The influence of postural stability and yoga experience on perceptions of other’s postural stability

Kristina Casos
Sensory Motor Behavior Laboratory
Kinesiology and Health Science
Our abilities and experiences can influence how we perceive the world...
Short Report

See the Apparent Ball

Jessica K. Witt and Dem

University of Virginia
Fig. 4. Verbally estimated distance as a function of body weight and target distance. Each point represents data from one or more participants, and there are 4 points for each participant (1 for each target distance). Lines represent linear regressions from Model 9 with PST set to the mean PST of 6.62. Thicker lines correspond to farther target distances. The graph shows the increased relationship between estimated distance and body weight as target distance increases.
Could our abilities and experiences influence how we perceive the abilities of other people?
Variables and Hypotheses

- **Independent Variable:**
  - Yoga experience
  - History of injury

- **Dependent Variable:**
  - Own postural stability
    - Extent of sway (COBALT)
    - Dynamics of sway (SampEn of quiet stance)
  - Perception of other’s postural stability
Hypothesis:

- Perceptions of another’s stability will be influenced by the participant’s own abilities (e.g., postural stability) and his/her own experience with a stability-specific task (e.g. yoga)
Methods- Overview

● Comparison 1:
  ● Current Yoga (2x/week for at least 3 months)
  ● Non-Current Yoga

● Comparison 2:
  ● History of bodily injury (any)
  ● No history of injury
One Minute Quiet Stance

COBALT

Posture Perceptions

Less Regular

More Regular

SampEn = .14

SampEn = .71
### COBALT

#### One Minute Quiet Stance

**Posture Perceptions**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Sway score</th>
<th>No. of Errors</th>
<th>Time to 1st error (secs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Firm Normal - EC HS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trial 1</td>
<td>0.40</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Trial 2</td>
<td>0.38</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Average</td>
<td>0.39</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Foam Normal - EC HS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trial 1</td>
<td>0.92</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Trial 2</td>
<td>1.65</td>
<td>1</td>
<td>0.00</td>
</tr>
<tr>
<td>Average</td>
<td>1.29</td>
<td>0.50</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Firm Normal - VMS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trial 1</td>
<td>0.79</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Trial 2</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Average</td>
<td>0.71</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Foam Normal - VMS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trial 1</td>
<td>0.89</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Trial 2</td>
<td>1.04</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Average</td>
<td>0.97</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
One Minute Quiet Stance

COBALT

Perception of other’s stability
Methods- continued

Questions:
● On a scale from 1-10 how fit was this person?
● On a scale from 1-10 how fit are you?
● Past bodily injuries?
Data and Results
The diagram shows a comparison of Cobalt Average Scores between two groups: currently in Yoga and currently NO Yoga. The results indicate a statistically significant difference with a t-value of -2.19 and a p-value of 0.03.
t(52) = 0.26  p = 0.80

Average Posture Rating of Other

Currently in Yoga

Currently NO Yoga
$t(52) = -3.26 \quad p = 0.00$
$t(52) = 0.17 \quad p = 0.87$
The scatter plot shows a positive correlation between Cobalt Average Score and Average Posture Rating of Other, with a correlation coefficient $\rho = 0.26$ and a p-value $p_{val} = 0.06$. The line of best fit indicates a weak linear relationship between the two variables.
Conclusions:

- Yoga experience didn’t influence the perception of another’s stability
- Having an injury didn’t influence the perception of another’s stability
- Relationship between one’s own stability score and perception of another’s stability
- Significant correlation between one’s own fitness perception and the perception of another’s stability