How does injury compensation affect health and disability in patients with complaints of whiplash? A qualitative study among rehabilitation experts-professionals

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Abstract

Purpose: To explore rehabilitation professionals' opinions about the influence and the pathways of injury compensation (IC) on health and disability in patients with whiplash associated disorder (WAD). Methods: Semi-structured interviews were performed among a purposeful selected sample of Dutch expert-professionals in the field of rehabilitation of patients with WAD. Inclusion continued until saturation was reached. Inductive and deductive thematic analyses were performed. Results: Ten rehabilitation expert-professionals (five females), working as physician, psychologist or physiotherapist, were interviewed. All expert-professionals acknowledged that IC can influence rehabilitation, health and disability. The expert-professionals provided three causal pathways; a pathway through prolonged distress, a behavioral pathway, and patient characteristics that may either attenuate or worsen their response. They assess the influence of IC mainly with interview techniques. Most professionals discuss the potential influence of IC with their patients, because they want to give clear information to the patient. Some emphasize that their role is neutral in relation with the IC. Others mention that financial consequences can accompany functional improvement. Conclusions: Rehabilitation expert-professionals believe that IC may affect rehabilitation, health and disability in patients with WAD. Three pathways are mentioned by the experts-professionals.

Implications for Rehabilitation

- According to rehabilitation expert-professionals, an injury compensation (IC) can lead to distress, by creating a (conscious or unconscious) conflict of interests within a patient between striving for compensation on one hand, and recovery on the other hand. Patient characteristics can either attenuate or worsen IC-related distress.
- Reliable and valid tools need to be developed to assess the influence of IC on health, disability and rehabilitation, and to limit the negative effects.
- Rehabilitation professionals can discuss the possible unintended effects of IC with their patients to clarify their current situation.

Introduction

Twenty to forty percent of the patients with whiplash associated disorder (WAD) demonstrate pain and other symptoms, as well as disability, 4 months after onset [1,2]. Several biological, psychological and social factors can predict delayed recovery [3,4]. Among the social factors is injury compensation (IC), which is defined as: the process to get payments for economic and non-economic losses for personal injury arising from an identifiable external cause [5,6]. Both the process for seeking compensation and the outcome of this process can differ substantially between patients [5]. In Europe, there are considerable differences between countries regarding the incidence of WAD and related costs, with the lowest rates in France and Finland and the highest in Great Britain. Switzerland has the
The primary aim of this study was to explore rehabilitation professionals’ opinions and practices regarding the influence and the possible causal pathways of IC on health and disability in patients with WAD. Because research on the opinions of rehabilitation professionals on this subject is currently lacking, a qualitative research design was adopted for this study.

The main questions investigated were:

1. Do rehabilitation experts-professionals acknowledge an influence of IC on health, disability, and on rehabilitation treatment, and which pathways may explain this influence?
2. How do rehabilitation experts-professionals address IC clinically, both in assessment (diagnosis) and treatment?

Methods

Design

Semi-structured interviews were conducted with rehabilitation experts-professionals. The interviews consisted of topics and semi-structured questions related to the research questions. The interviews were held between April and November 2013. Ethical approval was not needed, because there were no patients involved in this study.

Participants

The participants were purposefully selected Dutch expert-professionals in rehabilitation of patients with WAD. They were included because of their influential opinions on rehabilitation in patients with WAD, as demonstrated by a strong scientific publication record or professional leadership such as holding a position as professor or being an active member of relevant committees. The final list was made based upon a discussion between the authors (Table 1). The first eight on the list were asked to participate before the start of the study. Subsequent expert-professionals on the list were asked to participate until saturation was reached (no new topics were identified).

Procedures

The semi-structured interviews were conducted by the first author, who is an experienced physiotherapist, specialized in treating patients with WAD. This experience made communication with the expert-professionals easier. To ensure high quality interviewing, the interviewer received a prior training in conducting qualitative interviews. Also, the first two interviews were critically reviewed by the second author (M. P.) who provided feedback to the interviewer. Prior to the interview, participants were verbally informed about the procedure: duration (60 min.), themes, permission for recording the interview, and anonymity of their responses. The date and place of the interview

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were confirmed by telephone, and the semi-structured question form was sent via email prior to the interview.

