Integrating Neuroscience and Social Work: Advancing Healthy Aging through Community Engagement

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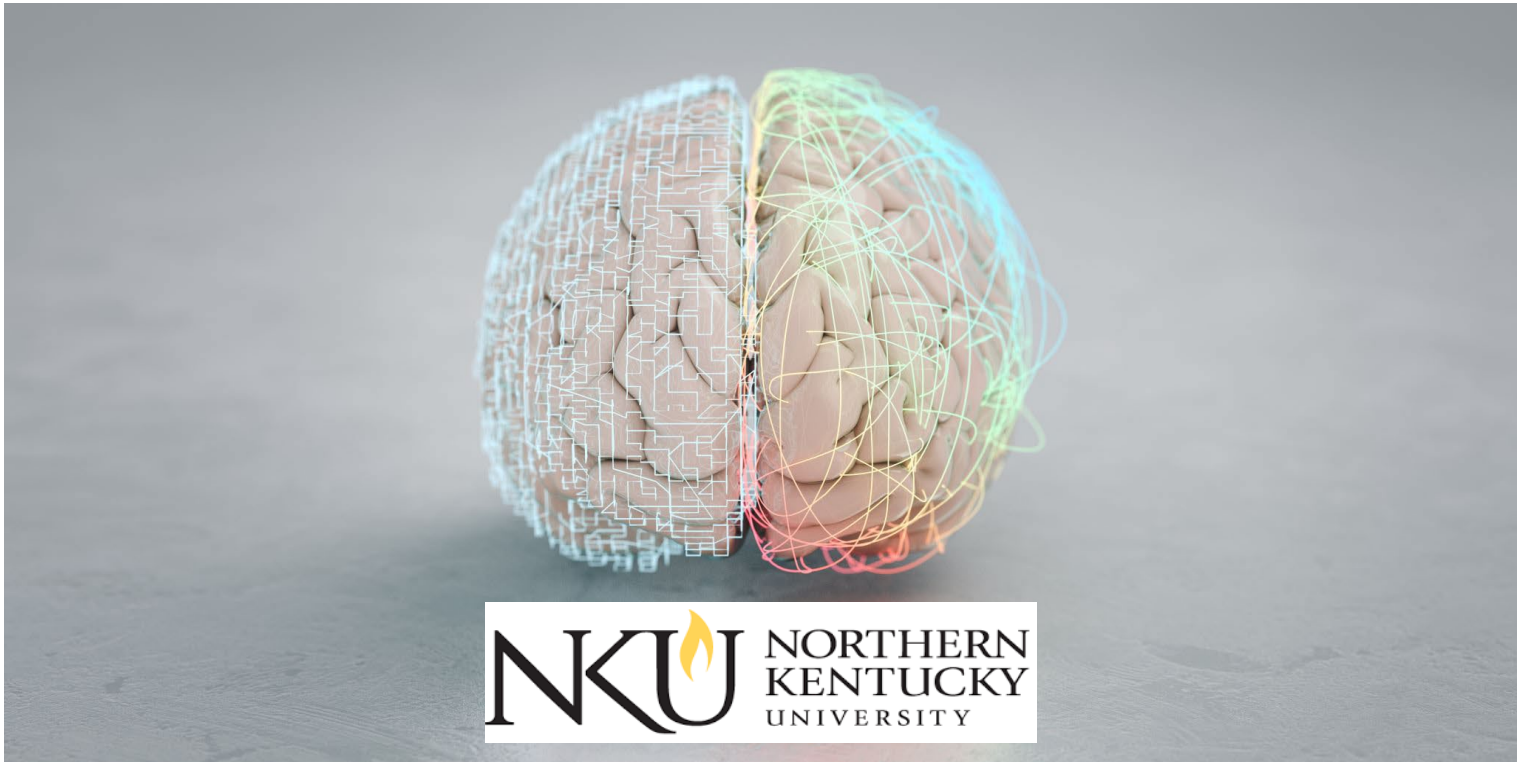


Disclosure

Dr. Kim has received a doctoral fellowship from the Ole A., Mable Wise, and Wilma Wise Nelson Endowment through the Department of Family and Geriatric Medicine at the University of Louisville School of Medicine. She has also received grant support from the Health Innovation Center Faculty Fellowship Grant at Northern Kentucky University and from the Korean American Social Work Association, an organization affiliated with the Council on Social Work Education.

This presentation is intended for educational purposes only. Funding or grant support did not influence the content of this presentation. The presenter declares no conflicts of interest.

Presenter Background & Expertise

Presentation Road Map

- Purpose & Learning Objectives
- Why Healthy Aging Matters
- Neuroscience Insights for the Aging Brain
- Executive Cognitive Functioning & Daily Life
- The Gap Social Workers Can Fill
- Evidence-Based Practice vs. Practice-Based Evidence
- Community-Engaged Interventions: Healthy Brain Initiative
- Implications for Practice, Education, and Policy
- Reflection, Questions, and Discussion

Purpose of the Presentation

This presentation is designed to:

- Integrate neuroscience and social work theory, research, and practice
- Translate brain science into community-based, non-pharmacological interventions
- Support licensed practitioners with evidence-informed strategies (CEU-aligned)
- Prepare doctoral students and faculty for translational and engaged scholarship
- Strengthen community partnerships that promote healthy aging

Learning Objectives

By the end of this session, participants will be able to:

1. Explain key neuroscience concepts relevant to cognitive health and aging.
2. Apply neuroscience-informed, non-pharmacological strategies in social work practice with older adults.
3. Identify community-based approaches that reduce social isolation and promote cognitive well-being.
4. Analyze how social work education and interdisciplinary collaboration can translate neuroscience into practice.
5. Recognize social workers' roles in advancing age-friendly, equitable, and dementia-capable communities.

