

RISK FACTORS FOR LOW BACK PAIN AMONG HOSPITAL WORKERS IN IBADAN, OYO STATE, NIGERIA

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SUMMARY

This study investigated the risk factors for low back pain among workers in hospitals in Ibadan under the Oyo State Hospital Management Board. A cross-sectional survey was carried out using a two-part questionnaire. Six hundred and seventy-five questionnaires were circulated and self administered out of which 446 were duly completed and returned, representing a response rate of 66%. The data was analysed with the statistical analysis system (SAS) using the chi-square contingency table technique with the level of significance set at 0.05. The point prevalence of low back pain for the hospital workers was 20.6% while the 12-month prevalence was 47.8%. Job tasks which predisposed significantly to low back pain were: lifting ($P < 0.01$), bending ($P < 0.01$), and staying in the same position for over 3 hours ($P < 0.01$). It was recommended that this group of workers should adopt good lifting techniques associated with good postural awareness in bending.

Key words: low back pain, hospital workers, job tasks

INTRODUCTION

Low back pain is sometimes referred to as man's most important non-life threatening disease¹ It is one of man's oldest complaints and a big cause of social

distress in many populations² Low back pain affects 70 to 80% of the general population at some time in their lives and is a leading cause of disability and activity limitation in persons between 35 and 40 years of age.³

A number of studies^{1,4,5,6} have attempted to identify the risk factors for low-back pain especially with respect to job-related tasks. Mckenzie⁷ stated that low back pain is the commonest cause of occupational disability in industrial societies and is the type of pain with which general practitioners have to contend most frequently. In addition, Nachemson⁸ opined that the incidence of low back pain is about the same in people with sedentary occupations and those involved in heavy labour, although the latter have a higher incidence of absence from work because they are unable to work when they have the back pain.

Sobti et al.⁹ also investigated the relationship between physical activity in the work place and subsequent musculoskeletal pain syndromes. The study revealed an association between occupational activities and musculoskeletal symptoms, which were specific for activity type and the skeletal site involved. It was also reported that the adverse effects of these occupational activities can still be felt many years after cessation of exposure to such activities.⁹ This study was carried out to investigate the prevalence of low back pain in a multidimensional job related environment such as the hospital, and to

identify possible risk factors for low back pain in such an environment.

Subjects and Methods

A cross-sectional survey was carried out among workers from hospitals in Ibadan under the Oyo State Hospitals Management Board. The hospitals and the number of questionnaires administered were as follows:

- Oni Memorial Children’s Hospital - 50
- Jericho Nursing Home - 25
- Adeoyo Maternity Hospital - 250
- Ring Road State Hospital - 350

The cross-sectional survey was carried out with the aid of a self-administered questionnaire, designed with multiple items related to the past and present low back pain complaints of the subjects. Informed consent was sought from volunteer participants and those who wished to participate in the various departments of the hospitals were requested to complete the study questionnaires. The investigators provided a brief explanation on the nature of the survey and then distributed the questionnaires to the participants who returned them after due completion.

The questionnaire sought information on the demographic characteristics of workers, their employment history, nature of work done, presence of low back pain in the last twelve months, duration and severity of low back pain, care-seeking practices of respondents with history of low back pain and sickness absence from work due to low back pain

Of the 675 questionnaires circulated, 446 were duly completed and returned. There were 163 male and 283 female respondents.

Statistical Analysis

The questions were coded and analysed using the statistical package SAS (statistical analysis system) version 6.04. Descriptive statistics of frequencies and percentages were used to describe the categorical variables while the chi-square contingency table technique was used to analyse the data. The level of significance was set at 0.05.

RESULTS

Biodata of Participants

Six hundred and seventy-five questionnaires were distributed in the four hospitals included in this study, out of which 446 were returned. This gave a response rate of 66%.

Two hundred and eighty three (63.5%) of the respondents were females. The age group, educational background, and nature of work of the respondents are shown in tables 1, 2 and 3 respectively. Majority (59%) of the respondents had tertiary education and 61.3% were exclusively involved in clinical tasks.

