



Editorial comment

Behavioural inhibition in the context of pain: Measurement and conceptual issues

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1. Introduction

In this issue of the *Scandinavian Journal of Pain*, Mark Jensen and colleagues [1] publish a study testing two specific predictions put forward by the Behavioural Inhibition/Behavioural Activation (BIS/BAS) two-factor model of chronic pain [2]. First, the authors hypothesized that trait behavioural inhibition, namely the tendency to respond to signals of threat with behavioural withdrawal and negative emotions [1], would have a direct negative effect on the psychological and physical functioning of people with chronic pain. Second, the authors also hypothesized the existence of an indirect (moderating) effect of trait behavioural inhibition on the relationship between pain-related cognitions and functioning. Cross-sectional self-report data from 88 chronic pain patients showed partial support for these hypotheses. Trait behavioural inhibition was found to have the expected direct negative effect on depression, but not on physical functioning. The expected moderating effect was only shown for the relationship between fear of movement/re(injury) and depression. This study offers partial support to a newly proposed theory, thus encouraging research in this area.

2. The behaviour of behavioural inhibition

The concepts of behavioural inhibition and behavioural activation are only now starting to be investigated in the field of pain. Previous research in other fields has also shown a direct effect of trait behavioural inhibition on depression (e.g., Gable et al. [3]). Unfortunately, the results did not yield the expected (direct or indirect) effects of trait behavioural inhibition on pain interference, which is how physical functioning was operationalized in the study of Jensen et al. [1]. We believe that this null finding raises an important conceptual issue with regards to the nature of the direct relationship between behavioural inhibition and physical functioning.

Behavioural inhibition is described as an action tendency, but not as an action itself. Its effects on physical functioning will thus presumably be mediated by intermediate behavioural processes. These are likely to reflect attempts to avoid cues, activities or events that are expected to cause pain. Future studies may include measures of avoidance behaviour or other activity patterns, and investigate whether they mediate the relationship between trait behavioural inhibition and physical functioning. Understanding the exact behaviours likely to reflect a high trait behavioural inhibition in the context of (chronic) pain will potentially also lead to modifications or refinements of the 2-factor BIS/BAS model [2].

3. Measuring behavioural inhibition in the context of pain

To measure behavioural inhibition, the authors used the BIS subscale by Carver and White [4]. This is a widely used measure with good psychometric qualities (e.g., Leone et al. [5]). However, this measure reflects “a concern over the possibility of a bad occurrence [...] or a sensitivity to such events when they do occur” (Carver and White, 1994, p. 322 [4]), and, as Jensen et al. [1] acknowledge, is not specific to pain. The authors suggest that this generic instrument failed to yield (larger) effects that would otherwise be revealed had a pain-specific measure of behavioural inhibition been used.

Although this is plausible, we wonder what the theoretical implications of such a measure would be. One of the important assets of the 2-factor BIS/BAS model of pain [2], which the present study by Jensen et al. [1] partially tested, is that it proposes overarching, pain-irrelevant personality factors that predispose individuals to pain problems. In this way, the measure can predict which individuals are likely to develop chronic pain problems when confronted with pain at some point in their lives (e.g., due to an operation or injury). This characteristic differentiates the 2-factor BIS/BAS model from other theoretical approaches, such as the Fear-Avoidance Model of pain of Vlaeyen and Linton [6,7], which focus on pain-specific factors. Further, this asset might be lost if trait behavioural inhibition is substituted by pain-specific behavioural inhibition, because the latter will likely overlap too much with existing constructs such as pain-related fear or pain catastrophizing (cf. [8]).

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Further, whereas it will be possible to specify behavioural inhibition with regards to pain, the same will likely not be possible with behavioural activation, which by definition focuses on reward, and might thus be a subject of more variability. In our opinion, given that the 2-factor BIS/BAS model of pain was proposed recently [2], it deserves to first undergo rigorous testing before the focus of its main concepts is adjusted from being generic to being specific to pain.

4. Conclusion

The findings presented by Jensen et al. [1] provide partial support to specific expectations put forward by the recently proposed 2-factor BIS/BAS model of pain [2]. Although not all hypotheses were confirmed, it is important that the investigation of the model's predictions continues. Given the finding that the relationships predicted by the model are to a large degree bidirectional, the accumulating body of research will ideally extend to include also experimental and longitudinal studies that will investigate this bidirectionality of the relationships. Prospective studies, for example with patients about to undergo an operation, might shed light on whether levels of trait behavioural inhibition (as well as trait behavioural activation), predict whether the patient will recover swiftly or will take the maladaptive path to pain chronification.

Conflict of interest

None declared.

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