Why Healthy Aging Matters Now

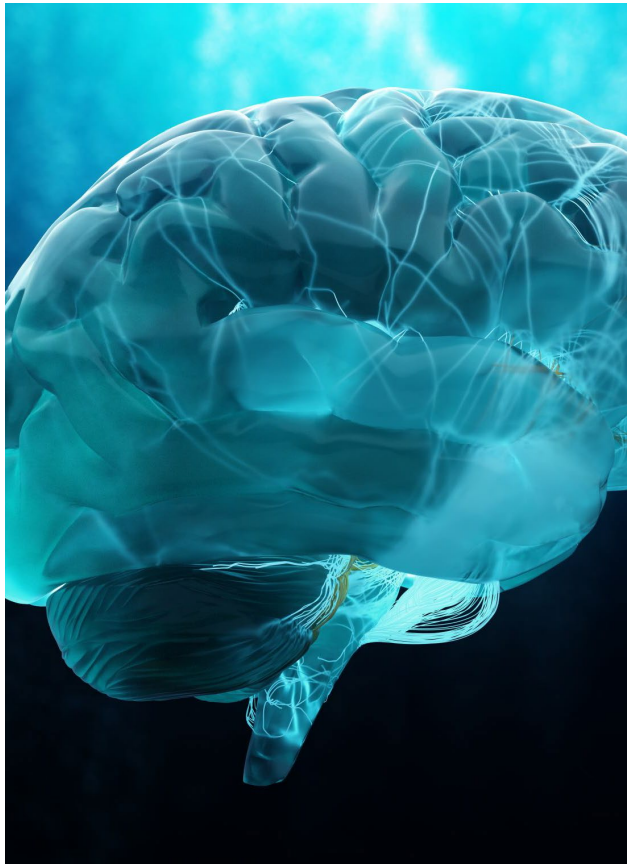
Rapid population aging

Cognitive health & quality of life

Limits of pharmacological approaches

The Aging Brain: Key Neuroscience Insights

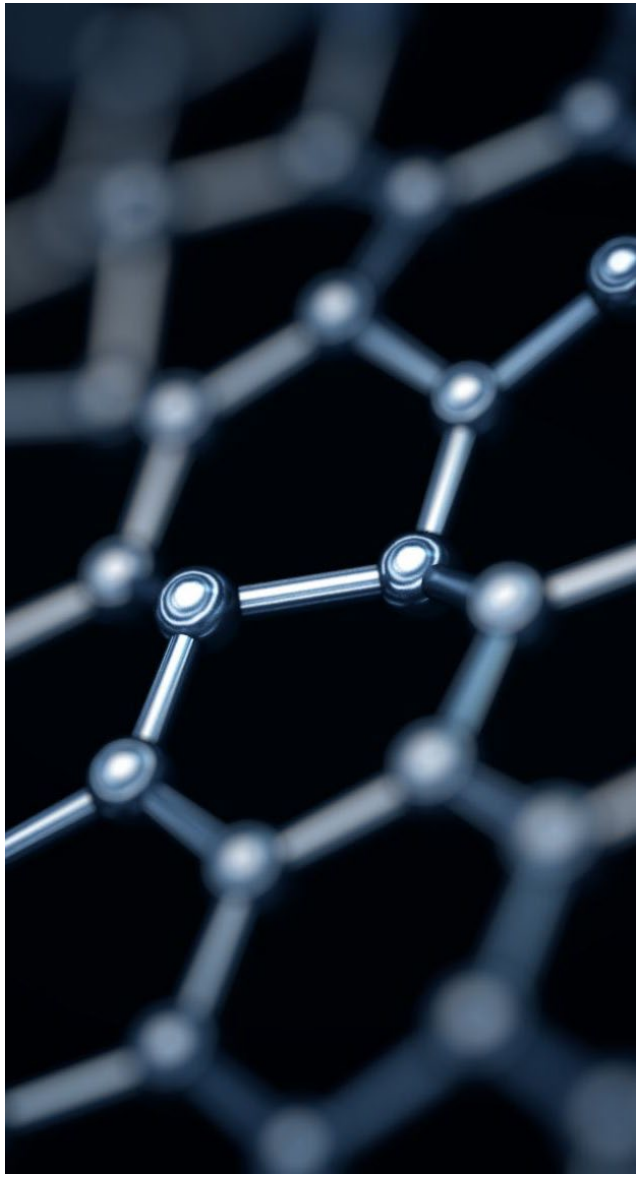
- **Neuroplasticity persists across the lifespan**
  The brain continues to adapt in response to learning, relationships, and environment.
- **Cognitive reserve shapes resilience**
  Education, occupation, and social engagement buffer cognitive decline.
- **Stress and trauma affect brain health**
  Chronic stress accelerates cognitive vulnerability; supportive environments matter.
- **Emotion, meaning, and connection are central**
  Belonging and purpose support neural regulation and well-being.



Neuroplasticity Across the Lifespan

The brain remains adaptable

Learning, engagement, and relationships matter



The Gap that Social Workers Can Fill with *Real Time Research** and CLOX Screening*

Clients with Executive Cognitive Impairment

Clinicians Unaware of Clients' Executive Cognitive Impairments

Executive Cognitive Functioning

Planning & Organization: Setting goals, sequencing steps

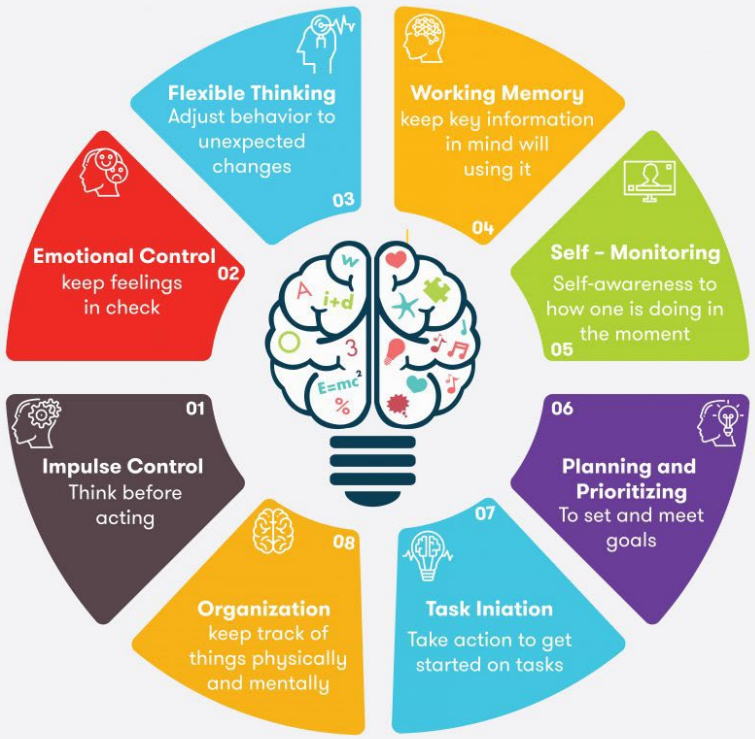
Working Memory: Holding and manipulating information

Cognitive Flexibility: Adapting to new rules or perspectives

Inhibitory Control: Self-regulation and resisting impulses

Problem-Solving & Decision-Making: Choosing and evaluating actions

EXECUTIVE FUNCTIONING



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Executive Function

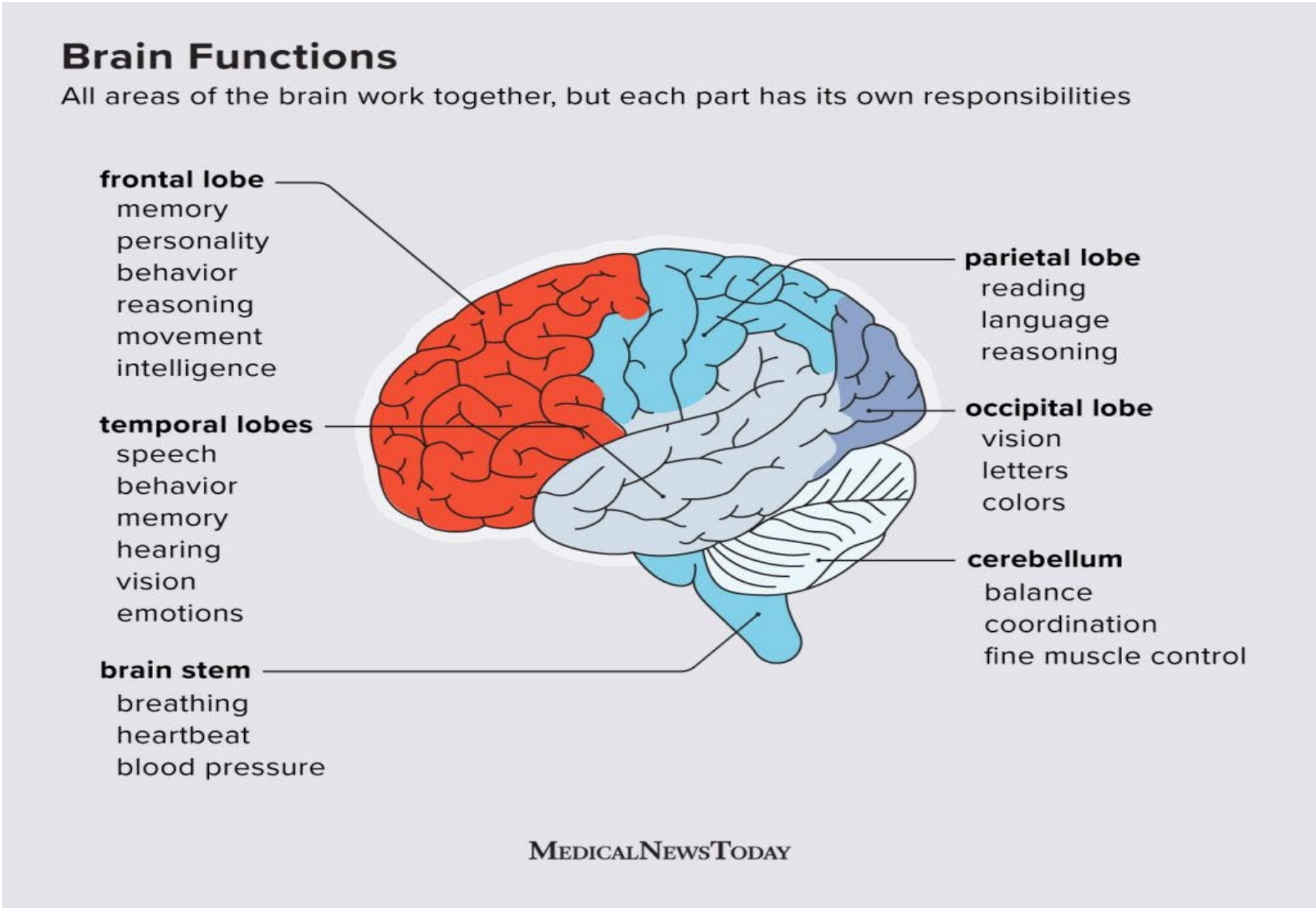
Examples of executive function are:

Working memory.

Inhibition control.

Cognitive flexibility:
planning, reasoning, solving problems, multitasking.

Cleveland Clinic



Warner, D. (2024, June 20). *Cognitive functioning: How the brain works*. *Medical News Today*. https://www.medicalnewstoday.com/articles/cognitive-functioning

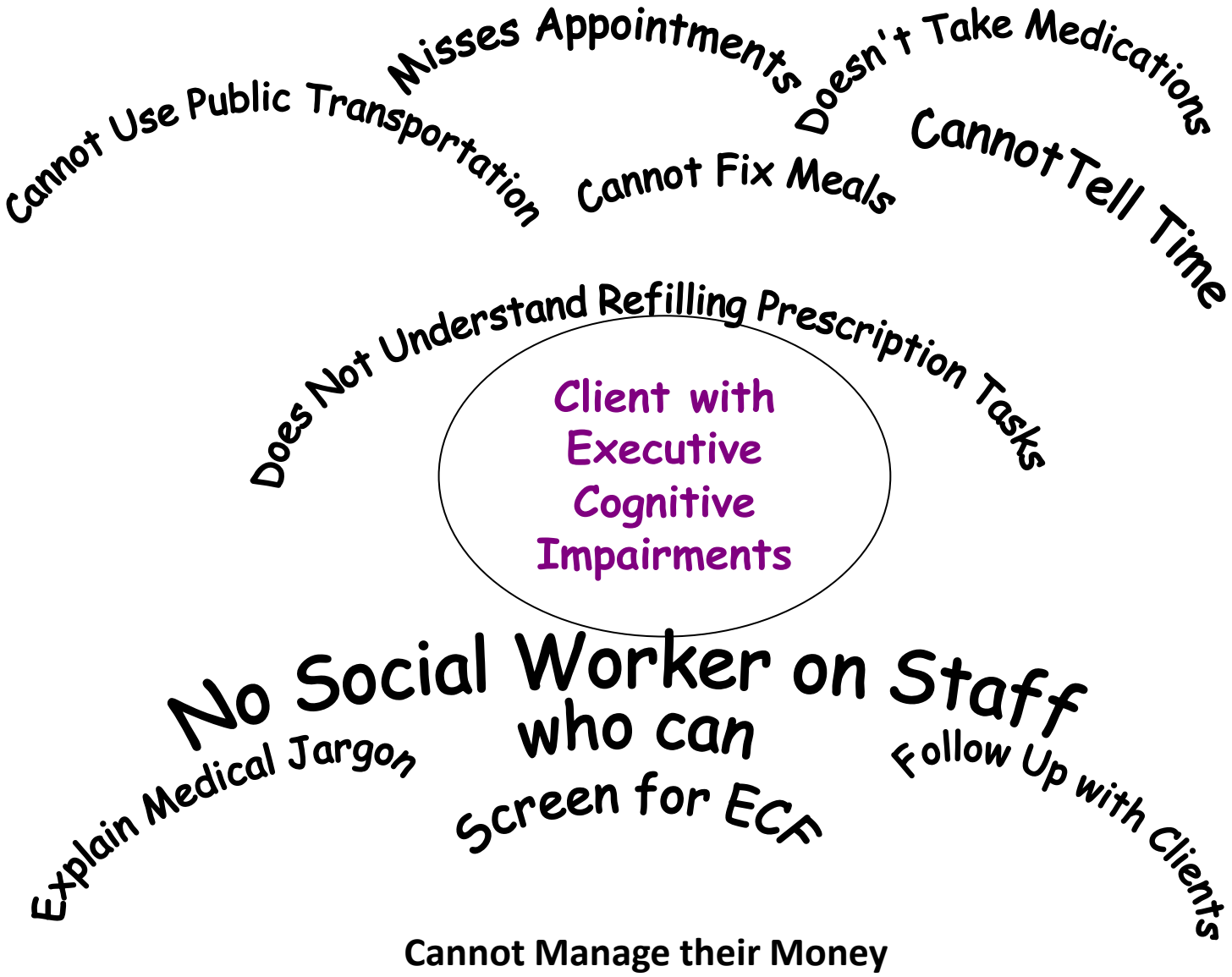
Executive Cognitive Functioning*

- Abstract thinking
- Planning
- Organizing
- Self-correcting
- Problem solving

Royall, D. R., Cordes, J. A., & Polk, M. (1998). CLOX: an executive clock drawing task. *Journal of neurology, neurosurgery, and psychiatry*, *64*(5), 588–594. https://doi.org/10.1136/jnnp.64.5.588

Example of the Executive Cognitive Functions required to get to this meeting

Executive Cognitive Daily Functions



Evidence-Based Practice (EBP) vs Practice-Based Evidence (PBE)

Feature	Evidence-Based Practice (EBP)	Practice-Based Evidence (PBE)
Definition	The integration of the **best available research evidence** with clinical expertise and patient values to guide decision-making.	The systematic **collection and use of data from real-world practice** to inform and improve interventions, often generating evidence from clinical experience.
Focus	Top-down: starts with research evidence and applies it to practice.	Bottom-up: starts with practice experiences and outcomes to build evidence.
Goal	Apply interventions proven effective through rigorous studies.	Learn from what works in real-world contexts and adapt practices accordingly.
Strength	Strong scientific validity, controlled findings.	High relevance to real-world practice, responsive to patient needs.
Example	Using interventions for depression that have been validated in randomized controlled trials.	Collecting outcome data from clients receiving a new counseling approach to evaluate its effectiveness in a specific setting.

