Relationship between occupation, social class and time taken off work following a whiplash injury

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ABSTRACT

INTRODUCTION Little has been published about occupational and social factors in relation to time off work following a whiplash injury.

PATIENTS AND METHODS We analysed 800 medicolegal case sheets from a consultant orthopaedic surgeon's practice.

RESULTS Of those injured, 596 were working and 204 were unemployed or retired. The working group was further analysed. Severity of injury was estimated by analysing velocity of injury combined with vehicular damage. Mean time off work for a minor injury was 10.6 days, moderate 12.1 days, severe 13.8, and very severe 24.9 ($P < 0.05$). Looking at work categories as previously described in the literature, 20.5 days were taken off by heavy manual workers, light manual 15.7, driving 13.9, secretarial 9.2 and sedentary 12.8 ($P < 0.05$). Analysing as per social class showed that professionals required 7.0 days, intermediate 14.7 days, skilled non-manual 16.1 days, skilled manual 34.2 days, semi-skilled manual 33.2 days, and unskilled manual 11.5 days ($P < 0.05$). Nearly a third (31.2%) required no time off work, after 4 days off, 52.1% had returned to work and 90.1% were back at work after 30 days. Time off lasting more than 12 weeks occurred in 29 cases (4.9%).

CONCLUSIONS Job style, severity of injury and social class have a bearing on time taken off work after road traffic accidents causing whiplash injury.

KEYWORDS

Whiplash – Medicolegal – Occupation

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Whiplash injuries are widely accepted to be a hyper-extension, soft tissue injury of the neck. The Quebec Task Force has suggested the term 'whiplash-associated disorder' as symptoms are not always confined to the neck.¹

Time off work following a whiplash injury is poorly defined but may cause a huge cost to the public and private sector with at least 250,000 new cases per year occurring in the UK alone.² In the context of medicolegal cases, time required off work following a whiplash injury is an essential piece of information for employers, insurance companies and the legal profession. Unfortunately, many studies do not examine this topic in great detail. Most report the mean time required off work, but do not break this down into separate job categories or social class.^{3–5} One study concluded there was no correlation between type of occupation and time off work.³ Another study found an association between occupation and time off work; it was inferred that physical injury was not of exclusive

importance as sedentary workers do not take the least time off following a whiplash injury and heavy manual workers do not take the most.⁵ More recently, Gozzard *et al.*⁶ found a positive correlation between both increasing severity of injury and time off work and also heaviness of manual work and increasing time off. They found no association between social class and time-off, but did find that those who were self-employed took less time off work.⁶

We have taken an original look at the relationship between a patient's occupation and social class with the time taken off work following a whiplash injury.

Patients and Methods

A null hypothesis was proposed – following a motor vehicle accident of similar velocity, all occupation categories and social classes require the same time off work.

A retrospective analysis of data collected by a single consultant orthopaedic surgeon from his medicolegal practice was performed. Inclusion criteria were patients aged 18 years or above, who had sustained whiplash injuries from a single road traffic accident (RTA). Exclusion criteria were all patients who had sustained associated fractures, dislocations, subluxations, other injuries, previous whiplash injuries or morbidities, which would influence time off work. Outcome data collected were sex, age, patient recollection of details and energy of accident, symptoms, occupation, social class and time off work.

The severity of the accident was estimated from the patient's account of the incident, and was graded as mild, moderate, severe or very severe. This grading system was adapted from a previous study of whiplash severity.⁴ Mild accidents involved bumper damage and minor denting to the body, severe was classified as extensive damage, and very severe as roll-over or occupant requiring cutting out. Moderate fell somewhere in between these classifications. It was made when case sheets were reviewed but before outcome was noted by the individual recording that data.

Occupation was recorded and categorised by social class and 'heaviness of occupation', as previously described by Warren and Warren.⁵ Categories included heavy manual, light manual, driving, secretarial and sedentary.

Time off work was recorded in whole days. Patients who had not yet returned to work were recorded as having time off from the date of their accident to the date of their medicolegal appointment. This included those who left or lost their job as a result of their injury and did not look for further work.

Data were analysed using the Statistical Package for the Social Sciences (SPSS). Throughout the study, the significance level $P = 0.05$ (5%) was used.

Results

Of 800 cases reviewed, 383 were male and 417 were female. The mean age for the male population was 37.7 years (range, 19–77 years). The mean age for the female population was 36.4 years (range, 19–79 years). In the study group, 596 patients (74.5%) were economically active, comprising heavy manual 43, light manual 216, driving 73, secretarial 190, sedentary 74 and 204 were unemployed or retired.

The mean time off work was 20 days, the data being skewed with time off ranging from 0 to 555 days off. The median time off was 4.0 days: 185 patients (31.2%) took no time off work, 199 (32.9%) took up to 1-week off work, with 90.1% of patients returning to work within 30 days (see Fig. 1). Time off work greater than 12 weeks

Figure 1 Cumulative percentages of patients taking time off work.

occurred in 29 cases (4.9%). At the time of the medicolegal consultation, 24 (3.9%) patients had still not returned to work.

