Clinical pain research

Context sensitive regulation of pain and emotion: Development and initial validation of a scale for context insensitive avoidance

Ida K. Flink*, Ester Klein-Strandberg, Steven J. Linton

Center for Health and Medical Psychology (CHAMP), School of Law, Psychology, and Social Work, Örebro University, Örebro, Sweden

HIGHLIGHTS

- Context insensitivity is a possible shared mechanism in pain and emotion.
- One core aspect of context insensitivity is avoidance of expression.
- There are no instruments for assessing context insensitive avoidance of expression.
- We describe the development of a scale to assess this construct.
- This tool may be used both clinically and in further research.

ARTICLE INFO

ABSTRACT

Background and aims: Context insensitivity has been put forward as a potential mechanism explaining the high co-occurrence of pain and emotional distress. In the pain literature, the concept has only been introduced at a theoretical level and an assessment tool for exploring its impact is lacking. In an interpersonal setting, a core aspect of context sensitivity and insensitivity concerns when to disclose and when to avoid expressing pain and related distress. Both context insensitive disclosure and context insensitive avoidance may hamper interpersonal support and fuel the problem. This exploratory study describes an attempt to develop a self-report instrument to assess tendencies to disclose vs. avoid expressions of pain and related distress, as well as self-perceived adjustment of disclosure vs. avoidance to the context.

Methods: A pool of items was systematically developed to assess different aspects of context insensitivity, including disclosure vs. avoidance of expression. 105 participants with persistent pain were recruited at pain rehabilitation clinics (80% of the sample) and in a university setting (20% of the sample). The participants responded to the pool of items as well as to a number of validated self-report instruments covering pain, pain-related disability, pain catastrophizing, emotion regulation tendencies, self-compassion and pain acceptance. The analyses explored the factorial structure of the initial instrument, as well as the criterion and construct validity.

Results: The analyses confirmed a stable underlying structure of the initial scale, with four distinct factors explaining 64.4% of the total variance. However, the criterion and construct validity could only be confirmed for one of the factors, which contained items reflecting context insensitive avoidance of expression. Consequently, only this factor, demonstrating very good internal consistency, was kept in the final version of the instrument which was named context insensitive avoidance (CIA).

Conclusions: We found support for the final version of our instrument, capturing one prominent aspect of context insensitivity. Avoidance of expression was related to higher ratings of pain, disability, catastrophizing and suppression as well as to lower levels of self-compassion. We encourage further studies to explore the impact of context insensitive avoidance for regulating pain and associated negative emotions. Yet, more research is needed that goes beyond self-report and includes other aspects of context. It is urgent to develop systematic ways for assessing context insensitivity, as it will enhance our understanding of regulatory strategies as potential transdiagnostic mechanisms in pain and emotion.

Implications: This tool for assessing contextually insensitive avoidance of expression could potentially be used both clinically and in future research to advance our understanding of comorbid problems with pain and emotional distress. Further research is needed to develop methods for assessing other aspects of context insensitivity to fully understand its impact in patients suffering from pain.

* Corresponding author at: School of Law, Psychology, and Social Work, 70182 Örebro, Sweden.
   E-mail address: ida.flink@oru.se (I.K. Flink).

1. Introduction

Context sensitivity is an inciting newly introduced concept in the pain literature. It has been defined as "the degree to which a response is in tune with the ever changing demands of the context" ([1], p. 130) and is put forward as a potential mechanism explaining the high co-occurrence of pain and emotional distress [1]. Earlier research has shown that up to half of pain patients experience coexisting major depression [26], and even more display depressive symptoms [2]. A recent study found that more than 50% of chronic pain patients displayed clinically relevant levels of *both* depressive symptoms and anxiety [27]. According to a transdiagnostic approach, pain as well as emotions may be driven by certain shared mechanisms [3]. In fact, the strategies used for regulating pain ("pain coping strategies") and negative emotions ("emotion regulation strategies") are markedly similar. For instance, withdrawal or avoidance is commonly described in both areas [4]. To be adaptive, regulatory strategies need to be applied flexibly depending on the circumstances, which is the core aspect of context sensitivity.

In the emotion regulation literature, the importance of context sensitive use of regulation strategies has been raised. According to the *regulatory flexibility model* [5], which has provided the theoretical source of inspiration for the current study, no emotion regulation strategy is either adaptive or maladaptive in and of itself, it is rather the ability to adjust it to the context that determines whether it is functional or not.

