Original Article

Association of Low Back Pain with Common Risk Factors: A Community Based Study

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Abstract

Background: Low back pain is very common in Asian communities. It is a major cause of activity limitation. Its risk factors were not studied well in Asian communities. This study was performed in the rural area to see the association of some common posture related and modifiable risk factors of low back pain.

Methods: This is a community based case-control study. Participants of both sexes between 30 and 60 years were selected who had low back pain. Data were collected with a semi-structured questionnaire and fifty-one participants were interviewed from which 32 had back pain (cases). Risk factor association was compared with age and ethnicity matched 19 patients without low back pain (control group).

Results: The point prevalence of low backache was 63%. Mean age of the patients was 45.8 (±10.8 SD) years. Seventy per cent of the back pain patients were females and 30% were males. Back pain was significantly associated with the risk factor 'bending and twisting movements of the body' (OR= 4.6 with 95% CI= 1.1 to 18.9, p= 0.041). It was not found to be significantly associated with the other studied risk factors.

Conclusion: Low back pain had a very high prevalence in rural Bangladesh. Bending and twisting movements of spine was the only posture related significant risk factor of low back pain.

Key words: **Bangladesh, case-control, low back pain, prevalence, risk factors.**

Introduction:

Low back pain (LAP) is an extremely common health problem[1-4]. Until 10 years ago, it was largely thought of as a problem confined to Western countries[5]; however, since that time an increasing amount of research has demonstrated that low back pain is also a major problem in low- and middle income countries[6-9]. Low back pain is the leading cause of activity limitation and work absence throughout much of the world[10], and it causes a great economic burden on individuals, communities and governments[11-13].

The point prevalence of LBP is 28.5% found in an Asian country[14]. The lifetime prevalence of low back pain is reported to be over 70%[15]. But globally, the annual prevalence of LBP has been estimated at 38%. In general, LBP resolves within weeks, but may recur in 24-50% of cases within 1 year. Thus, the identification of risk factors for LBP is important in the prevention of recurrent and possibly chronic LBP[16]. The prevalence of LBP in children is low (1%-6%)[17] but increases rapidly (18%-50%) in the adolescent population[18,19]. The prevalence of LBP peaks around the end of the sixth decade of life[20].

The age distribution of LBP is unimodal, with the peak prevalence occurring in those aged 45 to 59 years old. This is also similar to USA epidemiological data

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describing the peak point prevalence, period prevalence and lifetime prevalence all within ages 55 to 64 years[21].

Low back pain is pain, muscle tension, or stiffness, localised below the costal margin and above the inferior gluteal folds, with or without referred or radicular leg pain (sciatica)[22]. Low back pain is typically classified as 'specific' and 'non-specific'. Specific LBP is caused by specific pathophysiological mechanism whereas non-specific LBP is defined as symptoms due to non-specific cause, i.e. LBP of unknown origin. LBP is defined as acute when persists less than 6 weeks, subacute between 6 weeks and three months and chronic when lasts longer than 3 months. Approximately 90% of all LBP patients have non-specific causes[23].

The most important symptoms of LBP are pain and disability (activity limitation). Recently it has been suggested that a substantial proportion of patients with chronic LBP have widespread pain[24,25].

Different anatomical structures and pathophysiological functions can be responsible for lumbar pain, each producing a distinctive clinical profile. Pain can arise from the intervertebral disc in which case, greatest pain provocation will be associated with movements and functions in the sagittal plane. Lumbar pain can also arise from afflictions within the zygapophyseal joint mechanism, which will produce the greatest pain provocation during three-dimensional movements, due to maximal stress to either the synovium or joint cartilage. Finally, patients can experience pain associated with irritation to the dural sleeve, dorsal root ganglion, or chemically irritated lumbar nerve root. Pain can also arise from muscle[26].

More than 100 risk factors for LBP have been identified[27]. In the majority of cases, a combination of individual and work-related as well as non-work-related factors is likely to contribute to the development of LBP[28]. A wide range of work-related mechanical risk factors for LBP have therefore been reported in prospective studies. They include 'bending or twisting'[29,30], 'kneeling or squatting'[31], 'prolonged standing'[32], 'heavy physical work'[33,34], and 'nursing tasks' (e.g., manually moving patients)[35,36]. Overall, however, the evidence showing works postures, manual handling and carrying to be risk factors for LBP remains inconclusive[37].

