Pilot Study: The Impact of Habit Bandz on Body-Focused Repetitive Behaviors and Mental Well-Being

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Pilot Study Highlights

- In January, 2024, Habit Bandz was launched to 12 individuals who took the mental health (PHQ-9, GAD-7) and skin picking scales (A13) before and after using the product
- 93% of participants reduced their picking after using Habit Bandz according to the A13 scale
- 93% of participants said "would continue using Habit Bandz" after the study concluded
- Statistically significant t-tests observed between pre and post Habit Bandz intervention on measures of anxiety (GAD-7; $p<.05$) and skin picking (A13; $p<.01$)

Abstract. Mental healthcare professionals have long sought to change behaviors in those with unwanted habits such as skin picking, hair pulling, and nail biting. Habit Bandz (HBZ) is a comfortable wearable device designed to replace the hand movements typically associated with those unwanted habits. HBZ supports the nearly 60% of individuals [1] who suffer from body focused repetitive behaviors (BFRBs), such as nail biting, hair pulling, and skin picking. In January, 2024, HBZ was launched for 30 days to 12 individuals who took the PHQ-9, GAD-7, and A13 (skin picking scale) before and after using the product. Results indicate that use of HBZ significantly reduces BFRB behaviors (A13; $p<.01$) and feelings of anxiety and depression (GAD-7; $p<.05$). Furthermore, all 12 participants agreed that using HBZ positively impacted their well being. These results support HB's usefulness as a tool to support reducing BFRBs, and suggests that Habit Bandz may also be useful to reduce anxiety and depression related to other unwanted habits.

1. Introduction

Cognitive Behavioral Therapy and Urge Surfing are established methods therapists recommend to individuals who are trying to eliminate unwanted habits. Cognitive Behavioral Therapy emphasizes awareness of the triggers that lead to unwanted behaviors, whereas Urge Surfing treats the motivational landscape as an ocean, where waves are urges that one can be made aware of and "surf" (overcome) until the urge subsides. More than 800,000 people per year from over 103 countries visit bfrb.org looking for help with overcoming unwanted habits [5], but estimates for the incidence of BFRBs vary from less than 20% [3,4] to over 60% [1].

A specialized descendent of CBT, called Habit Reversal Training (HRT), has been particularly useful for treating BFRBs. HRT emerged as a way to deter and ultimately eliminate unwanted behaviors that are resistant to change, including nervous behaviors and tics [2]. HRT utilizes the ethos of CBT by training individuals to attend to triggers that precede unwanted urges. The first step of any HRT implementation is awareness training - when does the unwanted behavior occur, what are the consequences of its occurrence, and what environmental or internal states preceded it? HRT then introduces a competing response: rather than observe and inhibit unwanted thoughts, HRT emphasizes that individuals should retrain themselves to engage in a different behavior when the unwanted behavioral urge presents itself [2]. Therapists working with BFRBs must consider each individual's unique behavioral profile to determine a socially acceptable competing response that is behaviorally incompatible with their current unwanted habit.

Urge surfing is a mindfulness technique originally developed for managing cravings in substance use disorder, and it has since been instrumental in supporting those affected by BFRBs to manage their urges [6]. Urge surfing is deeply rooted in mindfulness-based therapeutic approaches, in which individuals are encouraged to observe and "surf" their urges rather than react to them. By accepting sensations and urges as impermanent, individuals are able to better manage their impulses.

HBZs offers a simplified competing response and awareness mechanism for unwanted manual behaviors: a wearable button. Operationally glitzed with haptic feedback, a companion app, mindfulness prompts, digital rewards, and feedback reports, HBZ is poised to help treat the estimated 60% of individuals who suffer from BFRBs [3]. The current HBZ build aims to support individuals with BFRBs in their aims to become more aware of their habit and the urges that precede it, to offer them a competing response when they perceive an urge, and to build awareness about their own progress through a companion app and check-ins. The present study aims to evaluate the general efficacy of the Habit Bandz product.

2. Methods

Product Description.
Habit Bandz is a wearable device with an affixed button that provides haptic feedback when pressed. The wearable pairs to a companion app to track user data and provide progress reports, behavioral suggestions, and check-in prompts for backend analysis.

Participants.
Twelve participants were recruited via social media to take part in the launch of HBZ, each with a self-reported history of struggling with BFRBs. Of the 12 participants, four were previously diagnosed with mental health conditions: two with OCD and two with ADHD (one of each diagnosis also self-reported struggles with anxiety and depression). The participants ranged in age from 21 to 53, with an average age of 29.5.