**Interviews**

Six major topics were derived from the two research questions, each introduced with an open-format question to elicit as much spontaneous responses as possible. The following questions were investigated:

1. Do rehabilitation expert-professionals acknowledge an influence of IC on health and disability?
2. What could be the causal pathway of IC on health and disability?
3. How can IC influence rehabilitation?
4. How do rehabilitation expert-professionals assess the influence of IC on health and disability in an individual patient?
5. What are the pros and cons of this assessment?
6. How do rehabilitation expert-professionals discuss the possible IC effects with their patients and what are their (ethical) considerations?

Each of the six major topics was then further explored by introducing a set of predefined subtopics. The interview scheme was pre-tested in an interview with one of the co-authors (J. V.), who fulfilled our inclusion criteria. These data were not included in the analysis. If new relevant topics emerged during an interview, these were then added to the interview scheme for the next interview.

**Analysis**

Inductive and deductive thematic analyses were used to analyze the data with the help of Atlas-ti, version 7 [15]. First, the recordings of the interviews were transcribed verbatim. Second, specific thoughts and actions in relation to the six research questions were coded or identified as themes on the basis of their ability to “capture something important in relation to the overall research question” [15]. The salient themes were identified by coding the fragments, in order to develop a coding scheme. Both theory-driven codes, which were based on earlier studies and also included in the interview scheme [5,6,11,14], as well as data-driven codes were defined. This open-coding process was done until no new codes were generated and this resulted in a preliminary code scheme. Subsequently, two interviews were coded with this coding scheme by two researchers independently (S. v. d. M. and M. P.), and differences in coding were discussed until consensus was reached. A final coding scheme was determined and tested for inter-rater reliability between two researchers (S. v. d. M. and M. P.). Outcomes are presented in six paragraphs, corresponding with the six research questions that represent the central themes in this study. For the analysis within each of the themes, all coded fragments were interpreted to identify dominant opinions as well as deviating of opposing responses on relevant topics. This analysis was initially performed by the first two authors and subsequently critically commented by the other authors.

**Results**

**Participants**

Ten expert-professionals (5 females) were interviewed until topic saturation was reached. Five are rehabilitation physicians, three psychologists, and two physiotherapists. Eight participants have a PhD in the rehabilitation field. They work in rehabilitation centers or private practices in different parts of and settings in the Netherlands (Table 1). Their mean age was 55.3 years (S.D. 8.1, range 42–68). Five of the participants had published papers in peer-reviewed international journals. The number of papers ranged from 7 to 54. For more information see Table 1.

**Analysis**

The first two interviews were coded by the first two authors independently (S. v. d. M. and M. P.). Concerning the first-coded interview, there was a total agreement (inter-rater reliability) of 33% and a partial agreement (on sublabel) of 33%. After discussion there was full agreement on all labels and sublabels. Concerning the second interview there was a total agreement of 49% and a partial agreement (on sublabel) of 28%. After discussion, there was full agreement.

**Do rehabilitation expert-professionals acknowledge an influence of IC on health and disability?**

All expert-professionals acknowledge that IC can influence health and disability, although the prevalence of this phenomenon is estimated considerably differently by the experts-professionals. For example: 

I think that in almost everyone it plays a role, in greater or lesser degree (participant 2 and 9). In general, the participants indicate three life domains that all may be affected by an IC. They report impairments on functional aspects (decreased concentration), on activities (washing windows), and on participatory aspects (decreasing social activities). Regarding participatory aspects, the financial consequences when patients stop working are also mentioned. Although the expert-professionals agree that in general IC can affect outcomes unfavourably, this is not necessarily so in all situations. Patients can also benefit psychologically from an IC as this serves as recognition for their suffering, and enables patients to put the blame elsewhere. Experts-professionals also indicate a more instrumental benefit, in cases where the insurance company pro-actively helps a patient (financially) to obtain adequate treatment to recover. In contrast, when the insurance company approaches the patient less benevolent the procedure may become particularly stressful. As an expert-professional mentioned: 

that they also are suspected of a personality disorder, which can be really traumatic and insulting (participant 1).

