



## Original Article

## Prevalence of Non-Specific Neck Pain Associated with Psychological Motives Among Young Adults During Problematic E-Learning in COVID-19.

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## ABSTRACT

Non-specific neck pain can be described as an acute or chronic cervical and shoulder girdle complication arising from occiput of skull to the spine of scapula that may radiate down to the arms, with or without minimizing cervical range of motion, not associated with history of any infection or fracture. **Objective:** The objective of the study is to observe the incidence of non-specific neck pain and its association with anxiety and depression among young adults during problematic online education. Previous literature showed a significant association of anxiety and depressive disorder with high morbidity in respondents with non-specific neck pain. But very few studies found to highlight the relation of psychological stress with neck discomfort. This research focuses on said prevalence of non-specific neck ailment in relation to anxiety and depression among young students of Government College University Faisalabad during problematic online learning. **Methods:** The study framework adopted was a cross-sectional survey. The sample calculated was 103 depending on previous researches. Subjects were taken from Government College University Faisalabad. A simple random sampling approach was utilized to gather the sample. The self-made questionnaire was used as data collection tool. Data analysis and interpretations was done by using SPSS version 16.0. **Results:** N=103 students including n=21(20.4%) males and n=82(79.6%) females had neck pain because of various psychological factors, such as depression and anxiety. Individuals had mild, moderate and severe pain on pain scale were (37.9%) (22.3%) and (8.7%) respectively with mean and Std. deviation (2.1262±0.9769). Outcomes were reported in the form of frequency distribution bar charts. Results concluded that 74% young adults reported neck pain due to anxiety and depression. The chi-square test parameters defined that there is significant relation of neck pain with anxiety ( $p = 0.001$ ) and no significant association of neck pain with depression ( $p = 0.5$ ) during problematic online learning. **Conclusion:** The inferences of this review indicated that anxiety causes more pain in neck region as compared to depression among young students during problematic e-learning. The study will help to raise the point of management of stressful situations in a better way to avoid the non-specific neck pain.

## INTRODUCTION

Non-specific neck pain is defined as acute or chronic cervical and shoulder girdle distress from occiput of skull to the spine of scapula which may radiate down the arms, as well as decrease of cervical range of motion without any history of trauma, infection or systemic pathology (e. g. fracture) [1]. Neck pain is the most familiar musculoskeletal disorder globally with an annual occurrence rate of 42 to 67% among young adult [2].

Although its precise etiology is unknown, it is considered multifarious in its origin, and researches show strong connection with depression, anxiety, migraine, inactive life style, sleep disturbances and smoking [3]. Office workers have higher annual prevalence (17.7 – 63%) and incidence (34 – 49%) of neck pain than other professionals [4]. It includes both physical risk factors, including extended sedentary or office work hours; an excessive amount of

labor or high expectations; and unsuitable workstation designs etc. and biopsychological risk factors such as stress, anxiety and depression [5]. Female gender, having a history of neck problems, having an eye-level monitoring posture and frequent muscular strain feelings, have all proven to induce discomfort. Perceived muscle tension has the biggest effect on pain in the neck. All three factors have indirectly affected neck pain resolved through discerning muscular tension; the record of neck pain has more influence in perceived muscular stress [6]. The structure of the cervical column, with regressive changes that are observed in individuals with nonspecific cervical discomfort, which also occur with aging. It is observed that there is a weak association between the level of degeneration and the existence of symptoms [7]. A variety of variables may be regarded to contribute to the NP within a "Bio-psycho-social" paradigm. Several risk variables are linked with nonmodifiable factors (e. g. history of trauma, age, gender, and genetics) and modifiable risk factors connected with psychosocial components (that can be changed as well [8]). Several variables have been associated with non-specific neck discomfort, including the gender females, advanced peer group, high paying job expectations, insufficient social or work assistance, past smokers, a history of low back complaints and a history of neck problems [9]. Physical treatments such as orthoses, massage, mobilization, manipulation, and traction are all utilized in the treatment of neck discomfort, as well as other approaches. Thermal modalities include, for example, therapeutic ultrasonography, diathermy, and heat therapy. Heating pads (dry or wet), infrared light, and other similar devices like hydrotherapy, using an ice pack with or without massage is recommended [10]. Cognitive behavioral therapy leads to gradual changes in cognitive behavior and disease by changing the thinking and improving mood of neck pain maladjustment and cervical vertebral dysfunction [11]. Certain MT techniques applied to the cervical spine may be less dangerous than others, and it is conceivable that these two factors may have therapeutic implications in terms of reducing the risk associated with these approaches [12]. This study focuses on said prevalence of non-specific pain in neck and its association with anxiety and depression among young adults during problematic online learning in the era of novel coronavirus pandemic.

