EVALUATING THE USABILITY OF A MOBILE APPLICATION FOR SELF-MANAGEMENT OF UNHEALTHY ALCOHOL USE

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Background and Problem

• Unhealthy alcohol use, from risky drinking to alcohol use disorder, represents a major cause of preventable morbidity and mortality

• One of the most common conditions among post-9/11 service members and Veterans
  – estimates range from 22% to 40%

• Only a small minority of post-9/11 Veterans receive alcohol-related care
  – Common barriers to care include concerns about anonymity (stigma), time constraints, and travel distance
  – Those that do seek care often take years

• Mobile applications, delivered on smartphones, may address these barriers

Step Away

• Developed by faculty at the University of Alaska
  – iOS operating system

• Conceptual framework:
  – Motivational enhancement therapy (MET) – time-limited, non-judgmental approach that supports a person’s motivation to change
  – Relapse prevention strategies – help persons identify and cope with situations that increase risk of relapsing or drinking inconsistently with their goals
  – Community reinforcement – highlights the importance of a person’s social life and the role of supportive others; non-drinking activities in achieving goals
Key Step Away Features

- Assessment & Feedback
- In-the-Moment Tools
- On-Going Assessment & Feedback
- New Activities
- Moods
- High Risk Times
- Goal Setting
- Rewards & Cravings
- Moderation or Abstinence Strategy
- Supportive Persons & Reminders

On-the-Moment Tools

New Activities

In-the-Moment Tools
• The aims of this pilot study were to assess:
  1) Acceptability, usability and use of Step Away among post-9/11 Veterans, and
  2) Participants’ self-reported heavy drinking days and consequences of alcohol use over 6 months
Methods

• Participants: Post-9/11 Veterans with AUDIT-C scores >4 who used VA care in prior 6 months

• Design: single-arm prospective cohort study
  – Baseline research assessment and follow-up at 1, 3, and 6 months
  – Participants compensated up to $150

• Recruitment:
  – Identified post-9/11 Veterans with AUDIT-C >4 in electronic medical record
  – Mailed invitation letters followed by up to 3 telephone calls
  – Brief Telephone Screen

• Eligibility:
  – Men: > 5 standard drinks any day or ≥15 drinks/week in prior 4 weeks
  – Women: > 4 standard drinks any day or ≥8 drinks/week in prior 4 weeks
  – Served post-9/11
  – Own an iPhone
  – 18-55 years old
<table>
<thead>
<tr>
<th>Measure</th>
<th>Instrument/ Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usability (Effectiveness, efficiency, satisfaction)</td>
<td>System Usability Scale (SUS) (1-100; ≥70 acceptable)</td>
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<tr>
<td>Acceptability and Satisfaction</td>
<td>Semi-structured Interviews</td>
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<tr>
<td>Step Away Use</td>
<td>App use</td>
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<tr>
<td>% of participants using app</td>
<td></td>
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<tr>
<td>Mean number of episodes per week</td>
<td></td>
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<tr>
<td>Mean minutes per week</td>
<td></td>
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<tr>
<td>Alcohol</td>
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<tr>
<td>Heavy drinking days (HDD) prior 30 days</td>
<td>Time-Line Follow-Back Interview</td>
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<tr>
<td>Drinking-related consequences prior 3-months</td>
<td>Short Inventory of Problems-Revised</td>
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</tbody>
</table>
Recruitment Results

- 1,000 potentially eligible Veterans were sent letters and contacted by phone
  - 576 (58%) did not respond or declined to participate
  - 323 (32%) screened ineligible
    - No iPhone (23%)

- 55 enrolled in study
  - Subsample invited to complete interviews

- Follow-up rates
  - 1-month – 91%
  - 3-months – 87%
  - 6-months – 89%
<table>
<thead>
<tr>
<th>Demographics</th>
<th>Mean (SD) or %</th>
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<tbody>
<tr>
<td>Age</td>
<td>37.4 (7.6)</td>
</tr>
<tr>
<td>Women</td>
<td>16.4%</td>
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<tr>
<td>White</td>
<td>81.8%</td>
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<tr>
<td>Employed</td>
<td>76.4%</td>
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<tr>
<td>Income &gt; $50K</td>
<td>50.9%</td>
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<tr>
<td>Clinical</td>
<td></td>
</tr>
<tr>
<td>Alcohol Use Disorder</td>
<td>82%</td>
</tr>
<tr>
<td>Heavy Drinking Days</td>
<td>8.7</td>
</tr>
</tbody>
</table>
• Participants’ mean SUS scores at 1- and 3-months were 69.3 (SD=19.7) and 71.9 (SD=15.8), respectively.

• Scores suggest Step Away has acceptable usability ratings.
Participants' use of Step Away

Participants primarily used on-going assessment and feedback and high risk times features
Mean Number of Minutes and Episodes per Week in Step Away

- 1 Week (n = 53): 55.1 minutes, 2.0 episodes
- 12 weeks (n = 22): 2.4 minutes, 4.5 episodes
- 24 weeks (n = 20): 3.9 minutes, 3.5 episodes
Participants’ Self-reported Impact of Step Away (n = 21)

- Increased awareness of alcohol consumed

“the use of the features ... are providing me with a consciousness of the fact that I’ve been going down the wrong road where alcohol is concerned. It’s on my mind all the time now.”
Participants’ self-reported impact of Step Away (n = 21)

- Promoted decisions to reduce alcohol use

“... I’ve actually cut back quite a bit in consumption and it’s made a big difference to me. It’s educational, it inspires me on thinking about why and how and the reasons other people might drink as well and I think that’s opened up a big window to me as far as prevention and not drinking as much.”
Heavy Drinking Days and Alcohol-related Problems

Baseline (n = 55) 3-months (n = 48) 6-months (n = 49)

HDD

3-months: 6.8
6-months: 6.3

SIP-R

3-months: 5.1
6-months: 4.4
Conclusions

• Step Away use may be associated with reductions in heavy drinking days and drinking related problems

• Post-9/11 participants reported Step Away as helpful in increasing awareness of alcohol use, which may influence readiness to change drinking patterns

• Participants’ use of Step Away declined over time and primarily involved accessing daily interview and weekly feedback features after week 1

• Limitations include single-arm prospective cohort design, repeated assessment and demand characteristics

• Next steps include future evaluation using RCT design and control condition
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The views expressed reflect the opinions of the authors and not the Department of Veterans Affairs
• Questions

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• Thank you!