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IP Journal of Nutrition, Metabolism and Health Science

Journal homepage: <https://www.jnmhs.com/>

Original Research Article

The changes after physical therapy in non-specific neck pain patients

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ARTICLE INFO

Article history:

Received 02-03-2022

Accepted 19-03-2022

Available online 11-04-2022

Keywords:

Nonspecific Neck Pain

Physiotherapy

Functional Disability

ABSTRACT

Background: Non-specific neck pain is one of the most common pain after low back pain. Physiotherapy interventions are used as a treatment to reduce pain and functional status in such patients. This study aims to see the changes after physiotherapy in non-specific neck pain.

Aim/Objective: To see the changes after physiotherapy in non-specific neck pain.

Materials and Methods: A case series was performed on 35 patients in Dhiraj General Hospital at physiotherapy department. Physiotherapy interventions including electro therapeutic modalities (like moist pack, ultrasound) along with stretching and strengthening exercise, massage to neck musculature was given for 3 days to patients with non-specific neck pain who were referred for physiotherapy. Outcome measure was taken in form of NPRS & NDI.

Results: A Decrease in NPRS and improvement in NDI was noted after the treatment sessions for 3 consecutive days.

Conclusion: It is concluded that physiotherapy intervention is effective in reducing pain and improving functional status in patients with nonspecific neck pain.

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1. Introduction

Neck disorders are very common painful condition causing limitation in functional activities in the general population.¹

Neck pain is the second largest cause of time off work, after low back pain (LBP).²

Nonspecific neck pain is neck pain (with or) without any specific systematic disease being detected as the underlying cause of the complaints. Numerous structures in the neck and nearby regions may be the sources of nonspecific neck pain, such as muscles, joint structures, ligaments, intervertebral disks, and neural structures.² Prevalence ranges from 6% to 22% and up to 38% of the elderly population, while lifetime prevalence ranges from 14.2% to 71% and it is more common in woman.³

In general population 25% of women and 16% of men are affected in their lifetime, people with neck pain are more seen between half and quarter decades.⁴

Nonspecific neck pain is the commonest cause of neck symptoms results from postural and mechanical cause.⁴

Nonspecific neck pain may arise due to prolonged neck flexion, weak musculature, trapezitis, etc. It is one of the most common conditions for referral to a physical therapist.⁵

Nonspecific Neck pain arise due to disease of cervical spine and soft tissue of neck pain. Muscular pain can be due to spasm of muscle caused by falling asleep in awkward position or prolong working of computer desk with bent neck.⁶

Neck disorders remain a common problem in Morden industrialized countries. Since early and mid-19 century, the use of computer has increased dramatically along with the

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increasing in report of neck pain.⁶

Abnormal findings of an examination consist of decreased mobility, muscle spasms, and tenderness.⁷ Physical Therapists approach the management of this pathology with varieties of interventions such as manual therapy (MT), therapeutic exercises, modalities, massage, and functional training.⁶

There are articles revealing sufficient evidence indicating that exercise therapy effectively prevents neck pain in the general population.^{3,6}

Thus, the aim of the study was to see the effectiveness of exercises in nonspecific neck pain patients.

1.1. Aim

To see the changes after physical therapy in non-specific neck pain patients.

1.2. Objectives

1. To see the changes in neck Pain measurement.
2. To see the status of Functional activity.

1.3. Review of literature

Giannoula Tsakitzidis, Roy Remmen, have done study on Non-specific neck pain and evidence-based practice and concluded that this entity is in fact a heterogenic condition. For the treatment of the diagnostic label 'NS-NP' strong evidence of efficacy was only found for multimodal care (manipulation/mobilization and supervised exercises).³ [January 2013]

Boyoung IM, et al. Has done study (2016) on "Effects of Scapular Stabilization Exercise on Neck Posture And Muscle activation In Individual With Neck Pain And Forward Head Posture", and concluded that scapular stabilization exercise can help improve the head posture and pain in the patient with neck pain and forward head posture. Controlling the muscular activities through scapular stabilization exercise also improve the patient quality of life.⁵ [Dec. 2015]

Arja Hakkinen, Petri Salo et.al. conducted study on "Effect of Manual therapy and stretching on neck muscle strength and mobility in chronic neck pain" this study concluded that both manual therapy and stretching were effective short term treatment for reducing both spontaneous and strain evoked pain in patient with chronic neck pain. It is possible that the decrease in pain reduce inhibition of the motor system and in part improved neck function. However the change in neck muscle strength were minor, showing that these treatment alone are not effective in improving muscle strength.⁸ [Sep 2007]

