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The Factors and Pattern of Neck Pain among the Under Graduate Medical Student in Dhaka City

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Abstract:

Neck pain is the most common causes of severe long-term pain and physical disability, affecting hundreds of millions of people around the world. Objective: The aim of the study was to determine the factors and pattern of neck pain among the undergraduate medical student in Dhaka city. Materials and method: It was a cross sectional study. Sample size was 84 and a pre-tested, modified, semi-structured questionnaire was used to collect the data. Data were analyzed using SPSS software version 16.0. Results: Majority of the respondents (40.5%) belonged to 22-24 age groups were more pain in neck region and Mean ± SD of age was 22.67 $\pm$ 2.69 years. Most of the respondents were unmarried (86.9) and (69.2%) were female. 63.1% were use chair and table during study and use internet (88.1%) by mobile (42.9%) in average 3 to 5 hours, study average 3 to 5 hours study except collage hours and half of the respondent (59.5 %) carry collage bag by shoulder and weight of collage bag was 4 to 7 kg, this study also found that undergraduate medical students are feeling mild neck pain near about 2 months and it was intermittent in nature, Maximum (84.5%) student has no traumatic history and half of the respondent feeling pain during device use, Statistically minimal significant association found between sex and months of pain feeling where p-value is 0.306 and use of chair table during study and severity of pain where p-value is 0.687, Conclusion: In high proportion of neck pain and injury most often in under graduate medical student in our country therefore this study revealed what are the factor and pattern of neck pain and how student prevent acute and chronic neck pain.

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INTRODUCTION

Neck pain is one of the major musculoskeletal disorders in the adult population[1.] its prevalence in the world ranges from 16.7% to 75.1%.[2] This condition has a complex etiology, including a number of factors: ergonomic (strenuous physical activity, use of force and vibration, inadequate posture, repetitive movement), individual (age, body mass index, genome, musculoskeletal pain history), behavioral (smoking and level of physical activity), and psychosocial (job satisfaction, stress level, anxiety, and depression).[3.4] According to the International Classification of Functioning, Disability and Health guidelines by Childs and colleagues, neck pain is classified into 4 types; Neck pain with mobility deficits, neck pain with radiating pain, neck pain with movement coordination impairments and neck pain with headache. Each type of pain experienced by a person can have different causative. For instances, tingling pain that radiates down an arm is suggestive of nerve impingement; while aching pain of slow onset that localizes to the base of the cervical spine suggests muscle or joint movement [5]. The head is supported by the lower neck and upper back. Upper back creates a supportive structure for head to sit on. Carrying School bag should base on children BMI and age. The number of patient was coming to the physician to get treated for their musculoskeletal problem and spinal pain due to heavy school bag carrying [6,] There is lot of evidence in the literature which shows that musculoskeletal complains such as neck, shoulder and back pain among school age students due to classroom furniture and excessive load on the spine by school bags [7.] Neck pain is common among adults, affecting 14-71% of adults at some point in their lives. Its 1-year prevalence in adults ranges at 16-75% [8]. A substantial 19-37% proportion of neck pain patients will develop chronic neck pain [9]. Neck pain causes considerable personal discomfort due to pain, disability, and impaired quality of life, and may affect work, Adolescents with neck pain are at high risk of having such symptoms in adult hood. Life-long chronic neck pain may have its origins in childhood. Thus to reduce the prevalence of neck pain in adults, knowledge regarding factors that can predict its onset and persistence in younger population is important [10].

There is also limited evidence of relations among clinical risk factors and neck pain. Most prior studies investigated the effects of biopsychosocial factors on neck pain in undergraduate students regardless of clinical factors such as muscle strength, endurance, and joint mobility [11.] Clinical factors may be a valuable diagnostic tool for early detection of

musculoskeletal disorders, Abnormal muscle strength, endurance, and joint mobility may lead to abnormal biomechanics of body movement, causing abnormal physical load to various tissues including muscles, ligaments, and bone. Thus individuals with abnormal muscle strength, endurance, and joint mobility may be susceptible to musculoskeletal injury [12]. There are insufficient article in this area in Bangladesh on my topic. Thus I have selected this topic to find out the current situation in Dhaka city especially to estimate the prevalence of neck pain among the undergraduate medical student & to determine the relevant factors that influencing the neck pain. Finding of this study might help to develop preventive measure in addressing this issue.

