

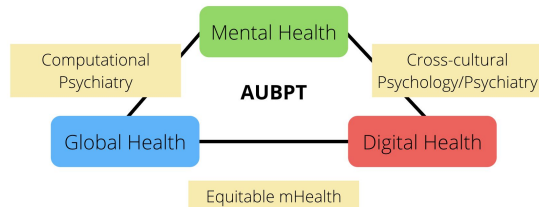
Predicting Alcohol Use Disorder Through Games: Alcohol Use and Behavior Phenotyping Test (AUBPT)

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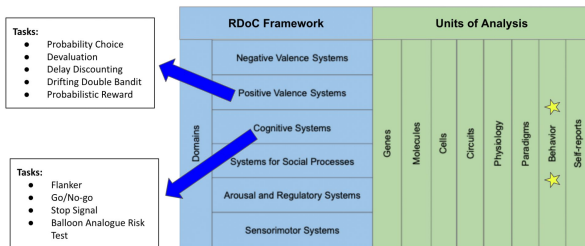
Background

- A complex web of **biopsychosocial factors** underlie predisposition towards **harmful alcohol use**.
- We introduce 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 reviews on RDoC and behavioral tasks; sets task content and verifies construct validity
- Data Science**: Develops functional, interactive app-based tasks; implements multi-platform integrations for login and data collection
- Implementation**: Works with global partners to translate and culturally adapt tasks; drafts manuscripts and grant proposals

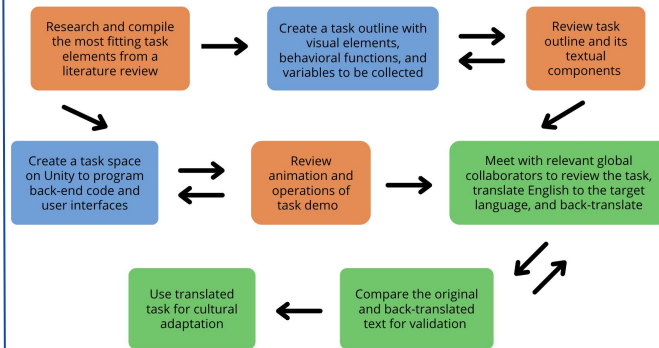
Collaborators

GEMINI Global Emergency Medicine Innovation & Implementation Research Lab | Duke GLOBAL HEALTH INSTITUTE | Duke Surgery Duke University School of Medicine

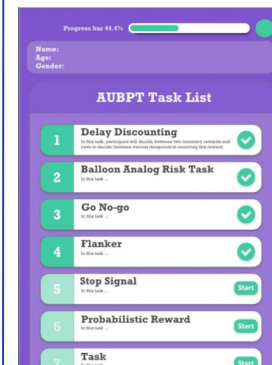
We are currently partnering with collaborators in **São Paulo, Brazil** and **Moshi, Tanzania** to adapt and implement the AUBPT tasks in those regions:



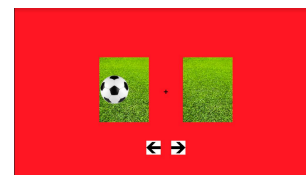
Task Development Workflow



Current Outputs



Task Navigation Page



Stop Signal Task



Delay Discounting Task

Independent Studies

- Fall 2021*: Brain Connectivity in Alcohol Use Disorder: A Meta-review of Human Neuroimaging Studies (Ramachandran), Review of Computational Modeling for Substance Use Disorders (Knagaram)
- Spring 2022*: A Systematic Review of Positive Valence, Negative Valence, and Cognitive Domains in Depressive Disorders, Bipolar Disorder, Anxiety Disorders, and Substance Use Disorders (Jha), Active Inference Modeling & Data Construction for AUBPT (Yu)

Next Steps

- Test AUBPT's ability to **predict risk of alcohol use disorders**
- Create an AI to model individual patients' performance on AUBPT and thereby identify their **alcohol use phenotypes**
- Adapt AUBPT in Hindi** in addition to the work already begun for Portuguese and Swahili adaptations