Original Article

Profile of Female Individuals with Chronic Low Back Pain

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Abstract

Background: *When low back pain (LBP) persists for at least 12 weeks, it becomes chronic. In 90% of cases, LBP is satisfactorily resolved within 6 weeks. LBP becomes chronic in 7% to 10% of cases. Among various populations, females tend to experience a higher prevalence and severity of chronic LBP compared to males, attributed to a combination of anatomical, hormonal, psychosocial and occupational factors.*

Objective: *To see the profile of individuals with chronic low back pain (CLBP) in female patients.*

Materials and Methods: *This observational study was carried out at the Department of Physical Medicine and Rehabilitation, BSMMU, Dhaka in 2016. 150 female patients of low back pain attending the Physical Medicine and Rehabilitation department, BSMMU were enrolled. Purposive sampling was done according to availability of the patients. All the data were compiled and sorted properly and the quantitative data was analyzed statistically by using SPSS.*

Results: *The most of the patients were belonged to low educational group (n=60, 40%). Obesity was an important risk factor for developing chronic low back pain. Patients with overweight were found, 43.33% (n=65). The most of the patients were in 5000 to15000 taka income group (n=90, 60%) whereas 41 patients (27.33%) family members were suffering from CLBP, and 76.0% (n=114) were inactive from physical exercise (Grade 1). 121 patients (80.66%) had the experience of grade 3 bad posture.*

Conclusion: *People in the grade 1 level of exercise group had the highest risk of developing CLBP. People in the grade 3 (regular) bad posture group had the highest risk of developing CLBP.*

Key words: *Low Back Pain, Female Patients, Chronic, Profile*

Introduction

Low back pain (LBP) is very common, experienced at some time in life by up to 80% of population.[1] It is defined as pain and discomfort, localized below the costal margin and above the inferior gluteal folds, with or without referred leg pain. When it persists for at least 12 weeks, it is defined as chronic low back pain (CLBP).[2] Studies show that in 90% of cases, LBP satisfactory resolves within 6 weeks.[3]

This is a major cause of disability and an important driver of health care costs in the United States and other countries.[4] Although, there are a large number of causes, in the majority of cases of LBP the etiology is unknown. Knowledge of underlying pathology has advanced little since then, despite limited improvements in outcomes for patients with low back pain.[5] Though a fairly common health problem, risk factors have not

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been completely elucidated.[6]

Being overweight has a significant association with lumbar sacral radicular pain. The results of certain case-control studies have revealed a positive association between increased body mass index (BMI) and lumbar disc herniation as well as lumbar disc narrowing among men and women.[7]

Osteopenia is a complication of anorexia nervosa and is associated with a two-to three-fold increase in fractures. Osteoporotic vertebral fractures are an important cause of LBP. Patient who exercised 3-4 times weekly or 5-6 times regularly every week were able to decrease the LBP significantly compared to patient who did not exercise at all.[8]

LBP correlated with physical inactivity, such as time spent in hours watching TV or videos.

Recent research indicates that heredity may be largely responsible for degeneration as well as herniation of intervertebral discs.[9] A sitting device that reduces spinal load and low back muscle activities may help increase sitting comfort and reduce LBP risk.[10] Having a high socioeconomic background had a protective effect against persistent LBP.[11] Individuals with lower education category were at higher risk of initiation of smoking compared to those with a higher education. Smoking was an important risk factor for LBP. Increased levels of income were associated with an increase in BMI.[12]

The prevalence of CLBP more than doubled in the 14-year interval from 3.9% in 1992 to 10.2% in 2006. This marked increase occurred among all sex, age, and race/ethnic subgroups. Chronic back pain is a complex affecting about 20% of the population in Bangladesh in each year between the age group 30-60 years. It has a great harmful effect on individual health, employment and daily activities of living.[13] Until now very few studies of the association between factors related to CLBP have been carried out in a representative sample of Bangladeshi population. The study will give detail information about risk factors of CLBP, so that people can modify their life style and can develop a broad health promotion intervention. The study will provide essential advice to the patients. Thus the health and wellbeing of the community people would be improved through prophylactic measure.

