UCCS University of Colorado Colorado Springs
Trauma, Health, and Hazards Center
Department of Psychology
Department of Computer Science

Measuring Engagement into the Web-Intervention by the Quality of Voice

Kotaro Shoji, Charles C. Benight, Austin Mullings, Carrie Yeager, Svati Dhamija, & Terry Boult

Abstract

The present study examined the relationship between the quality of voice and engagement levels while individuals were working on a web-intervention. Previous research has shown that web-interventions for trauma can be effective. However, many trauma survivors avoid engaging into the interventions because they often remind memories of trauma. Thus, maintaining their engagement levels into the web-interventions for trauma can be a key for an effective web-intervention. Studies have shown that the quality of voice (e.g., pulses, breaks) might be a reflection of a psychological and behavioral status (e.g., depression, anxiety). Twelve participants with a traumatic experience in the past 24 months worked on the My Trauma Recovery website, which has been designed to help trauma survivors. They also verbally stated how the modules would be beneficial after the completion of the module. Participants rated the engagement three times in this module. Results showed that engagement levels depended on the number of pulses, a percentage of pulses, percentages of vice breaks (partial eta-squared range: .19 to .22). These results might suggest that voice can be an indicator for engagement levels.

EASE Study

- EASE study aims to improve the website called the My Trauma Recovery that developed to help trauma survivors.
- The My Trauma Recovery consists of six modules: memories, relaxation, social support, unhelpful coping, professional support, and self-talk.
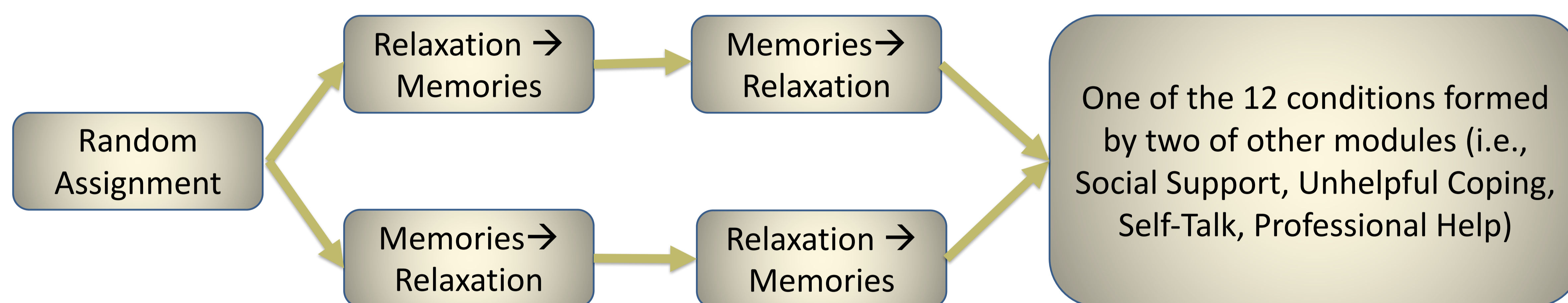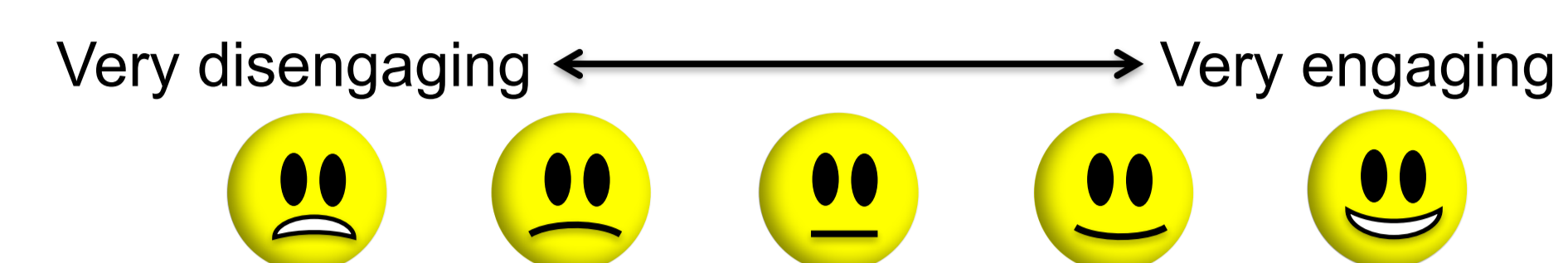
Method

Participants

- 12 individuals
  - Who experienced traumatic events in the last 24 months.
  - 18 years or older
  - Mean age = 42.3 years old (SD = 10.1)
  - All female

Measures

- Engagement: asked 3 times in each module

Very disengaging ⟷ Very engaging

- Voice responses: Asked after reach module
  - 3 questions about usefulness of the website and usability of the website.

