Gamifying Risk Identification for Alcohol Use Behaviors Across Countries and Cultures

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Background

- A complex web of biopsychosocial factors underlie predisposition towards harmful alcohol use.
- We will continue to work on the Alcohol Use Behavioral Phenotyping Test (AUBPT) – a computer-based dimensional assessment that can be culturally adapted to assess alcohol use behaviors across countries.
- AUBPT includes gamified versions of behavioral paradigms (tasks) that can evaluate the transdiagnostic biopsychological constructs under the positive valence and cognitive domains of the Research Domain Criteria (RDoC) proposed by the National Institute of Mental Health (NIMH).

Mapping Our Tasks to RDoC

- RDoC is a NIMH framework that aims to investigate biobehavioral mechanisms behind multiple disorders.

Subteam Structure

- Content
  - Conducts literature review on RDoC and behavioral tasks; tests task content and verifies construct validity
- App Development
  - Manages the design and development of BART, Stop-signal, Delay Discounting, and other applications used in the project
- Implementation
  - Works with global partners to translate and culturally adapt tasks; organizes culturally appropriate survey for app pilot
- Systematic Review
  - Screens research studies; extracts data to find gap in research regarding dual diagnoses and RDoC paradigms

Collaborators

- We are currently partnering with collaborators in São Paulo, Brazil and Moshi, Tanzania to adapt and implement the AUBPT tasks in those regions.

Universidade de São Paulo

Task Development Workflow

- Research and compile the most fitting task elements from a literature review
- Create a task outline with visual elements, behavioral functions, and variables to be collected
- Create a task space on Unity to program back-end code and user interfaces
- Review animation and operations of task demo
- Meet with relevant global collaborators to review the task, translate English to the target language, and back-translate
- Use translated task for cultural adaptation
- Compare the original and back-translated text for validation

Current Outputs

- AUBPT Task List
  - Delay Discounting
  - Balloon Analog Risk Task
  - Go No-go
  - Flanker
  - Stop Signal
  - Probabilistic Reward

- Task Navigation Page

Systematic Review

- 8003 Title/Abstract Studies Identified
- 1373 Duplicates Removed
- 6630 Title/Abstract Studies Screened
- 2446 Studies Included for Full Text
- 4184 Title/Abstract Excluded

Next Steps

- Test AUBPT's ability to predict risk of alcohol use disorders
- Create an open-source multilingual computer application for AUBPT
- Create open-source validated artificial intelligence models
- Adapt AUBPT in Portuguese, Swahili, and Hindi