Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 8s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Efficacy Of Kinesiology Taping Versus Interferential Therapy On Mechanical Neck Pain

Sindhuja R[*1], Sudhesh P[2], Soundararajan K[*3], Jerry Caleb[4], Velmurugan G[5], Soundharya M[6]

[*1]Shanmuga College of Physiotherapy, Vinayaka mission Medical College and Hospital (VMRFDeemed to be University), Karaikal – 609609, Puducherry, India.

Email ID: hinnusindhu095@gmail.com

[2,4] Department of Physical Medicine and Rehabilitation, Government Medical College and Hospital (Annamalai University), Cuddalore, Chidambaram -608002, Tamilnadu, India

[*3]Sri Ramachandra Faculty of Physiotherapy, Sri Ramachandra Institute of Higher Education and Research (Deemed to be University) Porur-600116, Chennai, India.

Email ID: soundararajan.k@sriramachandra.edu.in

[4, 5] Shanmuga College of Physiotherapy, Vinayaka mission Medical College and Hospital (VMRFDeemed to be University), Karaikal – 609609, Puducherry, India

Cite this paper as: Sindhuja R, Sudhesh P, Soundararajan K, Jerry Caleb, Velmurugan G, Soundharya M, (2025) Efficacy Of Kinesiology Taping Versus Interferential Therapy On Mechanical Neck Pain. *Journal of Neonatal Surgery*, 14 (8s), 414-428.

ABSTRACT

Background: Neck pain is a prevalent issue experienced by individuals of all ages. Mechanical neck pain refers to generalized discomfort in the neck, triggered by sustained postures, neck movements, and tenderness in the cervical muscles, without underlying pathologies. It is most common in middle-aged individuals. Kinesiology taping is a therapeutic method used to support muscles, joints, and fascia, promoting a full range of motion and aiding in the reduction of inflammation and pain, which is believed to accelerate recovery from injuries or micro-traumas. This effect is thought to occur by stimulating the body's natural healing processes and calming the nervous system. However, research on the application of kinesiology taping for mechanical neck pain is limited. This study aims to investigate this technique and compare its effectiveness to traditional physiotherapy in terms of pain reduction, range of motion, and disability.

Methodology: The study included 30 subjects who met the selection criteria. Each participant was provided with an explanation of the study and gave informed consent. The participants were randomly divided into two groups. Group A (N=15) received kinesiology taping, replaced every 3 days, along with daily isometric neck exercises for one week. Group B (N=15) underwent interferential therapy combined with daily isometric neck exercises for the same duration. Pre- and post-treatment data on pain, active cervical range of motion, and neck functional disability (measured using the Numerical Pain Rating Scale, Universal Goniometer, and Neck Disability Index) were collected and analyzed using appropriate statistical methods.

Results: A comparative analysis using the Whitney U test revealed a statistically significant difference ($P<0.05$) in the mean scores of the Neck Disability Index, active cervical flexion, and rotation percentage when comparing the post-intervention results between the two groups. The Wilcoxon matched pair test used for pre- and post-test analysis within both groups showed significant changes in the means of NPRS, cervical flexion, extension, rotation, lateral flexion, and NDI.

Conclusion: The study concluded that kinesiology taping resulted in significantly greater improvements in the Neck Disability Index, active cervical flexion, and rotation compared to interferential therapy.

1. INTRODUCTION

Mechanical neck pain is characterized by generalized discomfort in the neck, often triggered by prolonged postures, movement, or pressure on the cervical muscles without any underlying pathology. It affects 30% to 50% of the general population, with 11% to 14% of the working population experiencing limitations in daily activities due to neck pain.(2,3,4) The condition is most prevalent among middle-aged individuals.(2)

Mechanical neck pain contributes significantly to disability and healthcare costs.(5,6,7) Researchers continue to explore effective treatment options, with physical therapy being the primary management approach for individuals with non-specific neck pain. Among the various physiotherapy treatments, interferential therapy (IFT) is widely used in clinical settings. It is commonly administered for 10 to 15 minutes per session over a week to alleviate pain and discomfort.

In today's fast-paced world, patients seek treatments that provide relief in minimal time. As a result, alternative therapeutic methods are being explored. One such intervention is kinesiology taping (KT) (8), a technique developed by Dr. Kenzo Kaze in Japan more than 25 years ago. Unlike conventional taping methods, KT supports muscles, fascia, and joints while allowing a full range of motion. It is believed to accelerate recovery by reducing pain and inflammation (9). Additionally, KT stimulates mechanoreceptors during active movements, (10) potentially reducing pain through neurological suppression and enhancing the body's natural healing mechanisms.(11)

This study aims to compare the effectiveness of kinesiology taping and interferential therapy, both combined with exercise, in managing mechanical neck pain. The objective is to analyze pre- and post-treatment levels of pain, range of motion, and functional ability. The hypothesis suggests that kinesiology taping will result in significant improvements in pain reduction, range of motion, and overall functional ability compared to interferential therapy. (12)

2. METHODOLOGY

Study Type: Comparative study

Study Location: Outpatient Department, Shanmuga College of Physiotherapy, VMMC Campus, Karaikal

Study Population: 30 individuals diagnosed with cervical strain

Sampling Method: Simple randomized sampling

Inclusion Criteria:

- Age range: 20–45 years
- Both males and females included
- Diagnosed with mechanical neck pain (cervical strain)
- Neck Disability Index (NDI) score above 5

Exclusion Criteria:

- Skin conditions such as infections, blisters, ulcers, or open wounds
- Altered skin sensations
- Vertebrobasilar insufficiency
- Cervical radiculopathy or myelopathy
- Allergy to kinesiology tape

Materials Used: Proforma sheet, goniometer, Numerical Pain Rating Scale (NPRS), kinesiology tape, scissors, Interferential Therapy (IFT) unit, Neck Disability Index questionnaire

Procedure:

Thirty eligible participants were included in the study after meeting the selection criteria. Each participant was given a clear explanation of the study objectives and procedures, and informed consent was obtained. The participants were randomly divided into two groups:

- **Group A (n=15):** Received kinesiology taping (KT)
- **Group B (n=15):** Received Interferential Therapy (IFT)

Baseline assessments were conducted to evaluate pain intensity (NPRS), functional disability (NDI), and cervical range of motion (ROM) using a universal goniometer.

Evaluation Procedures:

Numerical Pain Rating Scale (NPRS)

Participants marked their pain intensity on a 10 cm scale, where 0 represented no pain and 10 indicated maximum pain. NPRS has been shown to have moderate test-retest reliability in individuals with mechanical neck pain.

Neck Disability Index (NDI)

The NDI questionnaire was translated into the local language (Tamil) to facilitate comprehension. Participants rated their ability to perform 10 activities, with total scores ranging from 0 to 50. A higher score indicated greater disability. The NDI is a validated tool for assessing functional impairment in individuals with cervical pain.

