

Age Specific Prevalence of Low Back Pain: A Hospital Based Cross-sectional Study

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ABSTRACT

Background: Low back pain (LBP) is an important clinical, social, economic, and public health problem affecting the population indiscriminately. It is a disorder with many possible etiologies, occurring in many groups of the population, and with many definitions. Nearly everyone will experience some form of back pain in his or her lifetime.

Methods: The current study is a cross sectional study undertaken by Lord Buddha Koshi Medical College, Saharsa, Bihar, India from Aug 2015 to Dec 2015. The objective of this study was to see the age specific prevalence of low back pain among 400 subjects visiting the Orthopedics OPD of the hospital. The age range of the study participants were 25 years to 65 years. The national guidelines on LBP diagnosis were used as diagnostic criteria.

Results: Overall prevalence of LBP was found at 31.25%. The highest prevalence was seen in 55–65 years age group. Age had positive association and important risk factors of increasing burden of LBP.

Conclusion: LBP is an important health problem & affecting all age groups and it is responsible for a great economic loss of any country.

Key-words- Low Back Pain, Prevalence, Public Health, World Health Organization

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INTRODUCTION

Low back pain (LBP) is an important clinical, social, economic, and public health problem affecting the population indiscriminately. It is a disorder with many possible etiologies, occurring in many groups of the population, and with many definitions^[1]. Nearly everyone will experience some form of back pain in his or her lifetime. The low back is the area behind the belly from the rib cage to the pelvis and is also called the lumbar region. Back pain is a major cause of missed work. Low back pain usually resolves on its own and is commonly the result of a strain injury.

There are many treatments for low back pain^[2]. Men and women are equally affected by low back pain, which can range in intensity from a dull, constant ache to a sudden, sharp sensation that leaves the person incapacitated.

Pain can begin abruptly as a result of an accident or by lifting something heavy, or it can develop over time due to age-related changes of the spine^[3].

Consequently, the vast literature available on LBP is not only heterogeneous but also contradictory^[1]. In accordance with the report of World Health Organization in 2002, LBP constituted 37% of all occupational risk factors which occupies first rank among the disease complications caused by work. Such high prevalence of complications at international levels has made the World Health Organization to name the first decade of the third millennium as the “decade of campaign against musculoskeletal disorders (as the silent epidemic)” (WHO, 2005). Sedentary lifestyles also can set the stage for low back pain, especially when a weekday routine of getting too little exercise is punctuated by strenuous weekend workout^[3]. Most low back pain is acute or short term, and lasts a few days to a few weeks^[4]. Low back pain is a leading cause of disability^[5]. It occurs in similar proportions in all cultures, interferes with quality of life and work performance, and is the most common reason for medical consultations. Few cases of back pain are due to specific causes; most cases are non-specific. Acute back pain is the most common presentation and is usually self-limiting, lasting less than three months regardless of treatment. Chronic back pain is a more difficult problem, which often

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has strong psychological overlay: work dissatisfaction, boredom, and a generous compensation system contribute to it. It tends to resolve on its own with self-care and there is no residual loss of function [6]. The majority of acute low back pain is mechanical in nature, meaning that there is a disruption in the way the components of the back (spine, muscle, inter-vertebral discs, and nerves) fit together and move [3]. For arbitrary classification purposes, chronic pain generally is defined as pain that has persisted beyond normal tissue healing time (or about three months) [7]. Chronic back pain is also defined as pain that persists for 12 weeks or longer, even after an initial injury or underlying cause of acute low back pain has been treated [3]. However, more recent reports from [8-12] suggest that prevalence rates are not that dissimilar from Western countries with one year prevalence in adults in these studies between 36% and 64%. A study done on truck drivers by [13] the prevalence was 62%. Another study of [14] for general population shows 34.21%.

In the present papers an attempt was made to see the prevalence/Incidence of Low back patients in a tertiary care hospital and the spectrum of age groups of those patients.

MATERIALS AND METHODS

The current study is a cross sectional study undertaken by Lord Buddha Koshi Medical College, Saharsa, Bihar, India from Aug 2015 to Dec 2015. The objective of the study was to see the age specific prevalence of low back pain. The age range of the study participants was 25 years to 65. All the patients visiting Orthopedic OPD of the hospital & want to participate in the study was taken. Those patients who shown some other kinds of morbidity with chronic disease were excluded from the study. The hypothesis of the study was the prevalence of the LBP was very alarming and was most common in a particular age group. The sample size was calculated with the help of Statistician by using:

$$N = Z^2_{1-\alpha/2} PQ / \epsilon^2$$

N= total sample size (number of experimental units)
 = Prevalence of metabolic disorder (50 % Taken because exactly not known at the current time and study region)

Q=1-P (50%)

$Z_{(1-\alpha/2)}$ = related to the chosen significance criterion α ; can be found in normal distribution tables, (1.96)

ϵ : relative precision (10% is taken in the present study)

Above formula gives, N=384, which is the minimum sample size required for the current study.

