

Does injury compensation lead to worse health?

By Natalie M Spearing PhD and Luke B Connelly PhD

Financial compensation for losses arising from a personal injury is intended to benefit injured people and 'right the wrong' that has been done to them.¹ While one may expect compensation to leave injured parties better off than they would otherwise be, the prevailing attitude is nonetheless that compensation does more harm than good.² This argument – that compensation *per se* or aspects of the compensation-seeking or granting processes are harmful to health – is labelled the 'compensation hypothesis'.³

The belief that compensation and its related processes play a role in prolonging symptoms and disability has existed since the introduction of injury compensation schemes in the 19th century.⁴ While proponents of the compensation hypothesis argue that there is ample evidence to support their view,⁵ the empirical literature used to support this argument is generally fraught with serious methodological problems that have not been convincingly addressed. As this evidence is widely used to influence policy and legislation as well as judicial, clinical, and even consumer decisions, it is clearly important for all parties with an interest in the question to understand why the evidence to date is unreliable.

This article describes the basis for the compensation hypothesis, provides an overview of the literature used to support it, and attempts to explain why the idea persists despite problems with the quality of the studies in this field. The content of this article is based on a series of studies recently conducted for a doctoral thesis,⁶ all of which have been published in peer-reviewed journals.⁷ Much of the current article focuses on whiplash research, in particular.

Two mechanisms for the compensation hypothesis are often proposed. One belief is that compensation and its related systems and processes are indeed harmful to health, and the other is that the lure of financial compensation prompts people to over-state the extent of their health problems or exaggerate the effects of those problems on their abilities to function. These two mechanisms are explored below.

ARE COMPENSATION SYSTEMS AND PROCESSES HARMFUL TO HEALTH?

The idea that compensation systems and the processes to procure compensation lead to worse health is based on a number of studies that have shown statistically significant correlations between such compensation-related factors and health. In particular, fault-based compensation schemes that require individuals to prove the cause, nature, and extent of their injuries to secure compensation are implicated in this

correlation. Delays in the receipt of compensation benefits and/or treatment are thought to be harmful to health and the adversarial nature of the process is believed to be harmful to recovery.⁸ This perspective is encapsulated in the statement that: "If you have to prove you are ill, you can't get well."⁹ In addition to the fact that not all studies report a negative correlation, however, the validity of studies in this field is limited by several important and unresolved empirical problems. Those problems include measurement error, selection bias and confounding, and the potential for reverse causality.

Measurement error

In the clinical or health literature, the term 'compensation' is often used to encompass a range of quite heterogeneous phenomena. Authors who have sought to examine the compensation hypothesis have variously done so by using measures of legal representation, indicators of legislative and administrative rules that are in place (for example, no-fault or fault-based injury compensation), monies paid to injured parties, and so on. These implicit conceptual differences across the studies complicate any interpretation of the corpus of evidence. Furthermore, homogenising these distinct concepts by treating them all as 'compensation' may lend credibility to decisions to limit financial compensation, even if compensation itself is not the source of ill-health at all.

There are also difficulties in measuring health outcomes due to their latent and imperfectly observable nature. This problem is compounded by the predominant focus in compensation research on measuring health in individuals with objectively unverifiable injuries, such as whiplash and lower back pain. Attempts to address this potential source of measurement error have included studying health outcomes in people with verifiable injuries, such as fractures and other traumatic injuries, and using verifiable proxies of health outcomes such as return to work and claim duration rather than subjective measures such as pain, for example. Such approaches do relieve the problem of hidden information

somewhat, but are subject to the same methodological limitations (described below) that afflict the validity of studies on unverifiable injuries. In addition, proxy measures of health such as claim closure are not always good indicators of symptom cessation and may, for example, reflect other phenomena (for example, financial incentives for insurance claims managers to reduce claim durations). Some of the challenges in measuring health in the compensation context, such as the reliance on self-reported health and the inability to verify some injuries through objective means, are not easily overcome.