Range of Motion (ROM) Assessment

Participants sat upright in a chair for ROM measurements:

- **Flexion & Extension:** The goniometer's fulcrum was positioned on the external auditory meatus, with the stable arm aligned to the sagittal axis and the movable arm aligned with the nose. Participants flexed and extended their necks, and ROM values were recorded.
- **Lateral Flexion:** The fulcrum was placed at the occipital protuberance, with the stable arm aligned to the spinous process of the thoracic vertebra. The movable arm followed the dorsal midline of the head as the participant tilted their head to the left and right.
- **Rotation:** The fulcrum was positioned where the sagittal and frontal axes meet, with both goniometer arms parallel to the ground. As participants rotated their heads, measurements were taken from the movable arm following the nose.

The Cervical Range of Motion (CROM) goniometer is considered a reliable and valid tool for measuring cervical flexion and extension.

Treatment Procedure:

Following the pre-assessment, the two treatment groups underwent their respective interventions:

- **Group A:** Kinesiology taping applied every three days
- **Group B:** Interferential therapy administered as per standard protocol

Kinesiology Taping Technique:

- **Patient Position:** Seated
- **Therapist Position:** Standing behind the patient

Application Procedure:

1. The kinesiology tape was measured and cut according to the treatment area.
2. Two strips of tape were used:
    - **Y-strip:** Applied from thoracic vertebrae (T3-T5) to the occipital region.
    - **I-strip:** Placed horizontally at the mid-neck level.
3. The participant was instructed to move their neck into flexion.
4. The base of the Y-strip was applied over the spinous process of T3-T5. The tails were placed along the Para-spinal muscles leading up to the hairline without tension.
5. The I-strip was applied horizontally at the middle of the neck. The center section of the strip was placed with moderate tension, while the ends were applied with minimal tension to secure the tape.

Exercise Program:

Participants performed isometric neck exercises targeting the extensors, flexors, and side flexors while seated. Each repetition involved a 6-second hold followed by a 6-second relaxation phase, with a total of 10 repetitions per session.

3. RESULTS

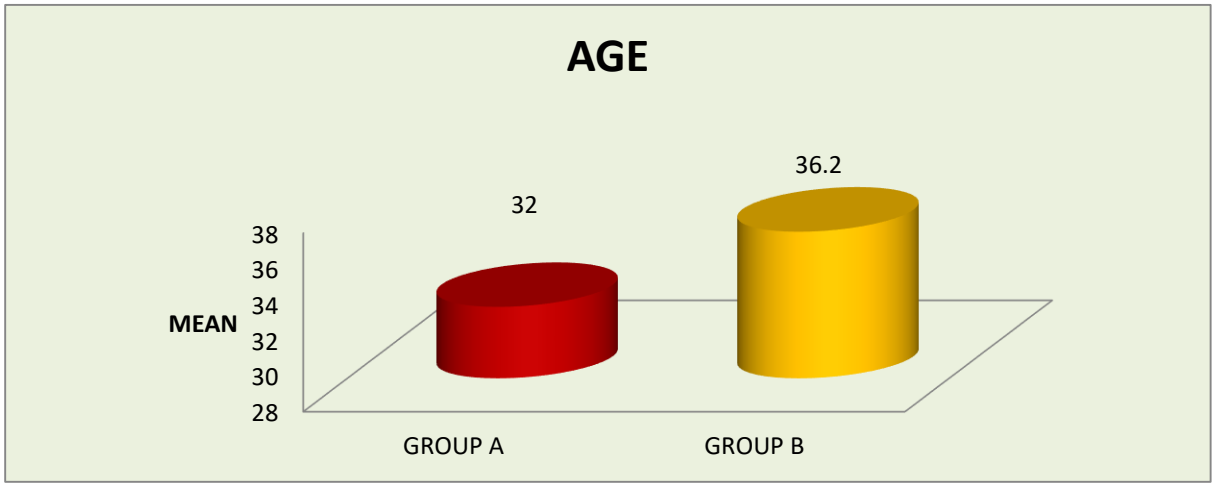
This study evaluates the effectiveness of kinesiology taping (KT) versus interferential therapy (IFT) in managing cervical strain. A total of 30 participants were randomly assigned to one of two groups. The statistical methods employed include:

1. **Descriptive statistics**
2. **Wilcoxon matched-pair test** – Used for comparing pre- and post-treatment outcomes within each group.
3. **Mann-Whitney U test** – Applied to assess differences in outcome measures between the two groups.

Graphical representations of the results are provided for clarity. All statistical analyses were conducted using specialized statistical software.

Table 1: AGE Distributions

Group	Mean	S.D	Homogeneity Test	
			Levene's statistics	'P' Value
Group 'A'	32.0	8.48	3.88	0.059
Group 'B'	36.2	6.84		

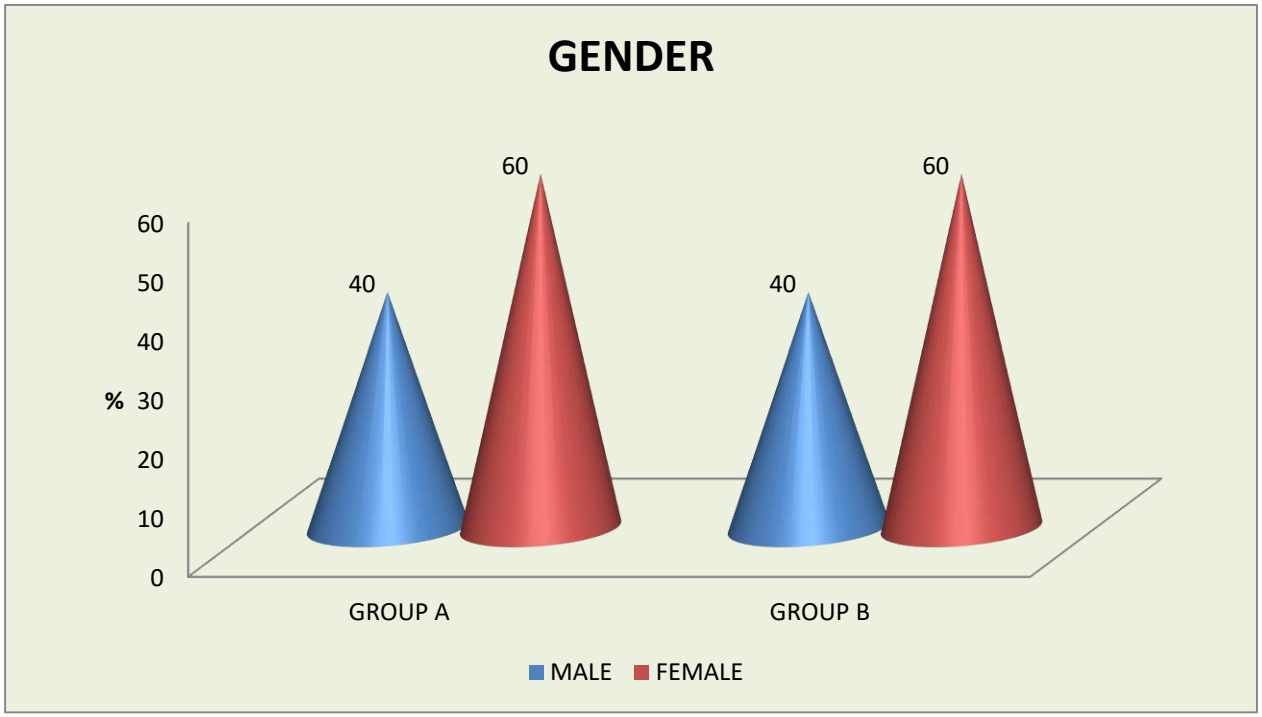


The age distribution of study participants is detailed in Table 1. The mean age for Group A was 32.0±8.48 years, while for Group B, it was 32.20±6.84 years. Levene's test for homogeneity was conducted to assess age differences between the groups, yielding a test statistic of 3.88 and a corresponding p-value of 0.059, indicating no significant difference. Thus, the age distribution between the two groups is comparable.

