

Acceptance of a Virtual Coach as Guided Intervention for Smoking Cessation

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01 - Objective

- 400 smoking cessation applications^[1]
- Guided interventions are more effective^[2]
- Few studies on guided interventions with virtual agent^[2]
- SAM, a virtual agent for smoking cessation
- In 2022, longitude study conducted with SAM

02 - Research question

What are the reasons to prefer using a questionnaire or a virtual coach?

03 – Methodology

- Thematic analysis^[3], finding themes in open question answers
- Increasing validity combining three methods for method triangulation:



Thematic analysis

- Familiarize with data
- Finding codes
- Second coder for researcher triangulation
- Combine codes in overarching themes
- Connect to quantitative analysis and literature



Quantitative analysis

- Spearman's rho correlation tests
- Categorical principle component analysis
- Combine codes with closed question answers



Literature study

- Find themes in literature
- Combine thematic analysis with literature
- Combine quantitative analysis with literature

04 – Results

- 7 themes identified, 4 positive – 3 negative (fig 1)
- Overall remarkably positive
- Most themes related with activities (tab 1)
- Engagement related with age

Personal connection

"[E]ven if it was obvious that I wasn't talking to a real person, it still felt like I had someone checking on me and my progress, making me feel more motivated."^[4]

P219

Engagement

"A questionnaire feels more distant which I think would make me less motivated to do the tasks. Where as knowing you are going to have the conversation style makes you want to do the tasks and be successful..."^[4], P272

Helpful content

"Sam brought a unique opportunity to talk things through rather than force myself to be introspective."^[4], P344

Natural flow

"More dynamic, in the sense of being challenged and able to give answers and get a reaction from the other side."^[4], P68

The four positive themes with associated quote

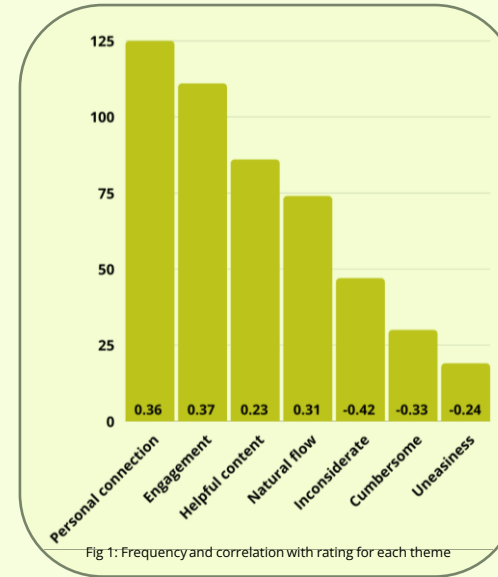


Fig 1: Frequency and correlation with rating for each theme

Theme	Motivated activities	Easy activities
Personal connection	0.21**	0.12**
Helpful content	0.17**	-
Natural flow	0.12**	0.12**
Inconsiderate	-0.15**	-0.09*
Cumbersome	-0.11*	-
Uneasiness	-0.11*	-

Tab 1: Correlation between motivated and easy activities and the themes.
** significant at 0.01 level, * significant at 0.05 level

Inconsiderate

"I'd rather have a free format to express my thoughts rather than pre-filled out responses."^[4], P128

Cumbersome

"[In a questionnaire] [t]here is no gimmicky conversation. Clear questions and answer."^[4], P249

Uneasiness

"I didn't relate to Sam and the bot-speak was irritating. A questionnaire would feel more natural."^[4], P451

The three negative themes with associated quote

05 - Recommendations

- Focus on personal feeling
- Tailor the activities
- Keep the conversation natural
- More options for free response
- Decrease the knowledge age gap

06 - Future

- Why do people find questionnaire easier
- In person participants
- Compare with in person coach

"It was nice having someone to talk to"^[4], P395

[1] J. B. Bricker, K. E. Mull, J. A. Kientz, et al., "Randomized, controlled pilot trial of a smartphone app for smoking cessation using acceptance and commitment therapy," Drug and Alcohol Dependence, vol. 143, pp. 87–94, 1 2014, ISSN: 18790046.

[2] S. Provoost, A. Kleiboer, J. Ornelas, et al., "Improving adherence to an online intervention for low mood with a virtual coach: Study protocol of a pilot randomized controlled trial," Trials, vol. 21, 7 Dec. 2020, ISSN: 17456215.