Esther Liyanage, Indrajith Liyanage, Maish Khan conducted study on "efficiency of isometric neck exercise and stretching with ergonomics over ergonomics alone in computer professionals". In these study outcome measures

used were VAS and OSWESTRY NDI and concluded that neck exercise and stretching along with ergonomics intervention proved more beneficial than ergonomics alone for neck pain in computer professionals.⁴ [Sep '2014]

1.3.1. Outcome measures

NPRS

0	1	2	3	4	5	6	7	8	9	10
No Pain										Max Pain

Fig. 1:

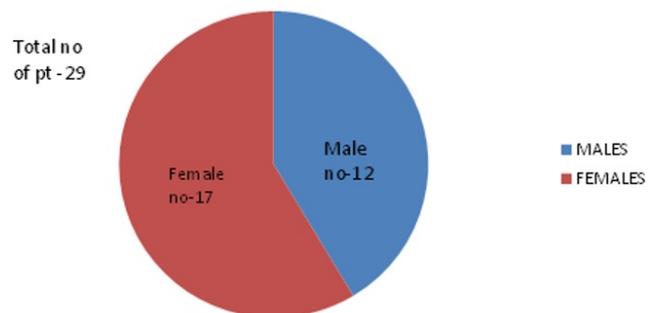


Fig. 2:

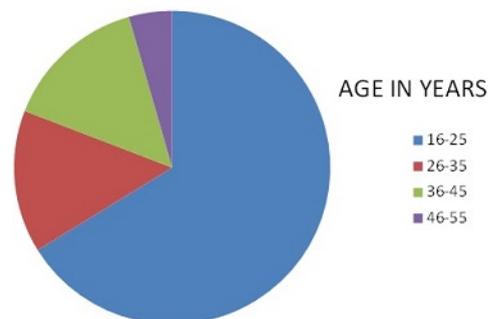


Fig. 3:

1.3.2. Neck disability index procedure

After obtaining approval from the Ethical committee of college of physiotherapy, patient who were referred with neck pain to the physiotherapy department were recruited for the study. All the patients were explained about the study and informed consent was obtained according to the ANNEXURE I. Participants who satisfied the inclusion criteria and who were willing to participate were included in studies. Subjects were assessed in detail according to

Table 1: Shows the data of pain and functional activity.

No. of patients	Age In years	Diagnosis (trapezitis)		NPRS (mean)		NDI score (mean)		Percentage%	
				Day 1 Pre	Day 3 post	Day 1 pre	Day 3 post	Day 1 pre	Day 3 post
18	19-25 Mean (21-5)	Unilateral - 6	On movt	6.33	1.5	11.61	1.16	23.38	2.22%
			On rest	2	0.16				
		Bilateral - 12	On movt	7	2.16				
			On rest	2.25	0.25				

Table 2: Shows the data of pain and functional activity.

No. of patients	Age In years	Diagnosis (trapezitis)		NPRS (mean)		NDI score (mean)		Percentage%	
				Day 1 Pre	Day 3 post	Day 1 pre	Day 3 post	Day 1 pre	Day 3 post
4	26.35 Mean (31.25)	Unilateral – 3	On movt	7	1.5	15.25	1.25	30.52	2.5
			On rest	2.5	2				
		Bilateral - 1	On movt	6	1.5				
			On rest	2	1				

Table 3: Shows the data of pain and functional activity.

No. of patients	Age In years	Diagnosis (trapezitis)		NPRS (mean)		NDI score (mean)		Percentage%	
				Day 1 Pre	Day 3 post	Day 1 pre	Day 3 post	Day 1 pre	Day 3 post
4	36.45 Mean (38.5)	Unilateral - 4	On movt	6	1.5	17.25	4.25	34.51%	4%
			On rest	2.5	0				
		Bilateral - 0	On movt	-	-				
			On rest	-	-				

Table 4: Shows the data of pain and functional activity.

No. of patients	Age In years	Diagnosis (trapezitis)		NPRS (mean)		NDI score (mean)		Percentage%	
				Day 1 Pre	Day 3 post	Day 1 pre	Day 3 post	Day 1 pre	Day 3 post
4	46.55 Mean (50.33)	Unilateral – 1	On movt	8	1	5.66	3	31.33%	6%
			On rest	2	0				
		Bilateral - 2	On movt	6	1				
			On rest	1	0				

ANNEXURE II, after recruiting patient –pain with NPRS and improvement in the functional activity were measured with NDI. According to patient requirement management was planned based on ANNEXURE III. After three sessions of physiotherapy treatment patient were reassessed and Outcome were.

