

A Cross - Sectional Study of Upper Cross Syndrome in Different Occupations

Dr. Tahzeeb Fatima¹, Dr. Saumya Pandey²

¹Assistant Professor, Era University

²Tutor, Buddha Paramedical College

Abstract: *Objective:* To find prevalence of upper cross syndrome in different occupations. Upper cross syndrome is also referred to as proximal or shoulder girdle crosses syndrome. Upper cross syndrome occurs when the muscles in the neck, shoulders and chest become deformed, usually as a result of poor posture. In upper cross syndrome, tightness of the upper trapezius and levator scapula on the dorsal side crosses with tightness of pectoralis major and minor. When these muscles are overactive, the surrounding counter muscles are underused and become weak. The overactive and underactive muscles can then overlap, causing an X shape to develop. **Material and method:** In this study data was collected from Kanpur Physiotherapy & Rehabilitation Centre & Ashutosh Physiotherapy Centre. Study was conducted in six months [August 2021 to January 2022]. Total 10 patients were participating in this study. Pectoralis major contracture test was performed to check the tightness of the pectoral muscles. Also test the weakness of middle and lower trapezius muscle. Data was analysed by using SPSS version 20. **Results:** Total 10 patients were involved in this study. The mean age for the patients was 22.11+4.505. There were 6 male patients and 4 female patients. The prevalence of upper cross syndrome in desk workers was 21.32%, while the prevalence in drivers was 13.21%. In teachers this prevalence was 15.11% and in house - wives was 16.024%. **Conclusion:** This study concluded that there is prevalence of upper cross syndrome in different occupations and also concluded that rest and medicine are relieving factors for upper cross syndrome patients.

Keywords: Upper cross syndrome, Trapezius, Pectoralis Major, Pain, Prevalence

1. Introduction

Upper cross syndrome is caused by weak lower and middle trapezius, tight upper trapezius and levator scapulae, weak deep - neck flexors, tight suboccipital muscles and sternocleidomastoid, weak serratus anterior and tight pectoralis major and minor.¹ The syndrome mainly arises as a result of muscular imbalance that usually develops between tonic and weak muscles.² There are two types of muscles present in our body, postural muscles such as pectoralis major, upper trapezius and sternocleidomastoid and other phasic muscles such as deep - neck flexors and lower trapezius. Predominantly static or postural muscles have a tendency to tighten. In various movements, they are activated more than the muscles that are predominantly dynamic and phasic in function, which have a tendency to develop weakness.³ Opposite group muscle imbalances in upper crossed syndrome give rise to postural disturbance.⁴ Mainly the head get one of the seventh percent of body weight, therefore preserved an unmoving placement with head leaning anteriorly exerts 3.6 times force is greater than is necessary for the preservation of the identical posture as with straight standing position.⁵ There are concurrent incidences of forward head and protracted shoulders in upper cross syndrome.⁶ In upper cross syndrome, forward head is a forward leaning position of head with cervical spine hyperextension and linked with tightness of upper trapezius, splenius and semispinalis capitis and cervicis and levator scapulae musculature.⁷ In upper cross syndrome, forward head is usually correlated with posterior cervical extensor muscles shortening, upper trapezius tightness as well as tightness of the sternocleidomastoid muscle.⁸ The forward posture of shoulder is the front deviation in shoulders.⁹ which is related to scapular protraction position and created by muscular discrepancy between the shortened small pectoralis muscle and weak middle trapezius

muscle.¹⁰ The beneficial tool of weakened postural muscles strengthening and stretching of tight ones to get better position of posture has been promoter and is a focus of physiotherapy practice as well as other bodywork plan.¹¹ The onset of neck pain mainly associated with forward head posture which cause sub - occipitals muscle shortening, weakness of scapular retractor muscles and anterior muscles of neck.¹² The forward head posture was linked with headache and poor strength. This biomechanical strain, in the incidence of condensed strength of core stabilizing neck muscles, in particular if it is repeated or prolonged are the major clarification for symptoms related with forward head posture.¹³