## METHODS

The study was conducted at various departments of Government College University Faisalabad including faculty of Life Sciences, faculty of Allied Health Professionals, faculty of Art and Social Sciences, and faculty of Applied Linguistics. People encountered in this

study consisting of both male and female students of GCUF those facing psychological issues during online education. The number of cases in this study was determined on the basis of previous longitudinal observational study arranged by Wirth et al. [13]. The size of sample estimated for this observational study was 103 male and female students. The population included was very diversified, so the most reliable simple random sampling technique was used. Sample selected carefully in accordance to inclusion and exclusion criteria. Both male and female students of Government College University Faisalabad with age ranging between 18-28 years, having experience of online learning/e-learning, and facing psychological complications, such as anxiety and depression during online education were all included in the study. Whereas, individuals having no experience of online learning and taking drugs for anxiety and depression with a past history of neck pain due to trauma, malignancy, cervicogenic headache, cervical radiculopathy, and any other pathology were all excluded. Data collection instrument was self-developed questionnaire that was obtained from the Northwick Park Neck Pain questionnaire including their demographics, questions related to study duration and problems during online education, level of anxiety and depression, working status and intensity of neck strain was accessed by "Numeric Pain Rating Scale" which induces pain description from 0 to 10 as 0 "no pain" and 10 "unbearable pain". Performa were filled after taking acceptance form from all the individuals. This study used descriptive statistics to analyze average frequency, mean and standard deviation of all variables. Pearson chi-square test to find association between anxiety and depression and neck pain among young adults. The p-value >0.05 was assumed statistically significant. All the analysis and interpretation were represented by using SPSS version 16.0.

## RESULTS

Demographic variables of this study comprised of age, gender and level of education. Most of the respondents were female n=82 (79.6%) while male n=21 (20.4%) in this study. Few respondents belonged to age group below 20 years were 7 (6.8%). Maximum population belong to age group 20-25 years were 92 (89.3%), while 26-30 age group comprised of 3 (2.9%) of total sample size with mean 1.9806 and standard deviation  $\pm 0.36997$ . Almost 69 (67.0%) of students had bachelor level of education and 13 (12.6%) of population had master level of qualification showed in table. Table 1 represented that the total number of respondents n=103 were enrolled in this cross-sectional survey out of which female students n= 82 while male students n= 21 were completely met on inclusion criteria.

Out of 103,40 (38.8%) of students graded mild level of anxiety while 44 (42.7%) had moderate level of anxiety, 16 (15.5%) of students reported severe level of anxiety during problematic e learning. 35 of 103 with (34.0%) had mild level of depression while 47 (45.6%) of sample population showed severe level of depression and 14 (13.6%) are those with severe level of depression during problematic e-learning. Results indicated that n=76 students (73.8%) further including 62 female and 14 male students had neck pain due to psychological factors as anxiety and depression. Those with pain at back of skull were 22 (21.4%) of sample. Students with pain at back of shoulders were 45 (43.7%) of total population. Young adults had complaint of pain at posterior region of skull were 30 (29.1%) of total sample size. Numeric pain rating scale deduced that 39 (37.9%) of students rated with mild pain (1-3), while 23 (22.3%) rated with moderate pain (4-6). N=9 (8.7%) of students rated with severe pain (7-9) and 1 (1%) rated with worst pain (10) on pain rating scale with mean 2.1262 and standard deviation of  $\pm 0.97699$ . Table 2 represented the Pearson Chi-Square test results concluded that there is significant association of neck pain with anxiety (p value = 0.001) as compared to depression (p value =0.5) which found that there is no significant association of neck pain with depression among young adults during problematic online learning.

Characteristics	N	Frequency	Percentage
Mean & Std. Deviation (1.9806 $\pm$ 0.369)			
Below 20		7	6.8%
21-25	103	92	89.3%
26-30		3	2.9%
31-35		1	1.0%
<b>Gender</b>			
Male	103	21	20.4%
Female		82	79.6%
<b>Level of education</b>			
Bachelors		69	67.0%
Masters/M-Phill	103	13	12.6%
PhD.		13	12.6%
Others		8	7.8%
<b>Problems during online education</b>			
Internet problems		31	30.1%
Psychological issues	103	13	12.6%
Not understanding things during online education		51	49.5%
<b>Others</b>			
Level of anxiety		8	7.8%
Mild	103	40	38.8%
Moderate		44	42.7%
Severe		16	15.5%
None		3	2.9%

<b>Level of depression</b>			
Mild		35	34.0%
Moderate	103	47	45.6%
Severe		14	13.6%
None		7	6.8%
<b>Neck pain</b>			
Yes	103	76	73.8%
No		27	26.2%
<b>Site of pain</b>			
Back of skull		22	21.4%
Back of shoulders	103	45	43.7%
Posterior part of skull		30	29.1%
Others		6	5.8%
<b>Radiating to arms</b>			
Yes	103	35	34.0%
No		68	66.0%
<b>Intensity of pain</b>			
Mean & Std. Deviation (2.1262 $\pm$ 0.9769)			
No pain (0)		31	30.1%
Mild pain (1-3)		39	37.9%
Moderate pain (4-6)	103	23	22.3%
Severe pain (7-9)		9	8.7%
Worst pain (10)		1	1.0%

**Table 1:** Descriptive Statistics

	Value	DF	Asymp. sig. (2 sided)
Anxiety	15.964 <sup>a</sup>	3	0.001
Depression	2.254 <sup>a</sup>	3	0.521

**Table 2:** Association of anxiety and depression with neck pain by using Pearson Chi-Square test

## DISCUSSION

It was difficult task because there was lack of previous literature available on this topic. Almost 1/3rd of population had problems of neck pain in their lives. Studies showed that 42 to 67% prevalence of neck pain among young adults [2]. Literature found that there is strong correlation of neck pain with depression, anxiety, migraine, inactive life style, sleep disturbances and smoking [3]. According to Liu et al., psychosocial factors like anxiety and depression are the major determinants of non-specific neck pain among young population. Anxiety and depression symptoms are closely related with high mortality in neck pain victims. This study supports the hypothesis that non-specific neck pain mechanisms mediate mental disturbances in neck pain patients [14]. According to Ortego et al., results showed that chronic non-specific neck discomfort is linked to psychological stress. This study shows that stress and non-specific neck pain are strongly interrelated [15]. According to Damasceno et al. that there is no strong association of text neck syndrome and growing prevalence of non-specific neck pain in youngsters [16]. According to Demyttenaere et al., anxiety was more frequent among

people with persistent neck pain to match chronic pain in their heads or necks with psychological problems. These results show that chronic back-to-neck pain is not specific to depressive disease with psychological impairment [17]. Elbinoune and its scientist in 2016 concluded that VAS disability has been statistically associated to anxiety in the univariate analysis ( $p = 0.02$ ). Depression was substantially associated with cervicobrachial neuralgia (CBN). The study shows that chronic neck pain (CNP) patients are frequent due to anxiety and depression. In addition, disability and CBN associated with CNP can forecast which sufferer is more at risk of mental health damage [18]. Tsang et al., declared that the intensity of the neck pain was significantly linked to anxiety ( $p < 0.05$ ). Behind it was significantly linked to anxiety, depression and disaster ( $p < 0.05$ ). Multiple regression analysis had confirmed a significant prediction of anxiety and disaster ( $p < 0.05$ ) for pain-induced dysfunction. The conclusion can be drawn that anxiety, depression and disaster are linked with their self-reported condition in patients with chronic neck pain while anxiety is also accompanied with their pain intensity [19]. According to Miller et al., his work examined the popularity and socio demographic risk factors of chronic and depressive chronic pain. It was mainly female (62,1%;  $n=732$ ) with average age 51.06 (SD=16,21). The sample was mainly female. Chronic pain was 21.9 percent due to any cause. About 35% of chronic pain participants also suffered from co morbid depression (7.7 percent of the entire sample). An analysis of multinomial regression found several demographic links to chronic pain and depression [20]. Results demonstrated that musculoskeletal disorders are significantly associated with elderly depression and anxiety. Logistic regression estimated the linkage of neck pain and disorders with depression and anxiety indicators ( $p < 0.05$ ) by Talvari et al., in his study [21]. Diepenmaat et al deduced that the general prevalence of neck or shoulder, low back and arm pain was 11.5% by 7.5% and 3.9%. in girls and adults living without both parents, the incidence rate of neck/shoulder pain was high. Neck or shoulder pain, low back pain and arm pain have been associated with depressive symptoms. The stress has been combined to pain in the neck/shoulder and low back pain. This study justifies the results of adolescent musculoskeletal pain that is associated with depression and stress [22]. In the research work of Myrtveit et al., gender-based analyses of logistic regression have assessed the connection between fervently occurring neck and shoulder pain and physical activities, depression signs and screen-based activity. In general, 20, 0% (1,797 girls over 8,990) and more often than boys ( $p < 001$ ) had frequent pain in the neck and shoulder. The powerful risk factor for neck and shoulder pain in boys and girls has been

a high number of depressive symptoms [23]. After completing analysis results showed 73.8% prevalence of non-specific neck pain due to psychological motives (anxiety and depression) among young adults during problematic online education.

## CONCLUSION

The inferences of this review indicated that anxiety causes more pain in neck region as compared to depression among young students during problematic e-learning. Anxiety is the most predominant factor in causing neck pain especially in posterior part of skull and back of shoulders during online education. Although depression is not significantly linked to non-specific neck pain among young adults during online learning. This study will help us to manage neck pain disorder through management of stressful situations physically and psychologically.

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