

# Emotion and Non-cognitive Measures of Decision-making Ability in Older Adults Within ARMCADA: A Pilot Study

P-0788

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BRIEF, EASILY ADMINISTERED EMOTIONAL AND NON-COGNITIVE MEASURES CAN HELP IDENTIFY PERSONALITY AND INDIVIDUALS WITH GREATER FINANCIAL VULNERABILITY AND SUBJECTIVE COGNITIVE CONCERNS, HIGHLIGHTING THEIR PROMISE AS EARLY INDICATORS OF COGNITIVE DECLINE AND DEMENTIA-RELATED RISK.

INTRODUCTION

- As the U.S. population ages, **the burden of Alzheimer's disease and related dementias (AD/ADRD) continues to grow.**<sup>1,2</sup>
- Early detection** of abnormal cognitive decline is no longer optional, **it is essential.**
- An **abnormal decline in decision-making (DM) ability** may serve as an **early sign of abnormal cognitive decline.**<sup>3</sup>
- Emotional and non-cognitive (ENC) factors shape DM** by influencing risk perception, judgement, and choice preferences.<sup>4-6</sup>
- The **ARMCADA (Advancing Reliable Measurement in Cognitive Aging and Decision-making Ability)** project identified ENC measures with high potential to be included in a multidomain DM battery for adults (45+).

ARMCADA

Advancing Reliable Measurement in Cognitive Aging and Decision-Making Ability

Financial Decisions

Emotional & Non-Cognitive

Healthcare Decisions

Assessing Decision-Making in Aging to Predict Cognitive Changes

Functional Outcomes

METHODS

- This pilot study included **152 adults over 40** (61.8% participants aged 60 and above; **59.9% female**) from the general population located across rural (20.4%), suburban (57.9%), and urban (20.4%) regions in the United States.
- Participants completed **measures assessing ENC** (Table 1) along with self-reported measures of **subjective cognitive decline (SCD)**
  - Everyday Cognition Scale (ECog-12)<sup>7</sup>
  - Memory Complaint Scale (MCS)<sup>8</sup>

| ENC Measures                                               | Construct                        | Items | Response Options                             |
|------------------------------------------------------------|----------------------------------|-------|----------------------------------------------|
| Adjustable Impulsivity Scale <sup>9</sup> (AIMS)           | Impulsivity, Risk-Taking         | 50    | 5 (Strongly disagree – Strongly agree)       |
| Gullibility Scale <sup>10,11</sup>                         | Gullibility                      | 12    | 5 (Strongly disagree – Strongly agree)       |
| Reading the Mind in the Eyes Test <sup>12</sup> (RMET)     | Theory of Mind, Social Inference | 36    | 4 (Different words)                          |
| Ten-Item Personality Inventory <sup>13</sup> (TIPI)        | Personality                      | 10    | 7 (Disagree strongly – Agree strongly)       |
| Mild Behavioral Impairment Checklist <sup>14</sup> (MBI-C) | Neuropsychiatric Symptoms        | 34    | 2 (Yes / No)<br>3 (Mild / Moderate / Severe) |
| PROMIS Depression <sup>15</sup>                            | Depression                       | 4     | 5 (Never – Always)                           |
| PROMIS Anxiety <sup>15</sup>                               | Anxiety                          | 4     | 5 (Never – Always)                           |
| PROMIS Social Isolation <sup>15</sup>                      | Social Isolation                 | 4     | 5 (Never – Always)                           |

Note. PROMIS = Patient Reported Outcomes Measurement Information System

**Pilot Research Questions**

- RQ1:** Are the selected ENC measures feasible and reliable?
- RQ2:** How do ENC measures relate to each other?
- RQ3:** How do ENC measures relate to self-reported SCD?

RESULTS

**Feasibility:**  
>95% completion;  
~15min for total ENC battery

**Reliability:**  
Most measures  $\alpha$ /KR-20>.80 (TIPI scales  $\alpha$  = [.35, .80])

**MBI-C domains related to**

- each other (generally  $r \geq .20$ )
- greater anxiety, depression, and social isolation ( $r \geq .60$ )
- greater SCD ( $r \geq .34$ )

**Higher impulsivity related to**

- higher overall gullibility ( $r = .53$ )
- higher MBI-C ( $r = .35$ )
- greater anxiety, depression, and social isolation ( $r \geq .27$ )
- greater SCD (MCS:  $r = .37$ ; ECog-12:  $r = .55$ )

**Higher emotional stability related to**

- lower impulsivity ( $r = -.47$ )
- lower anxiety, depression, and social isolation ( $r \leq -.52$ )
- lower SCD (MCS:  $r = -.35$ ; ECog-12:  $r = -.41$ )

**Higher conscientiousness related to**

- lower impulsivity ( $r = -.52$ )
- lower overall gullibility ( $r = -.51$ )
- lower SCD (MCS:  $r = -.22$ ; ECog-12:  $r = -.46$ )

**Figure 1.** Relationship between ENC measures

**Figure 2.** ENC relation with SCD measures

REFERENCES

CONCLUSIONS

- Findings support the feasibility** of administering the selected ENC measures in adults over 40.
- This pilot **lays the groundwork for examining interactions** between ENC factors and DM, and for **identifying measures and items most predictive of abnormal trajectories of DM.**
- Future work will validate the battery** across a **broad spectrum of cognitive decline**

CONTACT

This work is supported by NIA grant #1U24AG082022. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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