Procedure.
Participants were digitally administered a demographic questionnaire as well as three assessments: Patient Health Questionnaire (PHQ-9), General Anxiety Disorder (GAD-7), and the A13 Skin Picking Scale (SPS) before receiving the Habit Bandz wearable therapeutic in the mail [7,8,9] Furthermore, photos depicting areas affected by the unwanted habit were collected before participants received the Habit Bandz wearable. Participants were instructed to use the device "as much as possible" throughout the one-month study period, and informed that "the more you tap, the more it should work." Throughout the study, participants engaged in two check-in calls. The purpose of these calls was to provide a sense of structure to the individual and engage them throughout the study. Participants also had an opportunity to provide feedback during these calls. After one month of using Habit Bandz, participants took an exit survey. PHQ-9, GAD-7, and A13 were all readministered, and several questions to inform future development of the product were answered, photos depicting areas affected by the unwanted habit were also collected. After completion of the exit interview, participants were given an option to continue wearing Habit Bandz.

3. Results

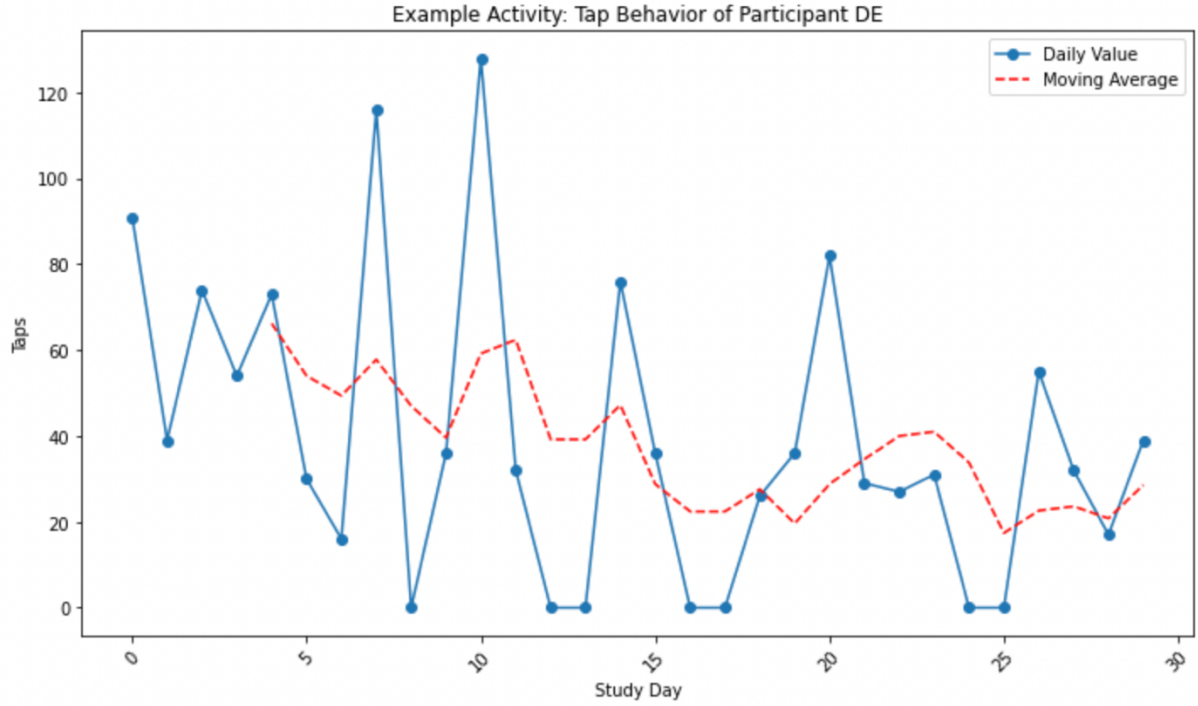

Figure 1: Example Habit Bandz usage by participant DE. Usage varied dramatically day-to-day, but followed a general downward trend. Results are preliminarily interpreted to reflect the decline in severity of urges over the course of the trial.