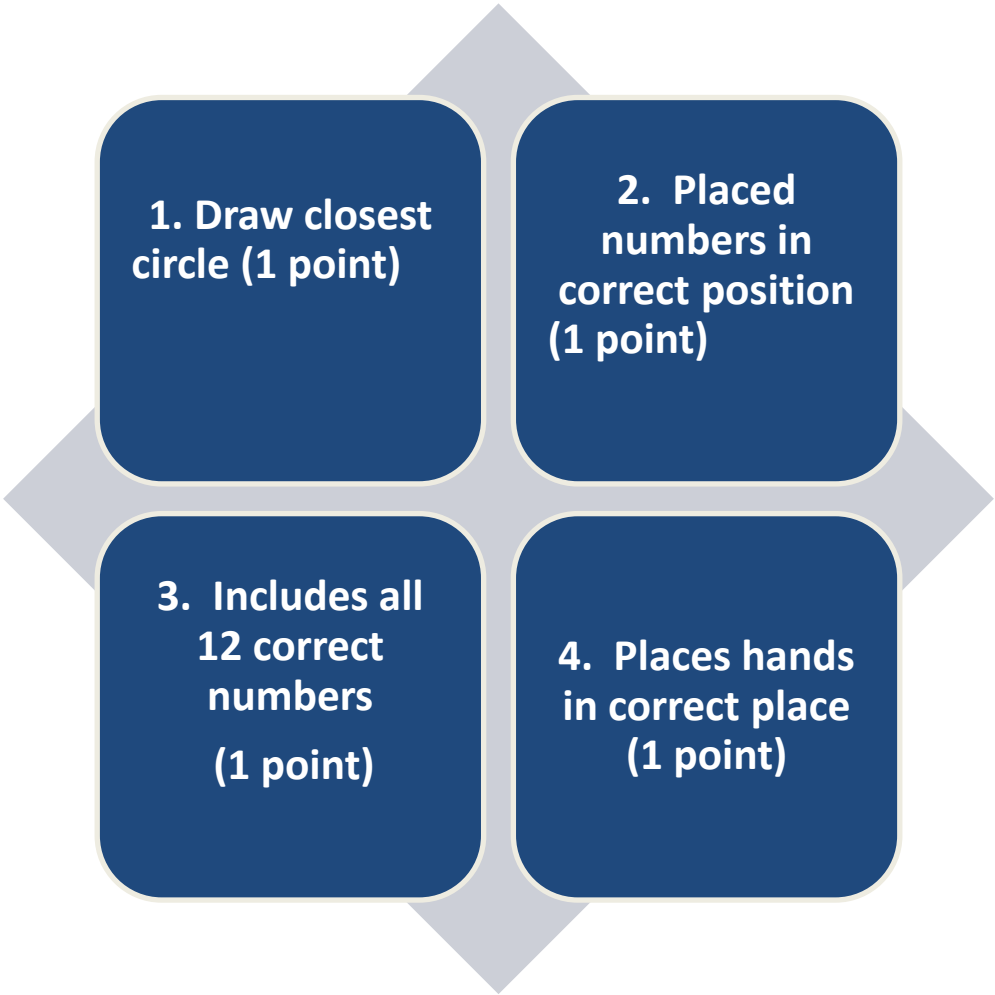
Greenhalgh, T., Howick, J., & Maskrey, N. (2014). Evidence based medicine: A movement in crisis? *BMJ, 348*, g3725. https://doi.org/10.1136/bmj.g3725

Instruction for CLOX Drawing

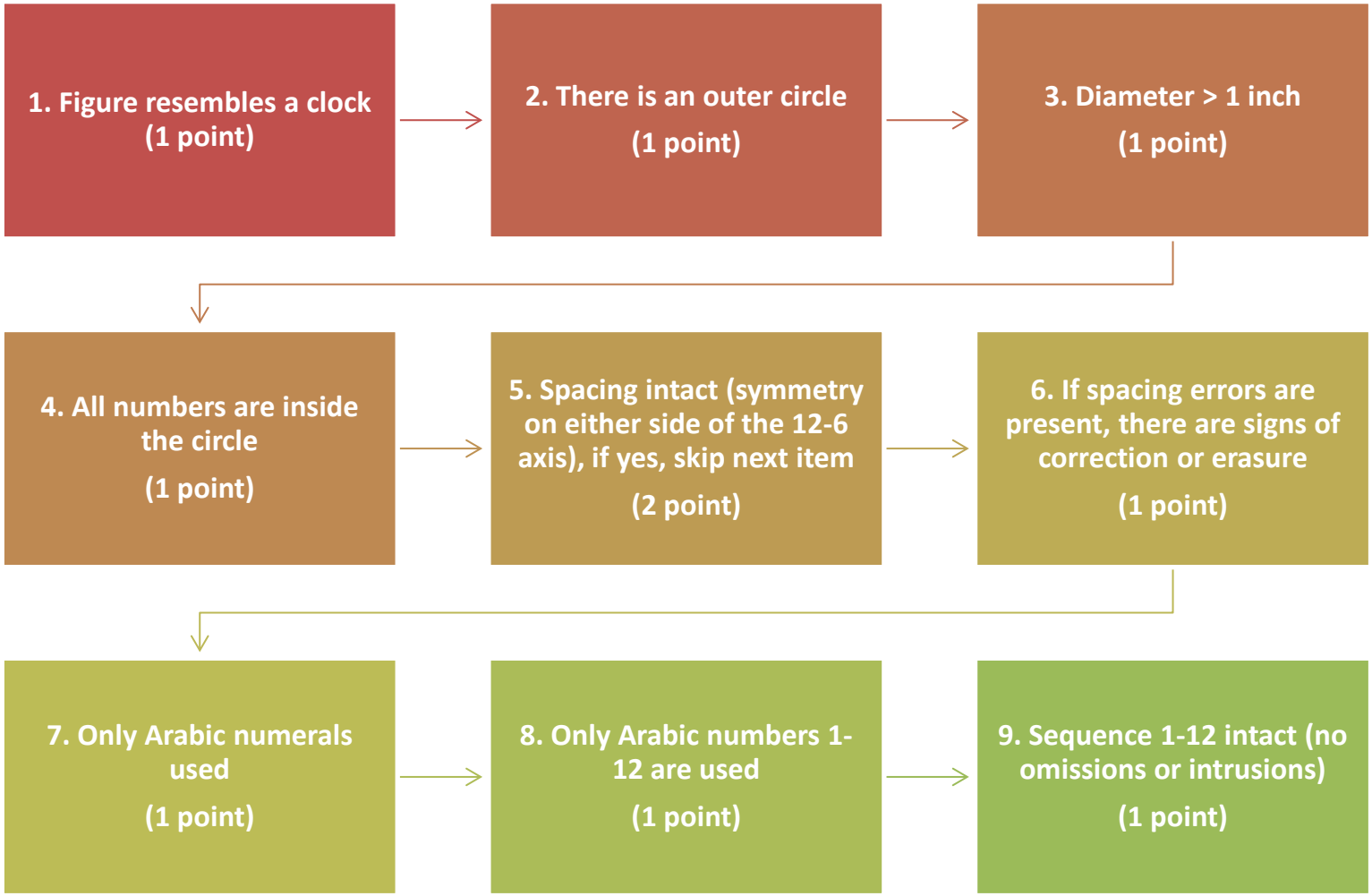
"Please draw a clock so that it says 1:45.

Set the hands and numbers on the face so that even a child can read them" (Royall, 1998).

Clinical CLOX Scoring Items



Fourteen *Research* CLOX Scoring Items *(Royall, 1998)*



Research CLOX Scoring Items (Cont')
(Royall, 1998)

10. Only 2 hands are present

(1 point)

→

11. All hands are represented by arrows

(1 point)

→

12. Hour hand is between 1 and 2 o'clock

(1 point)

