Enhancing Healthy Cognitive Aging through Participatory Arts

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Evidence-Based Participatory Arts Wellness Studies

- Dance (8)
- Theatre (8)
- Visual Art (3)
- Vocal Music (5)
- Instrumental Music (5)
- Autobiographical Writing (3)

Total: 32
Subset of studies that used cognitive measures

- Dance (5)
- Theatre (6)
- Music (3)
- Autobiographical Writing (1)

Total: 15
Dance

1. Coubard, Duretz, Lefebvre, Lapalus & Ferrufino, 2011
2. Kattenstroth, Kolankowska, Kalisch & Dinse, 2010
Participants: N = 35; Age: 60–94 years old, non-dancers

Design: Pre-posttest with random assignment to condition

Matched control group (continued usual lifestyle)

Experimental group: 1h/week for 24 weeks

Dance intervention started with 20 min. warm-up, followed by 40 min of dance

Professional Dance Academy under master instructor

Participants were taught sequences of dance steps with increasing complexity

Kattenstroth et al., 2013
Cognitive Measures

1) Neuropsychological battery: 12 subtests measuring immediate memory, visuospatial ability, language, attention, delayed memory

2) Fluid Intelligence: Raven Standard Progressive Matrices

3) Reaction Times: Standardized Reaction Time Analysis

4) Selective attention and concentration: non-verbal geriatric concentration test
Results

- Posttest: Dance group improved on neuropsychological battery, attention, nonverbal learning, reaction time.
- No change was observed in fluid intelligence.
- No improvements were found for the control group.
Theatre

1. Noice & Noice, 2006
4. Noice, Noice, & Staines, 2004
6. Yuen, Mueller, Mayor & Azuero, 2011
Participants: N = 122 -- Mean age: 81 years

Design: RCT (acting, singing, WLC) 8 seventy minute classes over 4 weeks

8 Cognitive instruments:
- Immediate and delayed word recall
- Forward and backward digit span
- Immediate and delayed story recall
- Category fluency
- Problem solving
Results

- Significant improvement was observed for the acting group on 5 out of 8 cognitive tests.

- Acting group improved against both the waiting list (no-treatment) controls AND the singing group.
Acting and Mindfulness

- Pretending is prohibited
- Genuine ongoing spontaneity although every word is learned and rehearsed
- Thinking ahead is prohibited
  Performance in front of peers creates strong social bonding
Music


2. Hanna-Pladdy & Mackay, 2011

3. Hanna-Pladdy & Gajewski, 2012
Participants: 31 musically naïve older adults (60-85 years)

RCT: individualized piano instruction vs. no-treatment control group

Duration: 6 months, 30 min lesson/week plus 3 hours practice/week

New assignment each week

Testing: Pretest, Posttest, 3 mo. Delay
Bugos et al.  
Cognitive Instruments

- **WAIS III (7 subtests)** – consist of Information, Digit Span, Arithmetic, Similarities, Picture Completion, Block Design, and Digit Symbol.
- Vocabulary & Letter Number Sequencing subtests
- Trail Making Tests (Parts A & B)
Results

1. Improvement in digit symbol performance
   - Perceptual speed and memory abilities

2. Improvement on Trail Making Test (Part B)
   - concentration, attention & planning

3. No significant main effects for digit span, block design, letter sequencing, TMT (Part A)

4. Most gains were not maintained
Autobiographical Writing


Participants: N = 18, retired physicians and spouses aged 62-84 years
8-week writing workshop, 90min/week
One group pre-posttest design
Cognitive Tests: list learning, verbal learning, processing speed & attention, visuo-spatial ability
Findings: Improved processing speed, attention and verbal learning
Recommendations for Future Studies

1. Standardized measures and common vocabulary

2. Comparable behavioral outcomes so that effectiveness across interventions can be assessed.

3. Consistent use of pre-post designs and active control groups

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4. Large enough samples to be meaningful

5. Assessment of long-term effects

6. More diverse populations

7. Pre-post brain scans where possible
Anecdotal Reports

“After each acting class I feel excited, like my brain is on fire.”

“The sheer joy of singing, blending voices with others is mood-altering and psychologically uplifting.”

“I was not feeling well this morning but I would never miss a session.”
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