Selection bias and confounding

In the clinical literature, the randomised controlled trial is the gold standard method for testing the effect of an intervention on an outcome of interest. It is not, however, generally feasible to randomise individuals to compensation-related interventions. Thus, the research in this field involves observational studies exclusively. In this context, two other potential sources of bias are important to consider: selection bias and reverse causality.

Selection bias arises in observational studies that seek to compare the behaviour of, or outcomes in, individuals who are exposed to a ‘treatment’ (for example, legal representation) and those who are not exposed to it (for example, individuals who self-represent). Selection bias arises when the observed groupings are, themselves, inherently non-random. In these circumstances, a causal inference cannot reasonably be drawn from a simple correlation between differences in the outcome of interest (for example, damages awarded) and the treatment (for example, legal representation) itself. If, for example, more severely injured people and people with higher incomes are more likely to seek legal representation, the damages awarded to them may be greater *even if* legal representation has no influence over damages awarded. When legal representation does influence damages awarded, failure to address a selection bias that is present causes both the treatment and selection effects to be attributed to the treatment, leading to a biased estimate of the true effect.

While the foregoing illustration refers to income and injury severity, other factors that are distinct from compensation-related variables may explain differences that arise between such groupings. A recent systematic review¹⁰ shows that none of the controlled longitudinal studies (that is, the highest-quality observational studies) on whiplash outcomes have actually been designed to test the effect of compensation-related factors, and consequently there has been no effort to address potential confounders in the relationship between these factors and health. As a consequence, even though statistically significant negative correlations are reported, it is inappropriate to interpret these correlations as evidence that compensation-related factors are the cause of worse health outcomes. The possibility that selection bias drives the empirical results in this literature has not been ruled out.

Reverse causality bias

In addition to the problem of unresolved selection bias, the fact that one’s health could itself influence decisions about

the pursuit of compensation is another important source of bias that has not been resolved, and it is seldom even acknowledged.¹¹ Reverse causality refers to ambiguity in the direction of causality; that is, does compensation-claiming lead to worse health, or does worse health lead people to claim compensation? In the compensation literature, the assumption that negative correlations between compensation-claiming and health reflect a causal pathway running *from* compensation-claiming *to* worse health dominates. The inverse and certainly plausible possibility that worse health (for example, symptoms, injury, or prognosis) leads individuals to claim compensation or to seek legal advice has for some reason been all but ignored. If the direction of causality is ambiguous, one cannot apply a causal interpretation to a statistical correlation regardless of its statistical significance and regardless of attempts to address selection bias and confounding.¹²

Why have important sources of bias been ignored?

Despite the presence of serious and unresolved sources of bias, there is widespread conviction across industry, clinical, legal, policy, and academic circles that compensation-related factors do adversely affect health. This view may persist for several reasons. First, most of the causal questions of interest in the clinical health literature concern clinical interventions that can be randomised to avoid selection problems. Second, in some non-randomised instances (for example, ‘does smoking cause lung cancer?’), the plausibility of reverse causation may be readily dismissed on clinical/theoretical grounds. By contrast, economists and other social scientists, who are well-acquainted with the problems of using observational data to answer questions that are not amenable to randomised trial (for example, ‘does higher income lead to better health or does better health lead to higher income?’), have developed a number of approaches to address such problems as reverse causality, selection bias and confounding.

The tendency of researchers to ignore (and perhaps be unaware of) important sources of bias in compensation research has led to the publication of numerous articles purporting to demonstrate that compensation and its related processes lead to worse health. The publication of these studies in well-regarded medical journals¹³ and under the auspices of respected bodies such as the World Health Organisation¹⁴ and the Royal Australasian College of Physicians¹⁵ is highly influential. Despite the fact that such studies suffer from serious and largely unaddressed measurement problems, the adoption of the resulting conclusions by powerful organisations, governments, clinicians, and researchers alike appears to have appeased the need to question the veracity of the data and methods used to draw those conclusions.¹⁶

ARE PEOPLE DELIBERATELY UNDER-STATING THEIR HEALTH STATUS?

