Creating Personas to Inform the Adaptation of a Digital Anxiety Sensitivity Intervention to Prevent Perinatal Anxiety

Martha Zimmermann1, Kimberly A. Yonkers1, Karen M. Tabb2, Elizabeth Peacock-Chambers1,3, Camille A. Clare4, Edwin D. Boudreaux4, Stephenie C. Lemon4, Nancy Byatt4, Bengisu Tulu5
1UMass Chan Medical School, 2University of Illinois Urbana-Champaign, 3Baystate Medical Center, 4SUNY Downstate Health Sciences University, 5Worcester Polytechnic Institute

Background
• 1 in 5 perinatal individuals experiences an anxiety disorder
• Many affected individuals do not receive treatment
• Individuals who are economically marginalized are even less likely to receive treatment
• Digital health could be an accessible option to help prevent and reduce this burden
• Anxiety Sensitivity Interventions are brief, cognitive-behavioral interventions that prevent anxiety or reduce risk for anxiety disorders in the general population.
• Anxiety Sensitivity Interventions have not been developed for perinatal populations

Study Objective: Develop personas, or user profiles, to inform the adaptation of an Anxiety Sensitivity Intervention for perinatal individuals and for digital health that can reach individuals experiencing economic marginalization

Methods
• User-Centered Design (UCD)
• Community engagement

Results

Table 1. Phase I: Expert-Identified Characteristics Relevant for Digital Health Intervention

<table>
<thead>
<tr>
<th>Characteristics (rated 1=low to 10=high)</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics: (e.g., age, residence, income, marital status, children)</td>
<td></td>
</tr>
<tr>
<td>Facts and Interactions: A brief history, basic information about the persona's roles and responsibilities</td>
<td></td>
</tr>
<tr>
<td>Challenges and Feelings: Relevant health challenges that this persona faces (e.g., challenges in relationships and at work)</td>
<td></td>
</tr>
<tr>
<td>Goals, Wants, &amp; Needs: What this persona wants from the intervention to meet their needs and goals and to overcome their challenges</td>
<td></td>
</tr>
</tbody>
</table>

Phase II: Advisory Council generated 6 personas with qualitative characteristics and quantitative characteristics
Phase III
• Cluster analysis suggested three user profiles (Figure 1)
• Generated Persona Card Templates (Figure 2) to guide qualitative analysis
Phase IV
• Validated Advisory Council-generated personas through end-user interviews
• Added “Aware” persona based on end-user interviews
• Phase V: Refined personas and added consideration of persona with same-gender partner, and persona experiencing fertility challenges

Figure 1. Cluster Analysis of Advisory-Council Generated Personas

Figure 2. Persona Template Card

Digital Health Intervention Design Implications

Personas generated through this process had distinct characteristics and design implications across four domains:

Content personalization
• Example: “Lonely” persona feels excluded by representation of partnered pregnancy→ Content should have inclusive options

Information provided by users
• Example: “Overwhelmed” persona has busy schedule → Ensure intervention does not feel burdensome (e.g., options for lower frequency asks for symptom monitoring, brief texts and videos)

Transparent options for data and information sharing
• Example: “Aware” persona is already connected with therapist → Options for sharing information with therapist

Limitations
• Interviews were limited to English-speaking participants and participants with Internet access only, limiting generalizability to other populations

Conclusions and Future Directions
• Understanding diverse user needs through persona generation could potentially promote greater population reach and generate sustained user engagement among populations not typically afforded access to behavioral health interventions
• Our team will create an app prototype that incorporates features based on these four personas with continued feedback from our advisory councils, perinatal individuals, and obstetric professionals

Acknowledgements: This work was supported by a seed grant from the Implementation Science and Practice Advances Research Center (iSPARC), a Massachusetts Department of Mental Health Research Center of Excellence and by the National Center for Advancing Translational Sciences, National Institutes of Health, through Grant KL2TR001454. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

"New moms... There is no downtime, but there are moments throughout the day, that five minutes to read something and ground yourself would be helpful. I would totally have jumped on it if I would have known what I know now about anxiety because it's a real thing. And then start normalizing that."
— Perinatal Individual (Participant 159)