



****accepted abstract****

Title: Human attributes in conversational agents: A field study with an app-based lifestyle intervention

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Background:

eHealth is helpful in improving people's lifestyle. Although automated self-help interventions are easier to implement, adherence is often higher in human-supported ones. This could be due to a lack of human attributes and low working alliance associated with automated self-help interventions. We therefore investigated whether adding visual and relational human cues to a conversational agent increases working alliance, and consequently adherence to an automated eHealth intervention.

Methods:

Participants (N=121) followed a 3-week physical activity app-based intervention in which a conversational agent sent daily exercises. Working alliance was measured with the Working Alliance Inventory Short Revised form. Adherence was measured as number of days people responded to the agent. Participants were randomized over 4 conditions differing in the type

of human cues the conversational agent used, i.e. visual cues (e.g., human avatar), relational cues (e.g., showing empathy), both, or no cues.

Findings:

One-way ANOVA revealed a significant difference for adherence between conditions. In contrast to expectations, visual cues and both visual and relational cues led to lower adherence compared to relational or no cues ($p=.001$). No significant difference was found between relational and no cues. Working alliance was not affected by cue-type, but showed a significant positive association with adherence ($r=.378$, $p=.001$).

Discussion:

Our results show that adding visual human cues to automated self-help interventions leads to lower adherence. We hypothesize that this could be due to a mismatch between participants' expectations and the real-life representation of the conversational agent. However, further research is needed to investigate this hypothesis.