Why become more general when can be more specific? Comment on Hollins et al. "Perceived intensity and unpleasantness of cutaneous and auditory stimuli: an evaluation of the generalized hypervigilance hypothesis" [Pain 2009;141:215-221], and on Rollman "Perspectives on hypervigilance" [Pain 2009;141:183-184]. Letter to the editor.

Alberto Raggi
Neurology, Public Health and Disability Unit – Scientific Directorate, Neurological Institute "C. Besta" IRCCS Foundation, Milan, Italy

Jerome E. Bickenbach
Swiss Paraplegic Research, Nottwil, Switzerland

0304-3959/$36.00
doi:10.1016/j.pain.2009.05.016

Answer to the comment on: What is "normal" disability? An investigation of disability in the general population

In their comment on the article of Mewes et al. [2] Leonardi and colleagues [1] refer to a very important aspect, namely the influence of the environment on disability. The authors refer to the WHO concepts of disability (which, by the way, are only one way to define it). They note that this aspect was not considered sufficiently in our paper, as our study seemed to be based on the definition of disability as any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human [3]. However, we think that this reasoning of Leonardi et al. is based on wrong assumptions. We used the Pain Disability Index (PDI) as frequently used instrument to assess pain-associated disability, and we presented normative data for this instrument. Whether the PDI assesses disability in the sense of Leonardi and colleagues or not is the aim of validity studies, which was not our purpose.

The broadened version of the Pain Disability Index (PDI) assesses disability by bodily complaints in seven major areas of daily living (family/home responsibilities, recreation, social activities, occupation, sexual behavior, self-care, life-support activity). Consequently it is possible to differentially assess disability in these areas. We can assume that the presented normative data reflect disability in these areas for the living situation in Germany and similar countries. In this respect, environmental factors were addressed. How far they overlap with Leonardi et al.'s definition could be evaluated, but we want to point to the fact not to confuse ascertainment strategies with concept definitions. Our article focussed on improving the application of the assessment tool PDI, and therefore we depended on the concept on which this ascertainment strategy is based on.

We chose to present the data for those persons suffering from at least one somatic complaint in order to improve comparability to patients with somatic complaints in general. However, Leonardi et al. [1] stated that only norms for all persons in the general population irrespective of having somatic complaints or not would help to decide who is disabled and who is not. Therefore, we present norms for all persons in the investigated sample who filled out the PDI ($N = 2434$) in Table 1. In agreement with Leonardi et al. [1] we think that a decision about who is disabled and who is not should be made in a manner that is fit-for-purpose. For single-case decisions, the assessment of disability should include a differentiated picture of a persons living situation, which is beyond the possibilities of an economical self-rating instrument as the PDI.

Declaration of interest

The authors declare no conflicts of interest.

References

[1] Leonardi M, Chatterji S, Raggi A, Bickenbach JE. A comment on What is "normal" disability? – an investigation of disability in the general population. Pain 2009;144:341–2.

[2] Mewes R, Rief W, Stenzel N, Glaesmer H, Martin A, Brähler E. What is "normal" disability? – an investigation of disability in the general population. Pain 2009;142:36–41.

[3] WHO. International classification of impairments, disabilities, and handicaps. Geneva: WHO; 1980.

Ricarda Mewes,
Winfried Rief
Department of Clinical Psychology, University of Marburg, Gutenbergstrasse 18, 35032 Marburg, Germany

0304-3959/$36.00
doi:10.1016/j.pain.2009.05.011

Why become more general when we can be more specific? Comment on Hollins et al. "Perceived intensity and unpleasantness of cutaneous and auditory stimuli: An evaluation of the generalized hypervigilance hypothesis" [Pain 2009;141:215–221], and on Rollman "Perspectives on hypervigilance" [Pain 2009;141:183–184]

Hollins et al. [4] tested the generalized hypervigilance hypothesis, according to which hypervigilance leads to the perceptual amplification of a variety of aversive sensations [5]. They investigated somatosensory and auditory sensitivity in patients with fibromyalgia (FM) and temporomandibular disorders (TMD), and in a healthy control group. The study is well-designed, and the results are relevant and intriguing. In comparison with healthy controls, patients showed an increase in perceived intensity of both somatic and auditory stimuli, even for low-intensity stimuli below the unpleasantness threshold.