Materials and Methods

An observational study was conducted from January 2016 to December 2016 among 150 patients attending at Physical Medicine and Rehabilitation outpatient department of the BSMMU after obtaining requisite consent from the patients.

Data were collected through interviewing of the patients. Case (patient with chronic low back pain) - Adult females, age 20 to 60yrs, low back pain with or without radiation to lower limbs, continuous pain for more than 3 months, patients having good cognitive function who had been able to participate in the interview. Control (patient without chronic low back pain) - adult females, age 20 to 60yrs., not suffering from low back pain, visiting to hospital to obtain treatment for conditions other than LBP, patients having good cognitive function who had been able to participate in the interview. Exclusion criteria - LBP due to inflammatory disease like Ankylosing spondylitis, Reactive arthritis, Psoriatic arthritis, Enteropathic arthritis etc., LBP due to Spinal tumors either primary or secondary, LBP due to infections like Tuberculosis, LBP due to direct blow to the spine, an acutely ill patient, person who cannot communicate or does not have good cognitive function to participate in the interview. A structured questionnaire administered by the interviewer was used for collecting the information. This questionnaire was included questions relating to personal data and details of risk factors. A weighting scale and a metal tape measure was used to measure the weights and heights of people. The collected data were entered into the computer and analyzed by using SPSS (version 25) to assess the profile of Individuals with low back pain in female patients. Continuous data were described using means and standard deviations. Categorical data were described using percentages. Bivariate analysis was done using the $\chi2$ test. Multivariate analysis was done using the binary logistic regression model. OR was computed to determine how much risk there was in presence of certain exposure compared to those who did not have that exposure. 95% CI was used to identify significance of the OR.

The study was approved by the Institutional Review Board, Bangabandhu Sheikh Mujib Medical University, Dhaka. The interviews were held directly in the corridor just outside the Outpatient Department.

Results

An observational study was carried out among 150 cases. Data was collected using a structured interviewer-administered questionnaire. Heights and weights were measured to calculate body mass index (BMI). Age range was 20 to 60 years. Mean age (SD) for cases was 35.8 ±11 years. In our study Level of education were graded into three groups according to school education and higher education: grade 1 (low) not attended school or attended up to class five or Primary education , grade 2 (moderate) class six or primary education to class twelve or higher secondary education, grade 3 (high) higher education (Karunanayake et al. 2013) 14. Among the total 150 patients, 60(40.0%) cases belonged to grade 1 followed by 53 (35.33%) cases belonged to grade 2 and 37(24.66%) cases belonged to

grade 3 respectively. People in low (grade 1) educational groups had a greater chance of developing CLBP. Level of income were graded into three groups according to monthly income: grade 1 or low less than Tk. 5000, grade 2 or middle Tk. 5000 to Tk. 15000, grade 3 or high more than Tk.15000 (Bangladesh Bureau of Statistics 2013). In our study most of the patient's level of income was grade 2 (n=90, 60%) followed by grade 3 (n=48, 32%) and grade 1 (n=12, 8%) respectively. In our study most of the patients were overweight (n=65, 43.33%) (Table I)

Table I: Socio-demographic characteristics of the study subjects (n=150)

Parameter	Number	Percentage
Level of education		
Grade 1 (low)	60	40.0 %
Grade 2 (moderate)	53	35.33 %
Grade 3 (high)	37	24.66 %
Level of income		
grade 1 or low	12	8.0%
grade 2 or middle	90	60.0%
grade 3 or high	48	32.0%
BMI		
18.4 or less(underweight)	10	6.66%
18.5 to 22.9(Normal)	54	36.0%
23 to 27.4(overweight)	65	43.33%
27.5 or higher(obese)	21	14.0%

