

Association of Neck Pain with Stress, Anxiety and Depression among Young Adults

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^{1,3,5,6} Conception and design, ^{3,4-5} Collection and assembly of data, ^{3,4-2} Analysis and interpretation of the data, ^{1,2} Critical revision of the article for important intellectual content, Statistical expertise, ¹ Final approval and guarantor of the article

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A B S T R A C T

Objectives: To determine the pain intensity of non-specific neck pain and find out the association of neck pain with stress, anxiety and depression.

Methodology: A cross sectional study was carried out on 254 young adults in Shifa Tameer-e-Millat University Islamabad, Pakistan from July to December 2017. Participants of either gender in age range 18 to 24 years and have non-specific neck pain were included in the study. All the participants with any illness or trauma that might cause neck pain and pathological condition associated with neck were excluded from the study. "Numeric Pain Rating Scale" and "Depression Anxiety Stress Scale-21" were used to evaluate pain intensity and negative emotions such as depression, anxiety and stress. Chi square test was applied to determine the association between pain and depression, anxiety and stress. The data was analyzed through SPSS v-21.

Results: Out of total 254 participants 212 (83.5%) were females and 42 (16.5%) were males. Participants mean age was 20.66 ± 1.83 (years). According to the results stress and depression had significant association with neck pain (p value < 0.05). However, no association of neck pain was observed with anxiety as p value was > 0.05 .

Conclusion: The study concluded that majority of the participants had mild level of non-specific neck pain and significant association of neck pain was found with depression and stress.

Key words: Anxiety, Depression, Mental health, Pain, Stress.

Introduction

Neck pain is a common public health concern among adults and leading cause of disability worldwide.¹ Among other musculoskeletal disorders neck and low back pain are considered as the 2nd leading causes of years lived with disability.² The 12-months prevalence of non-specific neck pain in young adults was found between 42 to 67%.³ This prevalence is rising each year causing work absenteeism, disabilities, sleep disturbance and reduced quality of life.⁴ The economic burden of neck pain is high for both the individual and the society due to costs related to healthcare, loss of work productivity, and absenteeism.⁵

Young adulthood is a transitional stage of life when people are in the process of forming an adult identity.⁶ This life stage is characterized by extensive changes such as handling education and career choices and establishing lifestyle.⁶ Exposure and choices made during this sensitive phase of life influence individuals health and wellbeing.⁷ Therefore, we believe that this vulnerable period leads to future musculoskeletal health problems. Despite the rising prevalence of this problem globally, very few researches have been done on this age group for this disorder.^{8,9}

Multiple researches have reported connection between physical illnesses and mental health disorders.¹⁰

Negative emotions such as anxiety and depression are common in people suffering from neck pain and they have profound impact on their overall mental health.¹¹ Different researches have reported that poor quality of life following the diseases leads to depression and anxiety in people suffering from neck and low back pain.¹² The exact cause of this relationship is not well defined in the literature as some studies suggest that pain can possibly cause immunological changes that eventually results in depression and anxiety.¹³ Whereas some other studies suggested that increased inflammatory biomarkers were found in the blood of patients with chronic pain disorders that leads to mental disturbances causing stress and anxiety.¹³

Therefore, this study was aimed to determine musculoskeletal neck pain intensity in young adults, and to find out the association between neck pain, depression, anxiety and stress.

Methodology

A cross sectional survey was carried out after getting approval from Departmental research committee of Shifa Tameer-e-Millat university Islamabad, Pakistan from July to December 2017. Participants were selected using convenient sampling technique. Sample size was calculated using Rao software online software using 95% confidence interval, 5% error of measurement and response distribution 75%. The calculated sample size was n=285 participants. Informed written consent was obtained prior to participation in the study.

Inclusion criteria were participants of either gender in age range 18 to 24 years and have non-specific neck pain. All the participants with any illness or trauma that might cause neck pain and pathological condition associated with neck were excluded from the study.

