

A STUDY ON RISK FACTOR SPINE LOW BACK PAIN

Khatib Shafiur Rahman^{1*}, Mohammad Sultanul Arefin² and Nazmul Islam Nissan³¹Senior Consultant (Ortho Surgery), 250 Bedded General Hospital, Dinajpur, Bangladesh.²Medical Officer, 250 Bedded General Hospital, Dinajpur, Bangladesh.³Residential Surgeon, Sheikh Sayera Khatun Medical College, Gopalganj, Bangladesh.***Corresponding Author: Dr. Khatib Shafiur Rahman**

Senior Consultant (Ortho Surgery), 250 Bedded General Hospital, Dinajpur, Bangladesh.

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ABSTRACT

Background: Chronic low back pain (CLBP) is an important health problem in Bangladeshi adult. **Objective:** To evaluate the risk factor spine low back pain. **Method:** This prospective study was carried out in the department of Physical Medicine and Rehabilitation, Dhaka from January 2019 to December 2020 to determine the association between CLBP and family history, smoking, level of education, level of income, level of exercise, bad posture and BMI in adult male. Total 50 patients with CLBP were taken as cases, and 50 adults without CLBP were taken as controls. Data were collected using a structured interviewer-administered questionnaire, enquiring about demographic data and details of risk factors. **Results:** Majority of the patients belong to <25 years age group and 60% were male. 20.75% were illiterate and Most of the patients had normal weight. Onset of pain sudden were seen in 23.9% whereas Onset of pain insidiously were seen in 76.1%. In case group 20% cases smoked up to 10 years whereas in control group it was 30%. in case group 50% exercise rare whereas in control group it was 30%. Plus among patients in case group 50% had regular bad posture whereas in control group it was 30%. Chi-square test was done to measure the level of significance. The differences of bad posture between the two groups were statistically significant ($p < 0.001$). **Conclusion:** Chronic low back pain was strongly correlated with slouching, physical inactivity, and a middle school education. Chronic low back pain was not substantially related to having a positive family history, routinely smoking, having a high monthly salary, or having a high body mass index. The majority of the patients in this research, both in the case and control groups, did not maintain proper posture while doing everyday tasks and did not engage in moderate to vigorous physical activity on a regular basis. The findings of this research have practical applications in the fields of health promotion, ergonomic assessment and management, good posture, educational program implementation, and shift-based rest breaks.

KEYWORDS: Low back pain (LBP), Chronic low back pain (CLBP), Risk factors.**INTRODUCTION**

Low back pain is a very common health problem worldwide and a major cause of disability - affecting performance at work and general well-being. The 2010 Global Burden of Disease Study estimated that low back pain is among the top 10 diseases and injuries that account for the highest number of DALYs (Disability-Adjusted Life Year) worldwide.^[1] Low back pain is the leading cause of activity limitation and work absence throughout much of the world, imposing a high economic burden on individuals, families, communities, industry, and governments.^[2,3] In the United Kingdom, low back pain was identified as the most common cause of disability in young adults, with more than 100 million workdays lost per year.^[4]

Low back pain (LBP) refers pain, muscle tension or stiffness located below the costal margin and above the inferior Glutei fold & defined as chronic when it persists for 12 weeks or more.^[5] Most episodes of back pain and

associated symptoms resolve within several weeks.^{6,7} However, LBP is a recurrent and chronic phenomenon, mostly associated with long-term disability and consequently is a significant socioeconomic burden.

Many risk factors are responsible for generation of low back pain (LBP) & trunk extensor muscles weakness is important one. Poor endurance of the trunk muscles may induce strain on the passive structures of the lumbar spine, leading eventually to low back pain. Evidence suggests that muscle endurance is lower for people with low back pain than for individuals without low back pain.^[8,9] The first test for evaluating the isometric endurance of trunk extensor muscles was described by Hansen in 1964. In 1984, following a study by Biering-Sorensen, this test became known as the "Sorensen test" and gained considerable popularity as a tool reported to predict low back pain within the next year in males. Using the Sorensen Test as a measure of spinal extensors endurance, some researchers have found a difference in

holding time between subjects with chronic low back pain (CLBP) and individuals without low back pain.^[10,11] These findings seem to suggest that poor trunk extensor endurance is associated with prolonged or recurrent low back pain.

