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Are you Committed Cathy, Reluctant Rita or Negative Nancy? Defining User Personas for a Technology-Based Wrist-Worn Eating Monitor

Michael L. Wilson
Clemson University

James N. Salley
Clemson University

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Michael L. Wilson, James N. Salley, Eric R. Muth
Department of Psychology, Clemson University, Clemson, SC

Abstract

Self-monitoring of energy intake is a critical element of a successful weight loss plan. However, current methods to monitor energy intake are cumbersome and prone to under reporting. The present study examined how individuals used a new energy intake monitoring tool, the Bite Counter, to adjust their eating behavior to a targeted bite limit. Data were collected from 30 female participants examining their compliance with using the device as well as their adherence to eating limits based on bite count. Three distinct compliance personas were developed based on the shared behaviors and traits of device users: Committed Cathy (the rapid adopter, seldom misses tracking eating activities), Reluctant Rita (often forgets device, always has an excuse) and Negative Nancy (will not wear or use the device). These personas will inform future experimenters on how to improve usage instructions in order to increase participant compliance with using technology-based eating behavior monitoring tools.

Methods

Forty-eight female participants were recruited for this study from the faculty, staff and student population of a mid-sized southeastern university. The study population was restricted to female participants only because of a low respondent rate for males during pilot testing and to have adequate statistical power for at least one gender. Behavior change was initiated using the Bite Counter; a wrist-worn monitor that tracks the number of bites, time and duration of eating activities (Dong, Hoover, Scisco & Muth, 2012). The Bite Counter is shown in Figure 1 to the right. Full study methods are reported in the published thesis (Wilson, 2014).

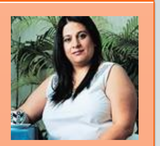
Figure 1. The commercially available Bite Counter

Bite Counter Information

Results

Bite Counter Persona Comparisons





ATTRIBUTE	COMMITTED CATHY	RELUCTANT RITA	NEGATIVE NANCY
Excitement level	High	Moderate	Low
Diet Experience	Moderate - some success	Moderate - rarely successful	High - nothing works
Wear of Device	All of the time	Only during meals	Always forgets
Daily Usage of Device	Seldom forgets to record meals	Frequently forgets to record meals	More missed than recorded
Consistency of Eating Times	Very consistent	Inconsistent	Extremely inconsistent
Consistency of Amount Eaten	Amounts are fairly constant	Amounts vary moderately	Amounts vary greatly
Casual Consumption	Low	Moderate	High
Weight Loss	Yes	Possible	No
Public Aware of Diet	Yes	Possible	No
Family Support	Yes	Possible	No
Complaints	Rarely complains	Criticizes the device and diet	Constantly complains
Excuses	Accepts blame for failures	Seldom accepts blame for failures	Always blames something/one else

Methods (continued)

Respondents were self-reported as being at least 9 kilograms overweight with no history of eating disorders. Selected participants were tracked for 11 weeks with in-lab weigh-ins and body measurements. Participants behaviors were developed post-hoc based on experimenter observations and data collected during the study period. Participants were paid $25 for their participation in the study.

Conclusion

User personas can be used to aid researchers in the early identification of future study participants who may be at a higher risk for dropping out. They can also highlight those who may have trouble with Bite Counter compliance or adherence to a diet protocol based on bite count. Ideally, it would be beneficial to predict user performance profiles based on a screening questionnaire that measures an easily adapted construct such as motivation, self-efficacy or body image and to correlate screening scores with these personas. This would give future researchers the ability to effectively classify and screen users during study intake and initial phases of the study, instead of needing weeks of observation to identify problematic participants.

In conclusion, this study establishes three distinct user personas for the Bite Counter and provides researchers with a classification method that can be used as a performance predictor for future study participants.

References

1. Dong Y, Hoover A, Scisco J & Muth E (2012). A new method for measuring meal intake in humans via automated wrist motion tracking. *Applied Psychophysiology and Biofeedback, 37,* 205-215.
2. Wilson, Michael, "ASSESSING THE BITE COUNTER AS A WEIGHT LOSS TOOL" (2014). All Theses. Paper 1955. http://tigerprints.clemson.edu/all_theses/1955

Contact Information: