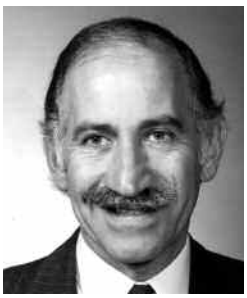
Editorial

Whiplash: Social Interventions and Solutions



Ten years ago in *The Journal*, we commented that the concept of chronic whiplash as an injury was "an example of illness actually induced by society, in general, and by physicians in particular"[1]. Subsequent data have shown whiplash is an "injury" like no other, very much *not* in keeping with the effects of a localized disorder[2]. Second, the outcome of the acute injury depends on where you live. That is, the acute whiplash injury, thought to be not objectively demonstrable, appears to produce symptoms wherever there are cars and collisions, but chronic pain is attributed to that collision event in some cultures and not in others. For example, in Lithuania, Germany, and Greece, victims of motor vehicle collisions appear to report recovery within weeks to months rather than years[3,4]. Engineers have shown that the prognosis of acute whiplash, when analyzed in the context of traumatic principles and crash severity, is independent of injury severity. Culture, not crash, remains the best determinant of outcomes[5]. Finally, the outcome of the acute injury depends on what you expect. A large, population-based prospective study of whiplash-injured in Saskatchewan, Canada, for example, has revealed that even after controlling for many other prognostic factors, the expectation of recovery (i.e., "I expect to recover soon" vs "I expect to recover slowly," or "I expect not to recover," or "do not know") is a strong predictor of self-reported outcome at 1 year[6]. Expectations appear to be culturally determined. Expectations of naïve subjects for the outcome of whiplash injury have been shown to be very different in North America than they are elsewhere, and are very much the same in Lithuania[7], Germany[8], and Greece[9], countries with reportedly low rates of chronic whiplash. Perhaps because of expectations, social factors are important and explain why doctors and rodeo cowboys are relatively immune[10,11].

These observations have many possible explanations, but also possibly direct applications. Social interventions, such as changes in litigation and compensation schemes, have had verifiable effects on clinical outcomes, as shown in Saskatchewan, Canada, where outcomes were dramatically altered by a change to a no-fault (no litigation) system, these outcomes including correlates of clinical recovery[12,13]. In addition, it was recently demonstrated in Australia that legislative change which removed financial compensation for "pain and suffering" for whiplash was shown to improve self-reported health status of whiplash patients[14]. System-wide changes in the delivery of treatment for whiplash injury, creating protocols that direct treatment beyond individual practices, have also been shown to be useful[15].

A recent review of the Task Force on Neck Pain and Associated Disorders supports the view that social factors are relevant to outcomes in whiplash-associated disorders[16]. While the Task Force indicated there were "no scientifically admissible study or studies that directly assessed the impact of cultural factors on recovery of WAD [whiplash associated disorders]," the same review accepted studies from Greece, Germany, and Lithuania indicating significant outcome differences in these countries versus many Western countries, providing direct evidence for an impact of cultural factors. According to the Task Force:

"...it has been hypothesized that cultural differences (e.g., culturally-based differences in expectations for symptoms and recovery) may explain longer recovery times noted in other jurisdictions. This is quite plausible..."

Further, the Task Force considers the specific social factors that may explain this difference, citing "the context in which an injury occurs (for example, differences in access to health care or type of health care provided), or differences in policies relevant to compensation for traffic collisions, etc." These same authors then describe a number of social factors that they found to be prognostic, including litigation and compensation, indicating that "prevailing com-

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Table 1. Characteristics of whiplash victims in University of Alberta Hospital Emergency Department study 2003[20] (UAH; n = 112) and Edmonton Primary Care Clinic study 2005[21] (EPCC; n = 131).

	UAH, n = 112	EPCC, n = 131	p
Age, yrs, mean (SD)	38.6 (15.0)	35.9 (10.9)	0.12
Male, n (%)	51 (45.5)	63 (48.1)	0.69
Retained a lawyer, n (%)	35 (31.3)	53 (40.5)	0.14

pensation and legal factors were prognostic factors in recovery from WAD." Our argument is particularly consistent with the conclusions of the Task Force in this regard.

One might disagree with labelling all those factors that are outside individual characteristics (physiology, genetics, pathology, psychology) as either social factors or cultural factors, or even sociocultural factors. Although there is no standard definition of culture, most incorporate the Boasian postulates in a working definition, wherein culture is defined as the system of shared beliefs, values, customs, behaviors, and artifacts that the members of society use to cope with their world and with one another, and that are transmitted from generation to generation through learning[17]. We further accept that society is often contrasted with culture, with the suggestion that society is the actual arrangement of social relations, while culture is made up of beliefs and symbolic forms[18]. Illness beliefs are important and have been measured (and even modified) through social marketing interventions, for example, in the analogous problem of low back pain[19]. As belief systems are culturally-based, any studies that examine beliefs and differences between populations in different countries reflect, to some extent, cultural differences. Thus, social factors and cultural factors cannot be isolated, and any evidence for the effect of one or the other will be indirect.

Given these observations, it is not surprising that system-wide changes are being considered to address the whiplash problem. In October 2004, new legislation was introduced in Alberta, Canada, that included a cap on "minor injury," limiting compensation to $4000 for pain and suffering following soft-tissue injuries not causing serious impairment. This met with resistance in some legal circles and has just failed the first step of a constitutional challenge. Although this legislation arose for a number of reasons, one of the reasons given by the Government for this legislation was to improve the low recovery rates seen in Alberta for these "minor" injuries, clinically, soft-tissue pain with no radiologically determinable lesions.

As an example, prior to the introduction of the October 2004 Automotive Insurance Legislation, Ferrari, *et al*[20] conducted a study completed by January 2004. Taking place in the Emergency Department setting of the University of Alberta Hospital in Edmonton, the study was primarily designed to test the effect of an educational pamphlet as part of whiplash treatment, but the data also provide 3-month recovery rates for all subjects. The primary outcome measure of recovery was the patient's response to the question, "How well do you feel you are recovering from your injuries?" The possible responses ranged from "all better" to "much worse," and the subjects responding with "all better" were defined as recovered. Using the primary criterion, only 21% patients reported recovery at 3 months post-injury in 2003. These patients have since been followed: only 28 of the original 112 were traceable; among these, only 39% had recovered 4 years post-injury.

In 2005, 6 months after the legislation was introduced, another study was conducted by Ferrari, *et al* in Edmonton[21] to compare the usefulness of different questionnaire-based measures of recovery. The study took place through Edmonton's walk-in primary care clinics, which are among the most common primary care centers to receive whiplash patients in Alberta because of the large numbers of clinics and long operating hours. Patients who attended a clinic in the spring of 2005 were identified through daily diagnostic codings of consenting physicians, with the aim of contacting these patients about 3 months post-injury. Identified subjects were then contacted and interviewed by telephone survey, confirming the same inclusion/exclusion criteria as in the aforementioned 2003 study (Table 1).

During the period of recruitment, and after initial questioning, 147 subjects were eligible for study, of which 131 (89%) provided verbal consent to the interview. The primary outcome measure was the patient's response to: "Do you feel you have recovered fully from your accident injuries?" Recovery was defined as answering "yes" to the recovery question, other choices being "no" and "not sure." A random subgroup of 25 respondents who reported recovery and 25 who did not were evaluated with the exact recovery question posed in the previous Alberta (2003) study: "How well do you feel you are recovering from your injuries?" The possible responses ranged from "all better" to "much worse," the subjects responding with "all better" being defined as recovered. In total, 52 (39.7%) reported recovery at 3 months post-injury. This is almost double the 2004 rate of recovery. Admittedly, these 2 studies are not entirely comparable in the settings of patient recruitment, and a number of subjects have missing followup data for which no basis is given. In either case, although the prognosis may have improved in Alberta, we still need to address what is a persistently low recovery rate, when compared to other countries.

In the end, whiplash is a problem beyond acute injury, acute treatment, and practitioner prescribing habits. While individual characteristics and coping methods may be relevant and deserve more study, society deserves study most of all. The measures that curb the whiplash problem will likely have to operate on a social plane. Determining which measures are most suitable and effective, however, requires a highly concerted effort between government, the insurance

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industry, and researchers: for example, databases would be needed to track useful outcome measures, so that a population-based picture of the state of recovery can be described and social interventions planned and studied.

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