Table 2: Gender Distribution

GENDER	Group 'A'		Group 'B'	
	Number	Percentage	Number	Percentage
MALE	6	40	6	40

FEMALE	9	60	9	60
TOTAL	15	100	15	100



In both the treatment groups 60% of the patients are male and 40% of the patients are female.

Table 3(a): NPRS and NDI – Descriptive Statistics

	Group 'A'				Group 'B'			
	PRE		POST		PRE		POST	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
NPRS	8.20	1.69	2.80	1.26	8.07	1.58	4.20	2.34
NDI	23.80	7.02	17.53	6.63	25.00	6.30	21.6	6.12

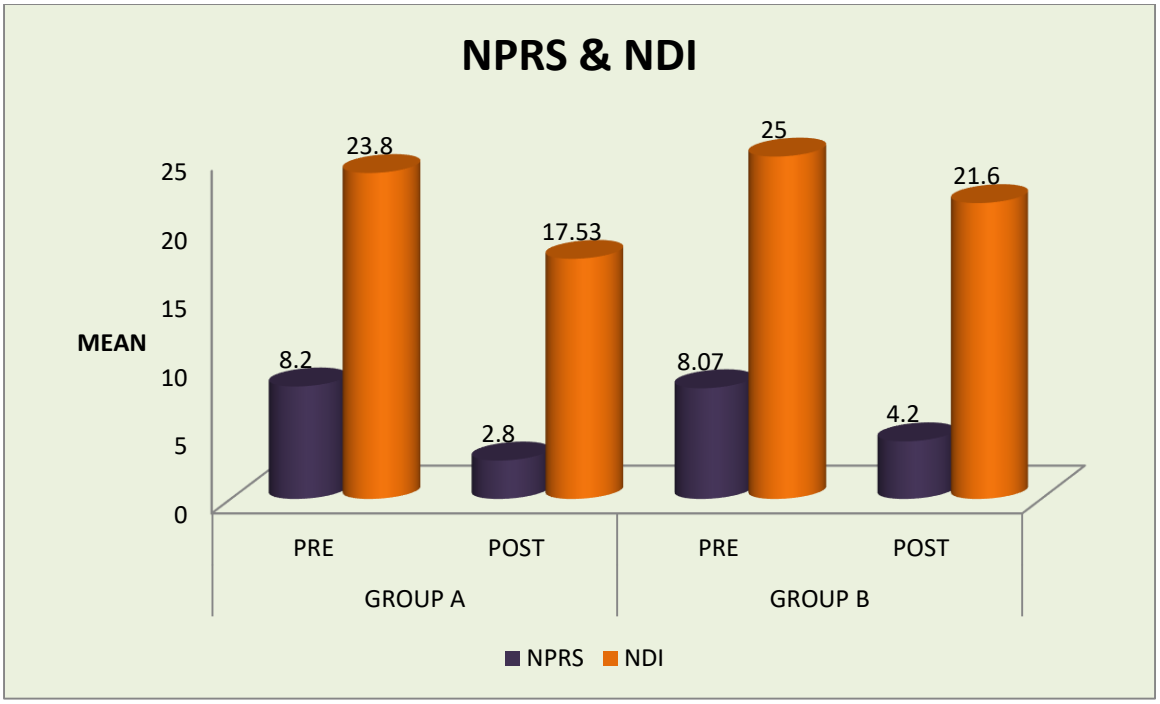


Table 3(b): NPRS and NDI comparisons

		N	Mean Rank	Paired 't' test	
NPRS	Group 'A'	15	8.00	3.43	0.001
	Group 'B'	15	7.50	3.302	0.001
NDI	Group 'A'	15	8.00	3.43	0.001
	Group 'B'	15	7.89	2.89	0.004

The baseline mean NPRS score for Group A was 8.20±1.69, which improved to 2.80±1.26 post-treatment. In Group B, the mean NPRS score at baseline was 8.07±1.58, reducing to 4.20±2.34 after treatment. Similarly, the mean NDI score for Group A decreased from 23.80±7.02 to 17.53±6.63, while in Group B, it declined from 25.00±6.30 to 21.6±6.12.

A Wilcoxon matched-pair test was performed to assess statistical significance in pre- and post-treatment NPRS and NDI values. The results indicated significant improvement in NPRS (z=3.43, p=0.001) and NDI (z=3.43, p=0.001) for Group A, as well as in Group B (NPRS: z=3.302, p=0.001; NDI: z=2.89, p=0.004). This confirms that both interventions significantly enhanced NPRS and NDI scores post-treatment.

Table 4(a): Flexion and Extension, Descriptive statistics

	Group 'A'				Group 'B'			
	PRE		POST		PRE		POST	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
C-Flexion	48.33	9.76	54.40	9.80	58.07	8.36	60.0	7.74

