

Users' attitude towards adding human feedback when preparing for quitting smoking/vaping with a virtual coach: A mixed-methods analysis

AUTHOR

Yoan Naydenov
Y.N.Naydenov@student.tudelft.nl



SUPERVISORS

Willem-Paul Brinkman, Nele Albers

INTRODUCTION

- Smoking is a leading cause of premature death globally [1]
- eHealth applications have the potential to improve the smoking cessation process [2]
- A virtual coach, Kai, was developed to stimulate smokers to quit
- An experiment involving around 500 participants interacting with the virtual assistant was conducted

OBJECTIVE

The goal of the research is to answer the following questions:

- Why people want human feedback when quitting smoking/vaping?
- What are the positive effects of the human feedback during the smoking cessation process?
- How to design the human feedback?

METHODOLOGY

- Thematic analysis:
 - Familiarization with the data
 - Code scheme generation
 - Checking reliability using second coder
 - Searching, reviewing and naming themes
- Method analysis
 - Quantitative data analysis - correlations
 - Literature study

RESULTS/FINDINGS

Cohen's kappa across all codes was approximately 0.825

Brennan-Prediger's kappa was 0.821

The following themes merged (Fig. 1):

- **Emotional Connection and Support**
- **Personalization and Expertise**
- **Effectiveness and Engagement**
- **Motivation and Encouragement**
- **Accountability**

No significant correlation between the themes and the user characteristics quitter self-identity, smoking frequency and amount of weekly exercises

Weak relation between the themes and the attitude towards the process with regards to engagement, accountability, positive effect and intention to continue with human feedback (Table 1)

Variable	Spearman Correlation	p-value
engagement	0.24	<0.001
accountability	0.25	<0.001
positive effect	0.31	<0.001
intent to continue	0.31	<0.001

Table 1: Relation between the theme Emotional Connection and support and subset of user characteristics

RECOMMENDATIONS

The human feedback should:

- provide empathy and support
- be personalized
- provoke thinking
- motivate the users
- make users feel more accountable

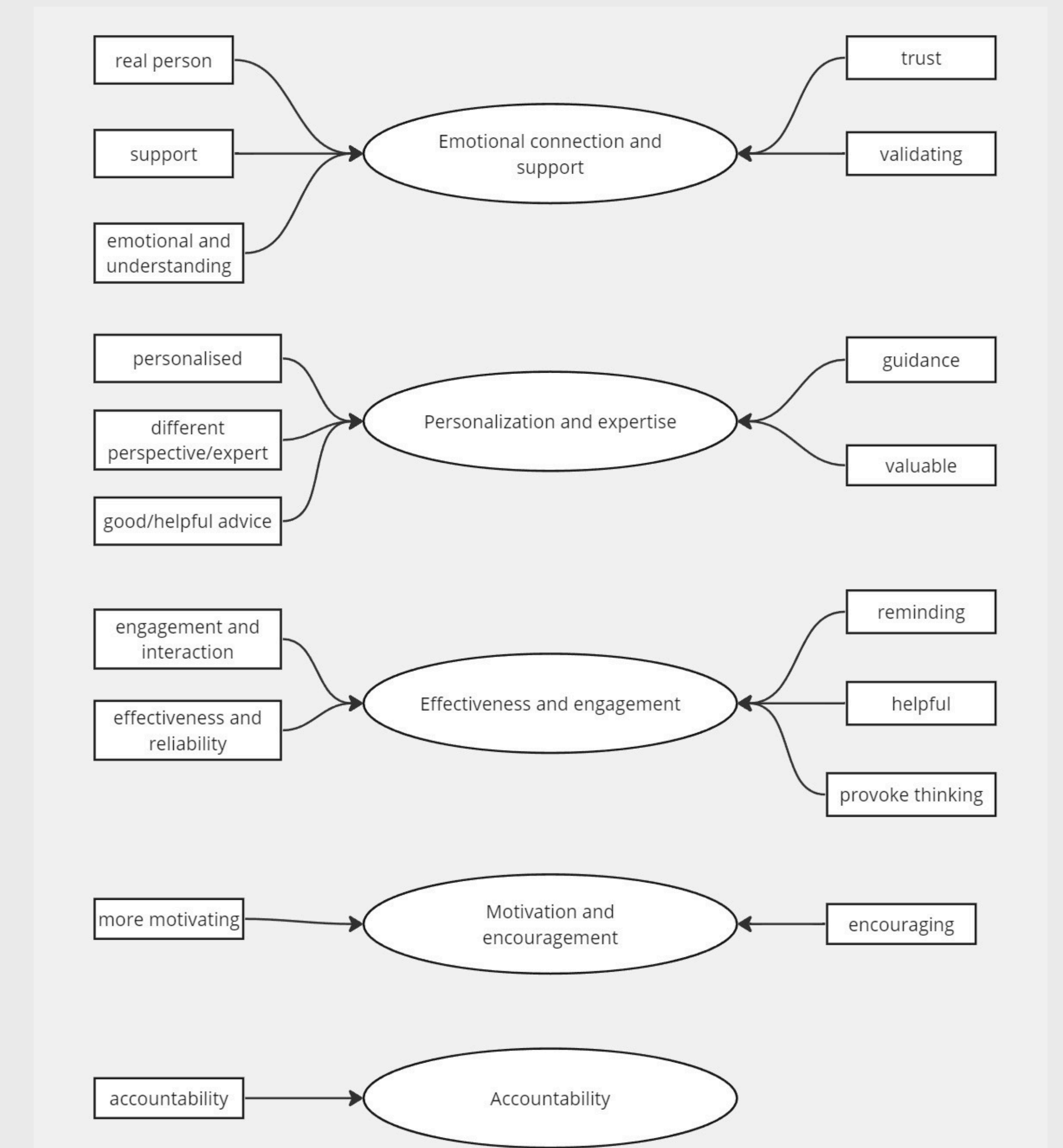


Figure 1: Distribution of codes according to themes

FUTURE WORK

- Explore scalability of human feedback integration into eHealth applications
- Research which user characteristics are related to the found themes

RELATED LITERATURE

- [1] Stroup DF, Gerberding JL, Mokdad AH, Marks JS. Actual causes of death in the united states. 2004
- [2] James Balmford, Ron Borland, and Peter Benda. Patterns of use of an automated interactive personalized coaching program for smoking cessation. J Med Internet Res, 2008