↓

13. Minute hand is longer than the hour hand

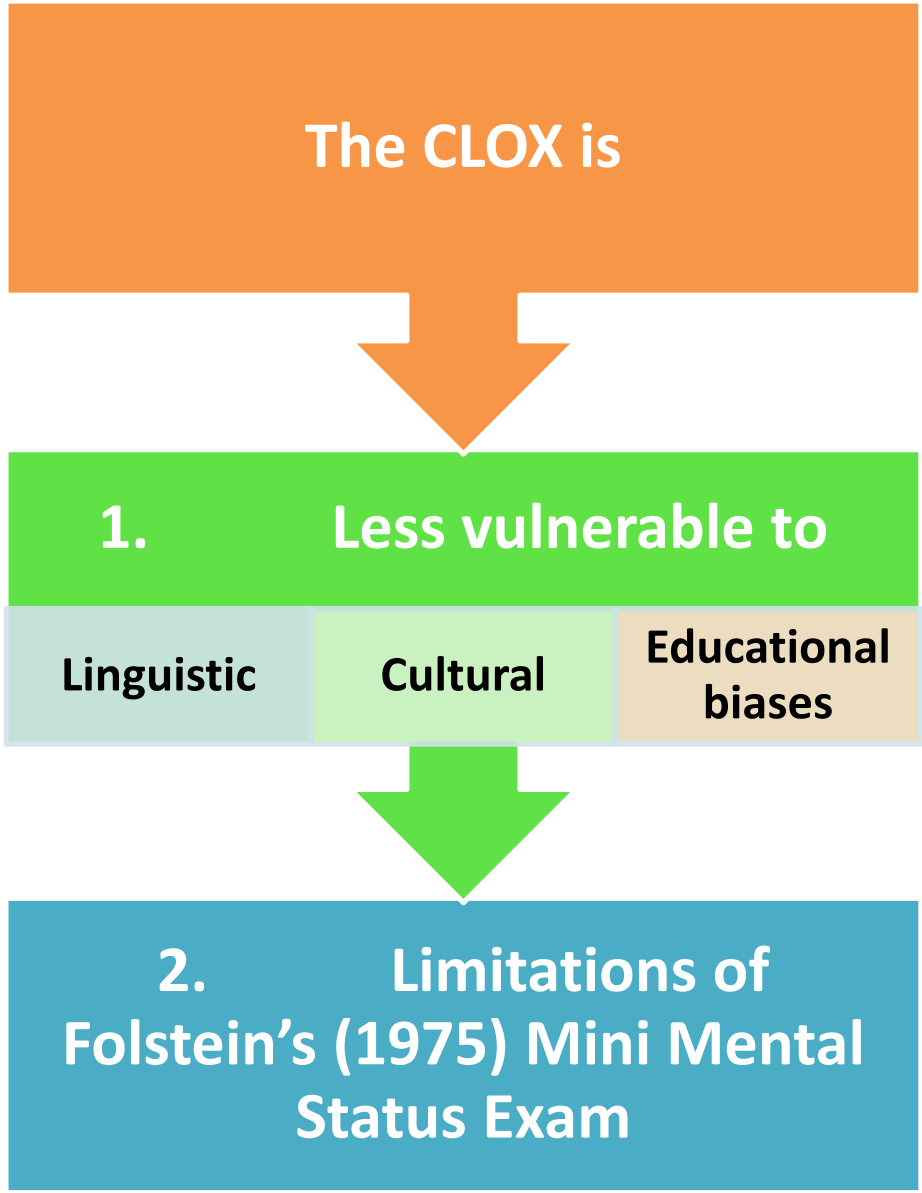
(1 point)

→

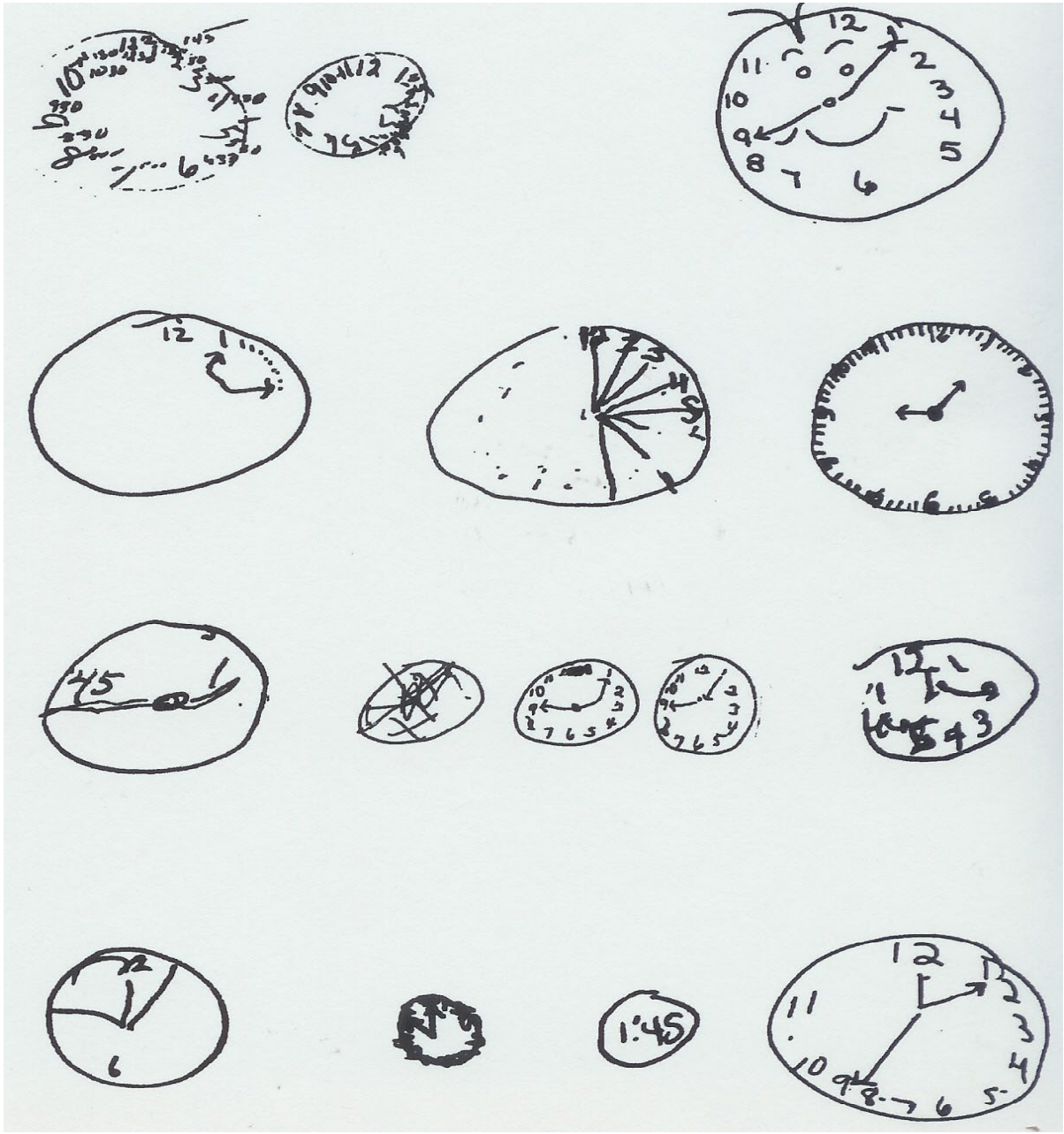
14. *None* of the following are present (1 point)

- 1) hand pointing to 4 or 5 o'clock
- 2) 1:45
- 3) intrusion of hands or faces (actually drew human hands or faces)
- 4) any letters, words or pictures
- 5) any intrusion from the circle below

CLOX Drawing Task (Royall et al, 1998, 2000, 2002)



