A mixed-methods evaluation of a virtual coach for smoking cessation and physical activity in adults

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baseline and post-intervention. Quantitative data included usage data and self-report questionnaires on feasibility, acceptability and participant characteristics (e.g. eHealth literacy). Qualitative data included semi-structured post-intervention interviews with a sub-sample of 12 participants. Descriptive analyses (quantitative) and the Framework Approach (qualitative) were used for data analysis, and quantitative and qualitative data were integrated during interpretation.

Preliminary results: Participants adapted the use of Perfect Fit to their preferences. Many participants were satisfied with the content but missed variations in conversations with the virtual coach. The coach offered anonymity, positively experienced by some (e.g. non-judgemental), but negatively by others (e.g. lower accountability). Many participants liked the combination of smoking cessation and physical activity enhancement.

Conclusions: Findings show the potential of interventions like Perfect Fit as a multiple health behavior change strategy in promoting public health and preventing chronic disease. Findings can inform intervention development and identify methods to foster feasibility and acceptability.

Key messages:
- mHealth interventions with virtual coaches, like Perfect Fit, could promote public health.
- Targeting multiple behaviors, like low physical activity and smoking, simultaneously seems beneficial.

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Background: Mobile health (mHealth) interventions with virtual coaches (i.e. AI conversational agents) offer scalable and cost-effective solutions for health behavior change. We developed Perfect Fit, an mHealth intervention with a virtual coach providing personalized feedback to promote smoking cessation and physical activity simultaneously. Through innovative techniques (e.g. sensor technology) and iterative development involving end-users, we aim to overcome challenges faced by mHealth interventions, like insufficient personalization. This study examines Perfect Fit's feasibility and acceptability.

Methods: A single-arm, mixed-method, real-world evaluation study was conducted with 100 adult smokers in the Netherlands. The intervention lasted approximately 16 weeks. Data were collected at