C-Extension	57.80	7.73	63.20	4.63	56.60	9.25	60.8	6.12

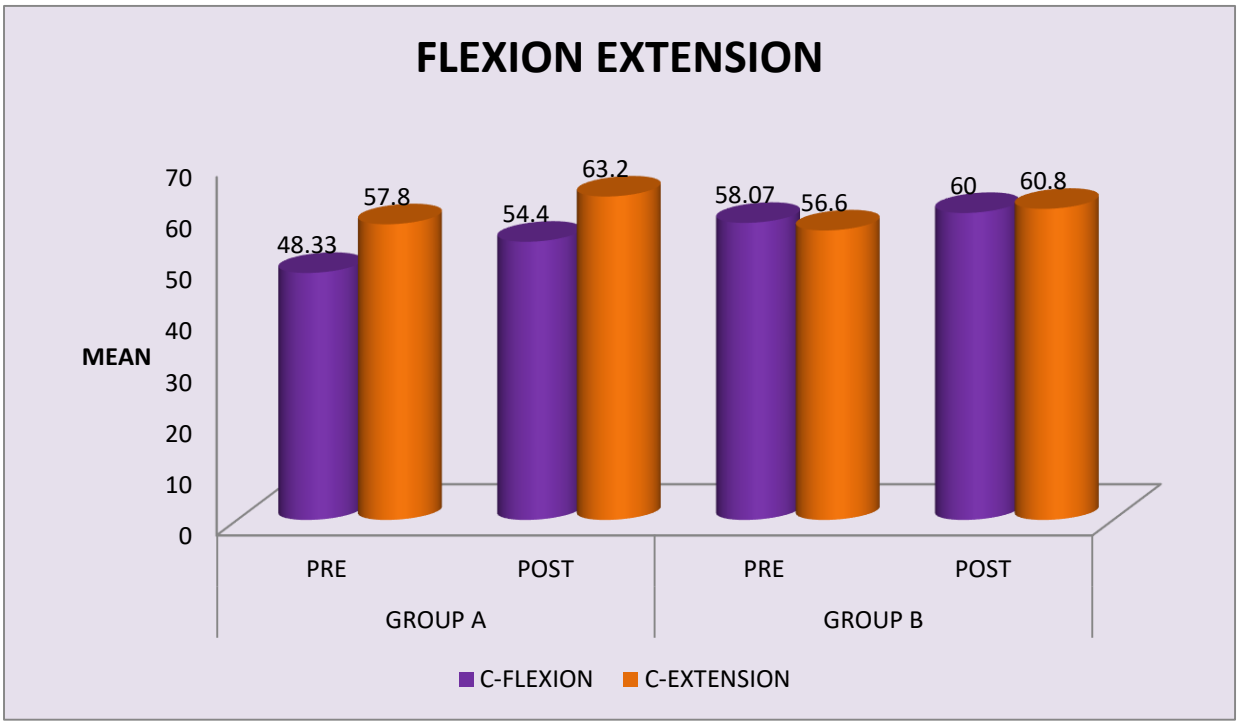


Table 4(b): Flexion and extension comparisons

		N	Mean Rank	Paired 't' Test	
				'z' value	'p' value
C-Flexion	Group 'A'	15	8.00	3.62	0.001
	Group 'B'	15	5.50	2.82	0.005
C-Extension	Group 'A'	15	6.00	3.02	0.003
	Group 'B'	15	4.50	2.58	0.010

The baseline mean cervical flexion for Group A was 48.33°±9.76°, which increased to 54.40°±9.80° following treatment, showing statistical significance (z=3.62, p=0.001). Similarly, cervical extension in Group A improved from 57.80°±7.73° to 63.20°±4.63°, also demonstrating a significant change (z=3.02, p=0.003).

For Group B, the mean cervical flexion at baseline was 58.07°±8.36°, increasing to 60.0°±7.74° post-treatment, with statistical significance (z=2.82, p=0.005). Cervical extension for Group B improved from 56.60°±9.25° to 60.8°±6.12°, with a significant change observed (z=2.58, p=0.010).

These findings indicate that both treatment methods led to notable improvements in cervical flexion and extension.

Table 5(a): Lateral flexion-Descriptive statistics

	Group 'A'				Group 'B'			
	PRE		POST		PRE		POST	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
LAT-Flexion right	33.33	7.71	37.17	5.45	33.53	7.18	36.40	5.22
LAT-Flexion Left	34.20	7.29	37.60	5.47	36.73	6.55	38.93	5.35

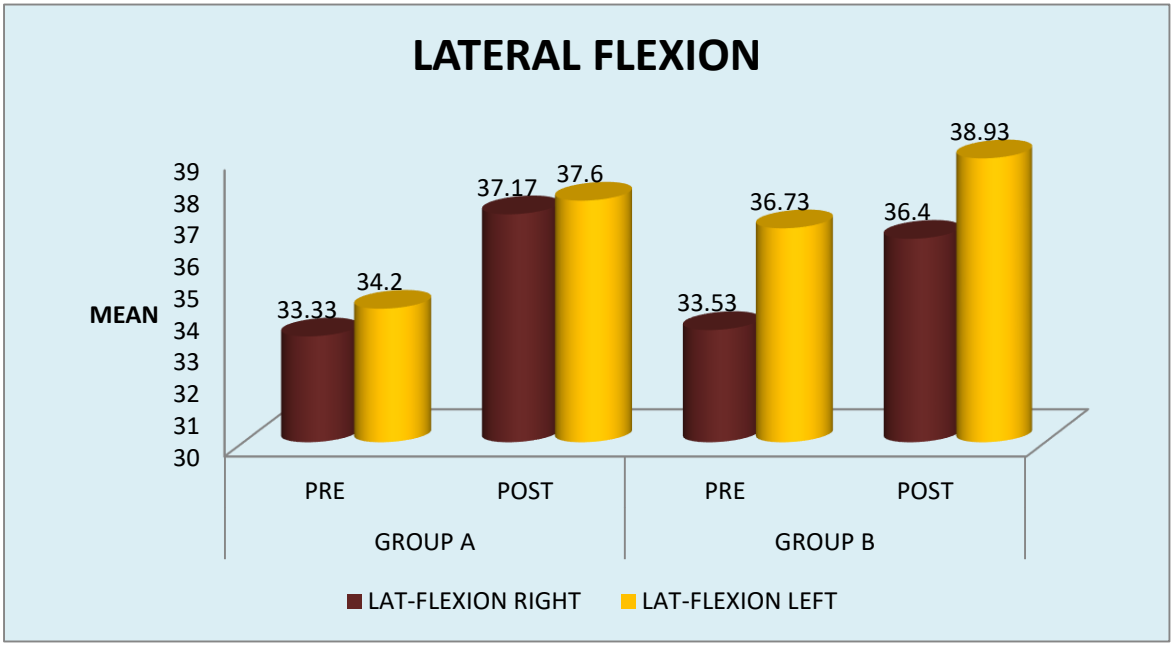


Table 5(b): Lateral Flexion Comparisons

		N	Mean Rank	Paired 't' Test	
				'z' value	'p' value
LAT-Flexion Right	Group 'A'	15	5.50	3.05	0.002
	Group 'B'	15	4.00	2.39	0.017
LAT-Flexion Left	Group 'A'	15	4.00	2.41	0.016
	Group 'B'	15	4.50	2.54	0.011

The mean baseline lateral flexion on the right side for Group A was 33.33°±7.71°, while for Group B, it was 33.53°±7.18°. Post-treatment, these values improved to 37.17°±5.45° in Group A and 36.40°±5.22° in Group B. The improvements were statistically significant for both Group A (z=3.05, p=0.002) and Group B (z=2.39, p=0.017).

For the left-side lateral cervical flexion, the baseline mean for Group A was 34.20°±7.29°, increasing to 37.60°±5.47° post-treatment, demonstrating statistical significance (z=2.41, p=0.016). In Group B, the baseline mean was 36.73°±6.55°, which improved to 38.93°±5.35° after treatment, also showing significant improvement (z=2.54, p=0.011).