In recent decades, there has been increased emphasis on work-related psychosocial factors in epidemiological studies of LBP. There is some evidence that psychological demands [38,39], and high job strain[40] are related to LBP. Lack of social support has been demonstrated to increase the risk of sick leave associated with LBP [41]. However, the level of evidence for most psychosocial factors is limited[42,43]. Smoking behavior[44,45], Life style, lack of physical exercise[46] and short sleep hours[47] are also found to increase the risk of LBP

Aging is a well known risk factor of LBP as degenerative changes in the spine and disc are one of the major causes of LBP[48]. Previous studies reported the association between age and LBP among Asian population[49] as well as the western population[46,50]. The association between gender and LBP had been reported by previous studies[44,45]. A systematic review showed that there was no evident relationship between alcohol consumption and LBP [51].

Low back pain is one of the major causes of activity limitation and work absence throughout much of the world[10]. It is the second most common reason for visits to physicians[52]. The point prevalence of LBP is 28.5% found in an Asian country[14]. Seventy per cent people have the chance of developing LBP at least once in life[15]. The economic burden of this disease is enormous. Although data from Asian countries are not available, the Quebec Workers Compensation System showed that the LBP was responsible for 73% of the medical costs, and 76% of the compensation costs[53]. In UK its treatment cost is 500 million pounds a year at the GP level[54]. So it is important to chalk out the risk factors for LBP in order to take preventive measures and to reduce the posture related modifiable risk factors among the rural people of our country.

Materials and Methods:

Study design and settings

It is a community based case-control study done at 'Bangladesh Academy for Rural Development' (BARD), Kotbari, Comilla, Bangladesh. Data were collected from Raichaw village of Comilla and analyzed at BARD.

Participants and procedure

Participants were selected from the inhabitants of Raichow village by non-probability sampling. Both male and female participants were chosen whose age between 30 and 60 years. Total 51 participants, irrespective of their gender, were interviewed consecutively. Severely ill patients (e.g., stroke, MI, paraplegic patients), pregnant women, patients with history of inflammatory back pain (morning stiffness >30 minutes), patients with 'red flag' symptoms were exempted from the purview

of the study. People unwilling to give interview were also excluded. Patients who had back pain previously, but not at the time of interview, were not included.

Participants within the specified age group who had the complaints of LBP at the time of data collection were defined as **'LBP'** group (case). Age and ethnicity (people of same village) matched patients with no LBP were allocated as **'no LBP'** group (control). Total 32 patients were included as cases and 19 patients as controls.

Data collection

A semi-structured questionnaire was used to interview and collect data. The questionnaire included three open ended and eight closed ended questions. People were interviewed and questionnaires were filled up by the interviewers. The interviewers went from home to home and talked to the people within 30 to 60 years.

Statistical analysis

Data were edited, checked and verified manually. Data were analysed and presented by the help of SPSS-V15. Association of risk factors with LBP was seen by odds ratio (95% CI), Chi-square test and likelihood ratio. Strength of association was examined by Phi & Cramer's V test. P value <0.05 was used to see level of significance.

LBP and risk factors

Low back pain (LBP) is pain, muscle tension, or stiffness, localized below the costal margin and above the inferior gluteal folds, with or without referred or radicular leg pain (sciatica)[22]. Demography means the study of the characteristics of human populations, such as size, growth, density, distribution, and vital statistics. Here we used age, gender, occupation, religion and marital status[55]. Activities related to different body postures like 'bending and twisting movements of spine'[29,30], 'kneeling and squatting movements of the body'[31], 'prolonged standing'[32], 'and heavy physical works'[33,34] were assessed in this study.

For 'bending and twisting movements' participants were asked, 'Do you work in positions where you are leaning forward without supporting yourself on your hands or arms?' For 'kneeling and squatting' they were asked, 'Do you need to squat or kneel in the course of your work?' And for standing, 'Do you work standing up?' (Response categories: yes/no). Heavy lifting was measured with a single item: 'Do you have to lift anything that weighs more than 20 kg on a daily basis?[16] Some other modifiable risk factors like 'smoking'[44,45] at present or in the past, 'history of trauma to the back'[46] within 4 weeks prior to back pain and 'sleeping less than 6 hours' in 24 hours[47] were also studied.

