

To Find Association Between Neck Disability in Relation to Physical Activity Among Young Adults with Chronic Neck Pain

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Abstract

Background: Neck pain is one of the chief musculoskeletal disorders that is noted in adult population and affect approximately about 14-71% during their lifetime. Neck pain is a very common problem in the society, this is because as it causes discomfort to the individual due to pain. It also is associated with disability that impairs the quality of life. Although, neck pain is very common source of disability, a little is known about its prevalence and course. There has been a rapid advancement of technology in last past ten years, which has drastically affected the lifestyle of the general population. In this view we decided to study the association of neck disability in relation to physical activity in young adults with chronic neck pain. **Subjects and Methods:** Total 312 cases were taken with chronic neck pain aged between 18-35 years and were divided into 5 groups based on their physical activity. Neck Disability Index score was calculated for each case after asking neck disability index questionnaire. **Results:** Our result showed that Chronic neck pain was recorded more in 18-25 age group that is 59.6% and Females (52.9%) were more affected with chronic neck pain than males 47.1%. There was significant association between neck disability and radiculopathy. There is no association between the neck disability and the physical activity in the cases with chronic neck pain. Overall statistical non-significant result was observed using Chi square test as the p-value was 0.303. **Conclusion:** There was no association found between neck disability and physical activity, there was a positive association between neck disability and radiculopathy.

Keywords: chronic neck pain, neck disability, physical activity.

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Introduction

Neck pain is one of the chief musculoskeletal disorders that is noted in adult population and affect approximately about 14-71% during their lifetime. Musculoskeletal Disorders (MSD) are injuries and disorders that impact human body movement due to the musculoskeletal system's involvement.^[1]

When the skin, ligament, and muscle of the neck are palpated in both passive and dynamic movements it causes a generalised feeling of hyperalgesia, which is termed as Chronic Neck Pain.^[2]

Neck pain is a very common problem in the society. This is because as it causes discomfort to the individual due to pain.^[3] It also is associated with disability that impairs the quality of life and may affect work the person does.

Because of the abovementioned causes, the financial costs of treating crippling neck discomfort are substantial.^[4,5]

Young adults are a phrase that refers to individuals who are in their teen up till the early thirties, that is those who are aged between 18-35 years.^[6]

Approximately two out of three individuals will at some point during their lives experience at least one episode of pain in their neck or shoulder.^[6] Recently, there is higher incidence of neck pain due to excess use of mobile phones, computers especially among young people.^[7,8,9]

Neck disability is defined as how much the persons everyday activities has been affected by the cervical pain.^[10] Although, neck pain is very common source of disability, a little is known about its prevalence and course.

As a developing country, India must recognise the gravity of the problem and take steps to prevent it from spreading to

epidemic proportions.^[11]

There has been a rapid advancement of technology in last past ten years, which has drastically affected the lifestyle of the general population especially young adults leading to physically inactive lifestyle.^[12]

Aims and Objectives

The aim of the study is to find association of Neck Disability in relation to physical activity among young adults (aged 18-35) with chronic neck pain. Further, we identified patients with chronic neck pain and their physical activity and neck disability and find out relation between physical activity and neck disability in patients with chronic neck pain.

Subjects and Methods

This study was conducted in our hospital after taking clearance from ethical committee, informed consent was obtained from all the cases, total 312 cases were taken with chronic neck pain aged between 18-35 years and patient with any form of cervical injury or any connective tissue disorder, spinal cord deformity were excluded from the study. The level of brisk and light physical activity was assessed separately by asking "How often do you engage in a) brisk or b) light physical activity?" Physical activity that causes at least some shortness of breath and sweating was characterized as "brisk". The phrase "light" refers to physical exercise that does not cause excessive sweat and shortness of breath. Cases were divided into 5 groups based on their physical activity i.e. Very active (more than 6 hours of brisk activity per week, Active (4-6 hours of brisk activity), Moderately Active (2-3hours of brisk activity per week), Light Active (1hour of brisk activity per week),

Inactive (less than 30 min of brisk activity). Neck Disability Index score was taken for each cases after asking neck disability index questionnaire.

The data was analyzed by using appropriate statistical tools and methods and frequency distribution, percentage were calculated. The associations was seen with the help of Chi Square test and standardization was kept at 0.05 level.

Results

Present study included 312 individuals with chronic neck pain between 18-35 years of age, where the largest proportion of neck disability was recorded in the 18-25 age group, followed by the 31-35 age group i.e. 59.6% and 24%. However, our study discovered no statistical relationship between neck disability and age group in the population studied. [Table 1]

In our study we also found out that females 52.9% we affected more than males 47.1% and we found that there was no significant association between the sex and the neck disability which was found to be p-value 0.42 which was found greater than 0.05 [Table 2].