Table 1. Age Group of Respondents (N = 446)

Age (Groups)	No	% Total	No. With LBP	% Age Group
20 - 25	60	13.6	22	4.9
26 - 30	70	15.9	27	6.1
31 - 35	74	16.8	40	8.9
36 - 40	66	15	45	10.1
41 - 45	64	14.5	27	6.1
46 - 50	65	14.7	27	6.1
51 - 55	36	8.2	22	4.9
56 - 60	11	1.3	3	0.7

Table 2. Educational Background of Respondents (N = 446)

Category	Number	% Total
Primary	48	10.9
Secondary	109	24.8
Tertiary	259	59
Postgraduate	30	5.3

Table 3. Nature of Work of Respondents (N = 446)

Nature of work	Number	% Total	No. With LBP	%
Clinical	264	61.3	125	47.3
Administrative	153	35.5	80	52.3
Maintenance	29	3.2	16	55.2

Prevalence of Low Back Pain

In this study, the twelve-month prevalence of low back pain was 47.8% while the point prevalence was 20.6%. The highest percentage of low back pain (10.1%) was reported among individuals within the 36-40 years age group, followed closely by those within the 31-35 years age group (8.9%) (see table 1). Pain rating with the visual analog scale (VAS) could not be done because only a few of the respondents could effectively rate their pain level using this system. However, pain rating by

individual perception using the verbal rating scale showed that 78% rated their low back pain as mild, 20.4% as moderate and 1.6% as severe.

Job Tasks and Low Back Pain

The job tasks which predisposed individuals to low back pain in this study are shown in figure 1. Sixty nine per cent of the respondents, who were involved in physical activities such as lifting, reported low back pain. About 45% of those whose work involved staying in the same position for up to three hours reported low back pain, while 67.1% of those involved in bending activities reported low back pain. With regards to the nature of work and low back pain, the highest percentage of low back pain (55.2%) was reported among the maintenance workers, followed closely by the administrative staff (52.3%). The clinical staff reported the least

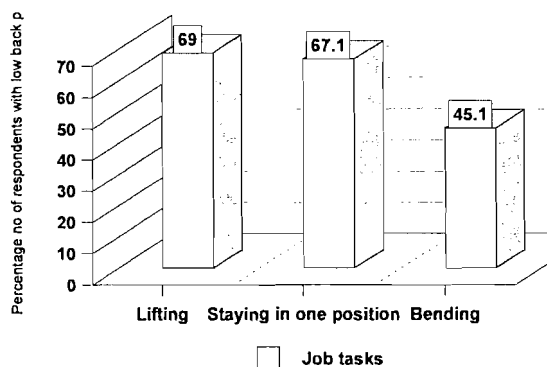


Figure 1. Job tasks and low back pain

percentage of low back pain (see table 3).

The utilization of healthcare facilities by subjects with low back pain revealed that the highest percentage of respondents with low back pain (84.5%) made use of healthcare facilities such as the hospital, while treatment varied from bed rest, use of mild analgesics such as paracetamol, to prescribed therapeutic exercises. A considerably higher percentage of subjects (52.3%) resorted to the use of medication rather than to prescribed therapeutic exercises (7.3%), to alleviate the pain.

With regards to sickness absence from work, only 8.1 per cent of the respondents obtained sick leave as a result of their low back pain symptoms. The highest number of days any of them had ever

taken off work due to low back pain during the past year was five.

DISCUSSION

In this study, the twelve-month prevalence of low back pain was 47.8% while the point prevalence was 20.6%. These values are not outstandingly high when compared to those from previous studies which were conducted among industrial workers. Liebensson,¹⁰ Hillman¹¹ and Lebouf-Tyde et al.¹² reported an average of 55% prevalence of low back pain. It has been suggested that occupational variation, cultural differences and even dissimilarities in question phrasing may cause variations in the prevalence rates obtained in different studies.¹⁶ These factors may have been responsible for the differences between the rates observed in this study and those of previous studies. Furthermore, the highest prevalence of low back pain was observed among workers within the age range of 36-40 years. This is in line with the observation by Borenstein¹ that low back pain is a source of activity limitation within individuals in this age group.

The risk factors for low back pain in this study were those associated with job tasks involving lifting, bending, as well as staying in the same position for up to three hours. It is plausible that the higher incidence of complaints of low back pain associated with bending and lifting observed among maintenance workers in this study was due to improper lifting techniques. The respondents who performed administrative duties and who had complaints of low back pain were probably involved in tasks that require sitting for prolonged periods. This observation is in line with those of previous studies^{4, 7, 9, 16} which identified occupational activities such as lifting, bending, and prolonged sitting and standing as risk factors for low back pain.

