Depression in acute and subacute back pain: Is the relationship between pain and depression mediated by cognitive pain responses?

Janina Hülsebusch a, Adina C. Rusu a,b, Monika I. Hasenbring a

a Department of Medical Psychology and Medical Sociology, Faculty of Medicine, Ruhr-University of Bochum, Germany
b Department of Psychology, Royal Holloway, University of London, U.K.

Background and aims
Depression is commonly seen in chronic pain patients and, furthermore, depression is a well-known risk factor indicating the development of chronic pain and disability in acute/subacute pain patients. However, the relationship between pain and depression is far from clear. In the cognitive mediation hypothesis, cognitive factors are conceptualized as mediators between pain and depression. In line with this model, catastrophizing and hopelessness have already been identified as factors influencing depression. More recently, thought suppression of pain thoughts has been shown as a further mediator in a sample of chronic low back pain patients (see figure 1). Thought suppression is a non-focused search for distraction from pain that often fails. These failures cause emotional distress and depressive mood.

The aim of the present study was to investigate the cognitive mediation hypothesis in acute and subacute back pain patients with thought suppression besides catastrophizing and help/hopelessness as potential mediators. It was suggested that pain itself has no effect on depression, but indirectly via the cognitive pain responses help/hopelessness, catastrophizing and thought suppression.

Methods
- 83 female and 81 male participants (N=164) with acute or subacute non-specific back pain (pain duration < 12 weeks)
- Average pain intensity (last seven days) was measured by an 11-point numerical self-rating scale (from 0-no pain to 10-worst pain imaginable)
- Depression: Beck-Depression-Inventory (BDI) E
- Pain-related cognitions were measured with the subscales help/hopelessness, catastrophizing and thought suppression from the KRISS of the Kiel Pain Inventory (KPI) E

Results
- Model fit: X²(df=1)=2.02, p=0.15; CMIN/DF=2.02; RMSEA=0.08; CFI=0.99
- Results are shown in figure 2. Pain has a significant influence on catastrophizing (β=0.34; CR=4.46; p<0.001), also significant is the path between catastrophizing and help/hopelessness (β=0.61; CR=9.96; p<0.001). We found significant paths between thought suppression and help/hopelessness (β=0.14; CR=2.40; p<0.05), thought suppression and depression (β=0.16; CR=2.15; p<0.05), as well as pain and help/hopelessness (β=0.13; CR=2.09; p<0.05).
- There was a significant path between pain intensity and catastrophizing, but only an indirect path between catastrophizing and depression via an increase in help/hopelessness.
- There was a direct path between pain intensity and help/hopelessness and between help/hopelessness and depression.
- Concerning thought suppression, there we found both, a direct path to depression and an indirect one via an increase in help/hopelessness. We did not identify a path between pain intensity and thought suppression in this sample of acute/subacute patients.

Conclusion
This was the first study investigating thought suppression, catastrophizing and help/hopelessness as potential mediator variables between pain and depression in a sample of acute/subacute back pain. Similar to the chronic sample, we found a direct path between pain, help/hopelessness, and depression. In both samples, catastrophizing revealed only an indirect path to depression via an increase in help/hopelessness. Concerning thought suppression, the results differed between both studies. Whereas the chronic patients in the Kläsen study revealed a direct path between pain and thought suppression, and further a direct path to depression, in the present study we found both, a direct and an indirect path between thought suppression and depression, the latter via help/hopelessness. We further did not find a relation between pain and thought suppression. The results indicate that in an early phase of the disease, thought suppression seems not to be an automatically response to pain. It is perhaps only shown by a subgroup of patients. As a clinical consequence, the different mediating paths between pain and depression should be considered more individually in cognitive-behavioral treatment modalities.

References

Contact details
MSc. Psych., Janina Hülsebusch
Department of Medical Psychology and Medical Sociology, Ruhr-University of Bochum

44780 Bochum, Germany
hulsebusch@medpsych.ruhr-uni-bochum.de
Phone: 0049 234 32 11968