Results:

Among 51 participants, 32(63%) had LBP and 19 (37%) did not. The point prevalence of LBP was 63% . Mean age of the 32 LBP patients was 45.8 (±10.8 SD) years; median age was 48 years (Fig 1). Seventy per cent of the LBP patients were females and 30% were males (Fig 2). Regarding occupation, around 70% were housewives, 18% were farmers, 6% were businessmen and the rest 6% were unemployed (Fig 3).

Around 94% of all the back pain patients were married, 3% were single and 3% had other marital status. Mean duration of LBP was found 3.5 (±2.5 SD) weeks among the villagers. Median duration was 3 weeks (Fig 4). Sixty seven per cent of the LBP patients consulted with physicians and 82% of them had the knowledge that body movements are related to development of LBP.

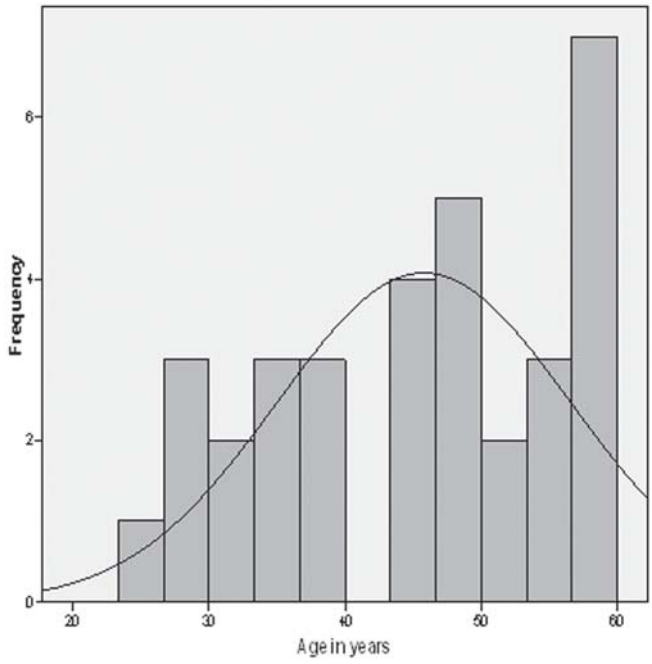

Fig 1- *Histogram Showing Mean Age of LBP Patients and Frequency Distributions*

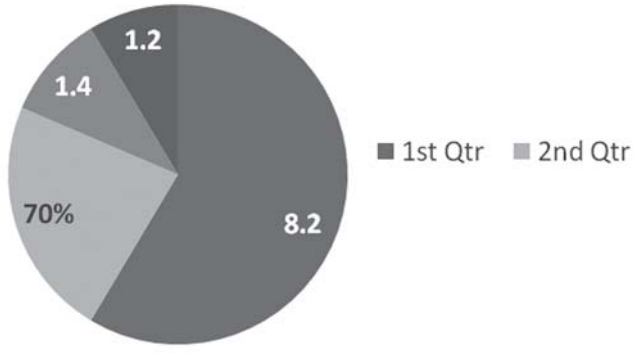

Fig 2- *Pie Diagram Depicts Gender Variations in LBP*

LBP was associated with the only posture related risk factor- 'bending and twisting movements of the body' (odd's ratio 4.6 with 95% CI=1.1 to 18.9), There was statistically significant association of LBP with bending and twisting movements (p=0.041). Likelihood ratio also significant (p=0.04). Good strength of association (p=0.041) between LBP and bending and twisting movements. LBP was not found to be significantly associated with the other risk factors kneeling and squatting (OR=1.18, 95% CI=0.38-3.67, p=0.30), prolong standing (OR=3, CI= 0.57-15.7; p=0.14), heavy working (OR=2.26, CI=0.6-8.4; p=0.15), back trauma (OR=1.6, CI=0.36-6.4; p=0.84), smoking (OR=0.94, CI=0.23-3.7; p=0.57), sleeping <6 hours/day (OR=1.7, CI=0.46-6.5; p=0.83) (Table 1).