METHODOLOGY

A pretested, modified, questionnaire was distributed to the under graduate medical students age group between 18-28 who have complain of neck pain in different medical collage of Uttara, Dhaka. A total of 84 under graduate medical student were selected both male and female who having complain of neck pain. All of the respondents gave their informed consent. Non randomized purposive sampling technique was applied and 3 section questionnaires were employed as the survey instrument. Section 1 sought information on demographic profile such as age, gender and marital status. Section 2 was on study related factors such as use of chair and table during study, use of internet, types of device use, duration of device use, duration of study except collage hours, carry of collage bag and average weight of bag. Section 3 contained feature of neck pain such as: type, duration, and severity of pain, history of trauma and what are the condition pain are increase, Data were summarized using the descriptive statistics of mean, standard deviation and percentages. Pearson's Chi-square analysis was used to determine the association of neck pain with factor responsible and pattern of pain. The data analyses were carried out using Statistical Package for Social Science (SPSS 16.0 version software Chicago). The significant level was set at 0.05

RESULT

Descriptive type of cross sectional study was conducted in uttara. Dhaka in order to determine the factors and pattern of neck pain among the under graduate medical student, A pre-tested modified interviewer administrated semi questionnaire was used to collect the information. A total of 84 undergraduate medical students were interviewed to collect the

information. Section 1 contained the questions about socio-demographic characteristics, section 2 contained study related factors, section 3 contained features of neck pain, All the data were entered and analyzed by using statistical packages for social science (SPSS) software version 16.0 (Chicago).

Section 1: Socio demographic Characteristics

Table1: Distribution of respondents by age (n=84)

Age in years	Frequency	Percentage
18-21	29	34.5
22-24	34	40.5
25-28	21	25.0
Total	84	100
Mean ± SD	22.67 ± 2.69	

The table-1 revealed the mean age of the respondents were 22.67 ± 2.69 years with a range from 18 to 28 years. It was found that 34.5 % , 40.5 %, 25.0%, of the respondents belonged to age group 18-21 years, 22-24 years, 25-28 years, and above respectively. Table-1 found that 22-24 age groups were more pain in neck region.

Table 2: Distribution of respondents by sex (n=84)

Sex	Frequency	Percentage
Male	34	40.5
Female	50	59.5
Total	84	100
Mean ± SD	1.84 ± 2.17	

The table-2 revealed that the mean sex of the respondents were 1.84 ± 2.17 years with a range from 18 to 28 years and shown that among the respondents, 40.5 % were male and 59.5 % were female and hear shows that female respondent are more

Table 3: Distribution of respondents by Marital status (n=84)

Marital status	Frequency	Percentage
Married	11	13.1
Unmarried	73	86.9
Total	84	100
Mean ± SD	1.86 ± 0.33	

The table-3 revealed that the mean marital status of the respondents were 1.86 ±.33 years with a range from 18 to 28 years and shown that among the respondents married were 13.1 % and unmarried 86.9 % and hear shows that unmarried respondent are more

Section 2: Study related factors

Table 4: Distribution of respondents by use of chair and table during study at home (n=84)

Variable	Frequency	Percentage
Yes	53	63.1
No	41	36.9
Total	84	100
Mean ± SD	1.36 ± 0.85	

The table-4 revealed that the mean use of chair and table during study at home of the respondents were 1.36 ± 0.85 and shown that among the respondents 63.1% were use and 36.9% not use and hear shows that chair table user are more during study

Table 5: Distribution of respondents by internet use during study (n=84)

Variables	Frequency	Percentage
Yes	74	88.1
No	10	11.9
Total	84	100
Mean ± SD	1.11 ± 0.84	

The table-5 revealed that the mean of internet use during study of the respondents were 1.36 ± 0.85 and shown that among the respondents 88.1% were use internet during study and 11.9% were not use and hear shows that internet user are more during study

Table 6: Distribution of respondents by types of device use during study (n=84)

Types of device	Frequency	Percentage
Desktop	18	21.4
Laptop	30	35.7
Mobile	36	42.9
Total	84	100
Mean ± SD	2.21 ± 0.77	

The table-6 revealed that the mean types of device use during study of the respondents were 2.21 ± 0.77 and shown that among the respondents 21.4 % were use Desktop, 37.7% use Laptop and 42.9% use Mobile and hear shows that Mobile user are more.