The second mechanism relates to material pursuits and the idea that the availability of compensation and/or the quantum of benefits may prompt individuals to exaggerate their state of health for the purposes of financial gain. This is known, in >>

insurance economics, as a form of 'moral hazard'.¹⁷ Whiplash and other compensable soft tissue and musculoskeletal injuries and syndromes have come under particular scrutiny in relation to this argument as they cannot usually be objectively verified. Again, fault-based schemes that provide an opportunity to recover losses over and above those for treatment (for example, for economic loss and general damages) are usually implicated.

One approach to testing for moral hazard has been to compare whiplash rates between different insurance systems. A recent comparison across European countries¹⁸ showed wide discrepancies in whiplash rates, but failed to account for cross-jurisdictional differences in how whiplash is diagnosed. Countries that accepted self-reported symptoms as evidence of whiplash naturally had a higher rate of claims compared to those that required radiological proof of a whiplash injury. This finding is to be expected, as the vast majority of whiplash injuries involve soft tissues only, and are therefore not detectable by X-ray.¹⁹

Studies showing higher rates of claiming in fault-based schemes, such as that of Cassidy and colleagues,²⁰ are also often held up as proof of moral hazard. The Cassidy study does not, however, compare the health of claimants and non-claimants, or address how the pool of claimants alters in response to a change in scheme design. The reduction in the frequency of claims observed after switching from a fault-based to a no-fault scheme may simply demonstrate that individuals have responded rationally to the new set of incentives: individuals may be less able and/or less willing to exercise their right to pursue a claim for compensation when compensation benefits are lowered. Evidence of this kind does not necessarily suggest that prior to this legislative change people were padding or inflating their claims.

Another test for moral hazard that is methodologically more robust involves comparing the health of claimants pre- and post-claim settlement, to test whether symptoms abate when the financial incentive to understate health status has been removed. A review of these studies²¹ finds no evidence that claimants deliberately and systematically exaggerate their symptoms prior to the settlement of their claims when information about the extent of their injury is asymmetric. Those who have not yet settled their claims exhibit a very similar recovery trajectory compared to those who have reached settlement.

Why does the idea that people exaggerate their symptoms persist?

Despite a lack of empirical evidence of this form of moral hazard, several reasons²² explain why it is widely believed that people who claim compensation exaggerate their symptoms. One reason is the familiar tension between insurers and the insured. Another is the unverifiable nature of most whiplash injuries and their most common symptom, pain, which has led to suspicions about the veracity of whiplash injuries. For example, large proportions of health professionals suspect that claimants over-state their symptoms, and this is supported by the broad psychiatric criteria for malingering, which is to be 'strongly suspected' in medico-legal cases

involving a discrepancy between reported symptoms and objective findings.²³ Sensational media portrayals may also influence suspicions about the motives of claimants.

Financial compensation should, in theory, improve the ability of injured persons to purchase the treatment they need to recover from their injuries, which may be of particular importance if health insurance coverage is not universal and individuals are not privately insured. This is important, as those who claim compensation are in comparatively worse health than non-claimants²⁴ and are often substantially more disadvantaged by their injuries than is commonly appreciated, even in the case of seemingly minor injuries such as whiplash.²⁵ Furthermore, the amount of compensation awarded for personal injuries tends to be consistent with the objectively ascertained economic costs of damages,²⁶ although it has also been suggested that claimants may be systematically under-compensated.²⁷ It seems reasonable – in the absence of robust empirical evidence to the contrary – to believe that most of the relatively small proportion of people who do assert their legal right to claim compensation²⁸ have cause to do so. The clinical empirical evidence to date does not provide sufficient evidence that moral hazard in injury compensation claims is ubiquitous.

