Background/Aims
The Avoidance-Endurance Questionnaire (AEQ) was shown to be a reliable and valid measure for the assessment of fear-avoidance and endurance-related responses in patients with low back pain. The construction of the AEQ was based on the Avoidance-Endurance Model (AEM). More specifically, the AEQ consists of 2 affective subscales (Anxiety/Depression, Positive Mood) and 3 cognitive subscales (Catastrophizing, Helplessness, Thought Suppression) and 4 behavioral subscales (Avoidance of Social Activities, Avoidance of Physical Activities, Pain Persistence, and Pain-Related suffering). The aim of this study was to explore the factorial structure and validity in a European sample of female patients with whiplash of work-related neck and shoulder pain (WRNSP).

Methods
Sample and measurement
1. 141 female patients with WRNSP (N=65) and whiplash disorder (N=76) from the Moclet-Study including 4 European countries (The Netherlands, Belgium, Sweden, Germany).
2. Psychological-Endurance Questionnaire AEQ
3. Measures for validation
   - Pain disability Index (PDI)
   - Pain intensity (NRS 0-10)
   - Work ability Index (WAI)
   - Beck depression inventory (BDI)
   - Pain anxiety symptom scale (PASS-20)

Validity
As expected, all but one (Catastrophizing) fear-avoidance-related subscales of the AEQ were positively related to pain intensity and disability and negative to work ability. Furthermore, fear-avoidance subscales were positively related to the depressive and pain anxiety. Significant correlations occurred for the endurance subscale thought suppression and the outcomes pain intensity and disability as well as depression and pain anxiety. Behavioral endurance as sum-score and humor/distraction revealed negative correlations with disability, depression and pain anxiety.

Results
Factor solutions
For the 10 affective items, the PCA yielded 2 factors (Anxiety/Depression, Positive Mood) that accounted for 72% of the total variance. For the 16 cognitive items, the PCA revealed 3 factors (Catastrophizing, Helplessness, Thought Suppression) that accounted for 67% of the total variance. For the 22 behavioral items, 4 factors were interpreted (Avoidance of Social Activities, Avoidance of Physical Activities, Humor/Distraction, Pain Persistence) that accounted for 58% of the variance.

Reliability

<table>
<thead>
<tr>
<th>AEO Subscales</th>
<th>Alpha</th>
<th>Alpha</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>N of items</td>
<td>Cronbach</td>
<td>N of items</td>
<td>Cronbach</td>
</tr>
<tr>
<td>Fear-Avoidance Scales</td>
<td>Pain</td>
<td>PDI</td>
<td>WAI</td>
</tr>
<tr>
<td>Anxiety/Depression ADS</td>
<td>.456**</td>
<td>.421**</td>
<td>.422**</td>
</tr>
<tr>
<td>Help/Helplessness HHS</td>
<td>.417**</td>
<td>.375**</td>
<td>.392**</td>
</tr>
<tr>
<td>Catastrophizing Thoughts</td>
<td>.131</td>
<td>.077</td>
<td>.059</td>
</tr>
<tr>
<td>Avoidance of Social Activities</td>
<td>.324*</td>
<td>.550**</td>
<td>.364**</td>
</tr>
<tr>
<td>Avoidance of Physical Activities</td>
<td>.239**</td>
<td>.453**</td>
<td>.320**</td>
</tr>
</tbody>
</table>

Endurance Scales
Positive mood despite pain | .140 | .218* | .220* | .353* | .405** |
Thought Suppression | .350** | .335** | .071 | .334* | .323** |
Behavioral Endurance Score | .054 | .189* | .148 | .113 | .221* |
-Humor/Distraction | .534 | .268** | .143 | .222* | .330** |
-Pain Persistence | .086 | .055 | .089 | .052 | .037 |

Conclusion
The factor structure of the original AEQ was widely replicated in a sample of female WRNSP and whiplash patients from four European countries. All fear-avoidance subscales and the endurance subscale PMS revealed high internal consistency, the Thought Suppression Scale and overall Behavioral Endurance Scale were satisfying. Due to the hypotheses of the AEM, fear-avoidance variables were positively related to pain, disability and emotional distress, supporting also hypotheses of the fear-avoidance model. In contrast, behavioral endurance was negatively related to disability and emotional distress, whereas Thought Suppression seems to increase pain and disability and related positive to emotional distress. The latter finding supports hypotheses of maladaptiveness of TSS due to a rebound phenomenon leading to feelings of distress.

References

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