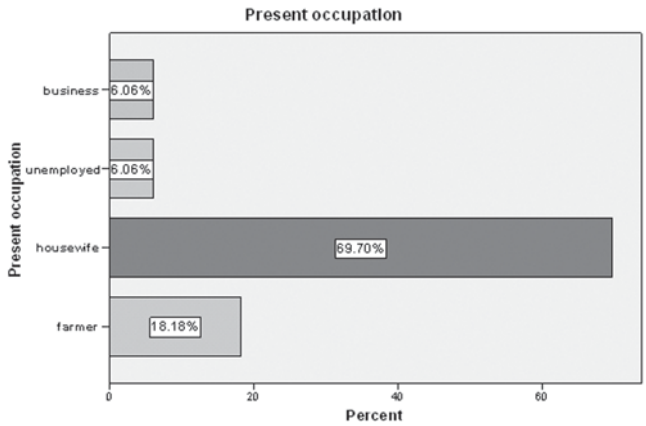

Fig 3- *Bar Diagram Showing Different Occupation of LBP Patients*

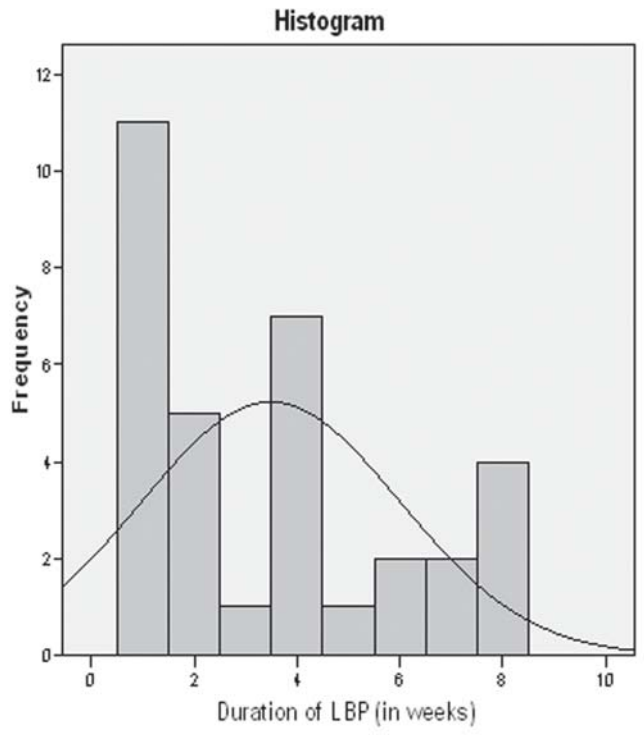

Fig 4- *Histogram Demonstrates Frequency Distribution of Back Pain Duration*

Discussion:

This study was undertaken to see the demographic patterns of LBP in rural Bangladesh and to look into its association with some common risk factors in the perspective of Bangladeshi villagers. We found the point prevalence of LBP is much higher (63% than contemporary studies for example 29% (Tomita *et al*[14].) but Kent *et al*[12]. showed point prevalence may vary widely from one region to another which might be due to variation in sample and sampling technique.

Mean age of LBP patients was 45.8 (±10.8 SD) which is a bit lower than the value (peak age 45 to 59 years) shown by Kent *et al*[12]. Like previous other studies[44,45] where female were found to suffer more from LBP, we found similar results (70% females) although more female predominance is due might be to more female participants in our study. Another contributing factor for female vulnerability is their occupation (housewife) which involved 'bending and twisting' movements of the spine. 70% of our participants and all female participants were housewives.

Association between LBP and none of the risk factors were statistically significant except 'bending and twisting movement' of the spine which is supported by Tomita *et al*[14]. in their study on Thai population. But he showed in his study a significant association with LBP and history of back injury, smoking**.** Duration was not associated with LBP in that study[14].

Squatting/kneeling, prolonged standing, heavy lifting was also significant in the study at Thiland[14] which is not consistent with ours. Most of our participants were young and smoking history for short time. This may be a possible explanation of lack of association because Miranda *et al*[46] showed association of LBP with smoking in only over 50 years population.