Table 6(a): Lateral rotation – Descriptive statistics

	Group' A'				**Group'B'**			
	PRE		**POST**		**PRE**		**POST**	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
LAT-Rotation Right	61.87	15.49	67.20	14.55	62.40	12.25	63.73	11.72
LAT-Rotation Left	69.73	15.59	74.80	12.21	65.60	9.43	66.80	8.80

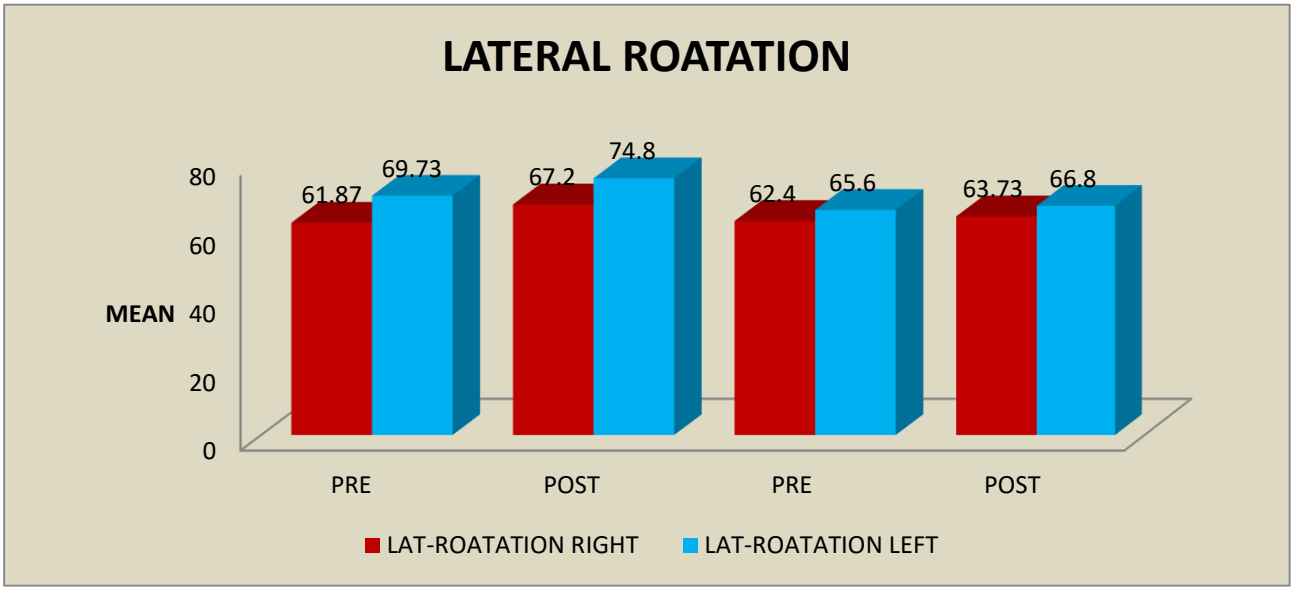


Table 6(b): Lateral Rotation Comparisons

		N	**Mean Rank**	**Paired 't' Test**	
				'z' value	**'p' value**
LAT-Rotation Right	Group 'A'	15	7.69	3.08	0.002

	Group 'B'	15	3.50	2.22	0.026
LAT-Rotation Left	Group 'A'	15	5.50	2.84	0.004
	Group 'B'	15	2.50	1.86	0.063

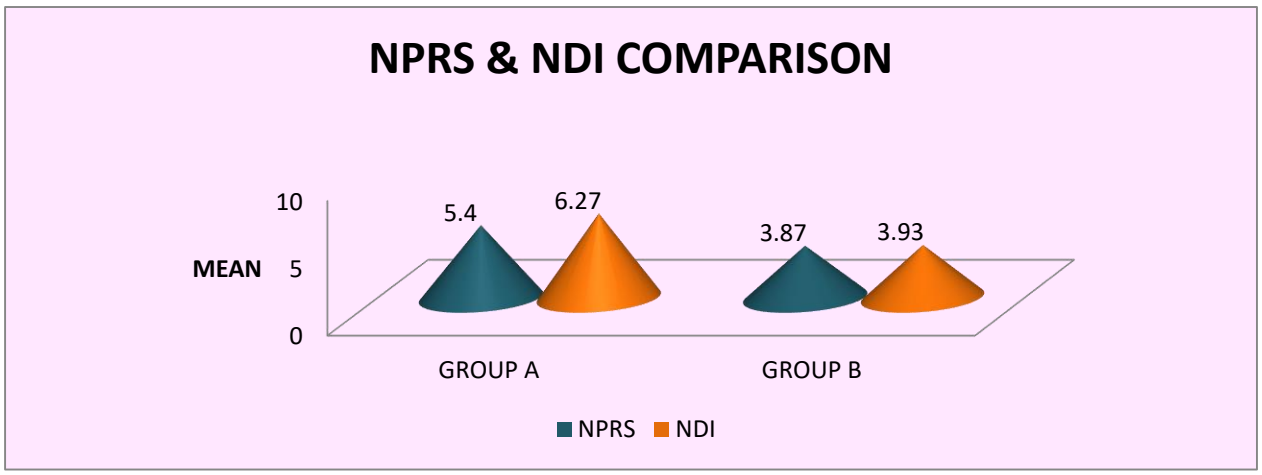
The baseline mean lateral rotation of the neck on the right side for Group A was 61.87°±15.49°, which improved to 67.20°±14.55° post-treatment, showing statistical significance (z=3.08, p=0.002). In Group B, the initial mean lateral rotation on the right side was 62.40°±12.25°, increasing to 63.73°±11.72° after treatment, with a significant improvement observed (z=2.22, p=0.026).

For the left-side lateral rotation, the baseline mean for Group A was 69.73°±15.59°, which increased to 74.80°±12.21° post-treatment, demonstrating statistical significance (z=2.84, p=0.004). In Group B, the baseline mean was 65.60°±9.43°, with a slight improvement to 66.80°±8.80° after treatment. However, this change was not statistically significant (z=1.86, p=0.063).

Thus, while cervical rotation significantly improved for both groups, the left-side rotation in Group B did not show a statistically meaningful enhancement.