**What could be the causal pathway of IC on health and disability?**

The expert-professionals provided three pathways, a pathway through prolonged distress, a behavioral pathway, and patient characteristics that may either attenuate or worsen their response. These pathways are elaborated below.

1. All expert-professionals agree that the compensation process can lead to prolonged distress, which affects health and disability directly. Consistent with the “International Classification of Function, Disability and Health” (ICF), the IC is regarded as an environmental factor that influences function, activity and participation level of the patient. One of the expert-professionals mentioned the role of myofascial trigger points; stress gives a disturbance of the “internal environment”, and that will aggravate their symptoms. Additionally, as already mentioned in the previous section, the interaction that patients have with their own insurance company and the liable company can be stressful and even harmful, with extraordinary little respect for the patients (participant 4). Also, continuing disagreement about a medical stable situation can be stressful: 

the patients are
always anxious about decisions relating to their medical situation. So, the complaints do not go away, if there is no calmness, security and safety. (participant 1) It can take years till the claim has come to a conclusion, and some expert-professionals therefore argue to reduce the time between start and end of the IC to limit the impact on health and disability.

(2) Within the behavioral pathway, IC serves as a reinforcing factor, rewarding behaviors that are conducive to receiving compensation. At the same time, behaviors promoting recovery are abated. The compensation the patient might receive from the IC can influence their behavior. In general, the professionals underscore the potential inherent conflict of interests between striving for compensation on one hand and recovery on the other: You have to recover, also you want to recover, however, you also have to show that you are disabled (participant 2). The expert-professionals believe that malingering by patients is rare, as patients usually appear to be unaware of this conflict of interests. This suggests that effects of IC on patients’ behavior would primarily occur unconsciously.

(3) The characteristics of patients most susceptible to IC effects seem to be rather heterogeneous, according to the experts-professionals. Patients can, for example, have a strong feeling of injustice, with an external locus of control: So it may happen that patient A, although going through a much more difficult IC case than patient B, still experiences less perceived injustice than B. Persons vary (participant 10). They can be socially deprived and/or have a history of anxiety, depression and/or pain catastrophizing. But there are also expert-professionals who contradict this view and who think that it can happen to anyone I (participant 1).

How does IC influence rehabilitation?

All expert-professionals believe that IC can influence rehabilitations. One example that IC influences rehabilitation in a positive way is that rehabilitation can be facilitated and paid by insurance companies and that advice about rehabilitation options were given by representatives of the insurance companies. One expert-professional reported a case in which a patient fully recovered after the IC was ended, another reported a better rehabilitation outcome after the struggle with the IC ended, or patients do not progress in a week that patients also have an appointment about the compensation. Sometimes rehabilitation programs will not be started or postponed, because of the way patients struggle with the IC: the patients are fighting with the IC, cannot stop the fight and cannot recover (participant 2, 6 and 8). Some expert-professionals report that they sometimes do not start or postpone a rehabilitation program, because of the lack of motivation and realistic goal-setting of the patient. Also, patients can exaggerate their impairments in neuropsychological tests. Such cases also illustrate behavioral pathways involved in IC, as mentioned above. Another experts-professional stated that the lack of motivation of the patient can negatively influence the motivation of the professional during treatment. The expert-professionals report difficulties in objectifying the struggle of the patient with the IC. One expert-professional specifically states: Basically, you deny a patient a healthcare intervention, based on the fact that the IC procedure is still ongoing. You cannot do that (participant 7). Sometimes a rehabilitation program is postponed until the IC is ended or has progressed to a more advanced stage: When the IC is very important for the patient, then you can decide together to first finish the IC and then start the rehabilitation program (participant 5). Also, self-management interventions are given in rehabilitation to teach patients to change their behavior, specifically in relation to the IC.

