

USE OF CERVICAL MANIPULATION BY PHYSICAL THERAPISTS FOR TREATING CERVICAL PROBLEMS

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ABSTRACT:

Background: Neck pain is a widespread disease that causes significant pain, disability, and economic costs. Not only is it a significant personal burden, but it also affects families, the health system, and the economic structure of countries.

Objective: The aim of this study was to evaluate the use of cervical manipulation in treating cervical problems by physical therapist.

Method: A descriptive cross-sectional survey was conducted. Data was collected from practicing physiotherapist by self designed questionnaire. Frequencies were found out using frequency tables and association was seen using chi-square test of independence.

Results: In this study 250 physical therapist were included. Out of which 116 were male and 134 were female. 164 therapists reported to be specialized in their certain fields of specialization. Out of 250 physiotherapists 203 reported that they use cervical manipulations to treat cervical problems. Furthermore association between the use of cervical manipulation and level of qualification showed no significant association between the two. It was concluded that most of the physical therapists use cervical manipulation in treating cervical problems and recommend using it.

Key words: cervical, manual, manipulation, physical therapists, neck pain

INTRODUCTION:

Neck pain is a common affliction. The history and physical examination are usually enough to make a diagnosis. . Cervical radiculopathy is characterized by a combination of motor control, feeling, and reflex deficits. Pancoast tumor and peripheral entrapment neuropathies are two conditions that can resemble cervical radiculopathy. Cervical myelopathy patients also have a history of recurring neck, back, and arm pain. In the absence of red flag symptoms or myelopathy, conservative treatment is appropriate.⁽¹⁾

Neck pain is a widespread disease that causes significant pain, disability, and economic costs. Not only is it a significant personal burden, but it also affects families, the health system, and the economic structure of countries. Despite of the impact of neck pain, its global impact. The discussion has not been comprehensively presented to serve as the basis for different types of epidemiological studies and for evaluating different health systems around the world. ⁽²⁾ Although the causes of neck pain are numerous, the majority of neck pain is caused by local mechanical issues. Damage to the joints, discs, or soft tissue causes mechanical neck pain.⁽³⁾ Acute neck pain lasts less than three weeks, while chronic neck pain lasts 12 weeks or longer, sub-acute neck pain falls somewhere in the centre. While degenerative changes take time to manifest, injuries (such as herniated discs) are more likely to cause acute neck pain. ⁽⁴⁾

Physical exercise, cervical traction, soft collars, manual therapy, heat therapy, and acupuncture are examples of non-operative, non-pharmacological treatments for cervical pain. 25 It is safer to use a multimodal treatment that includes physical therapy, medicine, and injection therapy. Patients with medically refractory pain or signs of myelopathy can benefit from surgery. In the absence of red flag symptoms or myelopathy, conservative treatment is appropriate. ⁽⁵⁾

The term “manipulation” refers to techniques involving a high-velocity low-amplitude thrust, while mobilisation refers to techniques involving lower velocity, passive joint movements. In their clinical practise, about 37% of therapists who regularly

conduct manual therapy procedures for patients with spinal disorders perform cervical spine manipulation and/or mobilisation of patients with neck pain. An growing number of high-quality randomised clinical trials (RCT) have recently supported the efficacy of these treatments in patients with neck pain and cervicogenic headaches. ⁽⁶⁾

Spinal manipulation is common in many countries, and that its usage has risen steadily in recent decades, at least in the United States and Europe, owing to the rise in complementary and alternative medicine use. However, evidence from recent research suggests that usage rates have levelled off. The three groups of practitioners most likely to perform spinal manipulation are chiropractors, osteopaths, and physical therapists. Although the literature does not provide for specific estimates of use, medical doctors and other professionals use spinal manipulation less frequently. ⁽⁷⁾

Walsh, Laurie PT, JD, MS, Bicheler et al. conducted the study on The Utilization of Spinal Manipulation by physical therapist in New York state. They Invited 300 physical therapy clinics from New York state of Sample population, 41.3% reported performing spinal manipulation and majority of those physical therapist (77.4%) use intervention between 0% and 25%. ⁽⁸⁾

Marie B. Corkery, Craig P, et al. Conducted the study of Joint manipulation by physical therapists in the United States. Forty-five programs participated in study, 414 (19.3%) responses were used for analysis and 69% reported using manipulation. ⁽⁹⁾