Participant's demographics were obtained using self-structured questionnaire. Intensity of pain was identified using Numeric Pain Rating Scale and it was categorized as scores of ≤ 3 indicating mild pain, 4–6 as moderate pain and scores of ≥ 7 as severe pain.¹⁴ Assessment of depression, anxiety and stress was done using DASS-21 as its simple, valid and reliable tool with Cronbach's α of 0.84 to 0.97.¹⁵ It is a 21-item scale with three subscales of seven items labeled: depression, anxiety, and stress.

Quantitative data was presented as mean \pm standard deviation whereas qualitative variables were expressed as frequency and percentages. To find out the association between pain intensity and depression, anxiety and stress Chi-square test was applied. Data was analyzed using SPSS v-21.

Results

Out of total 254 participants 212 (83.5%) were females and 42 (16.5%) were males. Mean age of the participants was 20.66 ± 1.83 (years). Majority of the participants had mild pain 179 (70.47%) followed by moderate 69 (27.17%) and severe pain 6 (2.36%).

Maximum number of participants had mild to moderate depression, anxiety and stress as shown in table I. Significant association was found between pain, depression and stress (p value < 0.05). However, no association of pain was observed with anxiety as p value was > 0.05 (Table II).

Table I: Frequency of depression, anxiety and stress.

DASS-21	Categories	N (%)
Depression	Not present	76 (29.92%)
	Mild	79 (31.11%)
	Moderate	54 (21.26%)
	Severe	41 (16.14%)
	Very severe	4 (1.57%)
Anxiety	Not present	79 (31.10%)
	Mild	73 (28.74%)
	Moderate	47 (18.50%)
	Severe	22 (8.67%)
	Very severe	33 (12.99%)
Stress	Not present	72 (28.35%)
	Mild	97 (38.19%)
	Moderate	67 (26.38%)
	Severe	12 (4.72%)
	Very severe	6 (2.36%)

Table II: Association of non-specific neck pain with depression, anxiety and stress using chi-square test.

Non-specific neck pain	P-Values		
	Depression	Anxiety	Stress
	0.000	0.417	0.000

Discussion

The findings of current study revealed mild to moderate intensity neck pain in young adults. Similar results were reported in a study by Saifee et al. in which intensity of non-specific neck pain among young adults was mild to moderate on Numeric Pain Rating Scale.¹⁶ Depression, anxiety and stress was evaluated using DASS-21 and this study results revealed that mild level of depression, stress and anxiety was evident among young adults and very few participants fell in the severe and very severe category of DASS-21. A study by Azfar et al. reported similar results with majority of the participants had no to mild category of stress, anxiety and depression.¹⁷

The current study revealed association of neck pain with depression and stress. The findings of a "systematic review and meta-analysis" showed high level of depression and anxiety symptoms in patients with neck pain because of poor

quality of life and association was found between these variables.¹⁰ Whereas, in the present study findings no association between neck pain and anxiety was found. Relationship between neck pain and depressive symptoms has been demonstrated by multiple studies whereas its association with anxiety has been less examined.¹⁸ Clinicians should be aware of the full spectrum of mental disorders associated with pain disorders while assessing patient on initial visit so that these mental health conditions can be managed timely.

Neck pain is a disabling condition and it negatively impacts the mental health thus making the person prone to negative emotions such as depression and anxiety.¹¹ A study by Luo et al. found that there is strong association of neck pain disability and anxiety.¹⁹ Findings of another study revealed that patients with pain disorders are at increased risk for depression and other mental health related issues.²⁰ Supporting the results of present study depression and perceived stress was found higher in patients with neck pain.²¹

Therefore, the findings of this study suggest that equal attention should be paid to physical and psychological symptoms when neck pain is encountered by the health care providers in clinical settings.

The limitation of study was that sample size was not large enough to make strong generalization. This cross-sectional study only identified associative relationships. It cannot identify the direction of relationships between neck pain and other mental health disorders.

Conclusion

The study concluded that mild level of non-specific neck pain was present among young adults and significant association of neck pain was found with depression and stress whereas, no association was observed with anxiety.

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