How do rehabilitation expert-professionals assess the influence of IC on health and disability in an individual patient?

Several techniques were reported by the professionals to assess the influence of IC. They ask whether there is a compensation claim and most also ask how patients cope with it. One expert-professional stated that the influence of the IC on health and disability is a multidimensional assessment made in a multidisciplinary team. The multidisciplinary team develops an opinion and judgment, based on discussion of information from the interviews, selects questionnaires (Tampa scale for Kinesiophobia [16] and the Hospital Anxiety and Depression Scale (HADS) [17], physical (A¨ strand test) [18] and functional tests (stair climbing). Most expert-professionals use interviews because it can be easily applied and produces valuable information, and one expert-professional mentions specific “open questions” and motivational interview techniques. At the same time, caution is needed according to some experts-professionals, as interviews may not be valid, and patients may easily become defensive. A professional said: Sometimes patients are annoyed during the treatment; they ask one of the therapists why we ask so many questions about the compensation claim (participant 5).

Do rehabilitation expert-professionals discuss the possible IC effects with their patients and what are their (ethical) considerations?

The majority of expert-professionals discuss the possible effects of compensation claims with their patients. One expert-professional explained it like this to his patients: You have a dilemma. You have to see me, and maybe you want to tell me that you are doing better. That is also the goal of our contacts. When you go to the physician of the IC, you want to emphasize that you are disabled and that you need compensation. Your accident is maybe three months or three years ago. Your compensation claim is about that period and for your claim you have to look to that period. Now we are going to look if you can recover. I don’t know if that will happen, and if that is not the case, this period can also be included in the compensation claim. Therefore, my advice is that you separate these periods. The compensation claim is about the moment until you get better, and now you are getting better (participant 4). Not all expert-professionals believe that this information directly improves the health of the patients, but it helps patients to clarify their current situation. The information can improve the relationship between professional and patient. However, sometimes the relationship ends, when patient decide to stop the rehabilitation program. The expert-professionals consider ethically that they want to give clear information to the patient, but the ultimate decision how to cope with a compensation claim is the responsibility of the patient. Some patients stop the IC on account of the discussion. A reason to not discuss the situation, is that the expert-professional will not be involved in the IC.

How do rehabilitation expert-professionals view their role and responsibility towards patients, insurance companies and others involved in the treatment of the patient?

The expert-professionals highlight that it is important to help the patient in a professional manner and to obtain a good treatment result. Some expert-professionals emphasize that their role is neutral regarding the IC: it does not matter to me if the IC pays the patient or not (participant 6). However, some other expert-
professionals mention that there can be financial consequences for the professional, because professionals get paid for their work. One expert-professional working in a private practice state that ‘‘no’’ isn’t easily said by therapists: When already three or four neuropsychological tests have been performed, and a therapist is asked to do one more, he will do it, otherwise someone else will do it. So, this situation continues (participant 1). Also negative consequences are mentioned; the medical reports they have to write for the IC are time consuming and limit the time they have for the patients. Expert-professionals mention that a collective interest of all stakeholders can be the good functioning and coping of the patient, the acknowledgement for the disability of the patient and a quick resolution of the compensation claim. According to the expert-professionals, the patient associations play an ambivalent role. On one hand, they can be supportive in helping patients with receiving acknowledgement of their disabilities. On the other hand, this can exacerbate the patients’ condition due to a one-sided position: what you have is really serious, miserable and difficult and we do not get any acknowledgement (participant 3). Other expert-professionals said that this has changed over the past years and that currently patient associations are more aware of their own responsibility in this process.

