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Brief Strategy Training Enhances Targeted Memory and Beliefs and Promotes Near Transfer

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Introduction

- ***Memory strategy training for older adults: Practical impact?***
  - Immediate benefits to trained tasks; limited evidence of transfer

Berry et al., 2010; Bottiroli et al., 2008; Fisher, 2012; Gross et al., 2000; Hertzog et al., 2009; West & Strickland-Hughes, 2017

- ***Self-regulation in training: Memory self-efficacy & effective strategy use***
  - Old < young; Positive correlates of performance (relationship ⇧ with age)

Agrigoroaei et al., 2013; Beaudoin & Desrichard, 2010; Cavallini et al., 2010; Crumley et al., 2014; Gross & Rebok, 2011; Jaeggi et al., 2014; Valentijn et al., 2006; West & Hastings, 2011

  - Enhanced from training? Value-added to training?
- ***Evaluate abbreviated version of tested effective program (EMC)***
  - Multifactorial strategy training designed to enhance self-regulatory factors

Bagwell & West, 2008; Hasting & West, 2009; West et al., 2008; West & Hastings, 2011

Research Aims

Aim 1: ***Test effectiveness of abbreviated name strategy training program***
- Pre-post gains for trainees, not waitlist group, expected for name recall performance and self-regulatory factors (memory self-efficacy, strategy use)

Aim 2: ***Test near transfer to verbal associative memory performance***
- Greater pre-post gains expected for trainees than waitlist group

Aim 3: ***Test mediation of training on memory by Δ self-regulatory factors***
- Full mediation expected through indirect paths of both self-regulatory factors

Methods

Study Design: RCT, 2 time (within: pre, post) × 2 condition (btwn: train, waitlist)

Training: 2-hr group training session plus ~2-3 hrs. self-study workbook
- Enactive mastery, vicarious experience, verbal persuasion, affective states

Participants (*N* = 122): 51 to 93 yrs. old (*M* = 73.24, *SD* = 8.31 yrs.)
- Healthy, English-speaking, community-dwelling, no cognitive impairment
- 78.7% female, 91.9% white, highly educated (*M* = 17.33, *SD* = 2.84 yrs.)

Measures:
- ***Name recall*:** 24 face-name pairs, % names correct at immediate recall

West et al., 2008

- ***Memory self-efficacy*:** Mean % confidence ability to do specific everyday memory tasks, increasing difficulty (MSEQ-4)

West, Thorn, & Bagwell, 2003

- ***Strategy use*:** Checklist of 16 strategies, e.g., *I tried to think of a meaningful association for the name*, self-reported % used