[3] V. Braun and V. Clarke, "Using thematic analysis in psychology," Qualitative Research in Psychology, vol. 3, pp. 77–101, 2 2006, ISSN: 14780887.

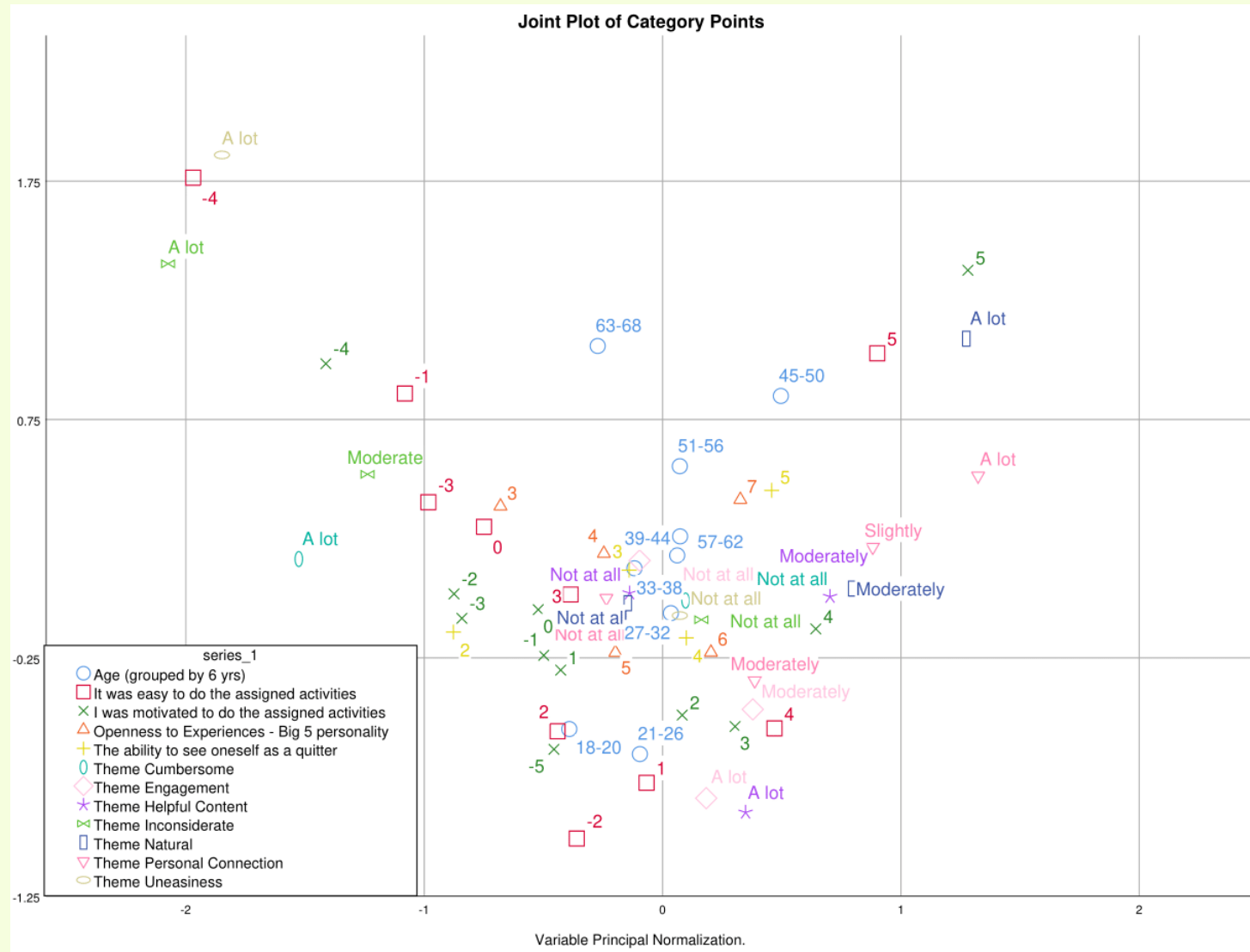
[4] J. Dechering, Acceptance of a virtual coach as guided intervention for smoking cessation: Dataset, Jun. 2022. DOI: 10.4121/20066186.

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