Prevalence of Low Back Pain in Law Enforcement Officers

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ABSTRACT

Background and Purpose: *The most frequently experienced injuries by law enforcement officers are back injuries. The purpose of this study is to determine the prevalence of low back pain among the High Point police department.* ***Method:*** *A low back pain questionnaire was issued to 200 High Point Police Officers actively working in law enforcement. The questionnaire was composed of questions regarding their low back pain experience, exposure to risk factors, and opinions about what contributes to these potential risk factors.* ***Results:*** *The response rate was 30.5%. The prevalence of low back pain currently among the officers who returned the survey was reported to be 55.8%. Of those who reported having back problems, 19.7% had back pain before joining the police department. 75.4% of the officers reported experiencing low back pain in the past year.* ***Conclusion and Discussion:*** *The questionnaire on the High Point police officers is only a partial indication of the need to understand and try to prevent low back pain that seems to plague those with physically demanding jobs duties. Through the use of this study and further research, more information can be accumulated on the cause of low back pain. Data collected for research can be used to help decrease the problems experienced by law enforcement officers while performing their duties.*
Key words: *Low back pain, Law enforcement, and Questionnaire research.*

INTRODUCTION

More than 20 million Americans suffer from back pain making it one of the leading causes of disability[3]. It is the most common work-related medical problem[14] and affects 60-80% of United States adults at some time during their life[15]. Back pain is one of the 10 leading reasons for patient visits to emergency rooms, doctors' offices, and hospitals. Occupational low back pain still remains a major problem in the United States[14]. Of the top 10 professions at risk for low back pain, police officers are ranked 6th [3]. In general, law enforcement officers experience many occupational demands with physiological and psychological effects that can be harmful to their health[11]. Low back pain can be associated with occupational and physical risk factors[7]. The manner in which officers exit the patrol car during an emergency or after driving for long periods of time constantly adds stress to their spine[4]. When exiting the patrol car, the officer often jerks up quickly and forcefully using awkward movements. This twisting of the back increases stress to the spine[4]. Most police officers join the force at a young age and tend to remain in their chosen profession for quite a long time[1]. The constant stress over time to the spine from the high demanding job will contribute to low back pain.

Several studies have uncovered a relationship between low back pain and driving. The prevalence of low back pain among those whose occupation involves driving for a large part of the day is usually higher than in the general population[2].

Prevention of low back pain is the main focus in decreasing the prevalence of low back pain. Improving physical fitness, increasing strength and flexibility of the back and improving muscular performance can have a large impact and may decrease the number of reported back injuries[10].

MATERIAL AND METHOD

A contact person within the High Point police department distributed a questionnaire among the 200 currently active High Point police officers. The questionnaire consisted of 50 questions in three sections. The first section dealt with basic demographics. The second section focused on work-related issues and job requirements that would affect the low back. The final section was on low back pain and how it affects the officer and his/her ability to perform their job. Most of the questions were rated on a scaled from 1-4 (1-Almost never, 2-Sometimes, 3-Often, 4-Almost always). The rest of the questions were open ended questions and questions where the officer circled the appropriate answer. All respondents to the survey remained anonymous. Confidentiality was maintained by randomly assigning numbers to each participant. The data obtained from the questionnaire was entered into a SPSS data analysis package determining the statistical significance. The questionnaire used has not yet been validated.

RESULTS

Out of the 200 currently active High Point police officers, 61 responded to the survey giving a response rate of 30.5%. However, not all respondents answered every question. A majority of the officers who responded to the questionnaire were males, work full-time, married and noted that they had a college level educational background. Descriptive statistics shown in Table 1 present the average years of service in law enforcement to be 10.8 years. Reported hours worked per day were averaged to be 9.3 hours.

A large number of the officers reported that they spend more than half of their shift in a vehicle reported that they spend more than half of their shift standing or walking. Over 95% of the officers reported wearing the duty belts while only 86.8% reported wearing the bulletproof vest. A majority of the officers replied that frequent twisting movements of the body standing and bending were key requirements for their job. Over 80% noted that they change positions frequently to try to get comfortable and reduce low back pain.

When asked on a pain scaled from one to ten, one being minimal pain and ten being extreme pain, the averaged current low back pain was reported on the scale as 3.9. Over 75% of the officers reported having experienced low back pain in the past year and over half reported that they currently are experiencing low back pain. More than half of the officers expressed not having back pain prior to becoming an officer.

Table (1): Descriptive Statistics.

	Minimum	Maximum	Mean	SD
Age	22	55	35.377	8.34
Height (in CM)	160.02	195.58	178.05	8.33
Weight (in KG)	48.98	122.46	86.48	17.88
Years of Service	1	29	10.8	7.9
Hours wk per day	5	13	9.4	1.47

Table 2 displays how the officers reported handling low back pain. Over 30% of the officers reported taking over the counter medicine or just ignoring the low back pain. Other ways reported to handle back pain were to go to a chiropractor, back massages, and performing yoga exercises.