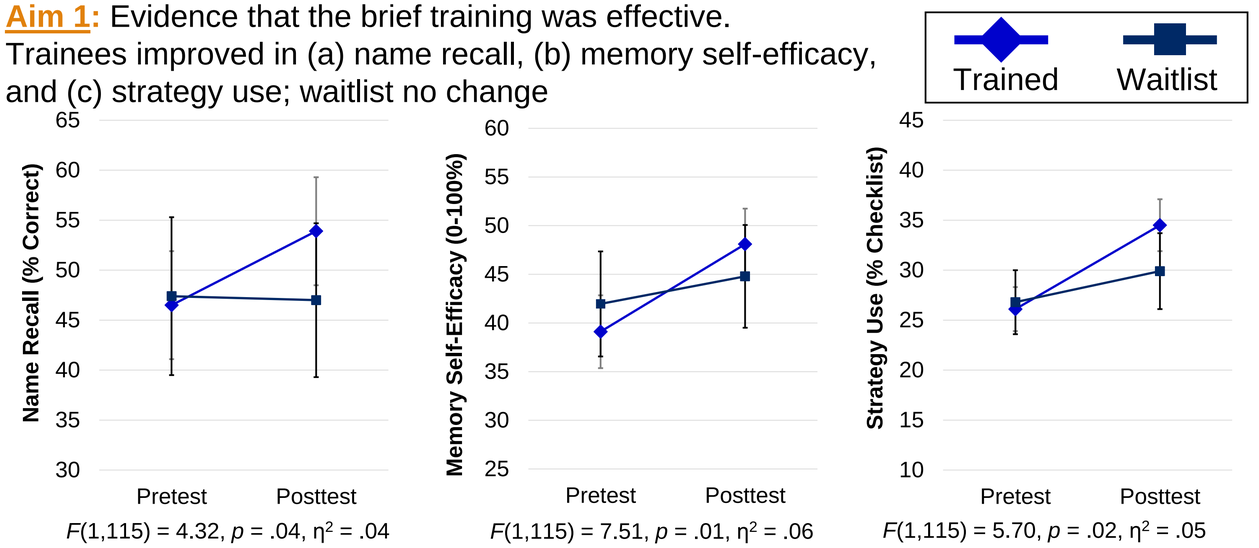
West et al., 2008

- ***Occupation-name verbal association*:** 30 occupation-name pairs, % names correct at immediate recall, delayed recall, delayed recognition

Adapted from Cavallini et al., 2010; Craigie & Hanley, 1997; James, 2004

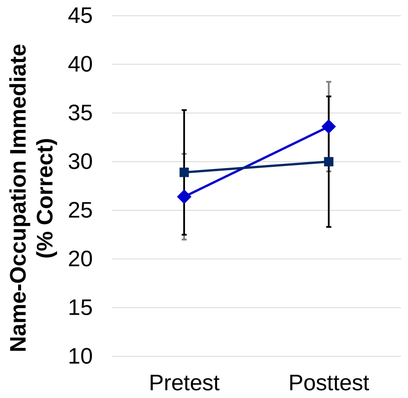
Results

Aim 1: Evidence that the brief training was effective.
Trainees improved in (a) name recall, (b) memory self-efficacy, and (c) strategy use; waitlist no change



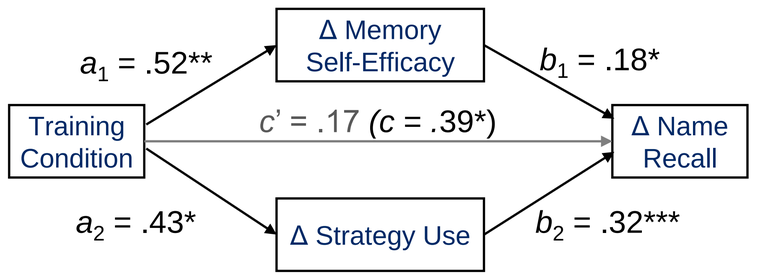
F(1,115) = 4.32, *p* = .04, η^2 = .04 | *F*(1,115) = 7.51, *p* = .01, η^2 = .06 | *F*(1,115) = 5.70, *p* = .02, η^2 = .05

Aim 2: Evidence for near transfer.
Trainees improved in name-occupation memory performance; waitlist no change



F(1,115) = 4.32, *p* = .04, η^2 = .04
Same pattern for delayed recall and recognition

Aim 3: Evidence for full mediation of training effect on name recall through Δ memory self-efficacy and Δ strategy use.



$a_1 \times b_1$ = .09, CI [.002, .245]
$a_2 \times b_2$ = .14, CI [.021, .280]

n.s., * $p \le .05$,** $p < .01$, *** $p < .001$

Δ = *Standardized difference scores. 5,000 bootstrapped samples.*
Age (yrs.) included as covariate. Analysis conducted with Process 3.0. Hayes, 2018

Discussion

Brief training effective beyond target task and enhanced self-regulation important
- Enhanced self-regulatory factors, near transfer effects, mediation of training effects
- Self-regulation key to maximizing training impact and possible translation of benefits
- Ease of broad dissemination
- ***Limitations*:** Sample selectivity & recruitment and compensation procedures (random assignment); no active control tested

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