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Study Protocol

Delivery of a Smoking Cessation Induction Intervention Via Virtual Reality (VR) Headset During a Dental Cleaning: Usability Study

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Background:

Effective evidence-based treatments (EBTs) for smoking cessation exist but are underutilized especially by economically disadvantaged smokers. Thus, innovations are needed to drive these smokers to engage with effective EBT resources. Using digital tools could provide a cost-effective and time-efficient way of delivering smoking cessation education in dental settings with a high degree of treatment fidelity. Given the marked health disparities in both oral health and smoking, the urban dental clinic is an ideal setting to proactively reach both unmotivated and underserved (low-income, racial/ethnic minority group) smokers.

The aim of this usability study is to pilot test all the operational procedures, methods, and logistics (e.g., recruitment, clinic workflow, data acquisition, study measures, text message program integration, and connection to the evidence-based resources for smoking cessation). Specifically, our aim is to: 1) ensure that the individually tested intervention components work together, 2) assess patient acceptability, satisfaction, and feasibility, 3) ensure that processes are in place to procure objective data from the EBT resources for smoking cessation (e.g., Quitline, clinic-based programs, and the NCI SmokefreeTXT), and 4) develop processes and procedures to ensure seamless transition from our 4 week text message program into the EBT resources for smoking cessation.

Design and Procedure:

This is a usability study that will recruit adult smokers ($n = 15$) who are patients of the Boston University School of Dental Medicine Treatment Center and have an upcoming dental prophylaxis or scaling and root planing appointment at the treatment center. The study consists of three phases.

In the first phase, prior to attending their scheduled teeth cleaning appointment, patients who have provided Consent to participate will be required to opt-into the 4 week text message program we developed to motivate participants to connect with EBT resources for smoking cessation. Once participants have opted into the program they will complete a baseline questionnaire either online or over the phone. During the teeth cleaning part of the appointment, participants will be asked to watch an educational video on smoking cessation (10 minutes). The video contains educational materials about the effects of smoking on patient's general and oral health, provide evidence-based guidance on smoking cessation and additional information on EBTs for smoking cessation.

Towards the end of the appointment, participants will complete a second questionnaire about smoking attitudes and beliefs, and subjective experience watching the video. After the questionnaire, participants will be given printed materials about EBT resources for smoking cessation with instructions on how to contact and access the services provided by these resources.

The second phase of the study starts within one day of the participant's appointment at the treatment center and will last approximately four weeks. During this phase, participants will receive approximately 1-2 text messages per day. The text message program is fully automated, customizable, and interactive, designed to build on the smoking cessation educational video and increase participant's motivation, self-efficacy and readiness to connect with the EBT resources. It includes tips, advice and problem-solving strategies to overcome barriers, build motivation and confidence, and facilitate contact with EBT resources. Participants will be asked to read the text messages they receive daily during the program and respond to those texts that ask for a response (approximately 2-4 text messages per week).

Every week during the text message program, participants will be asked to connect to an EBT resource using the information included in our texts. Our text message program will include links to the quitline and the NCI program, and names and telephone numbers of local smoking cessation clinics. At the end of the four week text message program, participants will be asked to complete a questionnaire similar to the questionnaire that was completed at baseline.

In the third study phase, participants will have two additional weeks to connect to the EBT resources. Participants will not be required to take part in any EBT resource for smoking cessation. Because in this usability study we are interested in testing the transition from our text message program into the EBT resources, and the data acquisition and integration process, participants are only required to connect with the resources. Participants can connect during the four week text message program but will also have two more weeks after the program has ended.

Once the participant has made contact with the EBT resources, there will be a brief questionnaire about their experience contacting the EBT resources. Participants' involvement in the study will terminate after the brief questionnaire has been completed.