IMPLICATIONS AND CONCLUSION

Limiting injury compensation in the belief that it leads to worse health may not only be unjust if it deprives individuals of the compensation they rightfully deserve, but may be harmful to the health and wellbeing of claimants if their capacity to purchase necessary treatment is diminished as a result of insufficient financial compensation, if one assumes that the consumption of health services leads to better health.²⁹

Given the potential for selection bias and reverse causality in the observational literature, and the dearth of evidence that claimants exaggerate their symptoms, it is remarkable that proponents of the compensation hypothesis have managed to develop momentum. As decisions about injury compensation are guided to some extent by research findings, researchers in this field have a duty to minimise the potential for bias in their work, or at the very least to identify potential sources of bias. Based on a critique of the existing research, a more robust approach is evidently needed before conclusions can be drawn about the effects of compensation-related factors on health. Without this, there is a danger that actions to limit personal injury compensation in the belief that compensation-related factors are harmful to health may have a detrimental effect on the health and wellbeing of injured people. ■

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after surgery: a meta-analysis', (2005) 293(13) *Journal of the American Medical Association*, 1644-52. **3** NM Spearing, LB Connelly, 'Whiplash and "the compensation hypothesis"' (2011) 36 (25 Suppl) *Spine*, S303-8. **4** H Merskey, RW Teasell, 'The disparagement of pain: social influences on medical thinking' (2000) 5(4) *Pain Research and Management* 259-70; MR Trimble, *Somatoform disorders: a medicolegal guide* (Cambridge Press: Cambridge, 2004). **5** Cameron & Gabbe, see note 2 above. **6** NM Spearing, *The Compensation Hypothesis: An Examination of the Argument that Injury Compensation Negatively Affects Health Outcomes*, PhD Thesis (National Library of Australia, 2012). Available at: <<http://trove.nla.gov.au/work/171934034?q=Spearing&l-format=Thesis&c=book&versionId=187464136>> **7** Spearing & Connelly, see note 3 above; NM Spearing, LB Connelly, 'Does compensation lead to worse health or does worse health lead to compensation? Why both possibilities must be considered (Abstract)' (2011) Supplement 50 *Journal of Rehabilitation Medicine*, 27; NM Spearing, LB Connelly, 'Is compensation bad for health? A systematic meta-review' (2011) 42(1) *Injury*, 15-24; NM Spearing, LB Connelly, 'Response to Cassidy JD et al' (letter), (2011) 42(4) *Injury*, 429-30; NM Spearing, LB Connelly, S Gargett, M Sterling, 'Does injury compensation lead to worse health after whiplash? A systematic review' (2012) 153(6) *Pain*, 1274-82; NM Spearing, LB Connelly, HS Nghiem, L Pobereskin, 'Research on injury compensation and health outcomes: ignoring the problem of reverse causality led to a biased conclusion' (2012) 65(11) *Journal of Clinical Epidemiology*, 1219-26; NM Spearing, D Gyrd-Hansen, L Pobereskin, D Rowell, LB Connelly, 'Are people who seek compensation "cured by a verdict"? A longitudinal study of health outcomes after whiplash' (2012) 20(1) *Journal of Law and Medicine*, 82-92; LB Connelly, NM Spearing, *Compensation and health outcomes*, in M Sterling and J Kenardy, (eds), *Whiplash: Evidence base for clinical practice* (2011) (Chatswood, Australia: Churchill Livingstone), 144-56. **8** C O'Donnell, 'Motor accident and workers' compensation insurance design for high-quality health outcomes and cost containment' (2000) 22(1-2) *Disability and Rehabilitation*, 88-96. **9** NM Hadler, 'If you have to prove you are ill, you can't get well: the object lesson of fibromyalgia' (1996) 21(20) *Spine*, 2397-400. **10** Spearing, Connelly, Gargett & Sterling, see note 7 above. **11** *Ibid*; R Dworkin, 'Compensation in chronic pain patients: cause or consequence?' (Letter), (1990) 43 *Pain*, 387-88; RW Teasell, 'Compensation and chronic pain', (2001) 17(4 Suppl) *Clinical Journal of Pain*, S46-S51. **12** Spearing, Connelly, Nghiem & Pobereskin, see note 7 above. **13** Harris, Mulford, Solomon et al, see note 2 above. **14** Carroll, Holm, Hogg-Johnson et al, see note 2 above. **15** Australasian Faculty of Occupational Medicine, see note 2 above. **16** Spearing, see note 6 above; Connelly & Spearing, see note 7 above. **17** D Rowell and LB Connelly, 'A History of the Term Moral Hazard',

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