Conclusion:

Association between LBP and 'bending and twisting movement' was statistically significant .The study revealed a high prevalence of back pain in rural area. Females were considerably more sufferers from back pain. Backache was found more predominant in middle and older age group. Multi-centered study in future on

Table 1: *Showings Association of Different Risk Factors with LBP*

Risk factors	OR & CI	X^2 value & p-value	Likelihood ratio & p-value	Phi & Cramer's V test (P-value)	Remarks
1) Bending and twisting	4.6 CI= 1.1–18.9	4.1 (df=1) P= 0.041	4.06 (df=1) P= 0.044	P= 0.041	**Statistically significant association**
2) Kneeling and squatting	1.18 CI= 0.38-3.67	1.04 (df=1) P= 0.3	1.03 (df=1) P= 0.31	P= 0.3	No significant association
3) Prolong standing	3 CI= 0.57-15.7	2.18 (df=1) P= 0.14	2.37 (df=1) P= 0.12	P= 0.14	Do
4) Heavy working	2.26 CI= 0.6-8.4	2.05 (df=1) P= 0.15	2 (df=1) P= 0.15	P= 0.15	Do
5) Back trauma	1.6 CI= 0.36-6.4	0.04 (df=1) P= 0.84	0.04 (df=1) P= 0.84	P= 0.84	Do
6) Smoking	0.94 CI= 0.23-3.7	0.31 (df=1) P= 0.57	0.32 (df=1) P= 0.57	P= 0.57	Do
7) Sleeping <6 hours/day	1.7 CI= 0.46-6.5	0.04 (df=1) P= 0.83	0.42 (df=1) P=0.83	P= 0.83	Do

larger population might be required in future to explain the findings.

Conflict of interest:

I declare no conflict of interest with anybody.

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References:

1. Andersson GB. Epidemiology of low back pain. *Acta Orthop Scand Supplement* 1998; **281:** 28-31.
2. Dionne CE, Dunn KM, Croft PR. Does back pain prevalence really decrease with increasing age? A systematic review. *Age and Ageing* 2006; **35:** 229-34.
3. Rapoport J, Jacobs P, Bell NR, *et al*. Refining the measurement of the economic burden of chronic diseases in Canada. *Chronic Diseases in Canada* 2004; **25:** 13-21.
4. Deyo RA, Cherkin D, Conrad D, *et al*. Cost, controversy, crisis: low back pain and the health of the public. *Ann Rev Public Health* 1991; **12:** 141-56.
5. Volinn E. The epidemiology of low back pain in the rest of the world. A review of surveys in low- and middle-income countries. *Spine* 1997; **22:** 1747-54.
6. Chaiamnuay P, Darmawan J, Muirden KD, *et al*. Epidemiology of rheumatic disease in rural Thailand: A WHO-ILAR COPCORD study. *J Rheumatol* 1998; **25:** 1382-7.
7. Hoy D, Toole MJ, Morgan D, *et al*. Low back pain in rural Tibet. *Lancet* 2003; **361:** 225-6.
8. Jin K, Sorock GS, Courtney TK. Prevalence of low back pain in three occupational groups in Shanghai, People's Republic of China. *J Saf Res* 2004; **35:** 23-8.
9. Ory FG, Rahman FU, Katagade V, *et al*. Respiratory disorders, skin complaints, and low-back trouble among tannery workers in Kanpur, India. *Am Industrial Hyg Assoc J* 1997; **58:** 740-6.
10. Lidgren L. The bone and joint decade 2000-2010. *Bull World Health Organ* 2003; **81:** 629.
11. Steenstra IA, Verbeek JH, Heymans MW, *et al*. Prognostic factors for duration of sick leave in patients sick listed with acute low back pain: a systematic review of the literature. *Occup Environ Med* 2005; **62:** 851-60.
12. Kent PM, Keating JL. The epidemiology of low back pain in primary care. *Chiropractic and Osteopathy* 2005; **13:** 13.
13. Thelin A, Holmberg S, Thelin N. Functioning in neck and low back pain from a 12-year perspective: a prospective population-based study. *J Rehabil Med* 2008; **40:** 555-61.
14. Tomita S, Arphorn S, Muto T, *et al*. Prevalence and risk factors of low back pain among Thai and Myanmar migrant seafood processing factory workers in Samut Sakorn Province, Thailand. *Ind Health* 2010; **48:** 283-91.
15. Van Tulder M, Becker A, Bekkering T, *et al*. European guidelines for the management of acute nonspecific low back pain in primary care. *Eur Spine J* 2006; **15:** 169-91.
16. Sterud T, Tynes T. Work-related psychosocial and mechanical risk factors for low back pain: a 3-year follow-up study of the general working population in Norway. *Occup Environ Med 2013*; **70**: 296-302.
17. Taimela S, Kujala U, Salminen J, *et al*. The prevalence of low