Objective

- To evaluate the risk factor of spine lower back pain

METHODOLOGY

This case control study was carried out in adult male patient attended at outpatient department of Physical Medicine & Rehabilitation, Dhaka from June 2019 to December 2020. 100 Subjects who had continuous LBP with or without radiation to lower limbs for 3 months or more and were aged within 18 to 60 yrs, were selected as cases. Patients who had LBP due to other causes such as

spinal tumors, infections and trauma were excluded. Patients who did not suffer LBP at the time of questioning were included as controls. Literacy rate was selected as variable to determine the sample size and there was an expected odd ratio (OR) of 2, power of 80% and significance level of 0.05. Total 50 patients with CLBP were taken as cases, and 50 adults without CLBP were taken as controls. Data were collected using a structured interviewer-administered questionnaire, enquiring about demographic data and details of risk factors.

RESULTS

Table-1 shows distribution of patients according to demographic status. Majority of the patients belong to <25 years age group and 60% were male.

Table 1: Distribution of patients according to demographic status.

Age group (in years)	Total
< 25	25.0
26-30	20.7
31-35	20.7
36-40	19.6
41-45	14.1
Total	100
Gender	Percentage (%)
Male	60%
Female	40%

Table 2 shows distribution of patients according to education where 20.75% were illiterate.

Table 2: Distribution of the study subjects according to educational level.

Education	Total
Illiterate	20.7
Primary	14.1
Secondary	9.8
Higher secondary	16.3
Graduate	19.6
Post graduate	19.6
Total	100.0

Table 3 shows distribution of patients by BMI. Most of the patients had normal weight.

Table 3: Distribution of the study subjects according to BMI.

BMI	Total	P value
Normal weight (18.5-24.9 kg/m ²)	65.2	0.191
Over weight (25.0-29.9 kg/m ²)	25.0	
Obese (30.0-34.9 kg/m ²)	9.8	
Total	100.0	

Table 4 shows distribution of patients according to presenting complaints. Onset of pain sudden were seen in

23.9% whereas Onset of pain insidiously were seen in 76.1%.

Table 4: Distribution of subjects according to presenting complaints.

Presenting complaints	Total	P value
Onset		
Sudden	23.9	0.625

Insidious	76.1	
Intensity		
Mild	54.3	0.703
Moderate	35.9	
Severe	9.8	
Character		
Constant	20.7	0.439
Intermittent	79.3	

Figure 1 Shows smoking status of the patients where in case group 20% cases smoked up to 10 years whereas in control group it was 30%.

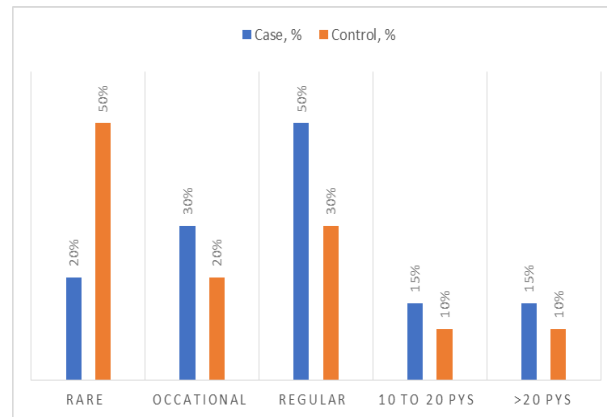


Figure 1: Smoking status of the patients.

Figure 2 Shows level of exercise where in case group 50% exercise rare whereas in control group it was 30%.

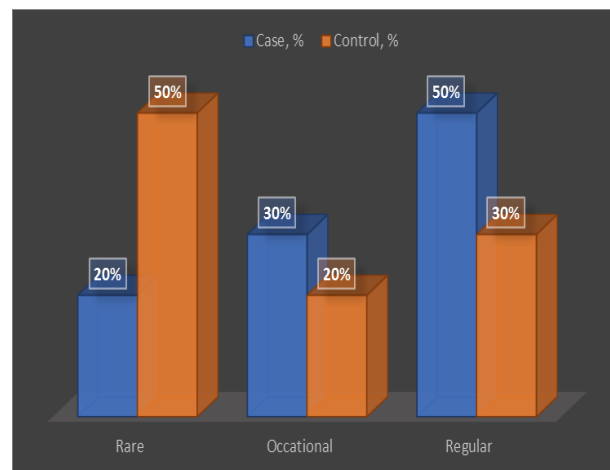


Figure 2: Level of exercise.