Table 7: NPRS and NDI: Between group comparisons

		N	**Mean Rank**	**Mean Difference**	**S.D.**	**Mann Whitney 'U' Test**	
						'z' value	**'p' value**
NPRS	Group 'A'	15	18.47	5.40	1.24	1.87	0.062
	Group 'B'	15	12.53	3.87	2.61		
NDI	Group 'A'	15	20.63	6.27	2.05	3.23	0.001
	Group 'B'	15	10.37	3.93	1.33		

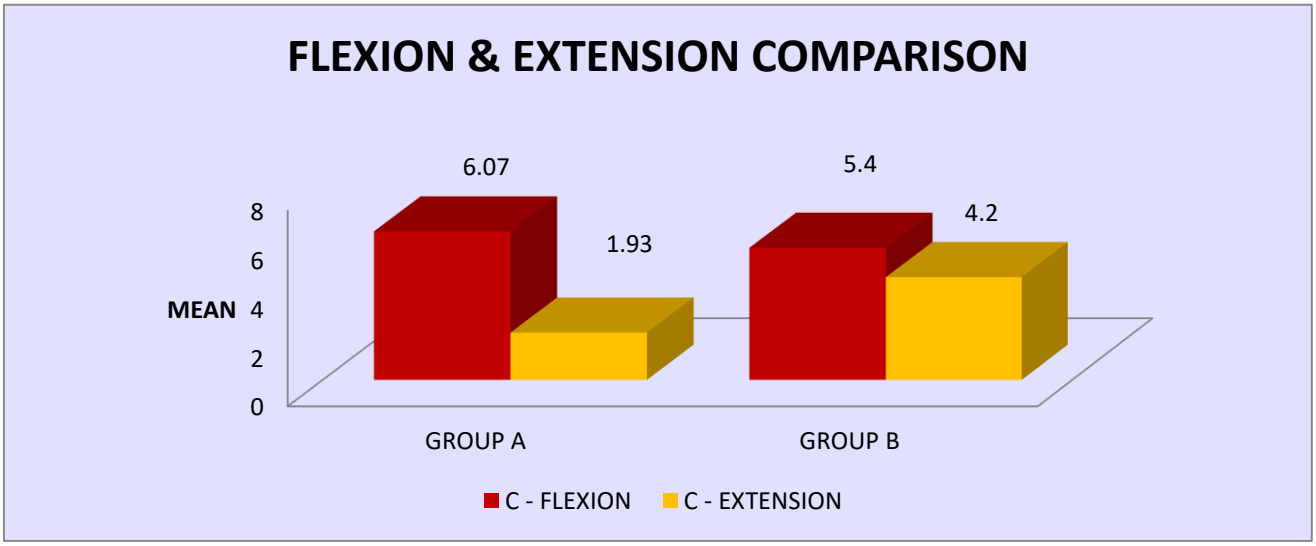


The average NPRS improvement recorded for Group A was 5.40±1.24, whereas Group B showed an improvement of 3.87±2.61. The Mann-Whitney U test was applied to compare the groups, and the results indicated no statistically significant difference. This suggests that both groups exhibited similar progress in terms of NPRS improvement.

Conversely, the mean NDI improvement for Group A was 6.27±2.05, while Group B demonstrated an improvement of 3.93±1.33. Statistical analysis revealed a significant difference (z=3.23, p=0.001), indicating that Group A achieved a substantially greater enhancement in NDI scores compared to Group B.

Table 8: Flexion and Extension: Between group comparison

		N	Mean Rank	Mean	S.D.	Mann-Whitney 'U' Test	
						'z'value	'p'value
C-FLEXION	Group 'A'	15	21.80	6.07	2.79	4.20	0.001
	Group 'B'	15	9.20	1.93	1.91		
C-EXTENSION	Group 'A'	15	16.97	5.40	4.59	0.969	0.333
	Group 'B'	15	14.03	4.20	5.61		

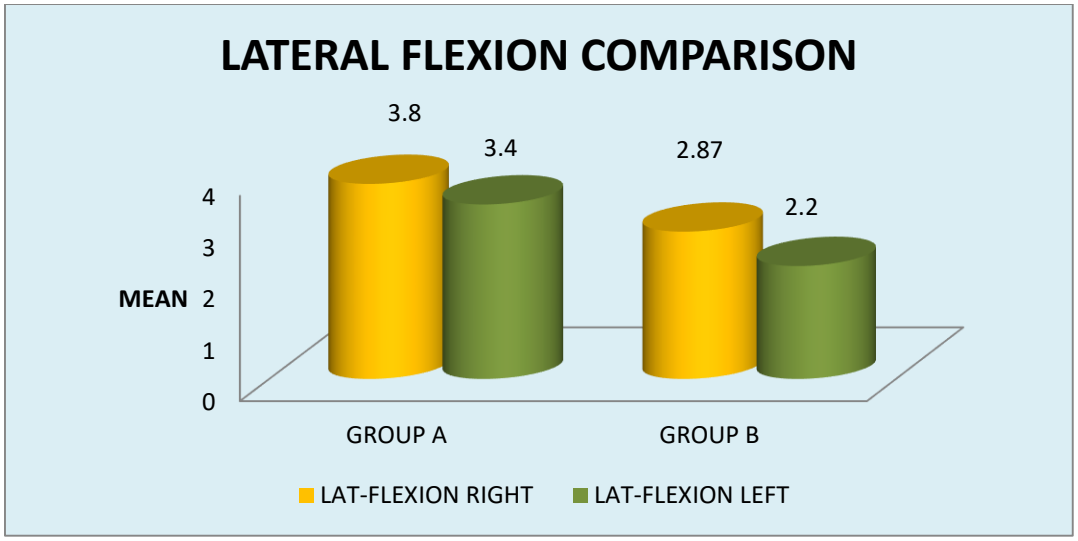


The mean improvement in cervical flexion was greater in Group A (M=6.07±2.27) compared to Group B (M=1.93±1.91). Statistical analysis confirmed a significant difference (z=4.20, p=0.001), indicating that Group A exhibited significantly higher cervical flexion improvement.

Although Group A also showed a higher mean improvement in cervical extension (M=5.40±4.59) compared to Group B (M=4.20±5.61), the difference was not statistically significant (z=0.969, p=0.333).

Table 9: Lateral Flexion: Between group comparison

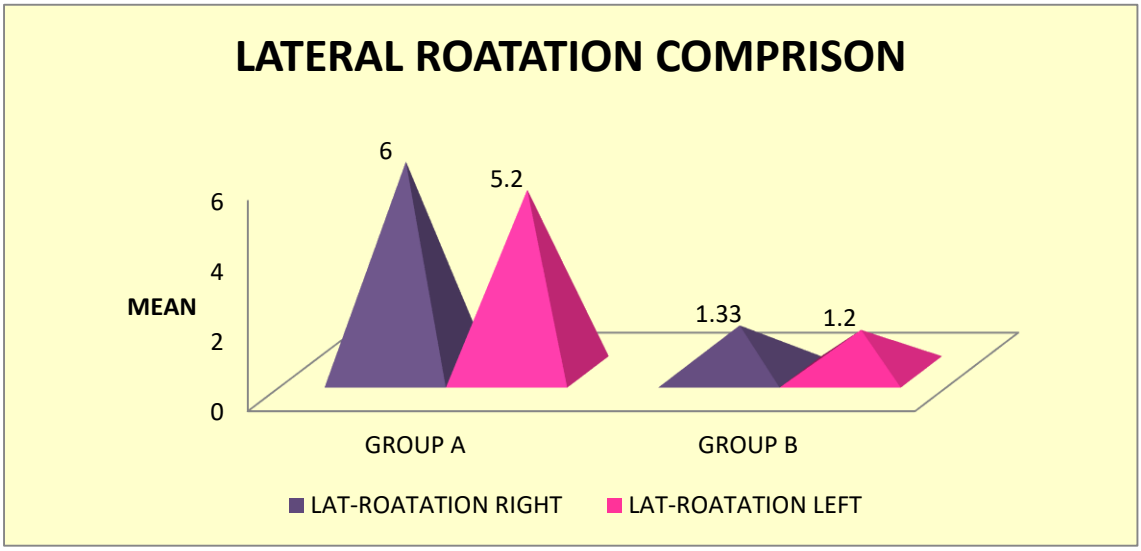
		N	Mean Rank	Mean	S.D.	Mann-Whitney 'U' Test	
						'z' value	'p' value
LAT-FLEXION RIGHT	K.T.	15	16.63	3.80	3.29	0.763	0.486
	I.F.T	15	14.37	2.87	3.70		
LAT-FLEXION LEFT	K.T.	15	15.87	3.40	5.29	0.246	0.806
	I.F.T	15	15.13	2.20	2.45		



The mean improvement in right and left lateral flexion was greater in Group A compared to Group B, as presented in Table 9. However, the differences between the groups were not statistically significant (p>0.05).