Table (2): Options used to handle back pain.

Handle Back Pain	Percent
Go to Doctor	11.5
Go to Therapy	1.6
Over the Counter Medicine	32.8
Ignore	32.8
Other	11.5

Fig. 1 conveys the occurrence of back pain reported by the officers. 36% of the officers answered that they have constant low back pain, whereas 18% commented that they experienced low back pain only while working. Less than half of the officers noted experiencing low back pain more in the morning or at night rather than while performing their job duty.

Walking slower than usual, problems with bending and kneeling, and going up and down stairs more slowly than usual were noted by less then half of the officers. Almost half of the officers replied that they felt their job increased the amount of low back pain they experienced. Less than 20% reported missing work because of having severe low back pain.

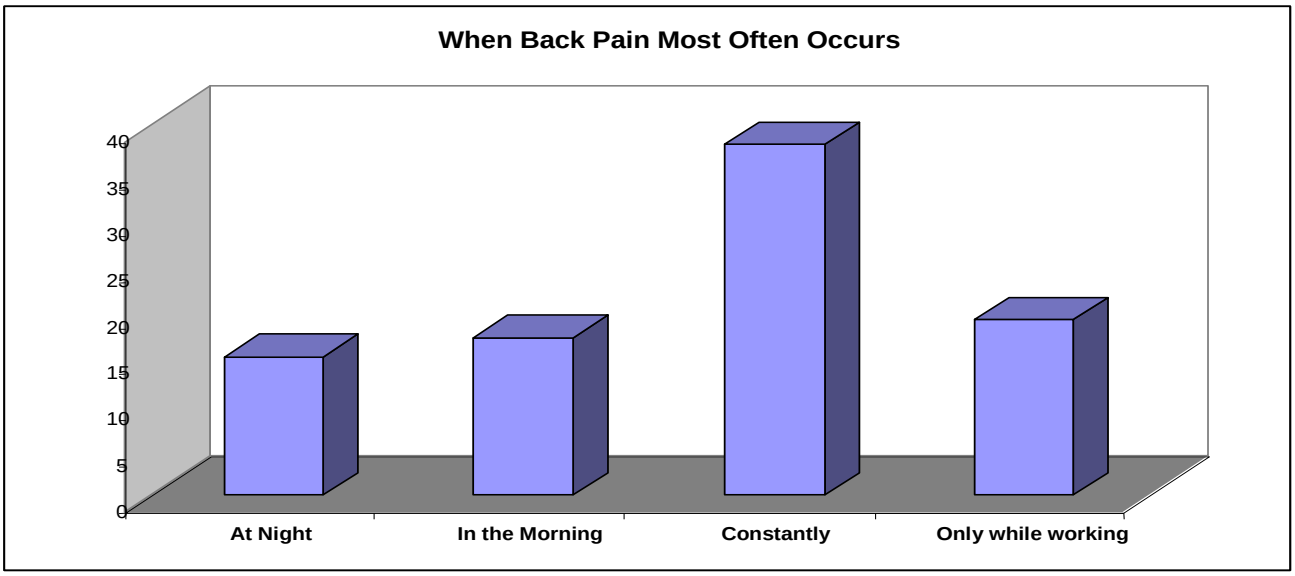

Fig. (1): When Back pain most often occurs.

It can be seen in fig. 2 the responses of those who reported having a job related accidents in the past year. This table reveals that of the reported work related accidents, 15% were due to a car accident and 12% were due to physical violence. Other reported on the job accidents were injuries obtained in defense tactics training class.

The questionnaire responses indicated that a majority of the officers participate in some form of exercise outside of the job. Less than half expressed an effect on their family or

social life because of low back pain. A minority of the officers reported smoking while more than half admitted to drinking alcoholic beverages. Most officers responded to having 1-2 drinks at each occasion.

