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FREQUENCY OF CHRONIC NECK PAIN IN UPPER CROSS SYNDROME IN FEMALE SCHOOL TEACHERS.

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ABSTRACT

Teachers are the most important part of our community. Their health matters a lot. This study would not only detect upper cross syndrome in teachers but also associated incident of neck pain with upper cross syndrome. This further will give insight into the good or bad ergonomics being used by teachers for their various teaching activities such as prolonged computer use and sitting. Precautionary measures that may be taken according to found ergonomic defects. Extensive load can be saved from health care system. This may help saving economic loads in terms of sick leave and hospital visits. This may impact overall community in terms of ailment free high quality teaching producing good outcomes. **Objectives:** The objective of the study was to determine the frequency of chronic neck pain in female school teachers in upper cross syndrome. **Study Design:** Case series. **Setting:** Study was conducted in following schools. Government Girls high school Shalimar town Lahore. City district Government Girls high school Fatehgarhpul Lahore. Government Zafar Islam primary school Punj peer Lahore. **Period:** The study was completed in six month from May 2015 to November 2015. **Material and Method:** 107 female school teachers of above mentioned schools were surveyed. The sample was collected after the filling of a questionnaire after taking informed consent from the authorities and school teachers. The purpose and objective of the study was informed to authorities. Questionnaire included both open and close ended questions. Teachers were assessed through specific measures. Confidentiality and anonymity were maintained with honesty and impartiality. **Results:** The result showed majority of respondents were married 90.7% of whom were having neck pain, 9.3% reported as pain free. The average age of patients was 35.51(SD+5.185). Distribution curve slightly skewed to lower values of age. The main results were showed that 2.8% respondents were came on none disability category, 15.9% were categorized having mild disability, 53.3% respondents with moderate, 14% with severe disability and 4.7% complete disability. **Conclusion:** Most of the school teachers were presented with upper cross syndrome with moderate intensity of neck pain and moderate degree of disability when assessed on Neck Disability Index. The associated musculoskeletal problems involved neck and shoulder at the most while less but equally reported were other regions of body.

Key words: Upper Cross Syndrome, Physical Therapy, Neck Pain, Cervical, School Teachers

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INTRODUCTION

The upper cross syndrome also known as shoulder girdle disorder is defined as stiffness of the upper trap, pec major, levators of scapulae and limitation of the middle and lower trap, serratus anterior, deep neck flexors especially the scalene and rhomboids. This disorder causes winging of the scapula and forward position of head and shoulders.

There is a forward head posture due to upper cross syndrome which causes sprain to muscles of shoulder girdle. There is a forward tilting and outward movement of the shoulder blades which gives an appearance of rounded shoulder. There is a change in the mechanical axis of rotation of

the glenoid fossa due to rounded shoulders. Postural over develo-pment of muscles leads to tendonitis, bursitis and shoulder impingement syndrome.

Upper cross disorder is a set of changes which causes muscular imbalance and movement disorder that causes pain in neck and soreness. Upper trapezius, pectoralis and SCMs becomes stiff, flexors of neck and stabilizers of scapulae become weak and does not support the body efficiently. Cervical curve increases due to anterior tilting of the head which produces extra sprain on vertebras and leads to limited motion. Forward skull posture is considered to enhance stress on upper neck segments. Trott and Watson first noted that forward head posture was more common in Cervicogenic headache patients than other patients which was also associated with decreased endurance and weakness of the deep neck flexors.

Cervical pain is soreness in the structures of the neck including muscle, nerves, bones and the disc between the bones. Common cause of neck pain is muscle stress or tension which may be due to having poor posture while watching TV or reading, bending over the desk for hours, having computer monitor positioned too high or too low, sleeping in an uncomfortable position, twisting and turning the neck in a harsh manner while doing exercise. (C. Benjamin Ma *et al* 2013).

Neck pain which is a common problem in society, usually effects 10% of our population. The pain is caused by the condition that compresses the pain sensitive structures. The national center for health statistics of United State reported that during the period of 1976-1980, 7% of men and 9.4% of women were having neck pain. Neck pain is more common among women. Older patients who are involved in both physically and mentally stress full jobs are more likely to have neck pain. (Gore DR 1999).

