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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 perception.

• 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!

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