Timothy W Flynn, Robert S Wainner, Julie M Fritz et al. Conducted study on spinal manipulation in physical therapist professional education. Physical therapists in this country and internationally have used spinal manipulation at much lower-than-expected rates. ⁽¹⁰⁾

Emilio J Puentedura, Rebecca Slaughter, Sean Reilly et al. Conducted study on thrust joint manipulation utilization by US physical Therapists and their comfort level in using thrust joint manipulation between the cervical, thoracic, and lumbar regions of spine. Majority of physical therapists felt that thrust joint manipulation is very effective

to lumbar (90.5%) and thoracic (91.1%). However smaller effectiveness is felt in cervical (68.9%).⁽¹¹⁾

Lise C Carlesso, Joy C Macdermid et al. conducted the study on spine manipulation and spin motion palpation by canidian physiotherapists.they study the response rate was 82%(278/338 eligible FCAMPTs). Most(99%) used manipulation .Two third of them (62%) used clinical presentation as a factor when deciding to manipulate. The latest frequently manipulated spinal region was the cervical spine (2% of patients).60% of them felt that manipulation generated more adverse effects.⁽¹²⁾

METHODOLOGY:

Materials and methods

- **Study design:** Descriptive cross-sectional study
- **Study settings:** Women institute of rehabilitation sciences
- **Sampling technique:** Convenience sampling technique
- **Sample size:** Sample size was calculated to be 377 through Raosoft software
- **Study duration:** 6 months
- **Inclusion criteria:** Both male and female PTs were included.

Both Government and Private sector PTs were included.

Both specialized and graduated PTs were included.

Only practicing PTs were included.

PTs having at least one year of experience were included.

- **Exclusion criteria:** Non practicing PTs were not included.

PTs having clinical experience of less than one year were not included.

Data Collection Procedure

The approval of presented research proposal was taken from institutional review board. The data was collected from practicing physical therapists fulfilling the eligibility criteria for the study. Before collecting data the study was explained to each participant and consent was taken. The

self-administered questionnaire was provided to each participant which they filled themselves. The data was collected from The study was carried out at Women Institute of Rehabilitation Sciences, Abbottabad, Ayub teaching hospital, Abbottabad, BBH Rawalpindi, AFIRM, Heart International Hospital, Rawalpindi, Fauji Foundation, Rawalpindi, Islam Central Hospital, Sialkot, Idrees Hospital, Sialkot, DHQ, Sialkot, Hameed Lateef Hospital, Lahore, General Hospital, Lahore, Fatima Memorial Hospital, Lahore, Hameeda Memorial Hospital, Lahore and various private clinics.

Data Analysis procedure

Data was analyzed through SPSS version 22. Frequency of cervical manipulation in cervical problems by physical therapists was measured by using frequency tables. Association was found out by using chi-square test of independence.

RESULTS:

Demographics:

Gender: According to our study out of 250 therapists, 53.6% (134) were females while 46.4% (116) were males.

Table No 1:

	Frequency	Percent
Male	116	46.4
Female	134	53.6
Total	250	100.0

Age: According to our study out of 250 therapists, 23.6% (59) were in between the age of 24 to 28, 51.2% (128) were in between 29 to 34 age, those in the age between 35 to 40 were 18.0% (45) and 7.2% (18) were above the age 40. This indicates that most of the therapists were in the age group from 29 to 34.

Table No 2:

age	Frequency	Percent
25 to 28	59	23.6
29 to 34	128	51.2
35 to 40	45	18.0
> 40	18	7.2
Total	250	100.0

Qualification: According to our study out of 250 therapists, 35.2% (88) were graduates while 64.8% (162) were post graduates. So this table indicates that most of the therapists were specialized.

Table No 3:

	Frequency	Percent
Graduates	86	34.4
Post graduates	164	65.6
Total	250	100.0

Certification in cervical manipulation: According to our study out of 250 therapists, 51.6% (129) certified in cervical manipulation while 48.4% (121) did not certify in cervical manipulation. This table shows that majority of the therapists were certified in cervical manipulation.

Table No 4:

	Frequency	Percent
Yes	129	51.6
No	121	48.4
Total	250	100.0

Use of manipulation to treat cervical problems: According to current study out of 250 therapists, 81.2% (203) used manipulation to treat cervical problems while 18.8% (47) did not use manipulation to treat cervical problems. This table indicates that majority of therapists used manipulation to treat cervical problems.