CLOX examples



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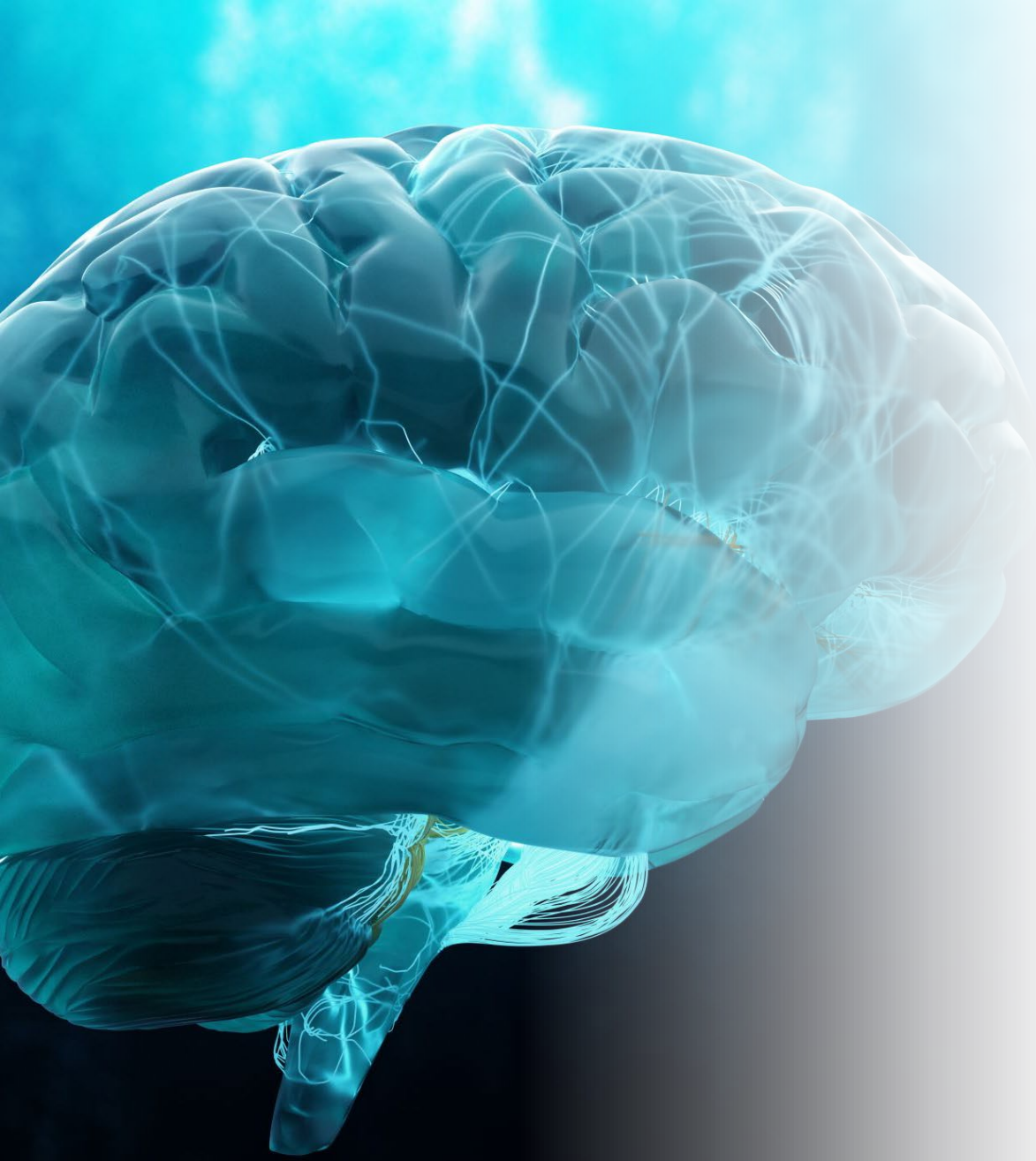
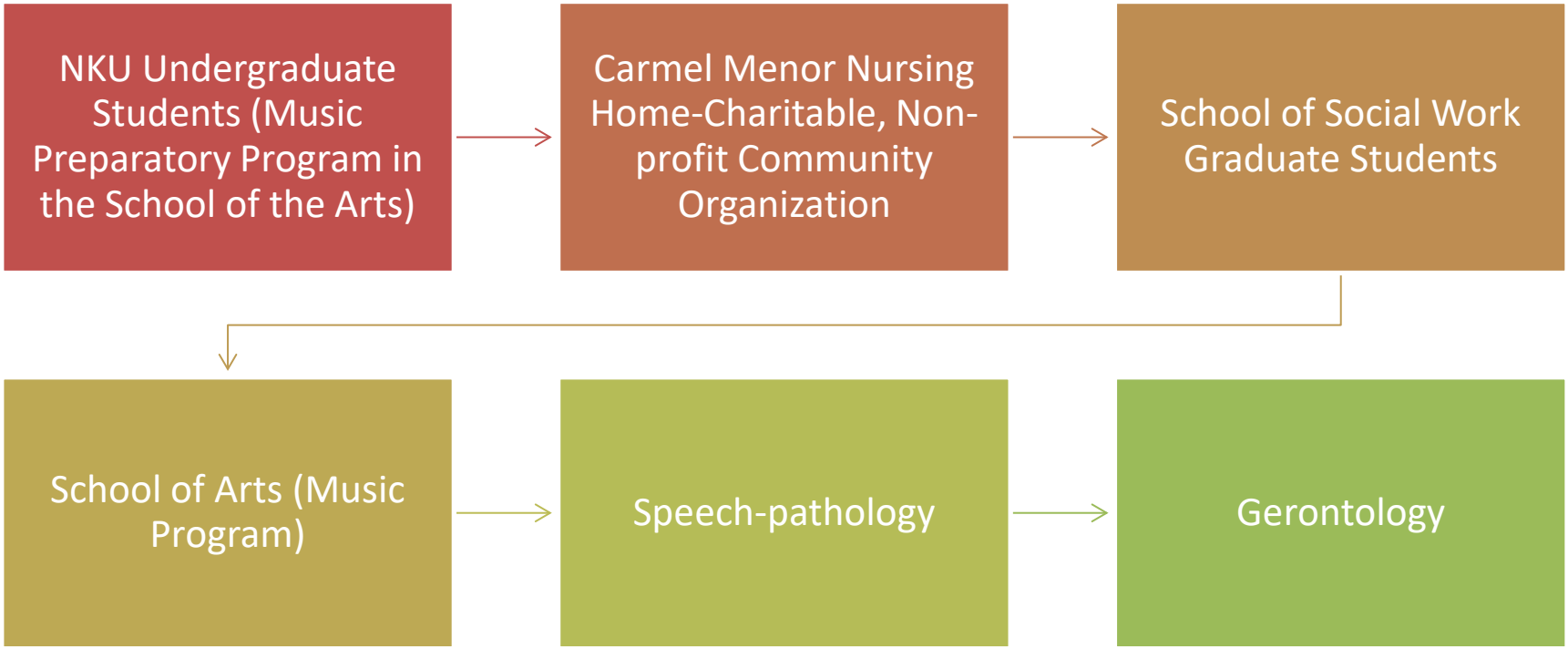
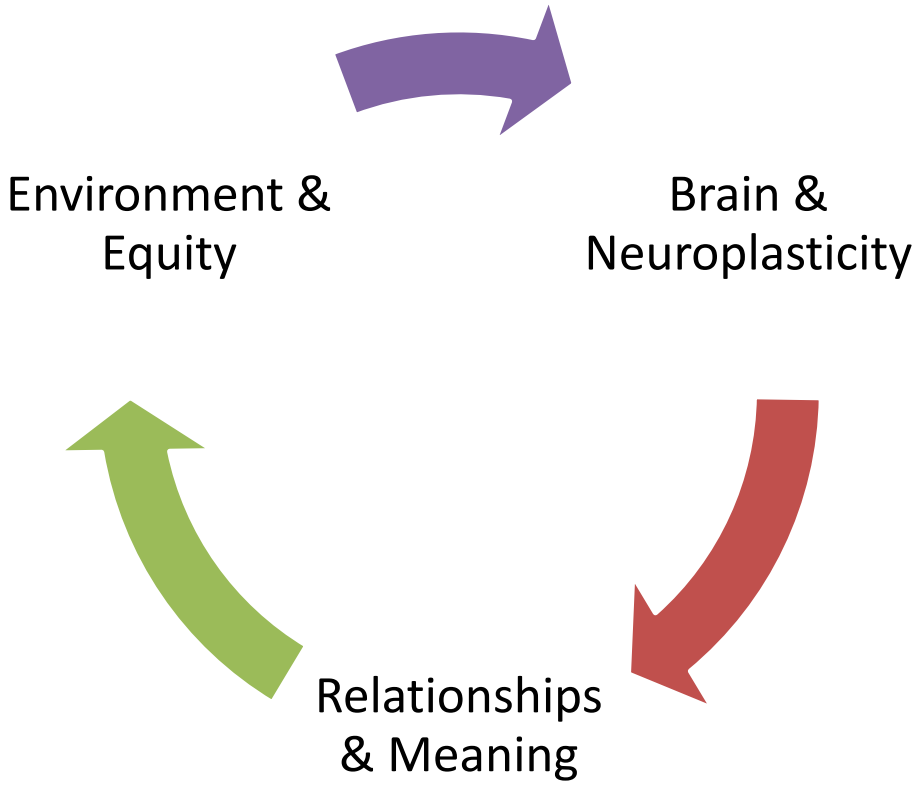