LITERATURE REVIEW

Won Gyu Yoo (2013) compared flexion of upper cervical region and angle of neck flexion of computer workers with pain of levator scapulae and upper trap. He took 8PC workers with upper trap muscle soreness and 8 others with muscle pain of levator scapulae. He assessed each subject in condition of flexion of upper cervical region angle and total angle of cervical flexion using a cervical range of motion instrument after one hour of computer work. Result showed that upper cervical flexion angle of the group with levator scapulae pain was significantly lower than that of the group with upper trap pain after PC work. He concluded that for effective intervention of neck pain, upper and lower cervical flexion should be assessed individually.

Gupta BD et al (2013) done a research to see the effects of deep cervical flexor muscle training vs conservative isometric training on forward cranium posture, pain and neck disability index in dental surgeons suffering from chronic neck pain. 30 individuals were taken and were divided into control and experimental groups. Baseline information of dependent variables was taken through Visual analog scale (VAS) and neck disability index (NDI). Forward cranium posture was measured through digital photograph technique. The result concluded that deep cervical flexor training was more useful than conservative isometric training in improving forward cranium posture, neck pain and disability among dental surgeons suffering from chronic neck pain.

Jung ho kang et al (2011) anticipated the effects of anterior tilted head and neck postures on postural balance in PC users. Thirty candidates who worked on PC for six hours per day were in group I and thirty candidates who worked less on PC were in group II. By estimating the angle A & B neck and head posture was measured. Angle A was between ear tragus, eye's lateral canthus and straight line. Angle B was between spinous process of C7, ear tragus and straight line. The severity of forward cranium posture with cervical extension was measured by subtracting angle A from angle B. The postural balance and center of gravity was also measured by using automated active posturography to find out the effect of usage

of PC on balance of posture. Participants in group I showed more extensive neck posture with forward tilting of head than participants of group II.

MI Young Lee et al (2014) investigated the effect of anteriorly tilted head posture on proprioception by determining the neck position-reposition error. They divided the sample population in 2 groups in accordance with the angle between cranium and vertebrae: the group with forward head posture and the control group. They measured angle between cranium and vertebrae which is the angle between a line extending from ear tragus to C7 and a line passing horizontally through C7. They measured error value of cervical position sense after cervical flexion, extension and rotation using head repositioning accuracy test. The result showed that there was an opposite correlation between the error value and craniovertebral angle of the joint position sense. They concluded that forward head posture is associated with reduced proprioception. Proprioception is reduced as forward head posture is increased.

MATERIAL AND METHOD

STUDY DESIGN

Case series

SETTING

Study was conducted in following schools.
Government Girls high school Shalimar town Lahore.
City district Government Girls high school Fatehgarhpul Lahore.
Government Zafar Islam primary school Punj peer Lahore.

DURATION OF STUDY

The study was completed in six month from August 2015 to January 2016.

SAMPLE SIZE

A sample of size 75 was calculated for the study with expected rate of 95% self reported musculoskeletal disorder among school teachers with most reported body sites appeared to be the back, neck and upper limbs at 5% level of significance. Sample size estimation for single proportion method was used.
P (1-p) (z/e) 2
Where
P=0.95 1-p= 1-0.95 z=1.96 e=0.05
However, a sample size of 107 were incorporated in study.

SAMPLE SELECTION

Inclusion Criteria
The respondents were included based on following inclusion criteria
Female school teacher with forward head posture
Aged between 30 to 45 years
Having duration of profession more than 3 years
Exclusion Criteria:
Respondents were excluded if found with following characteristics
Females With Additional Back Pain
Acute Neck Pain Of Less Than 6 Months
With Any Other Medical Condition

SAMPLING TECHNIQUE

Non Probability Purposive Sampling

DATA COLLECTION

107 female school teachers of above mentioned schools were surveyed. The sample was collected after the filling of a questionnaire after taking informed consent from the authorities and school teachers. The purpose and objective of the study was informed to authorities. Questionnaire included both open and close ended questions. Teachers were assessed through specific measures. Confidentiality and anonymity were maintained with honesty and impartiality.

DATA ANALYSIS

Tools and Statistics
With the help of self-structured questionnaire neck disability and pain were assessed. NDI (neck disability index) and VAS (visual analogue scale) were also used to assess the pain and functional status in patients with upper cross syndrome. Static and dynamic postural assessment was also done for cervical spine.

Data was analyzed by statistical package of social

sciences (SPSS). (SPSS Inc. Chicago, USA) for WINDOWS. The numeric data like age, working hours were presented in the form of mean ± S. Dev., and qualitative data like pain and disability was presented in the form of frequency and percentage. Descriptive statistics were used to find percentage of variables.