Discussion

To our knowledge, this qualitative study is the first to provide insight in the opinions of a selected group of rehabilitation expert-professionals about the influence of IC on health and disability in patients with WAD. All rehabilitation expert-professionals stated that IC can (usually negatively) influence health and disability, and recovery. Differences exist on the extent to which IC-interference may occur. The severe IC-related distress, rehabilitation impeding behavior, and patient characteristics were identified as pathways through which IC interference occurs. Finally, this study provided an initial understanding of how rehabilitation professionals in the Netherlands tend to address the issue in their clinic and how they perceive their own role and responsibility.

An important outcome of our study is that expert-professionals generally believe that IC can have negative side effects. However, positive effects may also occur. For example, the observation that IC can help patients to put the blame elsewhere can also be regarded as a positive factor, because they can externally attribute their current poor health and disability to the accident in the past [19]. A remarkable outcome in this study on this topic was the variation in the estimated prevalence of IC interference occurring in whiplash patients, which varied from an estimated 1% to almost 100% of cases. This variation in estimated prevalence does not seem to be dependent of the work setting (primary of tertiary care) or other characteristics of the experts-professionals. This lack of consensus may be consistent with the bidirectional nature of the relationship between IC and health [20,21]. On the one hand, patients with more severe impairments are more likely to obtain IC, while on the other IC may exacerbate symptoms. Therefore, not controlling for such reversed causality may lead to either overestimating or underestimating the prevalence of an IC interference.

Another outcome of this study are the mentioned pathways through which IC may influence health and disability. The most important pathway, as mentioned by the expert-professionals, appears to be that the IC itself may be a source of distress, which affects health and disability more or less directly. There is evidence that stress can affect the brain, cognition, and recovery [22,23]. The specific effects of stress emerge as a function of the timing and the duration of the exposure to stress [22]. That claimants may experience high levels of stress from IC schemes and that this experience is positively correlated with poor long-term recovery, was demonstrated in a recent Australian cohort study [23]. Also, central sensitization can play a role in this pathway, where distress reinforces sensitization and pain. However, underlying mechanisms are still unclear [24]. Similarly, biological markers to reliably and validly diagnose the structural effects of stress and sensitization on an individual level are still lacking [24]. That IC can lead to distress was also found in a meta-analysis on the effect of IC on mental health of patients, although the authors underscore this should be interpreted with caution, due to the limited quality of evidence [25]. Second, IC may indirectly interfere with rehabilitation through reinforcing adverse patient behavior impeding effective treatment. Apparently, the expected financial consequences from the IC can influence patients’ behavior. Patients who are striving for compensation may need to communicate poor health and disability, while at the same time they have to work on their recovery. This inherent conflict was also mentioned by Hadler in 1996. He wrote ‘‘the litigant is likely to lose the prerequisite skills for well-being… Inexorably, the litigant is drawn into the vulnerable state, too often never to return’’ [26]. The expert-professionals views were consistent with, but more nuanced than Hadler’s [26]. Also, an Australian longitudinal study showed a more nuanced vision and that removing the financial incentive does not have to influence the over-reporting of self-reported complaints [27].

Third, patient characteristics can play a moderating role, determining patients’ vulnerability for IC effects. This can also be related to the Communications model of Pain [28]. This model states that the experience of pain causes an internal reaction in the patient, which is influenced by intrapersonal and contextual factors [28]. This leads to verbal, non-verbal and behavioral expressions, which are influenced by the cognitions and emotions of the patients. It may be challenging for rehabilitation professionals and insurance workers to interpret these communications correctly. The internal reactions of patients are based on personal characteristics of the patient and his experiences with pain. Patients with a strong feeling of injustice and an external locus of control behave different from patients with an internal locus of control [29]. A questionnaire has been recently developed to measure perceive injustice, the Injustice Experience Questionnaire [30].

Further, this study explored how rehabilitation professionals tend to address IC in clinical practice, both with regard to diagnosis and treatment. It appeared that expert-professionals assess whether, how and to what extent IC may influence the rehabilitation process and outcomes, primarily through interviews. However, whether interviews are a valid method is debatable, because they are not always structured and standardized [31]. The experts, nor the authors of this manuscript, are aware of a validated means of assessing the influence of IC on health and disability. Therefore, it is recommended that valid instruments to measure the influence of the IC in rehabilitation are developed.