We disagree with their explanation in terms of hypervigilance, i.e., "those types of stimuli that are associated with pain are amplified because of the attention that is habitually directed toward them" (p. 214). The authors seem to favor this interpretation simply because the found lower thresholds are significantly related to the scores on a "widely recognized" measure of hypervigilance (p. 220). However, the used self-report measure (PILL [6]) is not a valid measure of hypervigilance but rather a symptoms checklist.

Hypervigilance is not a descriptive term, and may not be equated with heightened symptom reporting [2]. It is a theoretical construct, referring to "a habit to attend to somatic distress signals" [1]. Of critical importance is thus to demonstrate that attentional processes, such as vigilance and scanning, are involved [2]. This was not done in the study of Hollins et al. [4].

We agree with Rollman's editorial [7] that we do not know whether hypervigilance is at stake, or which processes account for the pattern of hyper-responsivity to somatic sensations in patients. However, we disagree with his suggestion that the view of hypervigilance as an attentional mechanism is currently too restricted, and that "hypervigilance may compose a number of elements" (p. 183), such as greater sensitivity, somatic attribution style, and maladaptive coping. Hypervigilance is a specific construct, and we risk of throwing away the 'baby with the bathwater' when the term is used in an over-inclusive, unparsimonious, way. A specific use of the term hypervigilance makes possible the development of theoretical models with testable hypotheses [2] and the development of specific guidelines for treatment [3]. The challenge for future research is to examine adequately the specific contribution of hypervigilance to pain. Recent advances in behavioral and neurophysiological research [8,9] show that we are now well armed for this challenge.

References

[1] Chapman CR. Pain: the perception of noxious events. In: Sternbach RA, editor. The psychology of pain. New York: Raven Press; 1978. p. 169–202.
[2] Crombez G, Van Damme S, Eccleston C. Hypervigilance to pain: an experimental and clinical analysis. Pain 2005;116:4–7.
[3] Elomaa MM, Williams AC de C, Kalso EA. Attention management as a treatment for chronic pain. Eur J Pain 2009, in press. doi:10.1016/j.ejpain.2008.12.002.
[4] Hollins M, Harper D, Gallagher S, Owings EW, Lim PF, Miller V, Siddiqqi MQ, Maixner W. Perceived intensity and unpleasantness of cutaneous and auditory stimuli: an evaluation of the generalized hypervigilance hypothesis. Pain 2009;141:215–21.
[5] McDermid AJ, Rollman GB, McCain GA. Generalized hypervigilance in fibromyalgia: evidence of perceptual amplification. Pain 1996;66:133–44.
[6] Pennebaker JW. The psychology of physical symptoms. New York: Springer-Verlag; 1982.
[7] Rollman GB. Perspectives on hypervigilance. Pain 2009;141:183–4.
[8] Van Damme S, Legrain V, Vogt J, Crombez G. Keeping pain in mind: a motivational account of attention to pain. Neurosci Biobehav Rev 2009, in press. doi:10.1016/j.neubiorev.2009.01.005.
[9] Wiech K, Ploner M, Tracey I. Neurocognitive aspects of pain perception. Trends Cogn Sci 2008;12:306–13.

Stefaan Van Damme
Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium
Tel.: +32 92649149; fax: +32 92646489.
E-mail address: Stefaan.Vandamme@UGent.be

Geert Crombez
Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium

Katja Wiech
Oxford Centre for Functional Magnetic Resonance Imaging of the Brain, Department of Clinical Neurology, University of Oxford, John Radcliffe Hospital, Oxford, UK

Valéry Legrain
READ – Unité de Réadaptation et de Médecine physique, Université catholique de Louvain, Louvain-la-Neuve & Brussels, Belgium

Madelon L. Peters
Department of Clinical Psychological Science, Maastricht University, The Netherlands