Random Assignment → Relaxation→ Memories → Memories→ Relaxation → One of the 12 conditions formed by two of other modules (i.e., Social Support, Unhelpful Coping, Self-Talk, Professional Help)

Random Assignment → Memories→ Relaxation → Relaxation → Memories

Results

We conducted a series of three within-subjects ANOVAs on engagement levels during the first memories module with the voice variables as covariates.

- Figure 1 shows that the engagement level depended on the number of pulses, $F(2, 20) = 2.85$, $p = .08$, $\eta_p^2 = .22$.
- The engagement levels were different depending on the number of periods (i.e., known cycles; Figure 2), $F(2, 20) = 2.89$, $p = .08$, $\eta_p^2 = .22$.
- Figure 3 depicts that the percentage of voice breaks was related to the engagement levels, $F(2, 20) = 3.05$, $p = .07$, $\eta_p^2 = .23$.
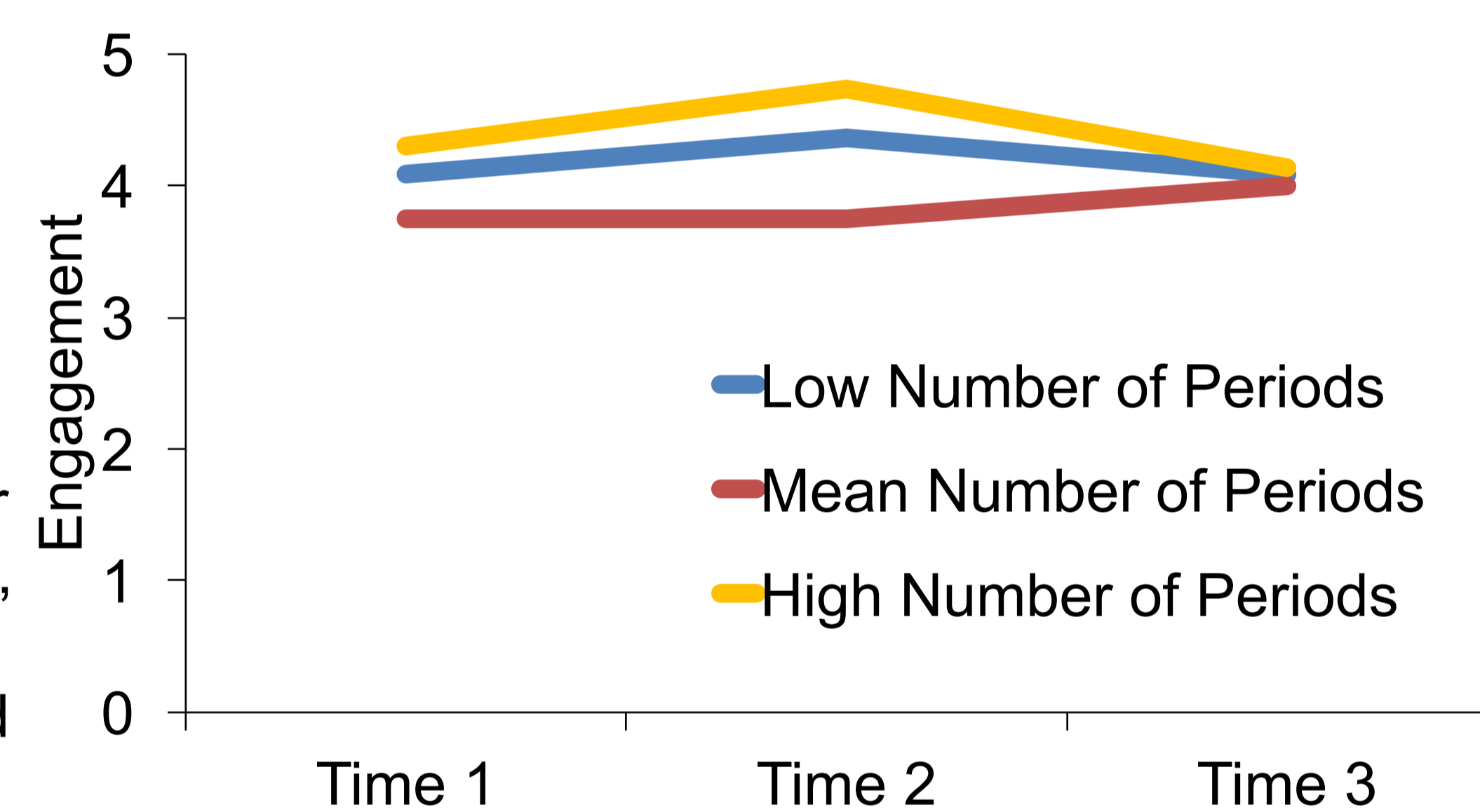
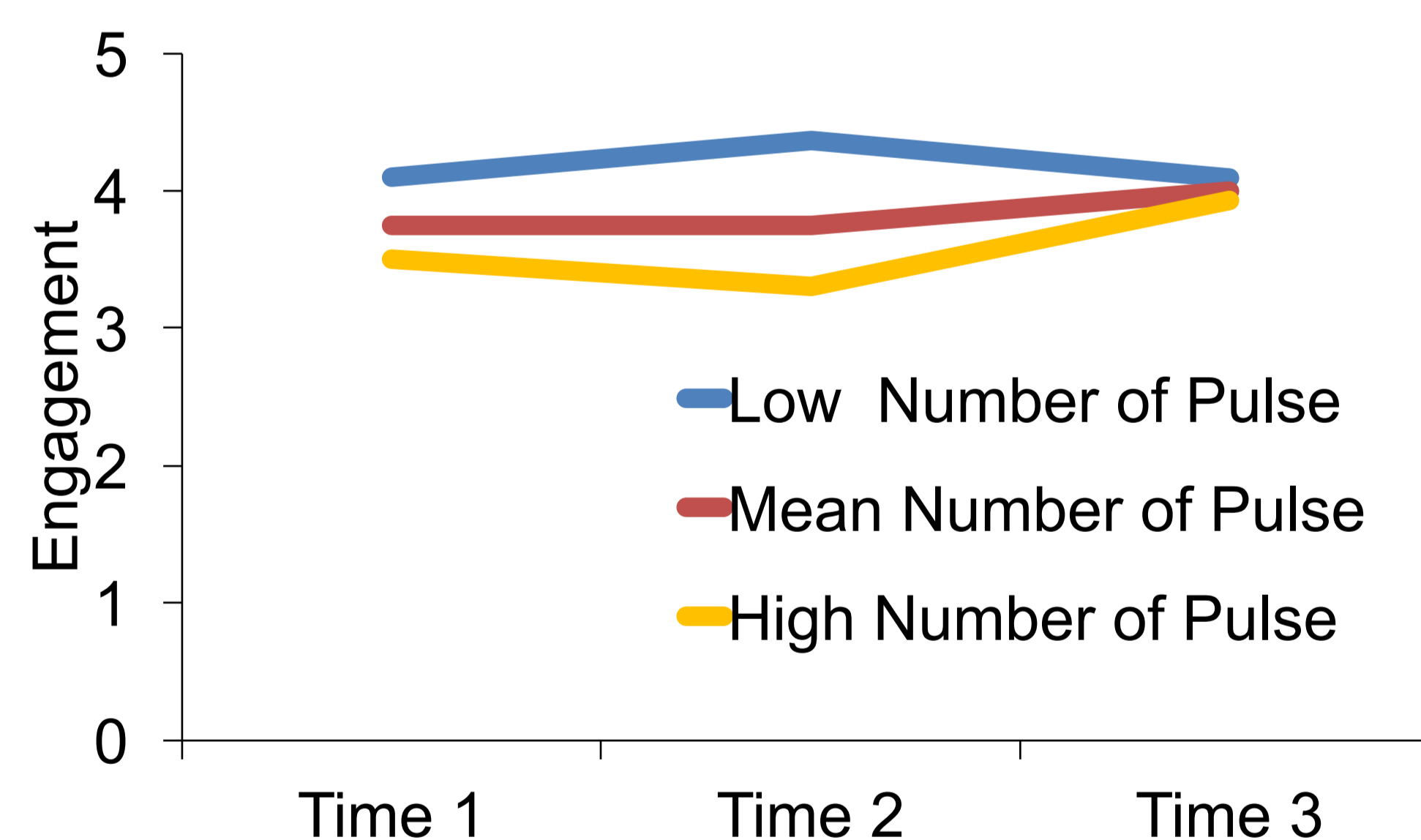Figure 2. The Interaction Effect of the Number of Periods and Engagement
(Low Number of Periods, Mean Number of Periods, High Number of Periods)