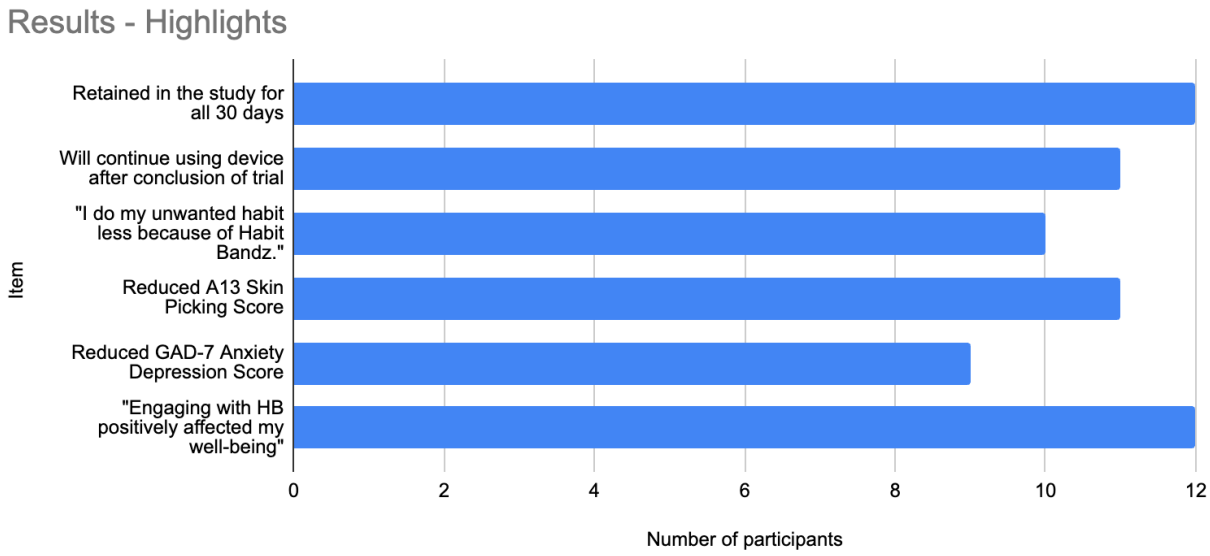

Figure 2: Reports from users indicate that the majority of participants used HBZ, picked less because of HBZ, and were overall positively affected by their engagement with HBZ technologies.

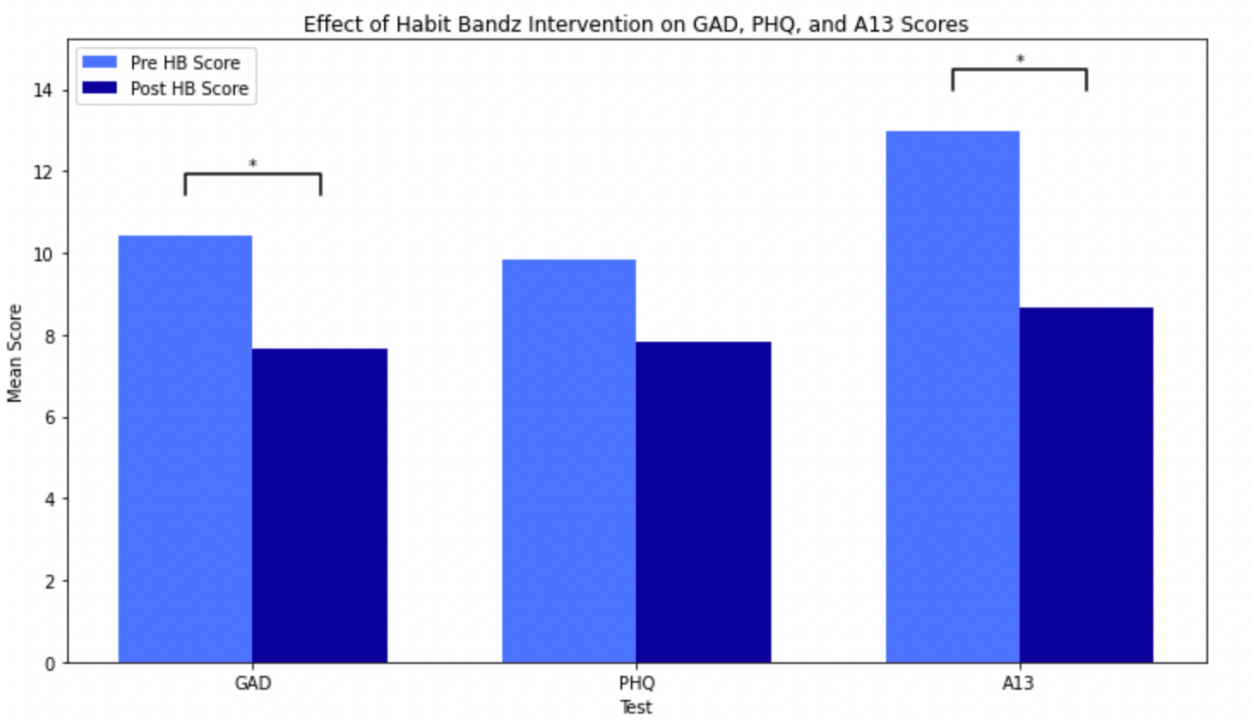

Figure 3: A paired sample t-test was conducted with participants' scores on a measure of generalized anxiety and depression (GAD), a measure of depression (PHQ), and a measure of skin picking (A13). On measures of A13 and GAD, a significant difference was found between pre and post-test. While PHQ scores declined overall, their drop did not meet the threshold for clinical significance.

4. Future Directions

Habit Bandz is a novel product designed for the management of Body Focused Repetitive Behaviors (BFRBs), with marked success demonstrated among its first 12 users. By leveraging urge surfing to inhibit unwanted behaviors and providing a competing response to replace them, Habit Bandz offers a versatile tool that could be applicable to other types of unwanted behaviors.

Habit Bandz emerges as an effective behavioral competitor for manual behaviors. While therapists might spend considerable time and resources finding compatible response strategies for unwanted manual behaviors, Habit Bandz offers an inconspicuous button equipped with a tactile surface and haptic feedback, specifically designed for urge surfing in BFRB management. Given the broad applicability of urge surfing for managing various unwanted behaviors, Habit Bandz may serve as a valuable tool for urge surfing across a variety of different applications.

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