Background/Aims.

Pain-related anxiety and fear of re-injury are predictive for pain and disability. Research indicates that this relationship is mediated by fear-avoidance responses (FAR) such as catastrophizing and behavioral avoidance, in sum leading to physical inactivity and disuse. Based on Rachman’s monograph “Fear and courage: a psychological perspective”2, the avoidance-endurance model (AEM)3 suggests that pain anxiety might also be followed by endurance-related pain responses (ER), such as thought suppression and pain persistence behavior, both leading to pain and disability in the long-term via physical overuse. The present study aims to investigate AEM-subgroups with regard to pain-related fear/anxiety.

Methods

Sample and measurement

- 173 LBP patients (85% chronic pain)
- Classification of the subgroups: Subscales Thought Suppression (TSS) and Behavioral Endurance Scale (BES) of the Avoidance-Endurance-Questionnaire (AEQ)4 and depression (Beck Depression Inventory, BDI)5 differentiated between:
  - Fear-avoidance (FAR): BDI ≥9, TSS and BES < 3
  - Distress-endurance patients (DER): BDI ≥9, TSS ≥3
  - Eustress endurance patients (ER): BDI < 9, BES ≥ 3
  - Adaptive patients (AR): BDI < 9, BES < 3
  - Tampa Scale for Kinesiophobia (TSK-DE)6
  - Pain Anxiety Symptom Scale (PASS-DE)7,8
  - Anxiety/Depression-Scale (ADS) of the AEQ.

Statistics

A one-way MANOVA with the factor group (AR, FAR, DER, EER) was performed with TSK, PASS, and ADS as dependent variables. Bonferroni post-hoc comparisons were calculated testing single group differences. The level of significance was p < .05.

Results

A one-way MANOVA (4 subgroups) showed a significant multivariate effect (Pillai trace = 0.32, F4,172 = 6.22, p < .001). Significant univariate effects: TSK: F8,172 = 3.28, p < .05, PASS: F8,172 = 13.28, p < .001; ADS: F8,172 = 21.26, p < .001. Post-hoc comparisons see in Tab 1 and descriptives in Figure 1.

Both, the FAR and the DER patients revealed the highest scores in pain anxiety and depression with significantly higher scores in DER compared to the adaptive patients and higher scoring in FAR and DER compared to the EER patients. The EER patients showed lowest anxiety scores despite pain.

Conclusion

Pain-related fear and anxiety is related to both, behavioral avoidance and endurance. More specifically, DER patients, who are characterized by high thought suppression and behavioral endurance, reveal high pain anxiety. This is in line with the “fear and persistence group” described by Rachman2. In contrast, EER patients, characterized by behavioral endurance and high positive mood, showed signs of pain-related “fearlessness” sensu Rachman.

These subgroup differences should be considered more cautiously within individually tailored cognitive-behavioral treatment approaches. While FAR patients benefit mostly from graded exposure techniques, endurance patients need more pacing-based interventions. The distinct emotional response pattern in DER and EER should be considered carefully.

References


Figure 1

Descriptive results (means and standard error) for variables of pain-related fear and anxiety/depression (TSK-DE, PASS-DE, ADS) in the AEM-subgroups

Table 1

Bonferroni post-hoc comparisons (adjustment of the α-level at p<0.05) for dependent variables of pain-related fear and AEM-subgroups (N=173).

<table>
<thead>
<tr>
<th>Variable</th>
<th>DER vs. AR</th>
<th>FAR vs. AR</th>
<th>EER vs. AR</th>
<th>DER vs. FAR</th>
<th>EER vs. FAR</th>
<th>DER vs. EER</th>
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<td>TSK</td>
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<td>n.s.</td>
<td>n.s.</td>
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<td>.067</td>
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<td>n.s.</td>
<td>.001</td>
<td>.000</td>
</tr>
<tr>
<td>ADS</td>
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<td>.080</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.001</td>
<td>.000</td>
</tr>
</tbody>
</table>

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