The analysis of our study shows positive association between neck disability and radiculopathy. Overall statistical significant result been observed since calculated p value been found to be less than .05 level i.e 0.048. [Table 3].

The result of our study showed that there was no significant association between the neck disability and the physical activity of the cases presented with chronic neck pain since the calculated p-value was 0.30 which was found to be greater than 0.05. [Table 4].

Table 1: Shows the Association Between Neck Disability with Age Group

		Age group			Total	Chi square value (p value)
		18-25	26-30	31-35		
Neck disability	Mild	130	31	52	213	6.023 (.422)
	Moderate	12	8	5	25	
	Severe	1	1	1	3	
	No disability	43	11	17	71	
Total		186	51	75	312	

Table 2: Shows the Association Between Neck Disability with Sex

		Sex		Total	Chi square value (p value)
		Female	Male		
Neck disability	Mild	112	101	213	3.25 (.354)
	Moderate	10	15	25	
	Severe	1	2	3	
	No disability	42	29	71	
Total		165	147	312	

Table 3: Shows the Association Between Neck Disability with Radiculopathy

		Radiculopathy		Total	Chi square value (p value)
		No	Yes		
Neck disability	Mild	203	10	213	7.859 (.048)
	Moderate	24	1	25	
	Severe	2	1	3	
	No disability	70	1	71	
Total		299	13	312	

Table 4: Shows the Association between Physical Activity Group with Neck Disability

		Neck disability				Total	Chi square value (p value)
		Mild	Moderate	No disability	Severe		
Physical activity group	Very active	39	8	18	1	66	13.95 (.303)
	Active	71	8	23	0	102	
	Moderately active	60	6	15	0	81	
	Light active	35	2	10	1	48	
	Inactive	8	1	5	1	15	
Total		213	25	71	3	312	

