ABSTRACT

Background: Tobacco use is one of the key problems that public health has to face. Tobacco smoking is among the main causes of morbidity and preventable mortality that can be effectively avoided. The eHealth approach uses information and communication technologies to improve the quality of health and healthcare. EHealth interventions delivered through technologies and the Internet are an effective therapeutic tool which contributes to behaviour change, including smoking cessation. This paper presents the results of continuous research on fully automated online eHealth intervention for smoking cessation.

Aims: The main objective of this study was to identify the effect of the form of reminders (SMS vs. email) in eHealth smoking cessation intervention using the Endre eHealth program in the population of Czech tobacco smokers.

Materials and methods: This research consists of two studies. First, a pilot study on user-acceptance of eHealth intervention was performed in a sample involving 30 respondents. This was followed by a randomized two-arm controlled study comparing the effect of a predictor in the form of eHealth intervention reminders for smoking cessation. Adult tobacco smokers were recruited based on advertising through a variety of online channels. 158 respondents were randomised for the experimental group (SMS reminder) and 190 for the control group (email reminder). The respondents used their own devices to go through the preparation phase of the online eHealth intervention, which involved receiving one therapeutic online module per day. The data collection was automated through the eHealth intervention online program. Three efficacy indicators were assessed: the effect of the form of reminder on advancing to the cessation phase, as well as the number of started and the number of completed online modules of eHealth intervention. Statistical analyses were performed using methods of descriptive statistics and logistic regression in Jamovi and R.

Results: The pilot study has proven a high level of user acceptance for therapeutic eHealth intervention techniques. Three quarters of all respondents would prefer to stop smoking using eHealth intervention over conventional therapy. Slightly less than a half of the respondents would use eHealth intervention for their next quit attempt. The results of the RCT study have proven that the form of reminder (SMS vs. email) has no statistically significant influence on the smoking

cessation process of the respondents as regards their willingness to start the cessation programme ($z=-0.0344$, $p=.973$) or on the percentage of online eHealth intervention modules started ($B=0.193$, $SE=0.342$, $t=0.564$, $p=.573$) or completed ($t=0.211$, $p=.833$). The average probability of starting the smoking cessation phase was 32%. The increase in the number of online modules started ($t=3.246$, $p=.001$) as well as completed ($t=3.720$, $p=.001$) was proven to correlate with the higher respondent age. Higher-age smokers, especially those aged 45 and less, would on average start and complete one eHealth intervention module more than lower-age respondents.

Conclusion: EHealth intervention was found by the target group of smokers to be a user-friendly and attractive form of smoking cessation. Higher-age smokers would show higher adherence to eHealth intervention; the question, therefore, remains, how to modify the programme to better reflect the specific needs of younger target groups. Thanks to its excellent temporal and local availability and thanks to the therapeutic techniques included, eHealth intervention has a great potential to improve the success rates of smoking cessation.

Keywords: tobacco, smoking, eHealth, mHealth, mobile phone, nicotine