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Examining the Reciprocal Relationships between Attitude, Habit Strength, and Actual Behavior in Dental Behavior Change

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Introduction

Attitudes and habit strength are two important determinants of behavior, and from a dual-processing perspective they represent two distinct pathways of behavioral control [1]. Since attitudes are based on beliefs, they influence behavior through intentions and decisions. In contrast, when defined as mental associations between cues and behaviors, habits are said to automatically trigger behavior. We examine two questions regarding how they jointly influence behavior execution: (1) Will attitudes cease to influence behavior when a habit is formed [2]? (2) How does repeatedly performing a behavior influence attitudes and habit strength? Examining the reciprocal relationship is important for a mechanistic understanding of behavior change. We examine these two questions in the context of dental behavior.

Method

Forty young adults participated in a 4-week field study in which they were persuaded to brushing teeth twice rather than once a day. In the first two weeks, a mobile app was used to remind them of brushing their teeth. Toothbrushing behavior was tracked by attaching movement sensors to participants’ toothbrushes in the first three weeks. Attitudes and habit strength [3] were self-reported in five short surveys (at the baseline and also weekly). Multilevel models were built to test the hypotheses.

Results

Weekly behavior frequency of targeted brushing was significantly influenced by attitude ($B = 0.08, p = .001$), but not by habit strength ($B = 0.03, p = .14$). There was no evidence for the moderating role of habit strength on the attitude-behavior link, as indicated by the absence of an interaction effect ($B = 0.003, p = .81$).

For the reverse relationships, the change of habit strength was positively related to toothbrushing frequency ($B = 1.73, p < .001$), but attitude change was not predicted by simply counting toothbrushing frequency ($B = 0.73, p = .10$).

Discussion & conclusion

Our results suggest that the influence of habit on toothbrushing becomes stronger over time, but the growth of habit strength does not attenuate the influence of attitude towards toothbrushing. This finding contradicts with dual-processing models, but it may reflect the fact that 3 weeks is not long enough to form a strong habit. We are able to demonstrate empirically that repeating a behavior is strongly tied to the growth of habit, but not to the change of attitude. We expect our findings to contribute to the development of integrated behavior change theories, and to stimulate more field studies with behavior-tracking and repeated measurements of theoretical constructs.

References