The role of attention in reducing anxiety, pain and distress associated with a stressful diagnostic procedure

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Invasive Medical Procedures

- Are perceived by most patients as highly stressful and anxiety provoking
- Heightened anxiety levels can lead to a variety of complications, incl. heightened experience of pain
- Flexible sigmoidoscopy is an invasive diagnostic procedure to detect bowel abnormalities, and is routinely performed without sedation or analgesia despite being uncomfortable and painful

Pain

- An unpleasant sensory or emotional experience, associated with actual or potential tissue damage or described in terms of such damage (IASP, 1979)
- Pain experience results from integration of sensory-discriminative, affective-emotional, and cognitive-evaluative axes (Melzack & Katz, 1994)

Anxiety and Pain

- Anxiety is a future-oriented emotion, characterised by negative affect and apprehensive anticipation of potential threat

- State anxiety is associated with
  - Reduced pain tolerance (Carter et al., 2002)
  - Increased pain perception (Williams, 1999; Jones et al., 2002)
  - Prolongation of pain experience (Williams, 1999)
  - Lowered pain threshold (Williams, 1999; Michelotti et al., 2000)

- Trait anxiety less studied, but
  - HTA ↓ pain tolerance (James & Hardardottir, 2002)
  - HTA males ↓ tolerance, ↑ pain intensity (Jones et al., 2003)
  - HTA ↑ pain intensity (Tang & Gibson, 2005)

Attention and Pain

- 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)

Attention and Pain

- **Limited Capacity Resource Theory of Attention** (Kahneman, 1973)
  - Attention is of limited capacity and distraction reduces the available resources to process pain stimulus
- **Parallel Processing Theory of Pain Distress** (Leventhal & Everhart, 1979)
  - Involve focusing attention on the physical sensations of pain and discomfort in a concrete, objective, non-distressing way

Distraction vs. Sensory Focus: Explanation for equivocal results

- Pain intensity or threat level (Eccleston & Crombez, 1999)
- Temporal factors (Suls & Fletcher, 1985)
- Anxiety may mediate the relationship between attention and pain (James & Hardardottir, 2002)

Study Aims

- Intervention study to reduce patient anxiety, pain and distress relating to flexible sigmoidoscopy using different cognitive attention strategies
- Investigation of which strategy is the most effective, and for whom
- Examine various psychological variables in relation to the experience of the procedure

Methodology

- Randomised controlled trial
- First time flexible sigmoidoscopy patients
- Random assignment to one of four conditions
  - Audio-Visual Cognitive Distraction – lexical decision task
  - Sensory Focus – pay close attention to sensations
  - Audio-Visual Relaxation – nature views and relaxing music
  - Control – standard care

Audio-Visual Distraction Conditions

- In the Cognitive Distraction and Relaxation conditions patients to wear virtual i-glasses
- **Cognitive Distraction** – lexical decision task
- **Relaxation** – view “DVD 'At Water's Edge..' (SereneVision Productions Inc.)

Sensory Focus and Control Conditions

- In the **Sensory Focus** condition patients are asked to pay close attention to their sensations while watching the real-time FS on the monitor
- **Control** Condition – Standard Care

Measures

Pre-procedure	**During**	**Post-procedure**
Demographic info	BP/HR	BP/HR
BP/HR	Behavioural observations of distress	Discomfort ratings
STAI (state & trait)	Depth of Insertion	Pain intensity ratings
Marlowe-Crowne	Length of time of procedure	MPQ
PANAS		STAI (state)
FPQ-III		Coping with Pain Questionnaire
Discomfort Expectancy		PANAS
Pain Expectancy		MBSS

Predictions

- **Distraction** – greater adjustment and lower pain intensity levels
- **Sensory focus** – greater adjustment and better pain outcomes if patients find it hard to disengage attention
- Likely that individual difference variables will interact with focus of attention, especially trait anxiety (James & Hardardottir, 2002)