Previvors Recharge: A Resilience Program for Cancer Previvors (PreCharge)

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Objective:

The purpose of this research was to assess in a 30-day pilot test the acceptability and feasibility of PreCharge, a digital program delivered via text messaging and online activities designed to increase resilience and adaptive coping among previvors—individuals with Hereditary Cancer Syndromes (HCS) who have not been diagnosed with cancer. PreCharge is tailored to users' levels of resilience and adaptive coping and addresses previvor-specific needs related to: 1) information; 2) healthcare navigation; 3) processing difficult emotions; 4) social support; and 5) self-care.

Design:

As this was a Phase I study, it entailed a single-group, pre-post pilot of the PreCharge. program.

The PreCharge.program has various components including:

- Immediate.and.Ongoing.Tailored.Communications¡.Following the baseline assessment, participants received onscreen feedback tailored to their responses. This feedback highlighted the importance of resilience and adaptive coping for previvors and described how the program aimed to enhance those skills. Participants' responses also guided daily text communications. Daily text messages provided tailored guidance—matched to each user's responses—about resilience and coping strategies. Periodic reassessments conducted via SMS ensured that communications remained relevant to participants' evolving needs.
- Online.Portal. Upon completion of the baseline assessment, participants gained access to a portal homepage which featured interactive activities and tools designed to address their resilience and coping. The portal included links to additional resources, an account page, and a log-out button. For research purposes, study information was also accessible from this page during the pilot.
- Just-in_Time.Assistance. In addition to daily text messages, participants could access "just-in-time assistance" by indicating upcoming medical appointments or texting trigger words. Appointment-related communications were sent via SMS three days before, on the day of, and three days after an appointment to address "scanxiety" and other concerns in a timely manner. Participants could also text trigger words at any time to receive immediate support. In response to trigger words,

PreCharge.provided participants with timely guidance for improving moods, practicing gratitude, and managing stress.

Methods:

Recruitment for the 30-day pilot test began in April 2024. Participants were recruited with the help of two leading previvor advocacy organizations: Facing Our Risk of Cancer Empowered (FORCE) and AliveandKick'n. From recruitment materials distributed by our recruitment partners, prospective participants were directed to a study landing page which began with a brief overview of the study, followed by "Frequently Asked Questions," that addressed several elements of informed consent. The landing page also included instructions on how to initiate the brief (about 5 minutes) secure screening assessment.

The study eligibility criteria assessed in the secure screening assessment were:

- Able to read and speak English
- Age 18 or older
- Currently living in the U.S.
- Regular use of a smartphone, the internet, or both
- Regular use of text messaging, email, or both
- Identify as having a Hereditary Cancer Syndrome (HCS)
- Have never been diagnosed with cancer
- Have a "low" level of resilience as indicated by a score of 26 or below on the Connor Davidson Resilience Scale (CD-RISC 10)

The screener excluded individuals who did not meet the study eligibility criteria. Individuals who screened out or who did not consent to study participation were thanked for their time and provided with a list of national resources for previvors.

Eligible participants were invited to provide informed consent. Those who provided informed consent completed a baseline research assessment that assessed confidence to cope, psychological flexibility, depression, and anxiety. After completing the baseline assessment, participants completed their first session, which asked them a series of questions to determine their level of resilience. Based on responses during this first session, the system delivered tailored feedback and queued 30 days worth of daily, tailored text messages focused on resilience. Completing this first session marked the end of the baseline session (baseline research assessment + first session) and granted participants access to their online portal, which featured interactive activities and tools designed to address their resilience and coping. Participants were told they could access their online portal at any time during the 30-day pilot period. As a thank you for completing the baseline assessment, participants received a $50 gift card.

Four days after completing the first session (which followed the baseline assessment), participants were prompted to complete a brief second session via text message. This session asked participants a series of questions related to an adaptive coping strategy: acceptance. Based on responses during that session, the system delivered tailored feedback and queued daily, tailored text messages about acceptance.

This pattern continued for the remainder of the 30-day pilot period: every four days, participants were prompted to complete a new session via text message, during which they would be asked a series of questions related to either resilience or an adaptive coping strategy; based on their responses, the system delivered tailored feedback and queued daily, tailored text messages related to the construct assessed.

Over the course of the 30-day pilot period, participants could complete up to seven sessions via SMS. The constructs assessed during each session were as follows: 1) resilience; 2) adaptive coping strategy: acceptance; 3) resilience; 4) adaptive coping strategy: active coping; 5) resilience; 6) adaptive coping strategy: venting; 7) resilience.

All daily text messages provided tailored guidance matched to each participant's responses to questions about their resilience and use of adaptive coping strategies, and encouraged users to engage with online portal activities and tools.

Participants received an email 31 days after completing the baseline session (baseline research assessment + first session), participants received an email inviting them to complete the follow-up assessment. Up to four text and five email reminders to complete the follow-up assessment were sent. Non-respondents received up to two telephone calls from the Research Manager to remind them to complete the follow-up assessment and offer them the opportunity to complete the assessment by phone. As a thank you for completing the follow-up assessment, participants received a $70 gift card.

Pilot participants were 138 previvors. Of the 138 initial participants, 134 completed the follow-up assessment at the end of the 30-day pilot period, resulting in a final sample of 134 previvors.

Simple descriptive statistics were calculated to describe the study sample and to evaluate program utilization and acceptability. Paired t-tests of pre-post differences on several key outcomes, including the primary outcome (resilience as measured by the CD-RISC 10), were conducted.