Table 7: Distribution of respondents by device use average day in hours (n=84)

Average day used	Frequency	Percentage
1 to 3 hours	18	21.4
3 to 5 hours	84	57.1
5 to 7 hours	18	21.4
Total	84	100
Mean ± SD	2.00 ± 0.65	

The table-7 revealed that the mean of device use average in a day of the respondents were 2.00 ± 0.65 and shown that among the respondents 21.4 % were use device in 1 to 3 hours, 57.1% were use device in 3 to 5 hours, 21.4% were use device 5 to 7 hours and hear shows that 3 to 5 hours user are more.

Table 8: Distribution of respondents by duration of study except collage hours average in a day (n=84)

Duration of study except collage hours average in a day	Frequency	Percentage
1 to 3 hour	10	11.9
3 to 5 hours	38	45.2
5 to 7 hours	36	42.9
Total	84	100
Mean ± SD	2.30 ± 0.67	

Table 8 revealed that the mean duration of study except collage hours average in a day was 2.30 ± 0.67 hours with a range from 1 to 7 hours. It was found from table -8 that 11.9 %, 45.2 %, 42.9 % of the respondents study except collage hours 1 hour to 3 hours, 3 to5 hours and 5 to 7 hours respectively. It was shown that most of the respondents study except collage hours average in a day 3 to 5 hours.

Table 9: Distribution of respondents by Carry of collage bag (n=84)

Carry of collage bag	Frequency	Percentage
By hand	15	17.9
By shoulder	50	59.5
By back	19	22.6
Total	84	100
Mean ± SD	2.04 ± 0.63	

Table 9 revealed that the mean the carry of collage bag was 2.04 ± 0.63. It was found from hear that 17.9 %, 59.5 %, 22.6 % of the respondents carry collage bag by hand, shoulder and back respectively. It was shown that most of the respondents carry bag by shoulder

Table10: Distribution of respondents by Weight of collage bag (n=400)

Weight of collage bag	Frequency	Percentage
2 to 4 kg	8	9.5
4 to 7 kg	35	41.7
7 to 10 kg	24	28.6
Above 10 kg	17	20.2
Total	84	100
Mean ± SD	3.23 ± 4.09	

Table 10 revealed that the mean of the weight of collage bag was 3.23 ± 4.09. It was found from hear that 9.5 %, 41.7 %, 28.6 % and 20.2% of the respondents collage bag weight 2 to 4 kg, 4 to 7 kg, 7 to 10 kg and above 10 kg respectively. It was shown that most of the respondent's weight of collage bag was 4 to 7 kg.

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Section 3: Features of neck pain

Table11: Distribution of respondents by Months of feeling pain (n=84)

Month of pain	Frequency	Percentage
Near about 1 months	29	34.5
Near about 2 months	37	44.1
Near about 3 months	18	21.4
Total	84	100
Mean ± SD	1.86 ± 0.74	

Table 11 revealed that the mean months of pain feeling was 1.86 ± 0.74. It was found from hear that 34.5 %, 44.1 % and 21.4 % of the respondents pain feeling Near about 1 months, Near about 2 months and Near about 3 months respectively. It was shown that most of the respondent's feeling pain in near about 2 months.

Table 12: Distribution of respondents by pain characteristics (n=84)

Characteristics of pain	Frequency	Percentage
Intermittent	26	31
Continuous	18	21.4
Tingling	20	23.8
Numbness	3	3.6
Burning	11	13.1
Radiating	6	7.1
Total	84	100
Mean ± SD	3.42 ± 1.26	

Table-12 revealed that the characteristic of pain feeling was 3.42 ± 1.26 that was 31 %, 21.4%, 23.8%, 3.6%, 13.1% and 7.1% of the respondents complained intermittent pain, continuous, numbness, burning, tingling and radiating sensation and according to this results most of the respondents complained intermittent pain

Figure 12: Distribution of respondents by pain characteristics.