back pain among children and adolescents - a nation-wide, cohort based questionnaire survey in Finland. *Spine* 1997; **22:** 1132-6. [PubMed] [Cross Ref].

18. McMeeken J, Tully E, Stillman B, Nattrass CL, Bygott IL, Story I. The experience of back pain in young Australians. *Manual Ther* 2001; **6:** 213-20.
19. Leboeuf-Yde C, Kyvik K. At what age does low back pain become a common problem? *Spine* 1998; **23:** 228-34.
20. Papageorgiou A, Croft P, Ferry S, *et al*. Estimating the prevalence of low back pain in the general population - evidence from the South Mancester back pain survey. *Spine* 1995; **20:** 1889-94.
21. Deyo R, Tsui-Wu Y. Descriptive epidemiology of low-back pain and its related medical care in the United States. *Spine* 1987; **12:** 264-8.
22. Van der Heijden GJMG, Bouter LM, Terpstra-Lindeman E. The efficacy of traction for low back pain: results of a randomized blinded pilot study. *Ned T Fysiotherapie* 1991; **101:** 37-43.
23. Van Tulder M, Koes B, Bombardier C. Low back pain. *Best Pract Res Clin Rheumatol* 2002; **16:** 761-75.
24. Bergman S, Herrstorm P, Hogstorm K, *et al*. Chronic musculoskeletal pain, prevalence rates, and socio-demographic associations in a Swedish population study. *J Rheumatol* 2001; **28:** 1369-77.
25. Natvig B, Bruusgaard D, Ericsen W. Localized low back pain and low back pain as part of widespread musculoskeletal pain: two different disorders? *J Rehabil Med* 2001; **33:** 21-5.
26. Sizer PS Jr, Phelps V, Matthijs O. Pain generators of the lumbar spine. *Pain Pract* 2001; **1:** 255-73.
27. Pincus T, Santos R, Breen A, *et al*. A review and proposal for a core set of factors for prospective cohorts in low back pain: a consensus statement. *Arthritis Rheum* 2008; **59:** 14-24.
28. Hoy D, Brooks P, Blyth F, *et al*. The Epidemiology of low back pain. *Best Pract Res Clin Rheumatol* 2010; **24:** 769-81.
29. Hoogendoorn WE, Bongers PM, de Vet HC, *et al*. Flexion and rotation of the trunk and lifting at work are risk factors for low back pain: results of a prospective cohort study. *Spine* 2000; **25:** 3087-92.
30. van den Heuvel SG, Ariens GA, Boshuizen HC, *et al*. Prognostic factors related to recurrent low-back pain and sickness absence. *Scand J Work Environ Health* 2004; **30:** 459-67.
31. Harkness EF, Macfarlane GJ, Nahit ES, *et al*. Risk factors for new-onset low back pain amongst cohorts of newly employed workers. *Rheumatology (Oxford)* 2003; **42:** 959-68.
32. Andersen JH, Haahr JP, Frost P. Risk factors for more severe regional musculoskeletal symptoms: a two-year prospective study of a general working population. *Arthritis Rheum* 2007; **56:** 1355-64.
33. Sorensen IG, Jacobsen P, Gyntelberg F, *et al*. Occupational and other predictors of herniated lumbar disc disease-a 33-year follow-up in the Copenhagen male study. *Spine (Phila Pa 1976)* 2011; **36:** 1541-6.
34. Macfarlane GJ, Thomas E, Papageorgiou AC, *et al*. Employment and physical work activities as predictors of future low back pain. *Spine (Phila Pa 1976)* 1997; **22:** 1143-9.
35. Smedley J, Egger P, Cooper C, *et al*. Prospective cohort study of predictors of incident low back pain in nurses. *BMJ* 1997; **314:** 1225-8.