A random sampling technique is used to collect the sample. The data was analyzed by using SPSS 20.0 (IBM Chicago). The frequency & percentage was calculated for categorical data, whereas the mean & standard deviation was calculated for continuous data.

RESULTS

The frequency of study variables of the study subjects were represented in Table 1. Among 400 study subjects, mean age of study subjects were 40 (± 11.19) years. The total numbers of male subjects were 210 (52%) and females were 190 (48%). The 52% subjects were from urban area while 48% were living in rural areas. The 73% study subjects were literate. Almost half proportion was found from high economic class family. Almost 48% people reported that they were smokers.

Table 1: Study variables of the study subject

Variable	N	%
Age	40 \pm 11.19	-
Gender		
Male	210	52
Female	190	48
Residence		
Urban	209	52
Rural	191	48
Literacy		
Literate	290	73
Illiterate	110	27
Economic Status		
High	205	51
Middle	103	26
Low	92	23
Smoking Behavior		
Yes	190	48
No	210	52

The age specific prevalence of Low Back Pain (LBP) is shown by Table 2. All the study subjects were divided in four study groups (Table 2) of equal frequencies of 100 i.e. age matched criterion then on the basis of diagnostic criterion of low back pain (LBP) national clinical guidelines.

Table 2: Age specific prevalence of Low Back Pain (LBP)

Age Specific Prevalence	(LBP %) N=400
25-35	12
35-45	25
45-55	34
55-65	54
Total	125

Summary of recommendations of 11 national clinical guidelines for acute low back pain [15]

Diagnosis

- Diagnostic triage (non-specific low back pain, radicular syndrome, specific pathology)

- History taking and physical examination to exclude red flags
- Physical examination for neurological screening (including straight leg raising test)
- Consider psychosocial factors, if there is no improvement
- X-Rays not useful for non-specific low back pain

Table 2 shows that prevalence of LBP increases as age increases & severity of pain increases as age increases ($r=0.80$, $p<0.05$). The overall prevalence of LBP was 31.25%. The minimum prevalence (12%) was found in 25–35 years age group. The maximum prevalence (54%) was there in 55–65 years age group. The prevalence of LBP was increasing sharply after 25 years age (Fig. 1).

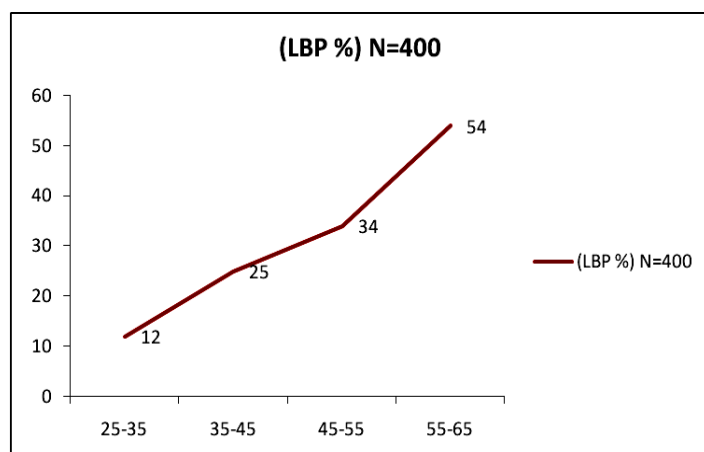


Fig. 1: Age specific prevalence of LBP

DISCUSSION

Previous study was also found better results of matched treatments in sub-groups of patients with non-specific low back pain. The highest prevalence of LBP among farmers was most likely the result of injury to the spinal structures, which may arise from working postures and movements of the lower back during the work process. This study demonstrated the point prevalence of LBP and associated factors among Thai farmers during the rice transplanting process. Regarding the aspects of prevalence stratified by personal characteristics, farming characteristics, and stress levels, the results of the current study showed that the prevalence of LBP was significantly higher in the farmers with high or severe stress levels. This result confirmed that farmers with high stress were more likely to have LBP. In the current study, the prevalence of stress among females was slightly higher than in males, but this was not significant. This result is consistent with a previous study that reported that the prevalence of LBP was not differentiated by gender. LBP disorders may occur due to many factors. Previous studies had reported that the personal characteristics associated with LBP were age, BMI, exercise, alcohol consumption, and smoking. In the present study, only age was related to LBP, which confirmed the results from some previous studies.

CONCLUSIONS

In the present study, LBP prevalence was found in different age groups and its significance is also mentioned. LBP is an important health problem and affecting all age groups and responsible for a great economic loss of any country.

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