

# Supplementary Information

This is a supplementary information document for the following publication.

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1. Illustration of emotion identification with generative AI images  
(expanding figure 2)

*The images are created by generative AI: DALL-E 2 and Stable Diffusion 1.5. Image generation tools used in this study are for research purposes and not suggested for clinical use.*

## Emotion Identification



You will see four photos of yourself experiencing different emotions. Please match the corresponding picture to correct emotion.

**Anger**

**Happiness**

**Fear**

**Sadness**

## My Emotional Vocabulary

Here are four photos of you experiencing different emotions. You will find related emotions and signs and behaviors below each picture to better name and express your emotions.

**Related Emotions**  
Annoyed  
Enraged  
Frustrated  
...

**Signs and behaviors**  
Aggression  
Arguing  
Blaming  
...

**Related Emotions**  
Cheerful  
Content  
Excited  
...

**Signs and behaviors**  
Feeling sociable  
Smiling  
Laughter  
...

**Related Emotions**  
Scared  
Despair  
Worry  
...

**Signs and behaviors**  
Avoidance  
Crying  
Sweating  
...

**Related Emotions**  
Despair  
Down  
Hopeless  
...

**Signs and behaviors**  
Negative thoughts  
Sleep problems  
Inactivity  
...

## 2. Illustration of exposure hierarchy with generative AI images (expanding figure 3)

*The images are created by generative AI: DALL-E 2 and Stable Diffusion 1.5. Image generation tools used in this study are for research purposes and not suggested for clinical use.*

### My Exposure Hierarchy

 <p><b>Exposure activity 1</b> Spend 5-minutes thinking about a spider.  Subjective units of distress: 20-34 (Low-Moderate Anxiety)</p>	 <p><b>Exposure activity 2</b> Spend 5-minutes holding a spider in a closed jar.  Subjective units of distress: 35-75 (Moderate-Severe Anxiety)</p>	 <p><b>Exposure activity 3</b> Spend 5-minutes holding and playing with a spider.  Subjective units of distress: 76-100 (Severe-Extreme Anxiety)</p>	<p>Here are three images of yourself performing activities you rated from least-distressing to most-distressing. With my guidance, we will work together to confront these matters.</p>
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### 3. Example for cultural appropriateness and individualization

*The images are created by generative AI: DALL-E 2. Image generation tools used in this study are for research purposes and not suggested for clinical use.*

#### ***Cultural appropriateness and individualization via prompt engineering***

Generative models require natural language input to generate intended results. It is called prompt, and the approach to craft prompts is called prompt engineering. Prompt engineering requires manipulating the input prompts until the output satisfies the needs. In our case, text-to-image generation, prompt engineering is necessary to yield more representative and enabling results that can augment the conversations. As a back-end process, we can adjust the prompts or input based on, such as, user demographics or descriptions. This process could be scalable to automatically (e.g. with user profile information) adjust any inputs to be culturally sensitive. In this prompt example below, we demonstrated that the demographic information and preferences in the prompt could have been entered before using the application or starting a session (by the user or moderator) to improve inclusivity and cultural appropriateness personalized for the patient and family.

Assuming an African mother in the clinic with his son, using their input (e.g., walking by the ocean with her son) to generate image may not reflect or represent their expressed experience to augment the therapy session. Adjusting the prompt is necessary to be inclusive and representative of an intended scenario.



***Prompt: "I am walking by the ocean with my son"***

**Output :** The first image is created with DALL-E using the above prompt. Bias in data affects the generation process.



***Engineered prompt: "An African woman in traditional dress is walking by the ocean with his son who is wearing a red shirt, blue short and white shoes"***

**Engineered Output:** The second image is created with DALL-E using the above prompt.

Bias in data can be mitigated with prompt engineering.