Figure 1. The Interaction Effect of the Number of Pulses and Engagement
(Low Number of Pulse, Mean Number of Pulse, High Number of Pulse)
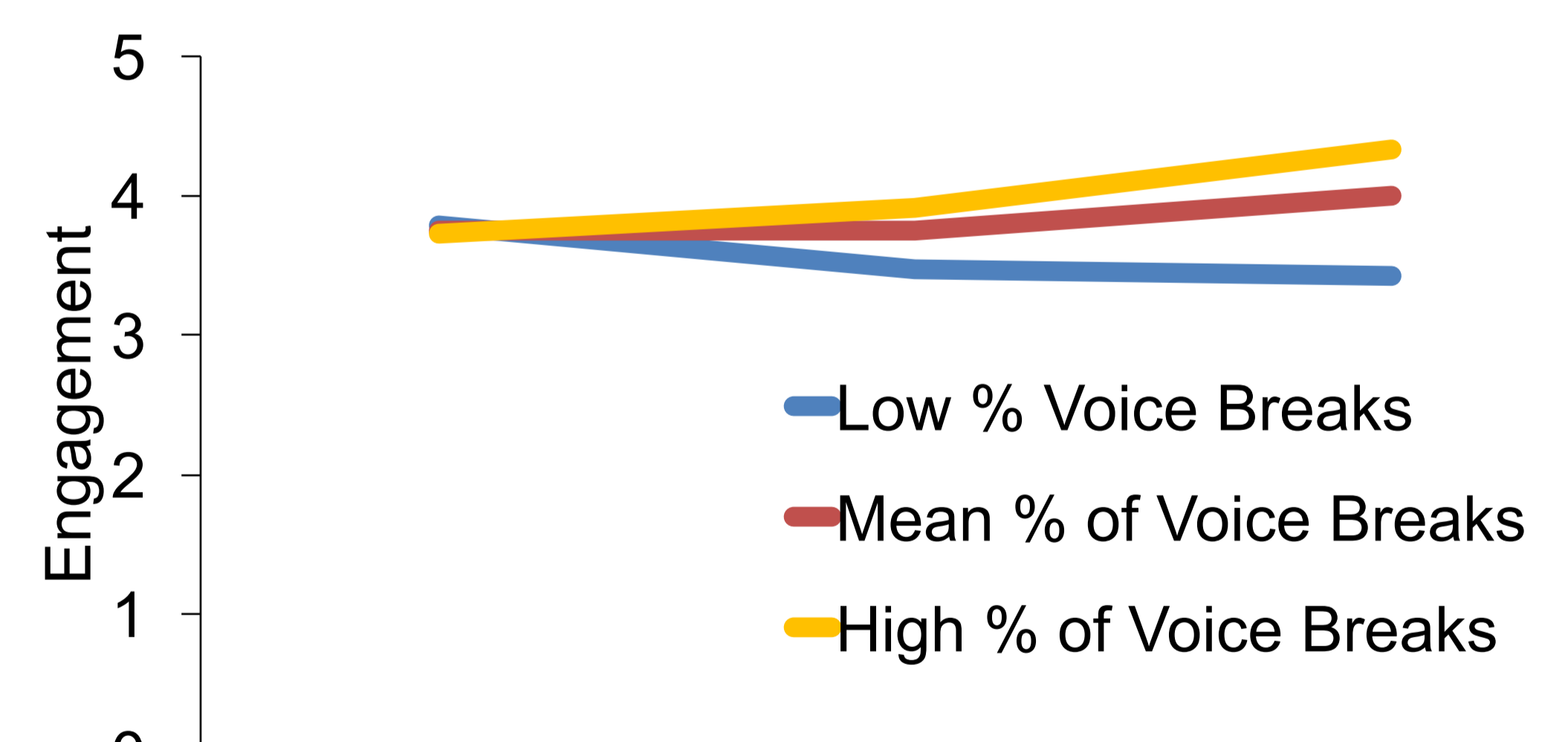
Figure 3. The Interaction Effect of the Percentage of Voice Breaks and Engagement
(Low % Voice Breaks, Mean % of Voice Breaks, High % of Voice Breaks)

Discussion

- Results suggest quality of voice may indicate levels of engagement into a web-intervention.
  - The low number of pulses might be related to high engagement although there was no difference at Time 3.
  - The low and high number of periods may be related to high engagement although this difference diminished at Time 3.
  - A high percentage of voice breaks may be related to high engagement at Time 3

- These marginally significant results may be due to a small sample size, given the large effect sizes for these results. We will continue collecting more data in the future.