Testing the Schema Enmeshment Model of Pain (SEMP): cognitive biases, depressed mood and future thinking in chronic pain

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Introduction

- Depressive symptoms are common in chronic pain. Previous research has found differences in information-processing biases between depressed and non-depressed pain patients, with strong evidence for the existence of recall biases in chronic pain (1,2). Negative future thinking is common in depression, but has not been explored in relation to chronic pain and information-processing models. This study aimed to test the SEMP with reference to future thinking (see Fig. 1).
- This study employed an incidental recall task to test the hypothesis that depressed chronic pain patients will recall more health-related words encoded in reference to the future compared to non-depressed chronic pain patients. Such a recall bias may result in the strengthening of pain schemas and the maintenance of the pain experience.

Methods

Sample
- N = 115 adults (mean age 45.5 years; SD = 13.5): 26 depressed chronic pain patients; 28 non-depressed chronic pain patients; 26 depressed patients without pain & 25 matched healthy controls. HADS depression cut-off points of 11 (‘probable case’) were used to assign pain patients to the groups. Participants were recruited from pain clinics and general practices.

Measures
- Endorsement and Recall Task: Participants were asked to endorse positive and negative health-related, depression-related, and neutral (control) adjectives, encoded in reference to either current or future time-frame. Incidental recall of the adjectives of the adjectives was then tested.
- Hospital Anxiety and Depression Scale (HADS)
- Statistical analyses

MANOVAs were conducted on endorsement and recall data to test for interactions between groups and variables of interest. This involved one-way and repeated measures ANOVA.

Results

- Results revealed that depressed pain patients were characterized by increased recall of health-related information, negative future-related information and absence of a bias towards positive health-related information compared to non-depressed pain patients. However, no evidence was found for a bias towards negative future health-related stimuli. Additionally, patterns of endorsement and recall bias differed.

Recall biases and future thinking I:

Fig. 1. The Schema Enmeshment Model of Pain (2)

Recall biases and future thinking II:

Fig. 2. Proportions of negative health-related words in the current and future condition by groups
- Groups did not differ significantly on recall of proportions of current health-related negative words, but they differed significantly on recall of future health-related negative words, current depression-related negative words and future depression-related negative words.

Fig. 3. Proportions of negative depression-related words in the current and future condition by groups
- The depressed pain group recalled significantly more future health-related negative words than the depressed group without pain, while the depressed group without pain recalled fewer words of this category compared to the control group (see Fig. 2).
- The depressed group without pain recalled significantly more current depression-related negative words than the non-depressed pain group and the control group. The depressed pain group recalled sign more future depression-related negative words compared to the control group (see Fig. 3).

Conclusion

- The depressed pain group showed a general bias towards health-related words regardless of the timeframe and preferential processing of negative words from the future-referent condition. In contrast, the non-depressed group showed a similar bias towards health information, together with a bias towards positive health information with reference to the future. These results extend our understanding of future thinking in chronic pain within the context of the SEMP and advocate the further investigation of the absence of a bias towards future positive health-related information in chronic pain patients with depressive symptoms.

References


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