If IC is deemed to relevantly influence the rehabilitation process and outcomes, the expert-professionals will discuss the possible effects of IC with their patients. However, this will not directly influence outcomes, because this does not solve any of the pathways identified. Furthermore, the IC can influence the professional views of the professional and can lead to a self-fulfilling prophecies, in relation to the patient prognosis of health and disability [32]. The attitude of the patient can also lead to a self-fulfilling prophecy, if a patient does not change his behavior in relation to the therapy goals, the therapy does not work [32]. Pessimistic expectancies of the patient can therefore be
particularly self-fulfilling [32]. Professionals and patients must be made aware of this process through education. A recent quantitative study shows that procedural fairness of the compensation process is positively correlated with quality of life [11]. This study implicated that patients’ quality of life can be improved by increasing the fairness of the compensation process and communicating more directly towards the patients [11].

Several limitations of this study need some consideration as well. First, we discuss some issues regarding the sample included in this study. We purposefully selected expert-professionals. All selected participants agreed to participate, and we created a balanced mix in field of occupation. Most participants had earned a Doctorate Degree, which in general involves extensive training in communication and argumentation [33]. We consider this a strength of this study. However, we also acknowledge that the selection process is not fully transparent. The level of expertise was not assessed with objective criteria only, and detailed personal data could not be disclosed to protect anonymity of our respondents. In addition, the sample consisted of experts with various professional backgrounds in this field: psychologists, physiotherapists, and rehabilitation physicians. Clearly, with a sample size of 10 respondents no sub-analyses of results within these disciplines were possible. Further studies enabling comparative analyses between these disciplines might elucidate variation in opinions according to different professional perspectives. Another issue with regard to the sample is the extent to which the results may be generalized to an international context. We interviewed Dutch experts-professionals only. Because the Dutch system of rehabilitation care and IC procedures differs from other countries, replicating our study in an international context is needed to test the generalizability of our results. Additionally, it may provide information on whether the beliefs of these Dutch professionals reflect dominant beliefs specific to the Dutch subculture which may be (partially) related to system characteristics. Second, the inter-rater reliability was only tested once using the first and second interview and appeared low. Although all inconsistencies could be solved in a discussion between the first two authors and the coding scheme was revised accordingly, no second inter-rater reliability was tested to confirm reliability of the revised coding scheme. Third, the tendency of people to favor information that confirms their beliefs (confirmation bias) could have biased the expert-professionals in their opinions. Fourth, as this was a qualitative study, the outcomes should first of all be interpreted as expert-opinions on the subject of IC interference, and not as facts directly supporting this phenomenon. Furthermore, we only interviewed rehabilitation experts-professionals, so the results of this study cannot (directly) be generalized to patients and insurers. Fifth, we reached saturation on the main research questions. However, on some subthemes, such as the causal pathways and the influence of IC on rehabilitation, opinions differed widely suggesting that saturation was not reached on some of the subthemes. The underlying reasons for these differences are unknown and may be subject of further study. Finally, the first author may have been biased by her own experience as a professional in the field of physiotherapy. However, the other authors have different backgrounds and therefore improve the generalizability of the interpretations. In general, qualitative research is complex because quality of insight and interpretation are hard to appraise and requires a dialogue between the authors [34].

It is important to realize that recovery from WAD is a multifactorial process in which not only IC, but multiple environmental and personal factors determine health and disability outcomes [4,35]. Awareness of the potential influence of IC is relevant for rehabilitation professionals. In further research, attention should be paid to empirical support for causal pathways and validated means of assessing it, as well as developing tools for rehabilitation professionals to mitigate unwanted side effects of IC on health and disability.

Declaration of interest

The study was self-funded. There are no conflicts of interest and no financial benefits to the authors.

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