Study Example: Healthy Brain Initiative for Older Adults: *Music Training and Social Engagement*

Interdisciplinary Research Team & Collaboration



The Community-Engaged Brain Health Framework



Challenge

01

Maintain older adult's quality of life and keep morbidity and mortality low

02

Maintain cognitive vitality

03

Remain social engaged during aging

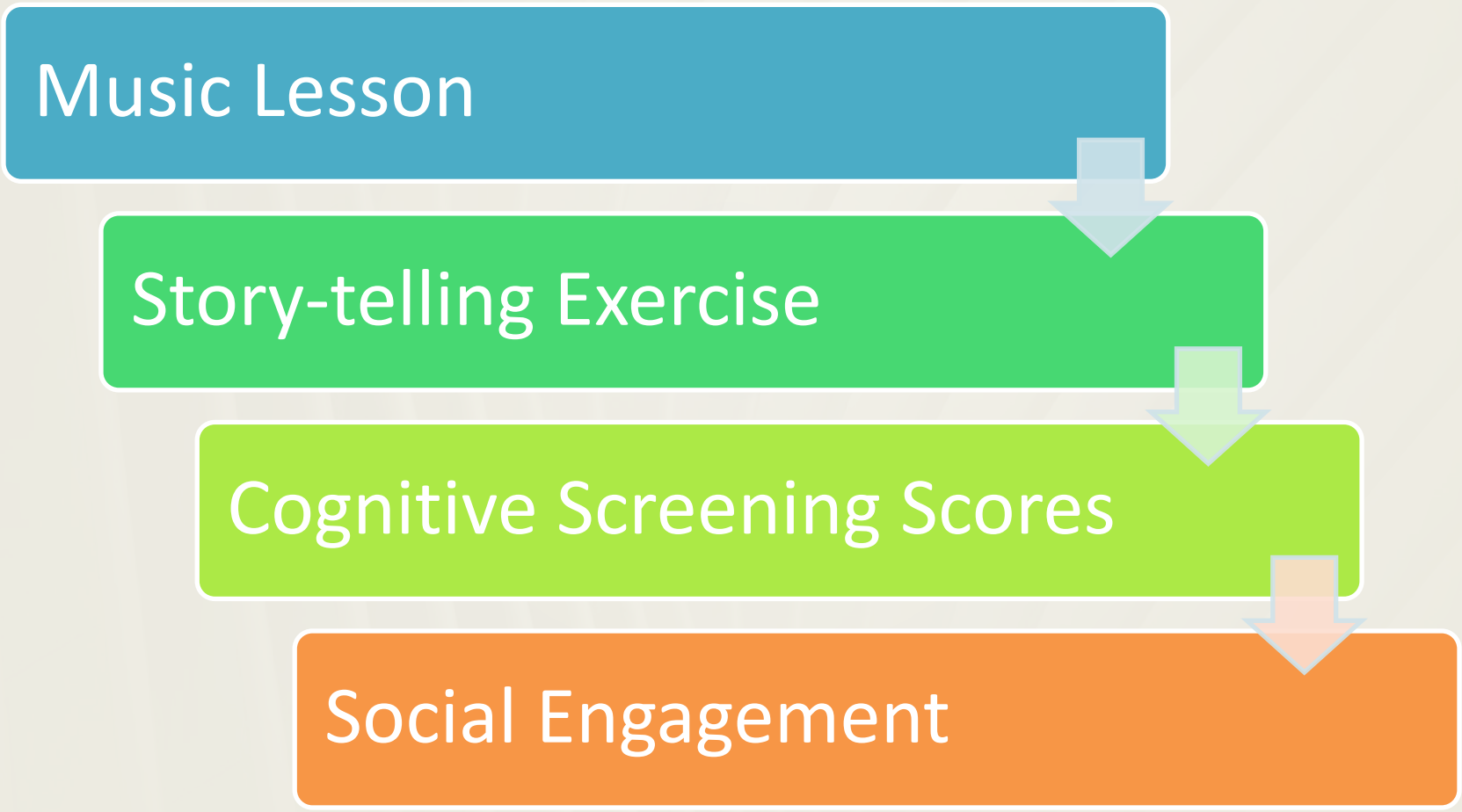
Innovative multi-purpose non-pharmacological intervention solution

BRAIN CHALLENGE: PIANO LESSONS

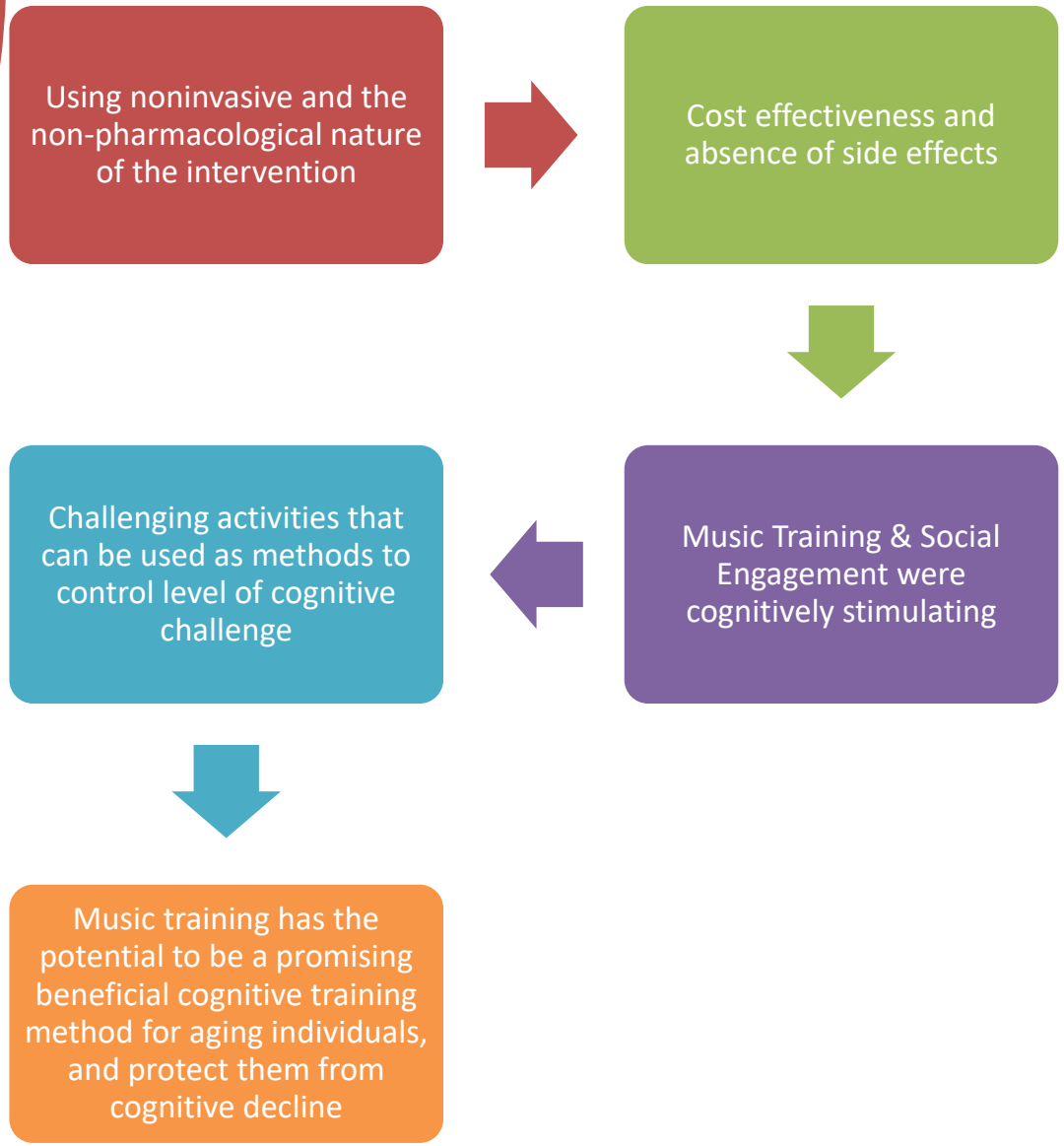
SOCIAL ENGAGEMENT: STORY-TELLING EXERCISE

