

Publication

Theory-driven development of a medication adherence intervention delivered by eHealth and transplant team in allogeneic stem cell transplantation: the SMILe implementation science project

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Medication adherence to immunosuppressants in allogeneic stem cell transplantation (alloSCT) is essential to achieve favorable clinical outcomes (e.g. control of Graft-versus-Host Disease). Over 600 apps supporting medication adherence exist, yet they lack successful implementation and sustainable use likely because of lack of end-user involvement and theoretical underpinnings in their development and insufficient attention to implementation methods to support their use in real-life settings. Medication adherence has three phases: initiation, implementation and persistence. We report the theory-driven development of an intervention module to support medication adherence (implementation and persistence phase) in alloSCT outpatients as a first step for future digitization and implementation in clinical setting within the SMILe project (Development, implementation and testing of an integrated care model in allogeneic Stem cell transplantation facilitated by eHealth).; We applied Michie's Behavior Change Wheel (BCW) and the Capability-Opportunity-Motivation and Behavior (COM-B) model using three suggested stages followed by one stage added by our team regarding preparation for digitization of the intervention: (I) Defining the problem in behavioral terms; (II) Identifying intervention options; (III) Identifying content and implementation options; (IV) SMILe Care Model Prototype Development. Scientific evidence, data from a contextual analysis and patients'/caregivers' and clinical experts' inputs were compiled to work through these steps.; (I) Correct immunosuppressant taking and timing were defined as target behaviors. The intervention's focus was determined within the COM-B dimensions Capability (lack of knowledge, lack of routine), Opportunity (lack of cues, interruptions in daily routine) and Motivation (lack of problem solving, trivialization). (II) Five intervention functions were chosen, i.e. education, training, modelling, persuasion and enablement. (III) Twenty-four behavior change techniques were selected, e.g., goal setting, action planning and problem solving. (IV) Finally, seventeen user stories were developed to guide the SMILeApp's software development process.; Our example on the theory-driven development of an intervention module in alloSCT delivered by eHealth and transplant team using a rigorous 3 + 1-stage approach based on BCW, COM-B and agile software development techniques, can be used as method-

ological guidance for other eHealth intervention developers. Our approach has the potential to enhance successful implementation and sustained use of eHealth solutions in real-life settings.

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