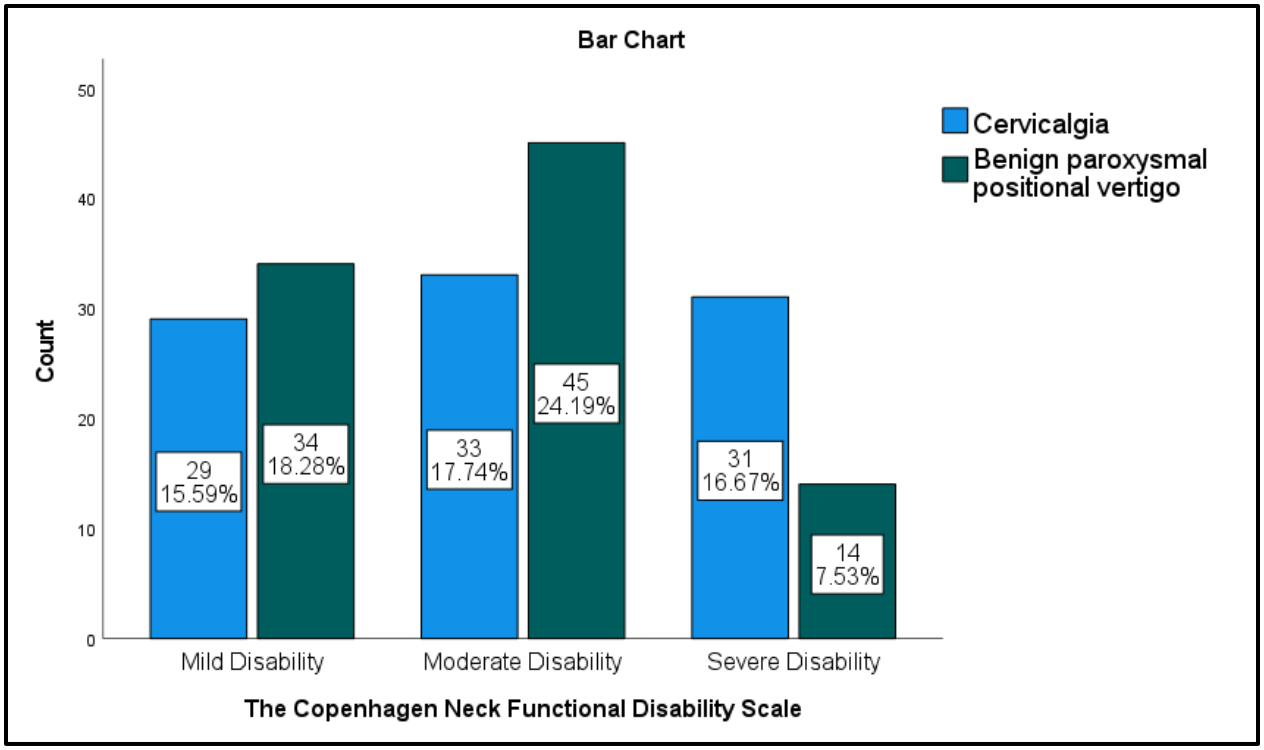
						Total	
		Cervicalgia		Benign paroxysmal positional vertigo			
		N	%	N	%	N	%
The Copenhagen Neck Functional Disability Scale	Mild Disability	29	31.2%	34	36.6%	63	33.9%
	Moderate Disability	33	35.5%	45	48.4%	78	41.9%
	Severe Disability	31	33.3%	14	15.1%	45	24.2%
Total		93	100.0%	93	100.0%	186	100.0%

