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THE PREVALENCE OF LOW BACK PAIN AMONG WORKERS IN AN ENGINEERING FACTORY-IRAQ

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نسبة انتشار آلام اسفل الظهر عند العاملين في الصناعة الهندسية-العراق

الخلاصة :

من خلال مسح وبائي اجرى على ١٠٩٨ شخص من الذكور الذين لهم خدمة اكثر من خمس سنوات يعملون في الصناعة الهندسية، تبين ان نسبة آلام اسفل الظهر خلال سنة واحدة هي ١٦٫٧٪، وان اعلى نسبة كانت عند الافراد الذين يتميز عملهم بالجلوس الطويل. لقد وجدت علاقة طردية بين انتشار آلام اسفل الظهر وجاميع العمر، وكذلك عند الافراد الذين لم يوزن اعلى من الطبيعي، لقد وجدت علاقة احصائية بين آلام اسفل الظهر وارتفاع سرعة ترسب الكريات الحمراء. اوصت الدراسة تطبيق برنامج صحي لتقليل الوزن.

SUMMARY :

The 12 month prevalence rate (PR) of Low back pain (LBP) among 1098 male workers working in an engineering factory for more than five years was 16.7% which was significantly prevalent among sedentary workers. The PR of LBP was increasing with both advancing age and increasing body weight. A high ESR was found to be associated significantly with LBP. Weight reduction programs are recommended.

INTRODUCTION :

LBP is usually a self limiting symptom but costs at least 16 billion dollars each year and disables 4-6 million Americans[1-3]. LBP is the leading cause of industrial absenteeism and chronic disablement[4]. LBP affects all age groups and both sexes, but has been reported to be more common between the age of 25 and 64 years than in younger or older age groups [5,6]. LBP affects over half of the working population, some time during their active working life [7]. Different studies[7-11] pointed to the importance of occupational factors in the etiology of LBP. In Iraq few studies[11-13] were conducted about this condition.

This study aims to determine the PR of LBP among workers working in an engineering factory.

MATERIALS AND METHODS :

1- AL-Qadissyia State Establishment was chosen as it is one of the largest engineering factories in Iraq.

2- Only workers with five or more years of empolyment were studied in order to detect the effects of the type of work on health, although the development of this condition

may need more than that period. The final number of the workers who respoonded to the questionnaire was 1098 male workers, females were excluded because their number was very small.

3- Although the workers were working in different departments, they were classified according to their Job title. Skilled workers (machine operators), Non-skilled workers (manual workers) and Sedentary workers (with clerical work mainly).

4- Each participant was required to give his reply to the specific questionnaire designed for this study.

5- Questions on subjective symptoms of LBP were asked with regard to the worker's complaint, its nature, any visit to meical clinic in the factory because of it, or any x-ray diagnosis made or medical or surgical treatment undergone or any sickness absence due to this ailment.

6- The lower part of the back is defined as the area between the lower ribcage and gluteal folds and often pain radiates into the high [15,16].

7- Weight and height of each worker were made as they are used in calculating the body mass index (BMI)[17,18].

8- ESR for each participant was estimated[19].

RESULTS :

The study included 1098 male empolyees (SG) working in an engineering factory. Their mean age, mean years of employment and mean BMI were 30.32 years, 9.84 years and 20.09 kg/m^2 respectively. Table 1 shows the association of the PR of LBP to other variables. The PR of LBP among the SG was 16.7%. The PR of LBP is increased with advancing age; this association is highly significant ($P<0.005$). The PR of LBP among sedentary workers was higher than other groups ($P<0.05$). LBP was more prevalent among workers employed for more than 15 years. There was a significant association between LBP and increase in body weight, the PR of LBP was 28.7% in subjects with obesity, 18.8% in those with overweight and 14% in those with normal BMI ($P<0.005$). The mean ESR of sujects with LBP is significantly higher than the mean ESR for those with no backpain, this difference is statistically significant ($t=13.4$, d.f 1098, $P<0.005$). No significant association was found between LBP and educational level of the workers, smoking habit or alcohol consumption.

DISCUSSION :

One thousand and eighty nine engineering workers were surveyed for the PR of LBP which is the leading cause of industrial absenteeism and disablement[4]. The one years PR of LBP was found to be 16.7% which is less than that found by Jamil[13], but it is comparable to that found by AL-Abdaly[12] among textile workers. The PR significantly increased with age, increasing BMI and longer duration of employment, these resalts agree with the results obtained from other international and local studies[11,12,20,21]. LBP was found to be more prevalent among sedentary workers which is in agreement with the finding of Hang and Ling[22]. This work may be as harmful to the back as manual and / or physical dynamic work despite the fact that the latter

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Table 1 shows the association of the prevalence rate (PR) of low back pain (LBP) with other variable and the values of chi-squaretest.

The variables	Total Workers NO.	Workers with LBP No.	PR	d.f	X^2
Age (years)					
20 -29	583	58	9.9		
30-39	359	82	22.8	3	43.9***
40-49	125	32	25.6		
50 +	31	1	35.5		
Total	1098	183	16.7		
Marital status					
Single	355	34	9.6		
Married	743	149	20.1	1	19.0***
Educational level					
Illeterate	44	11	25.0		
Read and write	26	5	19.2		
Primary school	479	74	15.4	4	7.4
Secondary school	381	56	14.7		
Others	168	37	22.0		
Years of employment					
5 - 9	654	70	10.7		-
10 - 14	159	34	21.4	2	40.1***
15 +	285	79	27.7		
Job title					
Sedentary	73	19	26.0		
Skilled	621	111	17.9	2	8.9*
Unskilled	404	53	13.1		
Smoking habits					
Smoker	364	51	14.0	1	2.8
Non-smoker	734	132	18.0		
Alcohol consumption					
Yes	90	11	12.2	1	1.3
No	1008	171	17.0		
BMI					
Obesity	87	25	28.7		
Overweight	330	62	18.8	2	13.4***
Normal	681	96	14.1		
ESR					
< 20	989	145	14.7	1	28.9***
> 20	109	38	34.9		

*$p < 0.05$, *** $p < 0.005$

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may cause the workers to be more vulnerable to back injuries[23,24]. This finding agree with that of Snock[7] who stated that change in body posture repeatedly is associated with a lower rate of LBP.

Although ESR is a non-specific test, but most degenerative disorders are associated with accelerated ESR[25], so the highest PR of high ESR was found among workers with LBP which may be related to a disease in the spines causing LBP[26]. Weight reduction programs are recommended.

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