Severity and time off work

Mean days off work, when stratified by severity of accident were: mild 10.6 days, moderate 12.1 days, severe 13.8 days, and very severe 24.9 days ($P < 0.05$). Treating the severity variable as ordinal (*i.e.* ranked), Spearman's correlation for severity versus time off work was 0.201 and significant at the 1% level ($P = 0.01$).

Occupation and time off work

Analysis of mean days off work by occupation revealed the following: heavy manual 20.5 days, light manual 15.7 days, driving 13.9 days, secretarial 9.2 days and sedentary 12.8 days. Those in secretarial employment took significantly fewer days off work as a result of a RTA than those in all other occupations ($P < 0.05$). Heavy manual workers took the most time off.

Social class and time off work

Mean days off work stratified by social class were: (I) professional 7.0 days, (II) intermediate 14.7 days, (III-NM) skilled non-manual 16.1 days, (III-M) skilled manual 34.2 days, (IV) semi-skilled manual 33.2 days, and (V) unskilled manual 11.5 days ($P < 0.05$). Using the Kruskal-Wallis test, the null hypothesis of equality in the distribution of days absent from work across the six social classes was rejected at the 5% level of significance ($P = 0.005$). The most time off was taken off by social classes III-M and IV.

Patients requiring time off work of over 3 months following RTA

Twenty-nine patients (4.9%) required more than 3 months off work following a whiplash injury. The number of

patients as stratified by occupation was distributed as follows: heavy manual 4, light manual 10, driving 6, secretarial 5 and sedentary 4. There was no significant correlation between time off over 3 months and heaviness of occupation.

Analysis of those taking more than 3 months off work by social class was as follows: professional 0, intermediate 5, skilled non-manual 8, skilled manual 11, semi-skilled manual 5, and unskilled manual 0. There was no significant correlation between time off over 3 months and social class.

Analysis of the same group of patients in relation to severity of accident was: mild 4, moderate 7, severe 13, and very severe 5 patients. There was no significant correlation between time off over 3 months and severity of injury.

Discussion

Analysis of time off work by severity of injury, occupation and social class has revealed certain trends in our patient population.

Although the mean time off work was 20 days, this value was skewed by the very few taking several hundred days off work. A more representative value was the median time off work being 4 days. Over 60% of patients were back at work within a week, and over 90% by the end of 1 month. Our findings mirror a previous study by Warren and Warren,⁵ who found that 84.1% of their series required time off work following a RTA.

Looking at just the severity of injury and mean days off work in this study, it is interesting to note the small difference in days off work between minor and severe injuries. This lends some weight to the argument that severity of injury is not related to the severity of whiplash disorder.

Interesting trends do appear when analysing data with respect to occupation and social class. Assessing time off with respect to occupation revealed that secretaries took significantly fewer days off work, whilst heavy manual workers took the most. This may be explained by the physical requirements of the respective jobs and may be a significant factor in determining how much time a person needs off following a whiplash injury. These findings are similar to those of Gozzard *et al.*⁶

There is a general trend of increasing time off with lower social class, which would, at least in part, mirror the findings with heaviness of occupation. Most interestingly, however, in the lowest social class (V) there are

significantly fewer days off work; in this group of unskilled manual workers, many did not get sick pay. Thus, provision of sick pay must also influence the speed at which people return to work.

Those patients requiring more than 3 months off work seemed to be distributed equally among all social class, occupation and by nature of the injury. They represented less than 5% of the overall population.

There are of course a number of limitations with our study. The study was retrospective and the assessment of injury severity was subjective. The subject group studied was that referred to an orthopaedic surgeon and so, compared to the population as a whole, are probably suffering moderate-to-severe injuries. Although nearly 600 patients were analysed, further numbers need to be studied to consolidate trends.

Undoubtedly a number factors influence the final outcome from an accident in which a whiplash injury is sustained. We note from the trends generated in this study that social class, occupation and severity of accident do play a part in influencing the time a person takes off work following such an injury.

Conclusions

There is an influence on the nature of one's job and social class on time taken off following whiplash injury; however, these are not exclusive factors in determining outcome. The isolated use of occupation or social class is inappropriate in determining how much time an accident victim requires from work.

References

1. Spitzer WO, Skovron ML, Salmi LR, Cassidy JD, Duranceau J, Suissa S *et al.* Scientific Monograph of the Quebec Task Force on Whiplash Associated Disorders: redefining 'whiplash' and its management. *Spine* 1995; **20** (Suppl 8): 1S-73S.
2. Galasko CSB, Murray PA, Pitcher M. Prevalence and long-term disability following whiplash-associated disorder. *J Musculoskel Pain* 2000; **8**: 15-27.
3. Mayou R, Bryant B. Outcome of 'whiplash' neck injury. *Injury* 1996; **27**: 617-23.
4. Parmar HV, Raymakers R. Neck injuries from rear impact road traffic accidents: prognosis in persons seeking compensation. *Injury* 1993; **24**: 75-8.
5. Warren RA, Warren MA. Whiplash injury sustained in motor vehicle accidents: factors influencing time off work. *J Orthop Med* 2001; **23**: 50-4.
6. Gozzard C, Bannister G, Langkamer G, Khan S, Gargan M, Foy C. Factors affecting employment after whiplash injury. *J Bone Joint Surg Br* 2001; **83**: 506-9.