Figure 3 Shows bad posture of the patients in case group 50% had regular bad posture whereas in control group it was 30%. Chi-square test was done to measure the level

of significance. The differences of bad posture between the two groups were statistically significant ($p < 0.001$).

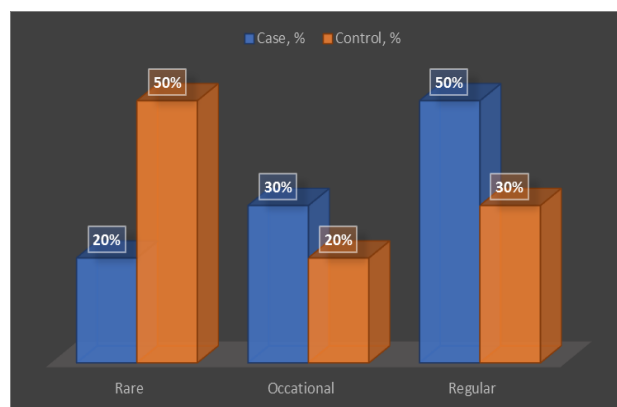


Figure 3: Bad posture of the patients.

DISCUSSION

There are not a lot of research out there that look at the causes of CLBP in adult males in Bangladesh. Very substantial evidence was found in this research ($p < 0.001$) linking poor posture to CLBP. Findings from a study of working-age women in Sri Lanka highlight the link between poor posture and chronic lower back pain. Twisting or bending many times each hour is the leading cause of low back pain in the workplace.^[10] Muscle fatigue may result from the increase in intramuscular pressure that occurs in the Para-spinal muscles as a result of slouching. It was shown that regular exercise significantly reduced the risk of LBP ($p < 0.001$). Exercise has been shown to be effective in preventing CLBP in other research from other nations as well. The current research found that a higher education level was associated with a lower risk of CLBP 13. CLBP was shown to be two times more often in those with a moderate education level (class six to H.S.C.) than in those with an advanced degree (higher education group). Those who did not complete elementary school or never did have a negative correlation with CLBP. Research has shown that persons with more education are less likely to suffer from LBP than those with less.^[7] Exercising regularly is a crucial part of treating low back pain. Thirteen, regular exercise was associated favorably with higher levels of education. Those with more education were less likely to smoke and more likely to consume diets strong in calcium and proteins, according to a 2014 study.^[14] Therefore, males in Bangladesh with higher levels of education may be more likely to engage in healthful lifestyles, as is the case in other countries, while those in the lowest education group may be more likely to engage in beneficial activities, such as walking more frequently than those in the moderate and high education groups due to a lack of transport brought on by lower income. Preventing low back pain (LBP) by regular walking is a smart idea.^[16] Hence, this may explain why persons with a primary school degree or below viewed CLBP favorably. Tobacco use history and chronic neck and back pain were not linked in this investigation. There has been no link between smoking and LBP discovered in a few international research either.^[17] However other research has shown a link between smoking and LBP.^[18] It's possible that the

varying results of these studies might be attributed to the fact that they were conducted on people of various ethnicities and geographical locations. Income was shown to be unrelated to CLBP in this analysis. Previous research among men in Sri Lanka found no correlation between income and CLBP.^[14] The link between extra weight and low back pain has not been confirmed by all investigations.^[7] The bulk of the males in this research who fell into the overweight or underweight categories were just slightly so. Previous research has not linked little weight gain or loss to an increased risk of CLBP.^[14] These factors could explain why LBP wasn't linked to weight status.

CONCLUSION

Chronic low back pain was strongly correlated with slouching, physical inactivity, and a middle school education. Chronic low back pain was not substantially related to having a positive family history, routinely smoking, having a high monthly salary, or having a high body mass index. The majority of the patients in this research, both in the case and control groups, did not maintain proper posture while doing everyday tasks and did not engage in moderate to vigorous physical activity on a regular basis. The findings of this research have practical applications in the fields of health promotion, ergonomic assessment and management, good posture, educational program implementation, and shift-based rest breaks. The research was limited in its scope since it was situated in a hospital and did not include matched case-control groups. As a result, in order to generalize the results of this study, it is advised that future research include members of the local community or people from all around Bangladesh.

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