2. Material and Methods

In this study data was collected from Kanpur Physiotherapy & Rehabilitation Centre & Ashutosh Physiotherapy Centre. Total 10 patients were participating in this study. Patients were made aware of the study. Pectoralis major contracture test was performed to check the pectoralis muscle tightness. After that trapezius weakness test was performed. In this test weakness of middle and lower trapezius muscle was assessed and verbal consent from was taken. Data collection tools were Numeric Pain Rating Scale [NPRS] and Neck Disability Index [Pain]. Inclusion criteria was participants with constantly or frequently occurring neck - shoulder pain more than one month. Patients working for atleast 3 years and the age between 25 & 50 years. Exclusion criteria were any malignancy related to soft tissue and joints, congenital shoulder deformities, recent fractures to related joints. Data was analysed by SPSS version 20.

Volume 12 Issue 2, February 2023

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

3. Results

In this study total 10 patients were involved. The mean age for the patients was 22.11±4.505. There were 6 male patients and 4 female patients. Table 1 show that the prevalence of upper cross syndrome in desk workers was 21.32%, while the prevalence in drivers was 13.21%. In teachers this prevalence was 15.11% and in house - wives was 16.024%. Table 2 stated that among 10 patients 21.3% marked neck extension as aggravating factor.9.7% marked neck flexion as aggravating factor.12.4% marked side bending, 7.05% marked neck rotation.24.0% marked all neck movement as aggravating factors. Table 1 stated that rest was a relieving factor for 26.4%, medicine was relieving for 30.4% & 10.5% stated that there was no relieving factor for them.

Table 1: Demographics of prevalence of upper cross syndrome in different occupation

| Occupation | Frequency (%) |
|--------------|---------------|
| Desk workers | 21.32% |
| Drivers | 13.21% |
| Teachers | 15.11% |
| Housewife | 16.024% |

Table 2: Frequency of aggravating factors

| Aggravating Factors | Frequency (%) |
|---------------------|---------------|
| Neck extension | 21.3% |
| Neck flexion | 9.7% |
| Side bending | 12.4% |
| Neck rotation | 7.05% |
| All neck movements | 24.0% |

Table 3: Frequency of relieving factors

| Relieving Factors | Frequency (%) |
|-------------------|---------------|
| Rest | 26.4% |
| Medicine | 30.4% |
| Nil | 10.5% |

4. Discussion

In this study, prevalence of upper cross syndrome was checked in different occupations. Desk workers and drivers showed more occurrence due to their posture imbalance as compared to teachers and housewives. Rest and medicine was relieving factors among all. Aggravating factors include different neck ranges. In some patients all neck movements were marked as aggravating factors. According to a study conducted on drivers in 2016 by Rugbeer and coworkers. Due to driving [22%], most of the pain was noted in the upper back [44%], followed by lower back [42%], neck [42%], shoulder [37%] and wrist/hand [31%].¹⁴ Results of current study were in favour of this research.

In current study, prevalence of upper cross syndrome was checked. Drivers marked 13.2% pain due to driving in current study. Another study was conducted by Junaid et al., in 2019 on drivers. This study also conducted that there were no relieving factors of upper cross syndrome patients.¹⁵ Current study stated that there were many relieving factors for upper cross syndrome patients. A study was conducted in Kashan in 2011 to check prevalence of upper cross syndrome in office workers. This study stated that 35.9% office workers were suffering from upper cross syndrome.

Neck and body posture was the main reason according to this study.¹⁶ Results of this study was in favour to my study as it stated that participants from different occupations like drivers 24.3%, desk workers 32.4%. According to the results of current study, housewives were also suffering from upper cross syndrome. The cause behind this, during household activities they don't maintain a good posture that causes pain and other difficulties. According to my study teachers were also suffering from upper cross syndrome. This can be due to perform their duty while continuously standing.