EACH OPERATIONALIZES COGNITIVE STIMULATION AND SOCIAL ENGAGEMENT IN AN OLDER ADULT'S LIVING ENVIRONMENT AND IS MEASURABLE

Intervention


Music Lesson
Story-telling Exercise
Cognitive Screening Scores
Social Engagement

Music Training as a Non-Pharmacological Strategy for Cognitive Aging



Conclusions & Implications

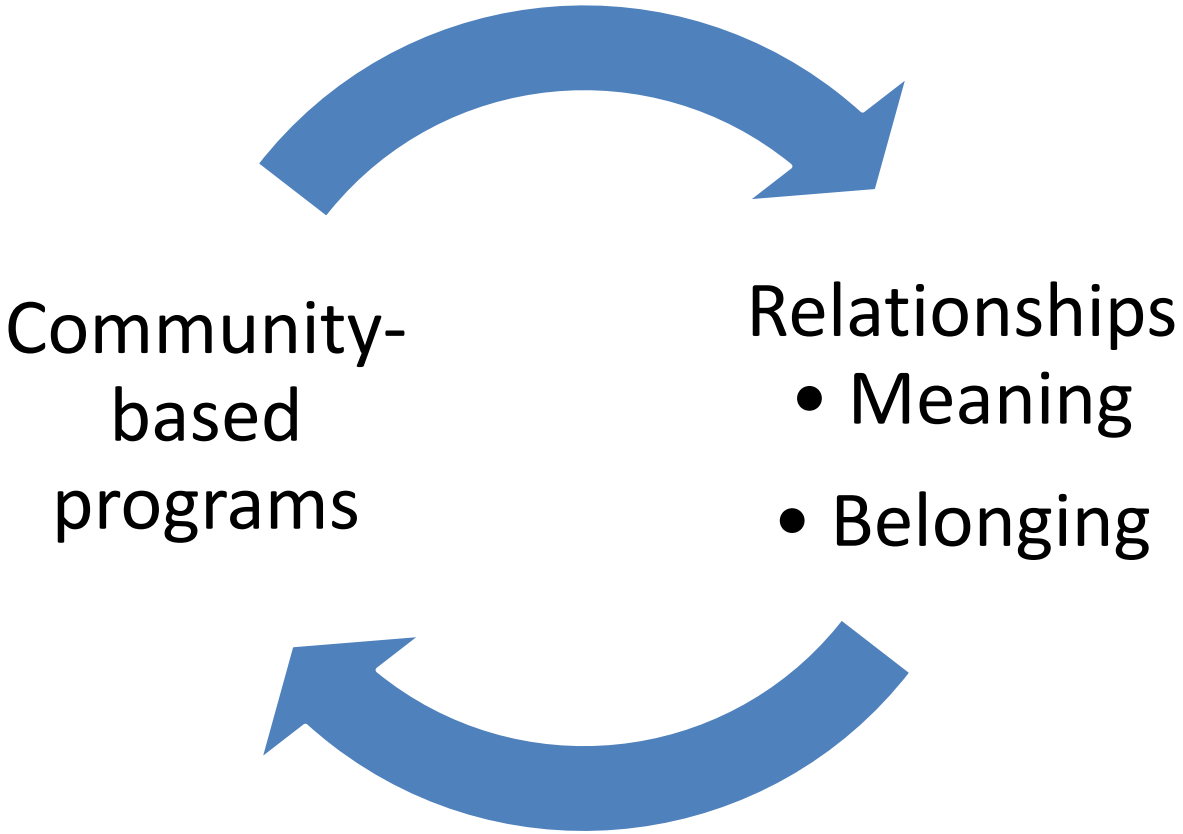
Financial implications for our economy and health care system

Assessing healthy cognitive aging within social work, gerontology, and any other related field in health are most needed to capture and further assess the effectiveness of many preventions and interventions for healthy brain aging

Future studies could examine-music, social engagement interventions, and cultural characteristic for race and ethnic group

Assessing cognitive impairment is essential for social workers in both research and practice including clinical contexts

Community Engagement as Brain Health



Research & Community Partnerships

University–community collaboration

Interdisciplinary teams

Implications for Practice, Education, and Policy

Practice translation

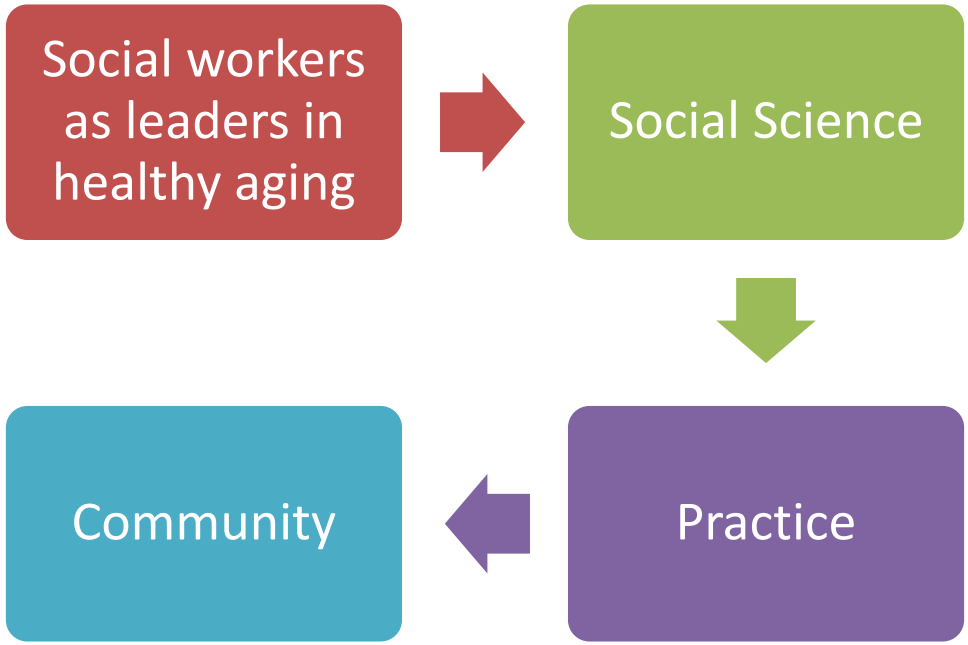
Curriculum integration

Advocacy

Reflection

How can neuroscience reshape your work?

Closing


Social workers as leaders in healthy aging
Social Science
Practice
Community

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Discussion, Question,& Answer

Thank you for your participation!

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