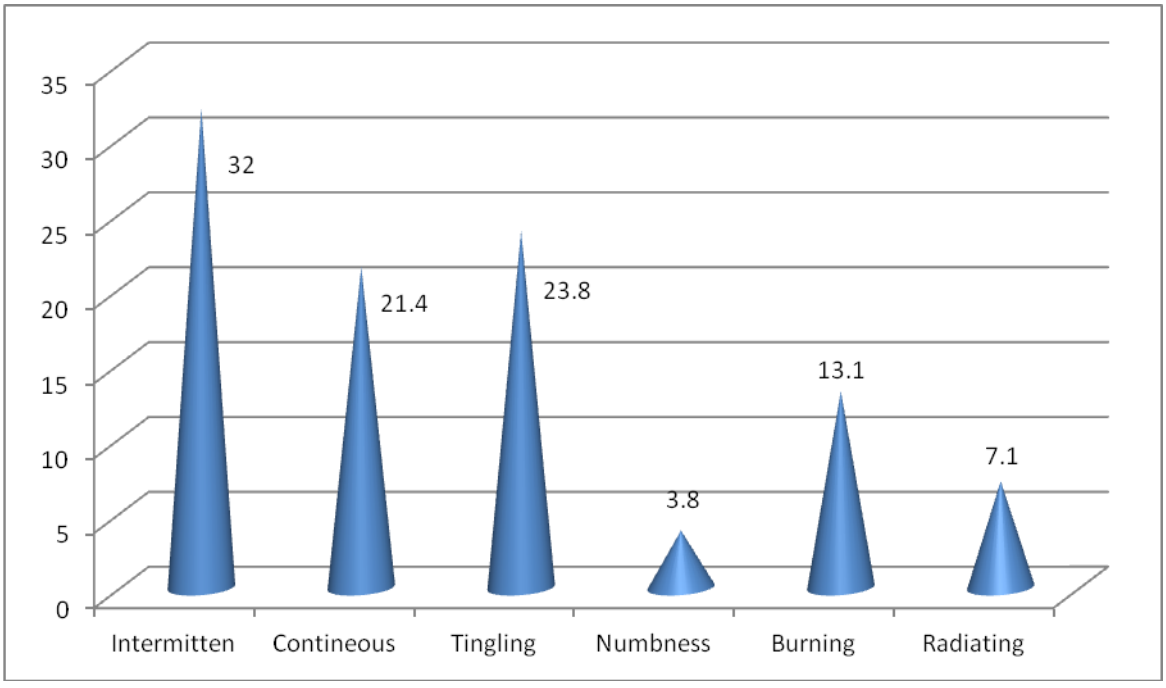

Table 13: Distribution of respondents by severity of pain (n=400)

Severity of pain	Frequency	Percentage
Mild	31	36.9
Moderate	24	28.6
Severe	23	27.4
Intolerable	6	7.1
Total	84	100
Mean ± SD	2.31 ± 0.91	

Table-13 revealed that the means of the severity of pain was 2.31 ± 0.91 that 36.9% were mild pain, 28.6 % were moderate pain, 27.4 % severe pain, and 7.1 % were feeling intolerable pain. According to pain grading scale most of the respondents were suffering mild pain

Figure 13: Distribution of respondents by severity of pain.