1.4. Management

1.4.1. Pain relief

1. Moist pack for 10-15 minutes
2. US over tender points 1 MHZ, 1 W/cm² for 10 min (it may vary according to the condition of the patient)
3. Kneading
4. Finger kneading
5. Wringing, rolling and picking up.

1.5. Finger kneading

1.5.1. Isometric exercise

Isometric contractions of neck flexors, extensors, side flexors and rotators either in sitting position.

1.5.2. Isometric exercise

Stretching: Stretching for neck side flexors and pectoralis muscle was given for 30 sec. For 3 repetition S.

2. Results

3. Discussion

In the study, total 35 subjects were assessed and 6 subjects who did not fulfil the inclusion criteria were excluded and 29 subject were recruited who were diagnosed as non-specific neck pain and referred to physiotherapy department.

According to the examination of patients on the basis of pain, range of motion, manual muscle testing, spasm and functional evaluation treatment was given for 3 consecutive days.

In the study, out of 29 patients who were diagnosed with non-specific neck pain 12 patients were male and 17 patients were female.

Out of 29 subjects, 15 had bilateral involvement and remaining 14 had unilateral involvement.

Age of all the subjects ranged from 19-52(mean -42.5) years.

Duration of pain ranged from 7 days to 3 years.

In table 1, subject age was between 15-25 years (mean age- 21.5) came with the complain of pain in the nape of neck. Among them 6 unilateral and 12 bilateral while forward bending, side turning, reading, etc. on first day pain on NPRS was (range-on movt 3-7,at rest 0-3)mean was 6.33in unilateral and 7 in bilateral and on NDI mean 11.61 for these treatment was given for 3 consecutive days and we found pain was decrease (NPRS mean 1.5 in unilateral trapezitis and mean 2.16 in bilateral trapezitis) and improvement in functional activates seen (NDI -mean 1.16).Overall functional improvement on NDI was 21.16%.

In table 2, subject age was between 26-35 years (mean age31.25) came with complain of pain in the nape of neck. Among them 3 unilateral and 1bilateral while forward bending, side turning, reading, driving etc. on first day pain on NPRS was (range on movt 0-7, at rest 2-4) mean NPRS was in unilateral trapezitis is 7 and in bilateral trapezitis is 6 and on NDI mean15.25 for this treatment was given for 3 consicutive days and we found pain was decreased (NPRS mean 2.1 in unilateral trapezitis and mean 1 in bilateral trapezitis and improvement in functional activities seen (NDI mean 1.25). Over all functional improvement on NDI was 28.02%.

In table 3, subject age was between 36-45 years (mean age- 38.5) came with the complain of pain in the nape of neck. Among them 4unilateral and 0 bilateral while forward bending, side turning, reading, ridding, etc. on first day pain on NPRS was (range on movt 0-8,at rest 0-4) mean was 6 in unilateral trapezitis and 0 in bilateral on NDI (mean 17.25) for this treatment was given for 3 consecutive days and we found pain was decreased (NPRS mean 1.5 in unilateral trapezitis) and improvement in functional activities seen (NDI mean 4.25). Overall functional improvement on NDI was 30.5%

In table 4, subject age was between 46-55years (mean age- 50.33) came with the complain of pain in the nape of neck. among them 1 unilateral and 2 bilateral while forward bending, side turning, reading, work, constant position, etc.on first day pain on NPRS was (range on movt 0-8, at rest 0-2) mean was 8 in unilateral trapezitis and 6 in bilateral trapezitis was and on NDI mean 15.66 for these treatment

was given for 3 consecutive days and we found pain was decreased (NPRS mean 2 in unilateral trapezitis and 1 in bilateral trapezitis) and improvement in functional activities seen (NDI mean 3). Overall functional improvement on NDI was 25.33%.

4. Conclusion

Thus, the study concludes that physiotherapy treatment is effective in reduction in pain and muscle spasm and improves the motor performance in patient with non-specific neck pain.

5. Source of Funding

None.

6. Conflict of Interest

The author declares that there is no conflict of interest.

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Cite this article: Gandhi NV, Upadhyay Y. The changes after physical therapy in non-specific neck pain patients. *IP J Nutr Metab Health Sci* 2022;5(1):32-35.