Table 10: Lateral rotation: Between group comparison

		N	Mean Rank	Mean	S.D.	Mann-Whitney 'U' Test	
						'z'value	'p'value
LAT-ROTATION RIGHT	Group 'A'	15	21.70	6.00	2.64	4.04	0.001
	Group 'B'	15	9.30	1.33	1.88		
LAT-ROTATION LEFT	Group 'A'	15	19.50	5.20	5.37	2.72	0.006
	Group 'B'	15	11.50	1.20	2.08		



The mean lateral rotation improvement on the right side was greater in Group A (M=6.00±2.64) compared to Group B (M=1.33±1.88), with a statistically significant difference (p=0.001). Similarly, the mean lateral rotation improvement on the left side was higher in Group A (M=5.20±5.37) than in Group B (M=1.20±2.08), also showing statistical significance. These findings indicate that the overall improvement in lateral rotation, regardless of the side, was significantly greater in Group A compared to Group B.

Summary of Results:

- The mean age of Group A participants was 32.0±8.48 years, while for Group B, it was 36.2±6.84 years. The age distribution was comparable between groups.
- The majority of study participants were female, with gender distribution being statistically similar between groups.
- Significant improvements were observed in all measured parameters post-treatment in both groups, except for left lateral rotation in Group B, where the improvement was not statistically significant.
- Comparative analysis between the groups revealed that Group A showed significantly greater improvements in NDI, cervical flexion, and lateral rotation of the neck compared to Group B.
- Improvements in NPRS, cervical extension, and lateral flexion were similar across both groups, without statistical significance.

4. DISCUSSION

This study aimed to assess the effectiveness of kinesiology taping (KT) and interferential therapy (IFT) in addressing mechanical and functional impairments in individuals with mechanical neck pain. The findings suggest that both KT and IFT significantly reduced pain, improved functional ability, and enhanced active range of motion (ROM). Additionally, both treatment groups experienced similar levels of improvement in pain intensity, cervical extension, and lateral flexion ROM.

Within-group analysis of pain intensity using the Numerical Pain Rating Scale (NPRS) demonstrated a greater improvement in the KT group compared to IFT. However, individuals who received KT showed a more pronounced enhancement in Neck Disability Index (NDI) scores, as well as greater cervical flexion and rotation gains than those treated with IFT.

The exact pathology of mechanical neck pain remains complex, with multiple anatomical structures potentially involved, including intervertebral joints, ligaments, neural tissues, discs, and muscles. Studies suggest that chronic mechanical neck pain particularly affects deep cervical flexors and extensors, while rotators may also be impacted to some extent.(3,11) It is hypothesized that KT exerts its effects by enhancing local circulation, reducing edema, and facilitating muscle activation, while also stimulating mechanoreceptors in the skin and fascia, providing feedback to the central nervous system (CNS).

Regarding pain intensity improvements measured by NPRS, intra-group comparisons revealed significant changes, whereas inter-group comparisons showed that KT led to a 54% improvement, compared to 39% in the IFT group. While this indicates a trend favoring KT, the difference was not statistically significant.

The results of this study may be attributed to KT's impact on proprioception, as it influences cutaneous mechanoreceptors through skin stretching. This stimulation provides essential feedback for joint movement and position (5, 16). Prior research has confirmed that cutaneous mechanoreceptors play a crucial role in detecting joint motion, particularly during extreme movements. (1,17)

One possible explanation for KT's effectiveness in improving cervical ROM is that the tension from the tape provides feedback and muscle support, thereby reducing mechanical irritation and soft tissue strain. This mechanism may facilitate pain inhibition and improved mobility. Research has also suggested that KT's elasticity supports muscle function by retraining and strengthening weakened muscles, which can help improve posture and reduce muscle fatigue.

Continuous sensory feedback from KT applied for 24 hours a day over multiple days, has been associated with improved cervical ROM and postural correction. Proper sensory input from KT may also help alleviate movement-related fear associated with pain, leading to increased ROM. Additionally; studies indicate that IFT, particularly when used as a co-intervention, can be effective in reducing musculoskeletal pain, with notable improvements observed in chronic pain conditions.

Previous research suggests that IFT's effectiveness may depend on specific stimulation parameters. While stimulating small-diameter fibers is generally more effective for chronic pain, some studies have predominantly used parameters that target larger-diameter fibers, which may provide only short-term analgesia. This could explain the modest effect size observed in some IFT applications. A common treatment protocol for IFT typically involves 10- to 20-minute sessions, administered over two to four weeks with a total of 12 sessions.

Additionally, strengthening and endurance exercises, such as isometric neck exercises, may contribute to reduced neck pain and improved cervical ROM. Strengthening cervical extensors and flexors can enhance posture, restore spinal biomechanics,

and promote proper alignment of the body's center of gravity. The Cochrane Review has emphasized the benefits of endurance exercises in activating deep cervical muscles, which play a key role in improving ROM. Proprioceptive training and neck strengthening exercises have also been found to be effective in reducing neck pain.

Based on this study's analysis, KT combined with exercise demonstrated significant benefits in reducing pain, enhancing functional ability, and improving cervical ROM. Consequently, the null hypothesis is rejected. Furthermore, therapists often employ a multimodal approach for managing mechanical neck pain, rarely relying solely on KT or IFT. Future research should explore whether incorporating either KT or IFT alongside other established interventions, such as active exercises, could further enhance treatment outcomes.

5. CONCLUSION

The findings of this study indicate that kinesiology taping, when combined with isometric neck exercises, is an effective intervention for reducing pain, improving functional ability, and enhancing range of motion in individuals with mechanical neck pain.

REFERENCES

[1] Roy la touché, P Ostergreen. Bilateral mechanical sensitivity over the trigeminal region in patients with chronic mechanical neck pain. Journal of Musculomedicine 2010; 26(3): 264 -280.

[2] F.G. Butcher, Kroom M.C. Incidence and prevalence of neck and upper limb disorders. Journal of Rheumatology 2007; 19: 118-123.