Table No 5:

	Frequency	Percent
Yes	203	81.2
No	47	18.8
Total	250	100.0

Avoidance of C0 and C1 manipulation in learning stage:

According to the given result of our study out of 250 therapists, 64.8% (162) avoided manipulation of C0 and C1 at learning stage while 35.2% (88) not avoided manipulation of C0 and C1 at learning stage. This table shows that majority of the therapists avoided manipulation of C0 and C1 at learning stage.

Table No 6:

	Frequency	Percent
Yes	162	64.8
No	88	35.2
Total	250	100.0

Effectiveness of cervical manipulation in PT's opinion: According to our study out of 250 therapists, 88.4% (221) therapists opinion were cervical manipulation is effective

while 11.6% (29) therapists opinion were cervical manipulation is not effective. This table shows that most of the therapists opinion were cervical manipulation is effective.

Table No 7:

	Frequency	Percent
Yes	221	88.4
No	29	11.6
Total	250	100.0

Association between qualification and use of manipulation to treat cervical problems: Table shows that p-value is 0.6 which is greater than 0.5, which means that qualification i.e. being graduate or post graduate does not have any significant association with use of manipulation to treat cervical problems.

Table no 8:

		use of manipulation to treat cervical problems		Total	Chi-square	p-value
		Yes	No			
Graduates	Count	73	15	88	.274	.601
	% of Total	29.2%	6.0%	35.2%		
Post graduates	Count	130	32	162		
	% of Total	52.0%	12.8%	64.8%		
Total	Count	203	47	250		
	% of Total	81.2%	18.8%	100.0%		

Discussion:

This research was carried out to find out the use of cervical manipulation by physical therapists in cervical problems. The results of the study suggested that most of the physical therapists i.e 203 out of 250 physical therapists use cervical manipulation to treat cervical problems in patients. Furthermore most of the physical therapists in the study had certification in cervical manipulation.

In a survey was done by Walsh, et al. in 2019 and its sample size was 300 which include physical therapists participants. One hundred and fifty physical therapists completed the survey and were included most of females (54%) and least males (45.3%). In this study 41.3% reported performing manipulation and majority of physical therapists (77.4%) used intervention. While In our study most of physical therapists were females (53.6%) and least were males (46.4%). In our study (81.2%) physical therapists used manipulation while (18.8) didn't use manipulation to treat cervical problems. ⁽⁸⁾

In a survey was done by Marie B Crokery et al. in 2020. Its sample size was 227. 414(19.3%) responses are use for analysis and 69% reported manipulation. A main barrier for use of manipulation was lack of manipulation use. While in our study physical therapists were specialized in Orthopedic Manual Physical Therapists. 81.2% (203) physical therapists use cervical manipulation to treat cervical problem and their opinion is that cervical manipulation is effective. 18.8% (47) did not use cervical manipulation to treat cervical problems. ⁽⁹⁾

A survey was done by Timothy W Flynn et al. in 2006. It appears that thrust manipulation is an intervention strategy that has some benefits but is often used in lower than expected rates. While in our study most of physical therapists specialized in Orthopedic Manual Physical Therapists. Physical therapists used manipulation to treat cervical problems in sessions. Physical Therapists are certified in cervical manipulation. Most of Physical therapists used Evidence

Based practice in Clinics. Majority of physical therapists opinion were that cervical manipulation is very affective. Majority of physical therapists recommended cervical manipulation. ⁽¹⁰⁾

A survey was done by Emilio J et al. in 201 its sample size was (1014). 1000 completed survey included for analysis. This research indicates that manipulation of cervical spine is not safe and effective. They do not feel comfortable performing manipulation for cervical spine. While in our study most of physical therapists opinion was that cervical manipulation is effective. Most of physical therapists were females. ⁽¹¹⁾

Limitations:

- One of the limitation of this study is that the final sample size is too large and we were not able to collect the whole data from therapists.
- Secondly the therapist didn't cooperate and also didn't respond well.
- Furthermore, the study was limited to close ended answers , therapists detailed impressions were unable to be recorded for study.

Recommendations:

- A detailed study with the complete sample size can be carried out in future.
- The cervical problems for which manipulation should be used can be specified.
- Effectiveness of the cervical manipulation can be checked by detailed analysis.

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