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Attention focus, trait anxiety and pain perception in patients undergoing colposcopy

Susanna Kola, Jane C. Walsh, Brian M. Hughes & Siobhán Howard

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Introduction

• Invasive medical procedures are considered very stressful and anxiety evoking by patients.
• Anxiety in turn affects acute pain, e.g., heightened anxiety reduces pain threshold/tolerance, increases pain intensity
• Attention is also linked to pain perception
  – Distraction
  – Sensory focusing
Introduction

• Focus of attention a mediational role in the perception of pain - can lead to increased or decreased pain reports

• **Distraction**
  – Reduced pain perception (e.g., Devine & Spanos, 1990)
  – Increased pain tolerance (e.g. Piira et al., 2005; James & Hardardottir, 2002)

• **Sensory Focus**
  – Reduced pain perception (e.g., Ahles et al., 1983)
  – Increased pain tolerance (e.g., Keogh & Herdenfeldt, 2002)
Introduction

• Effects of anxiety due to underlying anxious trait?
  – Failure of previous studies to account for anxious disposition

• Expectations of pain correlated with pain experience
  – Particularly important in medical situations?
Methodology

- **Aim:** Evaluating two attention-based interventions, while assessing the effect of trait anxiety and pain expectancy on outcomes (self-reported pain, anxiety, and affect)
  - **Colposcopy:** diagnostic procedure aimed at detecting pre-cancerous cervical lesions
- **123 patients underwent procedure in one of 3 conditions:**
  - **Active distraction:** engaged in cognitive task on laptop
  - **Sensory Focus:** focus on sensations in non-emotional way
  - **Undirected control:** standard care
Results

• Pain expectancy was significantly related to experienced pain intensity, sensory pain, affective pain, and peak pain
  – greater expectations of pain prior to colposcopy resulted in greater self-reported pain

• Trait anxiety was not significantly related to any of the pain measures, except the McGill Pain Questionnaire item ‘miscellaneous pain’
  – Higher trait anxiety was associated with greater miscellaneous pain
Results

• Elevated pre-colposcopy state anxiety and negative affect was associated with over-prediction of pain intensity
• Under-prediction of pain intensity was associated with greater post-colposcopy state anxiety
• However, if control for experienced pain intensity, this association is no longer significant
  – Thus, heightened state anxiety following colposcopy not due to under-prediction of pain, but rather experienced pain
Discussion

• No observed differences in self-reported pain perception between the three groups, while controlling for pain expectancy and trait anxiety
  – Active distraction and sensory focus patients reported similar pain ratings to women in the control condition
• Pain expectancy found to be associated with experienced pain
  – Pain expectancy should thus be considered in future studies
• Trait anxiety did not have an effect on pain perception
Conclusion

• Interventions aimed at producing accurate pain expectations may lead to reductions in pain

• Trait anxiety does not appear to directly influence pain perception, but indirectly through elevations in state anxiety and negative affect
  – Anxious state thus a better predictor for identifying colposcopy patients at risk for experiencing pain during the examination
Thank you!

Susanna Kola is now at the Department of Behavioural and Social Sciences at the University of Huddersfield

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