Chi Square Test		
	Value	P value
Pearson chi square	8.665	.013

The table presents the distribution of functional disability severity as measured by The Copenhagen Neck Functional Disability Scale among individuals with Cervicalgia and Benign Paroxysmal Positional Vertigo (BPPV). In the Cervicalgia group, 31.2% (29 out of 93) reported mild disability, 35.5% (33 out of 93) reported moderate disability, and 33.3% (31 out of 93) reported severe disability. In contrast, in the BPPV group, 36.6% (34 out of 93) reported mild disability, 48.4% (45 out of 93) reported moderate disability, and 15.1% (14 out of 93) reported severe disability. The total number of participants across both conditions is 186, with an even split of 93 participants in each group. The chi-square test was conducted to examine the association between the type of condition (Cervicalgia vs. BPPV) and the severity of functional disability. The Pearson chi-square value is 8.665, with a p-

value of 0.013. The results indicate a statistically significant association between the type of condition and the severity of functional disability. This suggests that there are differences in the distribution of functional disability severity between individuals with Cervicalgia and those with BPPV. Specifically, individuals with BPPV tend to experience more severe functional disability compared to those with Cervicalgia.

Figure 2: Copenhagen neck functional disability scale bar chart



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DISCUSSION

This study was conducted to compare ADLs restriction in patients of BPPV and cervicalgia to check that in which condition more ADLs restriction occurs. Mari Kalland Knapstad et al. (2020), cervicalgia is familiar problem amongst subjects with vertigo .Health center treats about 1,200 patients who are referred annually as of general practice and other professional care units because of giddiness or stability issues. They concluded that cervicalgia is usually exists in more than half of subjects involved. Cervicalgia patients usually have bad quality of life due to feelings of dizziness these results were accordance to current findings Individuals with BPPV tend to experience more severe handicap on the Dizziness Handicap Inventory, with 38.7% reporting severe handicap compared to 15.1% in cervicalgia (18).

Knapstad et al.(2020) described that dizziness is relatively common complaint with a diversified group of patients with different causes. The result of project shows that pain in neck region may affect control of posture, symptoms of dizziness, physical impairments and health related quality of life these results were accordance to current findings Individuals with BPPV tend to experience more severe handicap on the Dizziness Handicap Inventory, with 38.7% reporting severe handicap compared to 15.1% in cervicalgia (21).

Gunnar Bovim et al. examined the incidence and extent of neck pain. They concluded that the chronic cervicalgia is characteristic symptom in general individuals, especially in ladies these results were inline to current findings (22).

According to Yoshiyuki Ozono et al. (2014), dizziness occurs due to equilibrium issue. They took 120 patients with dizziness for this purpose. From their research project, they concluded that patients ratio with central etiology of disease was 12.5 % and for non-central etiology was 87.5% these results were accordance to current study. (23).

Peter R Croft et al. (2001) conducted a study to observed the one-year occurrence of cervicalgia and to check its relationship with risk factors such as history of previous injury in neck. They performed a cross-sectional survey and resulted that there were 4501 patients to the base-line questionnaire, response of 58.7% of whom 4393 provides the question presenting cervicalgia these results were accordance to current study.(24).

Eduardo SB Bracher et al. (2000) conducted that chronic, non-traumatic head and shoulder-girdle problem was a principle casual and risk factor for head vertigo (25).

Susan A. Rid et al. (2017) described that dizziness is very dangerous disorder vertigo had effect on ADL these results were accordance to current findings Individuals with BPPV tend to experience more severe handicap on the Dizziness Handicap Inventory, with 38.7% reporting severe handicap compared to 15.1% in cervicalgia (20).

According to B Mendel et al., dizziness influenced the quality of life, and the form of vertigo that greatly affects the living aspects was recurrent, brief- or long-lasting dizziness these results were compatible to current these results were accordance to current findings Individuals with BPPV tend to experience more severe handicap on the Dizziness Handicap Inventory, with 38.7% reporting severe handicap compared to 15.1% in cervicalgia (26).

A study by Andrea Ciorba et al., had also shown that dizziness has impact of activities of daily living these results were compatible to study It was estimated that the patients with benign paroxysmal position vertigo have more difficulty (48.4%) in performing activities of daily living as compare to patients of cervicalgia (15.1%).
(27).

CONCLUSION

The conclusion of this study is that the patients with benign paroxysmal positional vertigo have more difficulty in performing activities of daily living as compare to patients of cervicalgia

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