[3] Pia Damgard, Marie Barrtel et al. Evidence of Physiotherapy Interventions for Patients with Chronic Neck Pain: A Systematic Review of Randomised Controlled Trials. Journal of musculoskeletal and pain 2013; 3(8): 23-46.

[4] Cote P, van der Velde G. The burden and determinants of neck pain in workers: results of the Bone and Joint Decade. Journal of Manual Therapy 2010 ; 33(4) : 60–74.

[5] Borghouts JA, Koes BW, Vondeling H, Bouter LM. Cost-of-illness of neck pain in the Netherlands in 1996. Pain. 1999;80:629-636.

[6] Cote P, Cassidy JD, Carroll L. The factors associated with neck pain and its related disability in the Saskatchewan population. Spine (Phila Pa 1976). 2000;25:1109-1117

[7] Korthals-de Bos IB, Hoving JL, van Tulder MW, et al. Cost effectiveness of physiotherapy, manual therapy, and general practitioner care for neck pain: economic evaluation alongside a randomised controlled trial. BMJ. 2003;326:911. http://dx.doi.org/10.1136/bmj.326.7395.911

[8] Kase K, Wallis J. The Latest Kinesio Taping Method. Tokyo, Japan: Ski Journal; 2002.

[9] A Brief History of Kinesio Tex Taping. Kinesio UK website. http:// www.kinesiotaping.co.uk/history.jsp. Accessed November 7, 2011.

[10] Callegari, Avtara. Kinesio taping on short term change in shoulder strength: Randomized control trial. Journal of Ortho Sports and Sports Physical therapy 2010; 38(7): 335 389.

[11] Oliver C, Djordjevic. Mobilization With Movement and Kinesiotaping Compared With a Supervised Exercise Program for Painful Shoulder: Results of a Clinical Trial. Journal of Manipulative and Physiological Therapeutics 2006; 12(3): 123-137

[12] Kulkarni Prachi Sanjay, Vinod Babu. K, Sai Kumar. N, Vikas Kadam V. Short Term Efficacy of Kinesiotaping and Exercises on Chronic Mechanical Neck Pain. Int J Physiother Res 2013;05:283-92.

[13] REVIEW

[14] Mohammad F. Ali, Shereen H. El-Wardany, and Sharifa K. Alduraibi. Effect of Kinesio Taping in Patients with Mechanical Neck Dysfunction. Med. J. Cairo Univ., Vol. 83, NO. 1, Dec:867-873, 2015.

[15] Catalin Octavian MANESCU. Kinesiology Taping. Vol. VII. Nr.2.2015. Page no.302-307.

[16] Drew Slocum, California University Of Pennsylvania, The Effects Kinesio Taping for Pain Management

[17] Alicia M. Montalvo , Ed Le Cara, DC, Gregory D. Myer,. Effect of Kinesiology Taping on Pain in Individuals with Musculoskeletal Injuries: Systematic Review and Meta- Analysis. . The Physician and Sports medicine, Vol. 42,May 2014: ISSN-0091-3847.

[18] Kulkarni Prachi Sanjay 1 , Vinod Babu. K *2, Sai Kumar. N 3, Vikas Kadam V 4. SHORT TERM EFFICACY OF KINESIOTAPING AND EXERCISES ON CHRONIC MECHANICAL NECK PAIN. International Journal of Physiotherapy and Research Int J Physiother Res 2013, Vol1(5):283-92.

[19] MANUEL SAAVEDRA-HERNÁNDEZ, ADELAIDA M. CASTRO-SÁNCHEZ, MANUELARROYO-MORALES, JOSHUA A. CLELAND, INMACULADA C. LARA-PALOMO, CÉSAR FERNÁNDEZ-DE-LAS-PEÑAS. Short-Term Effects of Kinesio Taping Versus Cervical Thrust Manipulation in Patients With Mechanical Neck Pain: A Randomized Clinical Trial. J Orthop Sports Phys Ther 2012.42:724-730.

[20] Mehran Mostafavifar, MD , Jess Wertz, DO, James Borchers, MD, A Systemic Review of The Effectiveness Of Kinesio Taping For Musculoskeletal Injury. The Physician and Sports medicine, Vol. 40, ISSN-0091-3847.

[21] Javier Gonzalez-Iglesias, Cesar Fernanez-Las-Penas, JoshijaClealand, Peter Huijbregts. Short-Term Effects of Cervical Kinesio Taping on Pain and Cervical Range of Motion in Patients with Acute Whiplash Injury: A Randomized Clinical Trial. July 2009 | volume 39 | number 7 | journal of orthopaedic & sports physical therapy

[22] Victoria Misailidou PT, MSa,b,∗, Paraskevi MalliouPhDc, Anastasia BenekaPhDd, Alexandros Karagiannidis PT, MSe, Georgios Godolias MD, PhD. Assessment of patients with neck pain: a review of definitions, selection criteria, and measurement tools. Journal of Chiropractic Medicine (2010) 9, 49–59.

[23] Joy C. Macdermid, David M. Walton, Sarah Avery, Alanna Blanchard,EvelynEtruw, Cheryl Maclpine, CharlieH. Goldsmith. Measurement Properties of the Neck Disability Index: A Systematic Review. J Orthop Sports Phys Ther 2009.39:400-C12.

[24] Joshua A. Cleland, PT, PhD, OCS, John D. Childs, PT, PhD, MBA, OCS, Julie M. Whitman, PT, DSc, OCS Psychometric Properties of the Neck Disability Index and Numeric Pain Rating Scale in Patients With Mechanical Neck Pain. Archives of physical medicine and rehabilitation • February 2008.

[25] John D. Childs PT, PhD, Joshua A. Cleland PT, PhD, James M. Elliott PT, PhD, Deydre S. Teyhen PT, PhD, Robert S. Wainner PT, PhD, Julie M. Whitman PT, DSc,Bernard J. Sopky MD, Joseph J. Godges DPT, Timothy W. Flynn PT, PhD. Neck Pain: Clinical Practice Guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. J Orthop Sports Phys Ther. 2008:38(9).

[26] M.J. H. McCarthy, M. P. Grevitt, P. Silcocks , G. Hobbs. The reliability of the Vernon and Mior neck disability index, and its validity compared with the short form-36 health survey questionnaire. Eur Spine J (2007) 16:2111–2117.

[27] Birgitta Helmerson Ackelman and Urban Lindgren. VALIDITY AND RELIABILITY OF A MODIFIED VERSION OF THE NECK DISABILITY INDEX. J Rehabil Med 2002; 34: 284–287.

[28] V. RAJALAXMI, M. MANJU & S. VEENA @ KIRTHIKA. TO COMPARE THE EFFECTIVENESS OF INTERFERENTIAL THERAPY WITH AND

[29] WITHOUT NEURAL MOBILIZATION ALONG WITH CONVENTIONAL THERAPY IN CERVICAL RADICULOPATHY PATIENTS. International Journal of Physiotherapy & Occupational Therapy (TJPRC: IJPOT) Vol. 1, Issue 1, Jun 2015, 65-74.