Christopher Eccleston
Centre for Pain Research, School for Health, University of Bath, UK

doi:10.1016/j.pain.2009.04.035

Response to the letter to the editor by Van Damme and Colleagues

We are grateful to Van Damme et al. [11] for their thoughtful comments on our recent article dealing with hypervigilance [6]. In that article, we document by means of direct scaling that chronic pain (TMD and FM) patients who are hypervigilant, as measured by a questionnaire, show perceptual amplification of sensations aroused by cutaneous pressure, at both noxious and (less expectedly) innocuous levels of intensity; simple auditory stimuli were also perceptually amplified, although to a lesser degree. Our results are consistent with the long-held view of Rollman and colleagues [7,10] that hypervigilance involves perceptual amplification that encompasses more than the perception of pain, affecting aversive sensations in any modality (“generalized hypervigilance”).

As our article explained, the concept of hypervigilance has evolved since it was first introduced into the pain literature by Chapman [2], who thought of it as heightened attention to sensations that were painful or were thought by the patient to have negative health significance. Perceptual amplification was not part of his description. The primary concern of Van Damme et al. is that we should strictly adhere to Chapman’s original usage of the term hypervigilance, and that to do otherwise is “throwing away the ‘baby with the bathwater’”. We respectfully disagree. Most scientific concepts evolve over time: Just in our own field, consider the widely accepted changes that have occurred in the meanings of the terms pain, hyperalgesia, and nociceptor. In classical terminology we could say that hypervigilance causes or is associated with perceptual amplification, but if this link is consistently present, as research appears to indicate, it may actually be more straightforward to say that both heightened attention and perceptual amplification are *components of* hypervigilance.

Van Damme et al. [11] also maintain that the PILL is not a valid measure of hypervigilance, because it is a symptom checklist – or, more precisely, a list of symptoms whose frequency of occurrence the respondent is asked to report. Most of these symptoms are relatively minor ones (runny nose, indigestion, sunburn, etc.) that everyone has from time to time, but does not pay much attention to. The use of this questionnaire by pain researchers as a measure of hypervigilance [1,5,7] or somatic focus [8] rests historically on the extensive research that went into the development of this instrument by social psychologist James Pennebaker [9] and colleagues. They found, for example, that experimental subjects whose attention is directed inward by the sound of their own breathing while walking on a treadmill, will later report more symptoms than subjects who listened to street noises. Alertness to possible symptoms, in other words, is a major contributor to reporting them. Very hypervigilant people will report that they have a majority of the symptoms on the PILL at least monthly; these symptoms are, by design, so diverse as to make an organic explanation unlikely. Pennebaker does not use the term hypervigilance, but his work is consistent with this concept.

It is, of course, desirable to measure hypervigilance in different ways. The technique of measuring the ability of painful stimuli – or stimuli that the subject fears may be painful – to interfere with performance on an unrelated task (e.g. auditory discrimination) is certainly a valuable research tool [3,4]. This method appears to be especially effective in demonstrating attentional effects when the threat value of pain is high. Our research is to some extent complementary to this work, in that we showed hypervigilance (manifested as perceptual amplification) to be robust even when subjects are experiencing 15-s presentations of very gentle pressure, which they are unlikely to perceive as threatening. Hypervigilance does indeed appear to be a multifaceted phenomenon that requires additional study and conceptual development [10].

We have no relationship, financial or other, that might lead to a conflict of interest in the publication of this letter.

References

[1] Campbell CM, Edwards RR, Fillingim RB. Ethnic differences in responses to multiple experimental pain stimuli. Pain 2005;113:20–6.
[2] Chapman CR. Pain: the perception of noxious events. In: Sternbach RA, editor. The psychology of pain. New York: Raven Press; 1978. p. 169–202.
[3] Crombez G, Eccleston C, Baeyens F, Eelen P. When somatic information threatens, catastrophic thinking enhances attentional interference. Pain 1998;75:187–98.
[4] Crombez G, Van Damme S, Eccleston C. Hypervigilance to pain: an experimental and clinical analysis. Pain 2005;116:4–7.