36. Eriksen W, Bruusgaard D, Knardahl S. Work factors as predictors of intense or disabling low back pain; a prospective study of nurses' aides. *Occup Environ Med* 2004; **61:** 398-404.
37. Bakker EW, Verhagen AP, van Trijffel E, *et al*. Spinal mechanical load as a risk factor for low back pain: a systematic review of prospective cohort studies. *Spine (Phila Pa 1976)* 2009; **34:** E281-93.
38. Latza U, Pfahlberg A, Gefeller O. Impact of repetitive manual materials handling and psychosocial work factors on the future prevalence of chronic low-back pain among construction workers. *Scand J Work Environ Health* 2002; **28:** 314-23.
39. Johnston JM, Landsittel DP, Nelson NA, *et al*. Stressful psychosocial work environment increases risk for back pain among retail material handlers. *Am J Ind Med* 2003; **43:** 179-87.
40. Ijzelenberg W, Burdorf. Risk factors for musculoskeletal symptoms and ensuing health care use and sick leave. *Spine (Phila Pa 1976)* 2005; **30:** 1550-6.
41. Tubach F, Leclerc A, Landre MF *et al*. Risk factors for sick leave due to low back pain: a prospective study. *J Occup Environ Med* 2002; **44:** 451-8.
42. Macfarlane GJ, Pallewatte N, Paudyal P, *et al*. Evaluation of work-related psychosocial factors and regional musculoskeletal pain: results from a EULAR Task Force. *Ann Rheum Dis* 2009; **68:** 885-91.
43. Hartvigsen J, Lings S, Leboeuf-Yde C, *et al*. Psychosocial factors at work in relation to low back pain and consequences of low back pain; a systematic, critical review of prospective cohort studies. *Occup Environ Med* 2004; 61.
44. Gilgil E, Kacar C, Butun B et al. Prevalence of low back pain in a developing urban setting. *Spine* 2005; **30:** 1093-8.
45. Nagasu M, Sakai K, Ito A. Prevalence and risk factors for low back pain among professional cooks working in school lunch services. *BMC Public Health* 2007; **7:** 171.
46. Miranda H, Viikari-Juntura E, Punnett L, *et al*. Occupational loading, health behavior and sleep disturbance as predictors of low-back pain. *Scand J Work Environ Health* 2008; **34:** 411-9.
47. Mizoue T, Nishisaka S, Nishikuma K, *et al*. Occupational and lifestyle factors related to musculoskeletal and fatigue symptoms among middle-aged female workers in a frozen food processing factory. *San Ei Shi* 1996; **38:** 223-9.
48. Lawrence A, Rafael HL, Simeon M. Back pain and osteoporosis. In: John Hopkins White Papers, 1-37, Rebus, 2003. New York:
49. Chaiwanichsiri D, Jiamworakul A, Jitapunkul S, Lumbar disc degeneration in Thai elderly: a populationbased study. *J Med Assoc Thai* 2007; **90:** 2477-81
50. Lotters F, Burdorf A, Kuiper J, Miedema H. Model for the work-relatedness of low-back pain. *Scand J Work Environ Health* 2003; **29:** 431-40.
51. Leboeuf-Yde C. Alcohol and low-back pain: a systematic literature review. *J Manipulative Physiol Ther* 2000; **23:** 343-6.
52. Sharma SC, Singh R, Sharma AK, Mittal R. Incidence of low back pain in workage adults in rural North India. *Indian J Med Sci* 2003; **57:** 145-7
53. Abenhaim L, Suissa S. Importance and economic burden of occupational back pain: A study of 2,500 cases representative of Quebec. *J Occup Med* 1987; **29:** 670-4.
54. United Kingdom Department of Health, Clinical Standards Advisory Group. Epidemiology review: the epidemiology and cost of back pain. London: HMSO, 1994.