Background
Dramatic escalations of depression and anxiety among adolescents further exacerbate unmet mental health care needs as the ability for healthcare systems to meet demand continues to be a barrier to care. Digital mental health interventions (DMHIs) provide promise as first line low intensity interventions, such as within stepped care paradigms, but require feasibility and efficacy testing. Research reported preliminary efficacy of W-GenZD, a mobile application featuring a relational agent Woebot that delivers cognitive behavioral therapy (CBT). Further evaluation of W-GenZD among adolescents with symptoms of depression and/or anxiety is warranted.

Objective
Examine the feasibility and satisfaction associated with W-GenZD and telehealth-delivered CBT skills group, among a sample of adolescents seeking care for depression and/or anxiety from a children’s hospital outpatient mental health clinic that uses a stepped care approach to triage patients depending on presenting level of need.

Methods
The study randomized 141 adolescents aged 13-17 years to either W-GenZD or telehealth CBT skills group. Adolescents presented seeking care for depression and/or anxiety and were deemed appropriate for routine level of care in the stepped care model. Analyses in the intent-to-treat (ITT) population were conducted, yielding group estimators for:

1. Intervention Feasibility, measured by the Usability Rating Profile-Intervention Revised (URP-IR; range 8-32) at 4-weeks EOT of treatment.
2. Intervention Satisfaction, measured by the Client Satisfaction Questionnaire (CSQ-8; range 8-32) at 4-weeks end-of-treatment (EOT).

The ITT analytic sample included all participants who were randomized and who were evaluable on treatment (i.e., had primary outcome data available).

Results
Key findings presented in poster’s center panel.

Conclusions
This RCT, the first of its kind to investigate W-GenZD, a relational-agent-delivered DMHI, and telehealth-delivered CBT skills group in an outpatient children’s hospital setting. Findings support the feasibility of integration of the DMHI into this ecosystem’s established stepped care paradigm, as well as satisfaction of W-GenZD among this sample of adolescents seeking care for depression and/or anxiety. Findings have important implications for adolescents, parents, and providers as an effective, acceptable feasibility DMHI offers promise in addressing the adolescent mental health crisis.

A Randomized Controlled Feasibility Study of CBT Skills Group and W-GenZD, a Relational Agent-Guided Digital Intervention, Among Adolescents Seeking Outpatient Care for Anxiety and/or Depression.

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Background
Megan Flom, PhD; Laura Lang, MPH; Mary Margaret Gleason, MD; Andre Williams, PhD; Mary Margaret Gleason, MD

Intervention 2: W-GenZD

W-GenZD hosts Woebot, a guided self-help relational agent that guides users through a CBT-based program

Intervention 1: CBT Skills Group

Offers evidence-based emotion management techniques, mood tracking, empathy and psychosocial care

Participant journeys tailored in real-time, to endorsed needs and mood in the moment

Interface centers on goal-oriented, text-based conversations with Woebot

Intervention Adherence

92% 95%

CBT Skills Group 2 or 3 sessions attended Woebot Group 2 or 3 weeks app used

Author's Disclosures
This work was funded by Woebot Health, which covers the cost of on-site staffing, participant payments, and the platform for electronic data capture. Dr. Gleason received research funding from the Hampton Roads Biomedical Research Consortium and Dr. Gleason and Woebot, and Laura Lang received research funding to support this study from Woebot Health.

Acknowledgements
We would like to thank Robert Zuckerman, M.D., Ph.D., MPH, Aaron Casey, Ph.D., and Adam Platt, M.S., as well as all of our study participants and their families.

Disclaimer
Weobot for Adolescent Mood & Anxiety (Woebot-GenZD) is an investigational medical device. It has not been evaluated, tested, or approved by FDA.

References
Robinson A, Eaneff S, Darcy A. RCT of Woebot for Adolescent Depression compared to Digital Psychoeducation: The Headway Study. Presented at the annual conference of the Association for Behavioral and Cognitive Therapies (ABCT), New York City, November 2022.
“Safety, Efficacy, and Generalizability of a Relational Agent-Delivered CBT for Adolescents: A Randomized Controlled Trial.” 1 or 2 participants selected both “Pansexual” and “Asexual.”

Table 1. Descriptions of Feasibility and Satisfaction at 4-Weeks EOT

<table>
<thead>
<tr>
<th>Intervention Group</th>
<th>FEASIBILITY (URP-IR Scale Range: 6-36)</th>
<th>SATISFACTION (CSQ-8 Scale Range: 8-32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woebot Group</td>
<td>Interpretation n=55 55.00 (4.50)</td>
<td>Interpretation n=55 52.20 (5.54)</td>
</tr>
<tr>
<td>CBT Skills Group</td>
<td>Interpretation n=52 29.50 (5.25)</td>
<td>Interpretation n=52 23.08 (5.51)</td>
</tr>
</tbody>
</table>

Table 2. Frequencies of CSQ-8 Item Responses at Week 4 (EOT)

<table>
<thead>
<tr>
<th>Item</th>
<th>W-GenZD (n=52)</th>
<th>CBT Group (n=55)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How would you rate the quality of service you have received?</td>
<td>12 (23%)</td>
<td>40 (77%)</td>
</tr>
<tr>
<td>2. Did you get the kind of service you wanted?</td>
<td>9 (18%)</td>
<td>42 (82%)</td>
</tr>
<tr>
<td>3. To what extent has our program met your needs?</td>
<td>21 (44%)</td>
<td>27 (56%)</td>
</tr>
<tr>
<td>4. If a friend were in need of similar help, would you recommend our program to him/her?</td>
<td>5 (10%)</td>
<td>43 (90%)</td>
</tr>
<tr>
<td>5. How satisfied are you with the amount of help you have received?</td>
<td>23 (45%)</td>
<td>55 (45%)</td>
</tr>
<tr>
<td>6. Have the services you received helped you to deal more effectively with your problems?</td>
<td>9 (18%)</td>
<td>39 (79%)</td>
</tr>
<tr>
<td>7. In an overall, general sense, how satisfied are you with the service you have received?</td>
<td>18 (35%)</td>
<td>34 (65%)</td>
</tr>
</tbody>
</table>

Figure 1. Sample Self-Identity Characteristics

Table 1. Descriptives of Feasibility and Satisfaction at 4-Weeks EOT

<table>
<thead>
<tr>
<th>Intervention Group</th>
<th>n Median (IQR)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBT Skills Group</td>
<td>52 29.50 (5.25)</td>
<td>Appears</td>
</tr>
<tr>
<td></td>
<td>55 30.00 (4.50)</td>
<td>Similar across groups</td>
</tr>
</tbody>
</table>