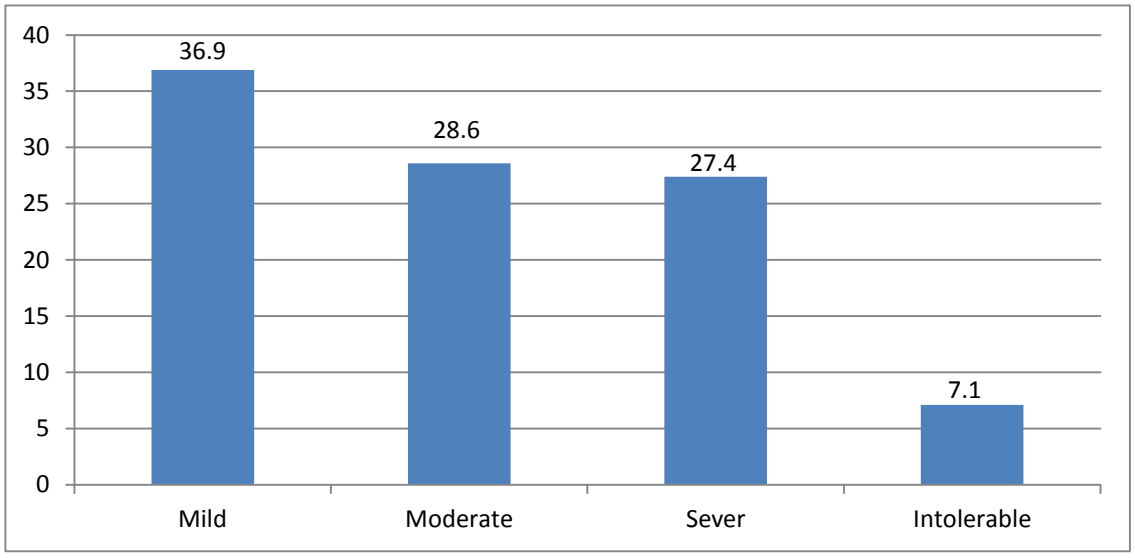

Table 14: Distribution of respondents by the history of trauma (n=84)

History of trauma	Frequency	Percentage
Yes	13	15.5
No	71	84.5

Total	84	100
Mean ± SD	1.84 ± 0.36	

Table-14 revealed that the means of the history of trauma was 1.84 ± 0.36 and found that 15.5 % respondents were history of trauma and 84.5 % respondents were not.

Table 15: Distribution of respondents by position of pain increase (n=84)

Pain increase	Frequency	Percentage
Sitting	20	23.8
Lying	25	29.8
During device use	39	46.4
Total	84	100
Mean ± SD	2.05 ± 0.73	

Table-15 revealed that the means of the increase pain was 2.05 ± 0.73 and found that 23.8 % respondents increase pain in sitting, 29.8 % respondents in lying and 46.4% respondent feeling pain during device use, Hear found that most of the respondent feeling pain during use device.

Table-16: Distribution and association of respondent between Sex and months of pain feeling

Sex	Months of pain feeling				
	Near about 1 month	Near about 2 months	Near about 3 months	Total	P-Value
Male	12	14	7	33	0.306
Female	16	22	13	51	
Total	28	36	20	84	

P value obtained from Pearson Chi-square(x^2) Test

The table-16 showed the minimal association found between sex and months of pain feeling where p-value is 0.306

Table-17: Distribution and association of respondent between Use of chair table during study and severity of pain

Use of chair table	Severity of pain					P-value
	Mild Pain	Moderate pain	Sever pain	Intolerable pain	Total	
Yes	13	33	10	3	58	0.68
No	5	13	6	2	26	
Total	18	45	16	5	84	

P value obtained from Pearson Chi-square(x^2) Test

The table-17 showed the minimal association found between use of chair table during study and severity of pain where p-value is 0.687

DISCUSSION

Neck pain is a common musculoskeletal disorder, among the under graduate medical student females were more affected with neck pain than males [13,] Most of the respondent (86.9 %) are unmarried and 63.1% were use chair and table during study that's are similar to Anne Asher study [14.] Maximum student (88.1%) were use internet during study near about same things found by Kim Sang Dol [15.]About half of respondent (42.9%) use mobile for internet browsing in 3 to 5 hours[16] . Average 3 to 5 hours daily study except collage hours and half of the respondent (59.5 %) carry collage bag by shoulder and weight of collage bag was 4 to 7 kg, these findings were similar to the finding of study carried out by the Australian Spinal Research Foundation [17.] This study found the undergraduate medical students are feeling neck pain near about 2 months and according to pain grading scale one third of the respondent complain intermittent mild pain similar result carried by PP Tellier[18]. Maximum student has no traumatic history it was near about 84.5 % and half of the respondent feeling pain during device uses these findings similar to findings of Back Clinic of Canada[19.] This study found minimal association between sex and months of pain feeling where p-value is 0.306 and use of chair table during study and severity of pain where p-value is 0.687, near about this similar condition arised study by the Revista Dor [20.]

CONCLUSION:

This study conducted that the undergraduate medical students from the different medical collage of Dhaka city and to examine the pattern and factor of neck pain among the students. A high proportion of neck pain and injury most often in under graduate medical student in our country. This study was found that what are the factor responsible and what are the pattern and how can the students are avoid acute and chronic neck pain,

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