The socioeconomic impact of the low back pain complaints was inferred by the number of days that the patient had been unable to work during the previous year. In this study, the highest number of days any of the respondents who had low back pain had ever taken off work during the past year was 5 days. This may be due to the fact that most of them (78%) had only mild pain hence they were still able to perform their job tasks and consequently absence from work was not too common.

The highest percentage of respondents with low back pain received prescribed medication in the

hospital to resolve their complaints while only 7.3% had prescribed therapeutic exercises. This may be due to inadequate awareness of the appropriate type of exercise to undertake to alleviate their low back pain symptoms.

CONCLUSION

From this study, the 12-month prevalence of low back pain was 47.8%. The risk factors for low back pain among the hospital workers included those associated with job tasks such as lifting, bending and prolonged stay in one position. The highest report of low back pain was among workers within the age range of 36-40 years. Most workers reported their low back pain as being mild, hence they did not obtain much leave absence from work within the past year. It is therefore suggested that education on good lifting techniques associated with good postural awareness in bending will be of great benefit in these group of workers.

REFERENCES

1. Apts DW. *Back Injury Prevention Handbook*. Chelsea: Lewis Publishers, 1992; 50.
2. Moffat KJ, Richardson C, Sheldon T. Back pain, its management and cost to society. Discussion Paper 129. (1995), New York University Centre for Health Economics, USA.
3. Borenstein DG. Epidemiology, aetiology, evaluation and treatment of low back pain. *Current Opinion In Rheumatolog* 1999; **11**: 151-7.
4. Frymoyer JW, Pope MH, Clements JH, Wilder DG, Mac Pherson B, Ashikaga T. Risk factors in low back pain. *Journal of Bone and Joint Surgery* 1983; **65A**: 213-218.
5. Marras WS, Lavender SA, Leurgans SE. The role of dynamic three dimensional trunk motion in occupationally related low back disorders. *Spine* 1993; **18**: 617-628.
6. Hoogendorn WE, Van Poppel MN, Bongers PM, Koes BW, Bouter LM. Physical load during work and leisure time as risk factors for back pain. *Scandinavian Journal of Work Environment and Health* 1999; **25(5)**: 387-403.
7. Mc Kenzie, RA. *The Lumbar Spine: Mechanical diagnosis and therapy*. Waikanae New Zealand: Spinal Publications, 1981; 1-14.
8. Nachemson: Lumbar Intradiscal pressure. Cited in: *The Lumbar Spine and Back Pain*". Lumbar Spine, mechanical diagnosis and therapy. Spinal Publications Waikanae New Zealand. (1976) 14-19.
9. Sobti A, Cooper C, Inskip H, Searle S, Coggon, D. Occupational physical activity and long term risk of musculoskeletal symptoms: A national survey of post office pensioners. *American Journal of Industrial Medicine* 1997; **32(1)**: 76-83.
10. Liebenson CS. Pathogenesis of chronic low back pain. *Journal of Manipulative Physiology and Therapeutics* 1992; **15**: 299-308.
11. Hilman M, Wright A, Rajaratnam G, Tennant A, Chamberlain MA. Prevalence of low back pain in the community: Implications for service provision in Bradford UK. *Journal of Epidemiology and Community Health* 1996; **50**: 347-352.
12. Leboeuf – Tyde C, Lauristen JM, Lauritzen T. Why has the search for causes of low back pain largely been non-conclusive? *Spine* 1997; **22(8)**: 877-881.
13. Riihimaki H, Tola S, Videman T, Hanninen K. Low back pain and occupation, a cross-sectional questionnaire study of men in machine operating, dynamic physical work and sedentary work. *Spine* 1989; **14(2)**: 204-209.
14. Brage S, Bjerkedal T. Musculoskeletal pain and smoking in Norway. *Journal of Epidemiology and Community Health* 1996; **50**: 166-169.
15. Scott SC, Goldberg MS, Mayo NE, Stock SR, Poitras B. The association between cigarette smoking and back pain in adults. *Spine* 1999; **24**: 1090-1098.
16. Otani T, Iwasaki M, Ohta A, Kuroiwa M, Yosiaki S, Suzuki S, Aoki S. Low back pain and smoking in a community sample in Japan. *Journal of Occupational Health* 2002; **44**: 207-213.