Cognitive vulnerability in fear of flying: The role of anxiety sensitivity.

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Introduction: The etiology of fear of flying

- Fear of flying (FOF) is diagnosed as a situational phobia
- Acquisition of FOF through classical conditioning
  1. External conditioning events
  2. Internal conditioning events?
Internal conditioning events?

- Hypoxia: oxygen deficiency at a cellular level
- 54% of passengers have a clinical blood oxygen saturation level (Humpfreys, Deyermond et al., 2005)
- Aversive physical symptoms: shortness of breath, dizziness, heart racing, ...
  - Similar to physical correlates of fear
  - Cognitive misinterpretation model Clark (1999) → vicious cycle

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<th>Anxiety, fear</th>
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<td>Catastrophic misinterpretation</td>
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<td>Nausea</td>
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I’m losing control
I’m going to die
I’m going to faint

Anxiety Sensitivity in Fear of Flying – Anouk Vanden Bogaerde – Ghent University, Belgium
World Conference on Fear of Flying, Montréal 06/06/2007
Anxiety Sensitivity (AS)

- AS is the specific tendency to respond anxiously to anxiety related bodily sensations
  - based on the belief that these sensations have threatening somatic, psychological or social consequences (Reiss, 1991).
  - AS is a cognitive vulnerability marker for the development of panic disorder and other anxiety disorders (Taylor, 1995).

- Subjects with fear of flying show elevated AS and a higher intensity of the fear of flying is associated with a higher AS (Rivas & Tortella – Feliu, 2000).
Flying at altitude

Hypoxia

Experience of Physical sensations

Anxiety Sensitivity

Fear
Anxiety sensitivity is a cognitive vulnerability factor for the acquisition of fear of flying.
Method

• **Sample**
  ▶ N = 160
  ▶ 26.9 % had FOF scores falling within 1SD of mean of clinical sample reported by Van Gerwen (1999)

• **Materials**
  ▶ Flight Anxiety Situations Questionnaire (Van Gerwen, 1999)
    • In Flight Anxiety
  ▶ Flight Anxiety Modality Questionnaire (Van Gerwen et al, 1999)
    • Somatic subscale
  ▶ Anxiety Sensitivity Index (Reiss, Peterson, et al., 1986)
Results (1)

- **Moderator Analyses (Baron & Kenny, 1986)**
  - A main effect for somatic sensations
    \[ \beta = .847; t(7.617); p < .01 \]
  - A significant main effect for AS
    \[ \beta = 0.138; t(.2.107); p < .05 \]
  - A significant interaction effect
    \[ \beta = -.052; t(.016); p < .05 \]

This significant interaction effect indicates that AS acts as a moderator variable between somatic symptoms and flight anxiety.
Results (2)

- **Simple slopes analyses (Holmbeck, 2002)**
  - the moderator variable is dichotomized into a low AS group and a high AS group, by using +1SD and – 1SD as cut-off points
  - somatic sensations do significantly predict flight anxiety for the **high AS group**
    \[ \beta = .206 ; t(2.81) ; p < .01 \]
  - this relationship was not significant for the **low AS group**
    \[ \beta = .351 ; t(.517) ; p = .606 \]
Results (3)

Regression plots for High and Low AS

- **Flight Anxiety**
  - High AS
  - Low AS

- **Somatic Symptoms**
  - Low (-1SD)
  - High (+1SD)

- **P-values**
  - P<0.001
  - p=0.606
Conclusion

• AS does moderate the relationship between somatic symptoms and flight anxiety
  ▶ somatic sensations significantly predicts flight anxiety in individuals with high AS
  ▶ whereas it does not for individuals with low AS.

• Clinical relevance: importance of interoceptive exposure for individuals with high AS
Discussion: recommendations for future research

- The findings of the present study are tentative

- Determining the causal role of AS in the acquisition of fear of flying:
  - longitudinal or experimental research would be required.

- Determining the role of hypoxia in fear of flying
  - other sources of physical sensations?
Questions?
Info


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