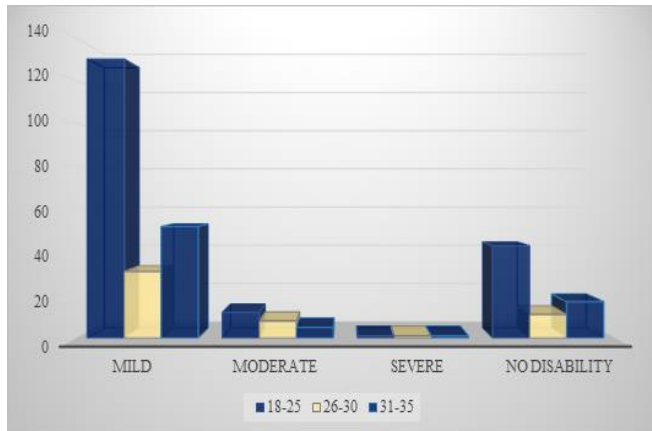


Figure 1: Shows the Association Between Neck Disability with Age Group

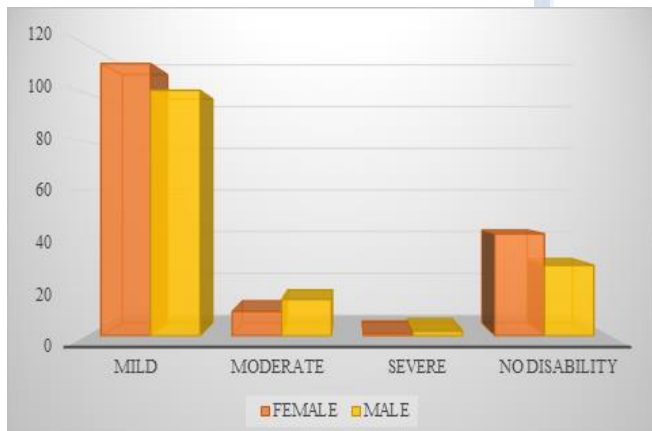


Figure 2: Shows the Association Between Neck Disability with Sex

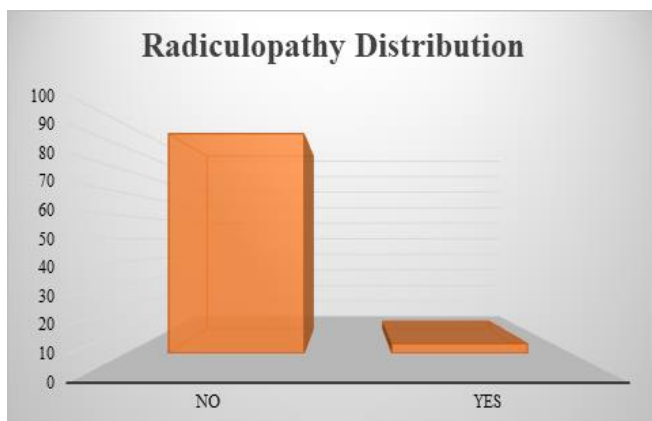


Figure 3: Shows the Association Between Neck Disability with Radiculopathy

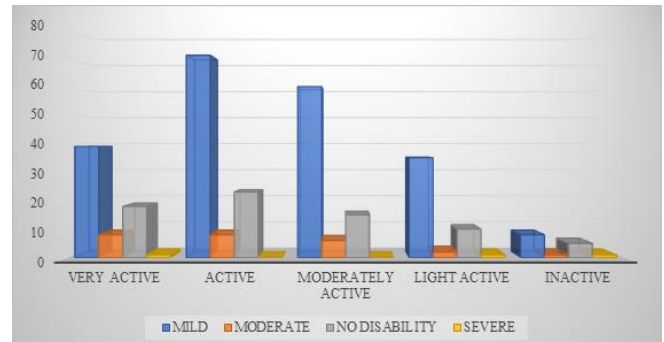


Figure 4: Shows the Association Between Physical Activity Group with Neck Disability

Discussion

For this study, 312 individuals with chronic neck pain between the ages of 18 and 35 years old were considered. The findings of the study revealed that the largest proportion of neck disability was recorded in the 18-25 age group, followed by the 31-35 age group i.e. 59.6% and 24%. However, our study discovered no statistical relationship between neck disability and age group in the population studied. Hildebrandt et al.^[13] did a study to find association of physical activity and pain in neck, 2030 cases were taken and revealed that the mean age was 33.7 years. Côté et al.^[14] on the other hand, did a study on 2184 cases and found that the highest frequency percentage was seen in the 40-49 year age range i.e 53%.

In terms of gender distribution, our study found out that females (52.9%) were affected more than male 47.1%. However, findings of the analysis revealed that there wasn't any statistically significant relationship between Neck disability and sex of the cases. Hill et al.^[15] revealed in his research that in cases with pain in neck for more than three months, females were more affected than males i.e 52% and 48% respectively as the females are less physically active than males. But according to Hey et al.^[16] who studied 626 cases complaining of chronic neck pain in which the prevalence of male 54% were shown to be greater than females 46%.

In this study total 4.2 percent of all the cases of neck pain had presented to us with radiculopathy and majority 95.8 percent did not have radiculopathy. According to Rodine et al.^[17] radiculopathy is a common source of neck pain and functional impairment in the elderly. Salemi et al.^[18] reported that the annual incidence of radiculopathy was 83.2 per 100,000 cases, while Murphy et al.^[19] assessed that the frequency of radiculopathy with chronic neck pain was 3.5

per 1000 people in their study. The findings of this study show a statistically significant relationship between neck disability and radiculopathy as p value is 0.048.

The largest percentage of participants with chronic neck pain was recorded in active group 32.7%, followed by the moderately active 26%, very active 21.2%, light active 15.4% and inactive 4.8% categories in terms of physical activity distribution. Physical activity has also been linked to a lower occurrence of cervical pain. According to Feldman and Diepenmaat,^[20] physical activity is not related to neck and shoulder pain, whereas Niemi et al., Siivola et al,^[21] said that physical activity can reduce the risk of neck and shoulder pain. Geene et al,^[22] study showed that the maximum cases were recorded in active group 44% followed by moderate active i.e 22% and stated that there was no relation between physical activity and neck disability in the cases. In our study, we however, found that the association between the physical activity group and neck disability was statistically non-significant as p value was 0.30.

Strength of the study

This study has focused on finding out any possible association of neck disability with chronic neck pain in young age population as there is higher incidence of neck disability in young aged working population. This study also rules out any relation between the co-morbidities and neck disability.

Limitations of the study

Study was done in a limited age group (18-35 age) and there was a time constraint too.

Conclusion

This study adds to the evidence that neck pain is frequent among people between the ages of 18 and 35 years. According to the findings of this study, there are significant connections between comorbidities for some cases. In this study we also found that there is no significant association between neck disability with physical activity. Individuals who are seriously hampered by neck pain and who have comorbidities should get appropriate medical guidance, which is highly crucial.

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