5. Conclusion

This study concluded that there is prevalence of upper cross syndrome in different occupations. This study also concluded that rest and medicine are relieving factors for upper cross syndrome patients.

References

- [1] Muscolino J. upper crossed syndrome. J Aust Tradit Med Soc.2015; 21: 80 - 5.
- [2] Yoo WG, Yi CH, Kim MH. Effects of a ball - backrest chair on the muscles associated with upper crossed syndrome when working at a VDT. Work.2007; 29: 239 - 44.
- [3] Weon JH, Oh JS, Cyn HS, Kim YW, Kwon OY, Yi CH, et al. Influence of forward head posture on scapular upward rotators during isometric shoulder flexion. J Bodyw Mov Ther.2010; 14: 367 - 74.
- [4] Evans O, Patterson K. Predictors of neck and shoulder pain in non - secretarial computer users. Int J Ind Ergon.2000; 26: 357 - 65.
- [5] Da Costa JT, Baptista JS, Vaz MJW. Incidence and prevalence of upper - limb work related musculoskeletal disorders: A systemic review. IOS Press Content Library.2015.10 (3) 635 - 44.
- [6] Mubashir MJJoR. A cross - sectional survey on prevalence of upper cross syndrome and its correlation to WRMSDs in working physiotherapists. Pakistan Journal of Rehabilitation.2021.10 (1): 42 - 50.
- [7] Rafie F, Zamani Jam A, Shahravan A, raof M, Eskandarizadeh AJJoe. Prevalence of upper extremity musculoskeletal disorders in dentists: symptoms and risk factors. Health p.2015.6 (3) 1 - 6.
- [8] Werner RA, Franzblau A, Gell N, et al. Prevalence of upper extremity symptoms and disorders among dental and dental hygiene students. Europe PMC.2005 33 (2): 123 - 31.
- [9] Ashworth A, Hill CM, Karmiloff - Smith A, Dimitriou DJRidd. Cross syndrome comparison of sleep problems in children with Down syndrome and Williams's syndrome. Research in Developmental Disabilities.2013.34 (5): 1572 - 80.
- [10] Rana AA, Ahmad A, Gillani Sa, Idrees MQ. Effects of conventional physical therapy with and without muscle energy techniques for treatment of upper cross syndrome. Scientific Reviews in Pharmacy.2020.45 (1): 127 - 32.
- [11] Karimian R, rahnama N, Ghasemi G, Lenjannejadian S. Association between upper extremity Musculoskeletal disorders and Upper Cross Syndrome among Teachers and the effects of NASM Corrective

Exercises along with Ergonomic Intervention on their Upper extremity Musculoskeletal Disorders. Study in Medical Sciences.2012.4 (3).40 - 46.

- [12] Annaz D, Karmiloff - Smith A, Johnson MH, Thomas MSJJoecp. A cross - syndrome study of the development of holistic face of the recognition in children with autism, Down syndrome and Williams syndrome. Journal of Experimental Child Psychology.2003.102 (4): 456 - 86.
- [13] Wickramasinghe EP, Seneviratne RD, Gunawardena NSJR. Prevalence of musculoskeletal pain and its effects among secondary teachers in the district of Colombo in Sri Lanka. BMC Public Health.2019; 58 (3) 60 - 67.
- [14] Rugbeer N, Neveling N, Sandla. The prevalence of work - related musculoskeletal disorders in long distance bus drivers. South African Journal of Sports.201628 (2): 55 - 8.
- [15] Mujawar JC, Sagar JHJloo, medicine e. Prevalence of upper cross syndrome in laundry workers. Indian Journal of Occupational and Environmental Medicine.2019 23 (1): 54 - 60.
- [16] Saberi HR, Moravveji AR, Fakharian E, Dehdashti ARJD, syndrome m. Prevalence of metabolic syndrome in bus and truck drivers in Kashan, Iran. BMC Musculoskeletal Disorders.2011 3 (1): 1 - 5.