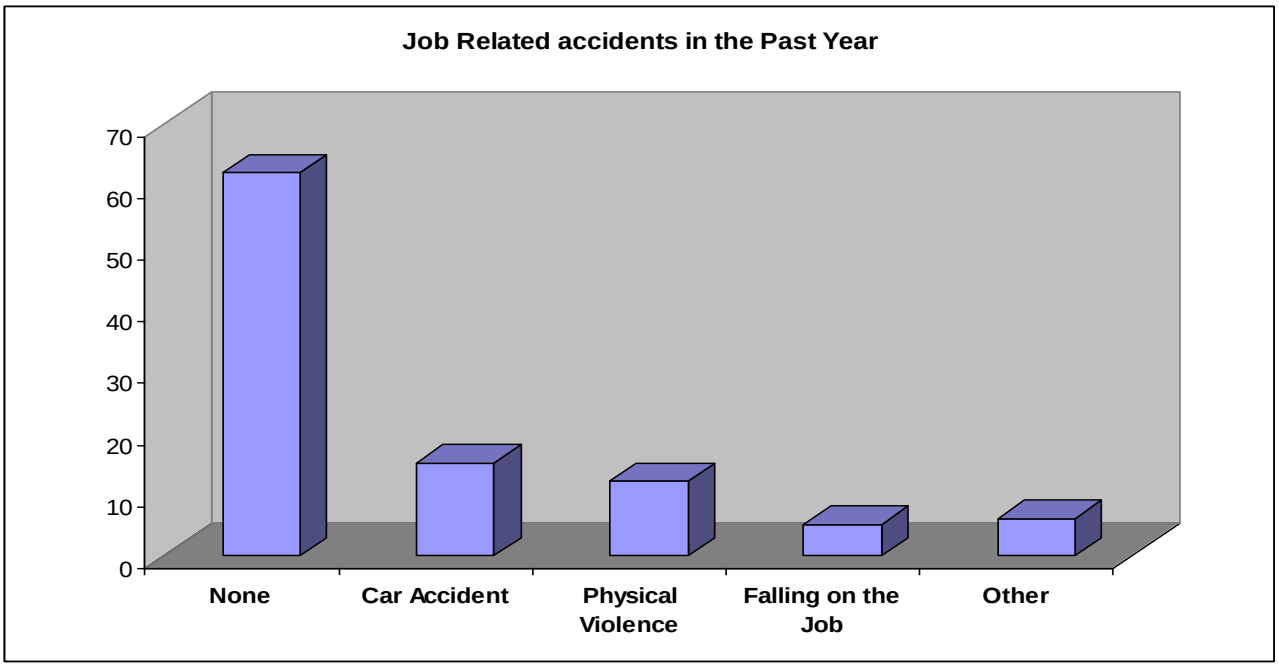

Fig. (2): Job Related Accidents in the Past Year.

DISCUSSION

The results from this study support the findings of the prevalence of low back pain in the occupation of law enforcement. The study found that officers report frequent twisting movements of the trunk with activities such as frequent bending and reaching behind their back. Also, officers noted that they constantly try to change positions in an attempt to reduce back pain. Most of the officers reported having no back pain prior to becoming an officer.

When considering the findings of this study, several possible limitations should be taken into account. First, the questionnaire used was designed by the authors, which consequently may have some limitations in recording the symptoms accurately. It would have been desirable to test the validity of the questionnaire by having the test repeated. Second, the sample size was small. Since the sample size was small it may not be possible to accurately analyze the data and draw conclusions. Third, the officers answered the questions to the best of what they could recall. Some officers left some of the questions unanswered while others wrote in responses to the questions. This limited the accuracy in the data.

Another limitation is that most of the officers reported participating in some form of exercise outside of their job. However, an accurate level of physical fitness was never determined.

Conclusion

This study demonstrated that there is a prevalence of low back pain in the High Point

police officers. Further research needs to be considered in testing officers for physical fitness. Rather than having a survey to verify fitness, specific physical fitness tests should be administered. Also further research in comparing and contrasting the prevalence of low back pain in other police departments needs to be addressed. Back pain is not a result of a single incident but rather repeated wear and tear over the years. Through further research, an understanding of low back pain may be found. Low back pain is a difficult condition to diagnose as well as manage. Educating individuals in high demanding jobs on proper posture, exercise, and stretches may prevent many cases of back pain.

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الملخص العربي

معدل الإصابة بالآم أسفل الظهر عند أفراد الشرطة

تمثل إصابات الظهر أكثر الإصابات حدوثاً لدى أفراد الشرطة ، وتهدف هذه الدراسة إلى تحديد نسبة حدوث ألام أسفل الظهر عند أفراد الشرطة .

طريقة الدراسة : تم عمل استبيان لمجموعة من أفراد الشرطة مكونة من مائتي فرد وقد اشتمل الاستبيان على مجموعة من الأسئلة تختص بإصابتهم بآلام أسفل الظهر ومدى تعرضهم للأسباب المؤدية إليها ورأيهم في تقليل أثار هذه العوامل .

نتائج البحث : مثلت الاستجابة للاستبيان نسبة 30.5% من أفراد الشرطة منهم 19.7% كانوا يعانون من ألام أسفل الظهر قبل الالتحاق بالشرطة والباقي أصيبوا بآلام أسفل الظهر بعد الالتحاق بالشرطة .

الخلاصة : نتائج الاستبيان الأولية تشير إلى الحاجة إلى فهم ومحاولة منع ألام أسفل الظهر عند أفراد الشرطة .

الكلمات الدالة : ألام أسفل الظهر - استبيان - أفراد الشرطة .