In the pain literature, the concept of context sensitivity has only been introduced at a theoretical level [1] and to our knowledge an assessment tool for exploring its impact is lacking. One explanation for this is that it is difficult to incorporate all aspects of context sensitivity into one measure. In the present study, we chose to focus on a specific regulatory dimension, namely disclosing vs. avoiding expressions of pain and related distress. Moreover, we narrowed our attention to a certain type of context, specifically interpersonal situations. This is extremely relevant since disclosing personal experiences in a context sensitive manner elicits emotional support which in turn relieves suffering. However, when disclosure is not sensitive to the context, e.g. when personal feelings are disclosed to a stranger or when a loved one cues for disclosure, but disclosure is nevertheless avoided, support is lost and the encounter might fuel more distress. By disclosing pain and related distress in a context sensitive manner, the patient gets emotional support which relieves suffering. Both context insensitive disclosure and context insensitive avoidance may hamper interpersonal support and fuel the problem.

This exploratory study describes an attempt to develop a self-report instrument to assess tendencies to disclose vs. avoid expressions of pain and related distress, as well as self-perceived adjustment of disclosure vs. avoidance to the context.

2. Method

2.1. Overview of the design

A preliminary scale was systematically developed as described below, and the psychometric properties were tested on a sample of individuals with persistent pain.

2.2. Participants

Inclusion criteria in the study were age > 18 years and pain duration > 3 months. A total of 105 individuals participated in the study. In terms of gender, 69% identified themselves as women, 29% identified as men and 2% identified as "other". The mean age was 40 (SD = 14.62) and the mean pain duration was 7 years (SD = 9.19).

The study was approved by the Regional Ethical Review Board in Uppsala, Sweden (D Number 2015/480/1).

2.3. Recruitment

To get a range of pain problems as well as participants from a range of age groups, we used two sources of recruitment. The majority of the sample (80%) was recruited at two pain rehabilitation clinics in central Sweden. Local staff at the clinics provided patients with printed materials with information regarding the study and handled the administration of questionnaires. Patients were informed that their choice whether to participate or not would not affect their usual care at the clinic. The remaining part of the sample (20%) were students recruited at a Swedish university. Students received information about the study in connection with ordinary lectures and were invited to participate if they fulfilled the inclusion criteria. All participants were offered vouchers worth 10 Euros as incentives. For participants who accepted the vouchers, personal identification data were gathered for administrational purposes and this data was stored separately from the questionnaires. For the purpose of the study, no personal identification data was collected.

2.4. Measures

Swedish versions of all measures were used.

2.4.1. Demographical data
Participants were asked to complete details about age, sex and pain duration.

2.4.2. Development of a scale to measure context insensitivity
The initial version of the instrument was constructed to capture different aspects of context insensitive responding in an interpersonal context with the focus on why people disclose or not disclose difficulties with pain. The regulatory flexibility model [5] was used as the theoretical basis. According to this model, emotion regulation involves detecting cues in the environment, ensuring a broad repertoire of skills and monitoring and adjusting behaviours based on feedback. We included all these aspects in the original pool of items which consisted of 118 items. In addition to the model, qualitative data from two focus groups interviews (described in [1]) on the theme of pain disclosure was used as a source of inspiration. Following the completion of the item pool, the items were reviewed by the authors for clarity and conceptual overlap and tested on 10 pilot participants who provided feedback with regard to face validity and comprehensibility. Based on this feedback and review, 84 items were eliminated. Examples of reasons for elimination were redundancy, questionable ability to capture the construct of interest (e.g. due to ambiguity or complexity) and suboptimal face validity. The remaining pool of items consequently consisted of 34 items as listed in Table 1. Responders used a 7-point scale to rate the extent to which they considered each statement as being true for them (1 = *Not at all true*; 7 = *Completely true*).

2.4.3. Criterion validity
Pain intensity and pain-related disability were used as criterion-variables. A brief version of the pain severity subscale from the Multidimensional Pain Inventory (MPI [6]) was used to assess pain intensity, and the interference subscale from the same questionnaire was used to assess pain-related disability. The brief version of the pain severity subscale consists of two items (severity of pain during the past week; level of pain at the present moment), while the interference subscale consists of 9 items (e.g. affects the ability to participate in social activities; affects ability to work). All items are rated on a 7-point scale. The MPI has demonstrated