Table II: Association between low back pain and BMI (n=300)

Variable	Cases (n=150)		Control (n=150)		OR	95%CI for OR	
	No.	%	No.	%		Lower	Upper
BMI							
1 (18.4 or less)	10	6.66	16	10.66	1		
2 (18.5 to 22.9)	54	36.0	41	27.34	1.772	0.784	4.008
3 (23 to 27.4)	65	43.33	62	41.33	1.096	0.490	2.450
4 (27.5 or higher)	21	14.0	32	21.33	0.808	0.323	2.018

Table II showed association between low back pain and BMI. It is evident that, BMI had significant associations with CLBP.

Table III: Outcomes of logistic regression (Family history) (n=300)

Variable	p value	OR	95% confidence interval for OR	
			Lower	Upper
Family history				
Positive	0.115	1.490	0.908	2.447

Table III illustrates the outcomes of logistic regression. According to the results of logistic regression family history had not significant associations with CLBP.

Table IV: Outcomes of logistic regression (Smoking) (n=300)

Variable	p value	OR	95% confidence interval for OR	
			Lower	Upper
Smoking				
1 (Never smoked)	0.767	1.145	0.386	3.520
2 (Stopped in past)	0.616	1.354	0.415	4.422
3 (Up to 10 PYs)	0	0	0	0
4 (10 to 20 PYs)	0	0	0	0
5 (>20 PYs)				

Table IV showed outcomes of logistic regression. According to the results of logistic regression smoking had not significant associations with CLBP.

Discussion

Low back pain (LBP) is defined as pain and discomfort, localized below the costal margin and above the inferior gluteal folds, with or without referred leg pain. When it persists for at least 12 weeks, it is defined as chronic low back pain (CLBP) . Studies show that in 90% of cases, LBP satisfactory resolves within 6 weeks. In 7% to 10% of cases, low back pain becomes chronic.[3]

Low back pain (LBP) is very common, experienced at some time in life by up to 80% of population.[14] In the present study, the association between CLBP and bad posture was very strong (P < 0.001). People in the grade 3 (regular) bad posture group had the highest risk of developing CLBP. A study on Malaysia orthopaedic journal showed that poor work posture also significant correlation with LBP (p< 0.001), prolong standing and leaning forward were frequently associated with low back pain.[15]

Previous studies from other countries have also demonstrated that bad posture had a significant association with CLBP. Study on adult Sri Lankan male has found a significant association between bad posture and CLBP.[16]

Spinal posture is a common focus in the assessment and clinical management of LBP patients. However, the link between spinal posture and LBP is not fully understood. Compared to standing posture, sitting posture decreases lumbar lordosis, increases low back muscle activity, disc pressure and pressure on the ischium, which are all associated with occupational LBP . A sitting device that reduces spinal load and low back muscle activities may help increase sitting comfort and reduce LBP risk.[10] These may be some reasons why posture had a significant association with the development of CLBP.[17]

This study could not find an association between level of smoking and CLBP. Studies done in other countries have also not been able to find an association between smoking and LBP. In one study showed that cigarette smoking was generally reported to be a weak factor for LBP .[18] According to Malaysian orthopaedic journal 2010 (TS wong et al) revealed that smoking was not significantly association with LBP. However, other

studies have found an association between smoking and LBP (Schumann et al. 2010). These studies have been performed on different races and different countries and these may be contributing to the different study findings.[15]

Conclusion

This study showed that bad Posture, exercise and moderate level of education had significant associations with chronic low back pain. Positive family history, Smoking regularly, Monthly income and BMI were not significantly associated with chronic low back pain. A majority of patients in this study, in both cases and controls, did not follow a correct posture while engaging in daily activities and did not participate in regular physical activities such as walking, running and swimming. In practice, the results of this study can help to promote of healthy lifestyle, ergonomic measurement and control, good posture and execu tion educational programs and consider resting periods during the work shift.

Acknowledgement

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