RESULT

Marital Status		
	Frequency	Percent
married	90	84.1
unmarried	17	15.9
Total	**107**	**100.0**

The result showed the marital status in which 84.1%were married and 15.9%were unmarried.

Socioeconomic Status		
	Frequency	Percent
Lower class	10	9.3
Middle class	72	67.3
Upper class	25	23.4
Total	**107**	**100.0**

The result showed socioeconomic status wise distribution in which 9.3% belong to Lower class, 67.35% belong to middle class and 23.4% belong to Upper class.

Upper cross syndrome: Forward Head posture		
	Frequency	Percent
Yes	89	83.2
No	18	16.8
Total	**107**	**100.0**

Result showed that regarding upper crossed syndrome forward 83.2% were found positive having forward head posture and 16.8% were found without forward head posture.

Upper cross syndrome: Cervical lordosis		
	Frequency	Percent
Yes	89	83.2
No	18	16.8
Total	**107**	**100.0**

Result showed that regarding upper cross syndrome 65.4% respondants were having cervical lordosis and 34.6% respondents were without cervical lordosis.

Upper cross syndrome: Thoracic Kyphosis		
	Frequency	Percent
Yes	49	45.8
No	58	54.2
Total	**107**	**100.0**

Result showed that regarding upper cross syndrome 45.8% respondentswere found positive for thoracic kyphosis and 54.2% were negative.

Upper cross syndrome: Protracted and elevated shoulders		
	Frequency	Percent
Yes	79	73.8
No	28	26.2
Total	**107**	**100.0**

Result showed that regarding upper cross syndrome 73.8% respondents were positive for protracted and elevated shoulders and 26.2% respondents were reported negative.

Upper cross syndrome: Abducted, rotated and winged Scapulae		
	Frequency	Percent
Yes	79	73.8
No	28	26.2
Total	**107**	**100.0**

Result showed that regarding upper cross syndrome 55.1% respondents were found positive for abducted, rotated and winged scapulae and 44.9% were negative.

Pain Assessment: Neck pain		
	Frequency	Percent
Yes	97	90.7
No	10	9.3
Total	**107**	**100.0**

The result showed that regarding pain assessment 90.7% respondents were having neck pain and 9.3% respondents were pain free.

If yes then specify area		
	Frequency	Percent
Shoulder and neck	49	45.8
Shoulder, neck and arm	42	39.3
Upper back	6	5.6
Not Applicable	10	9.3
Total	**107**	**100.0**

The result showed that regarding pain specific area 45.8% respondents reported pain in shoulder and neck, while 39.3% respondents reported in shoulder, neck and arm, 5.6% respondents reported in upper back and 9.3% were those who previously reported no pain.

Neck pain intensity		
	Frequency	Percent
Mild	9	8.4
Moderate	76	71.0
Severe	12	11.2
Not applicable	10	9.3
Total	**107**	**100.0**

The result showed that regarding neck pain intensity, 8.4% respondents reported mild pain, 71.0% respondents moderate, 11.2% reported severe and 9.3% respondents were those who previously reported no pain.

Interpretation of Neck Disability		
	Frequency	Percent
None	3	2.8
Mild	17	15.9
Moderate	57	53.3
Severe	15	14.0
Complete	5	4.7
Not applicable	10	9.3
Total	**107**	**100.0**

The result showed that 2.8% respondents were came on none disability category, 15.9% were categorized having mild disability, 53.3% respondents with moderate, 14% with severe disability and 4.7% complete disability. While 9.3% respondents were those who previously reported themselves pain free.

DISCUSSION

As one previous study conducted to explore the prevalence and work-related risk factors of upper limb and neck disorders among secondary school teachers. Methods: In Hong Kong, one hundred secondary school teachers were randomly chosen. Logistic analysis showed that gender, age and working in head down posture were identified as risk factors for neck and upper limb pain. High workload, high anxiety and low colleague support were found to be significant on affecting the neck pain and upper limb pain developed after becoming teachers. Conclusions: Upper limb pain and neck pain were highly prevalent in secondary school teachers in Hong Kong. Head down posture, gender, age and some psychological factors were found to be major risk factors

CONCLUSION

Most of the school teachers were presented with upper cross syndrome with moderate intensity of neck pain and moderate degree of disability when assessed on Neck Disability Index. The associated musculoskeletal problems involved neck and shoulder at the most while less but equally reported were other regions of body.

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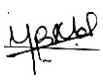
2	Ubail ullah Akbar	Supervision	
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