Total Brain Health® Programs Improve Brain Health Knowledge and Memory Self-Efficacy in Older Adults: A Pilot Study

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Introduction

As people pass the age of 65, they are at risk of declining in cognition and wellbeing. Interventions are needed to forestall or remediate these declines in cognition and wellbeing. Since 2015, TBH® Brands LLC has been developing the Total Brain Health® programs and TBH Toolkits, which serve as a series of "out of the box" programs on memory improvement and brain fitness especially for active aging and fitness settings. The TBH Toolkits are founded on decades of research show that cognitive function and long-term brain vitality are best supported by ongoing and robust engagement across physical, intellectual, and socio-economic aspects of wellbeing.[1]

Method

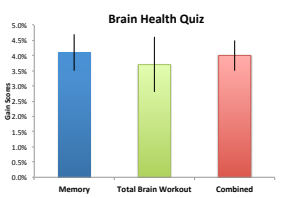
- TBH's brain training philosophy draws from 3 evidence-backed methods:
  1) Training across the wellness spectrum
  2) Social-based brain training
  3) Experiential learning
- Two TBH programs were implemented
  - TBH Memory (N=50; Mean Age = 77.68)
    - 16 classes, 1x week.
  - TBH Brain Workout (N=21; Mean Age = 72.62)
    - 20 classes, 1x week.
- Participants comprised of a community based sample of older adults aged 61-95.
- A trained community instructor led each group.
- Questionnaires were given to participants before and after the program.
  - Brain health knowledge quiz
  - Geriatric Depression Scale[2]
  - Memory Functioning Questionnaire[3]
  - Memory Controllability Inventory[4]
  - Daily habits questionnaire
- Multiple regression analyses were used to predict change in responses while controlling for race/ethnicity, marital status, education level, current occupation, age, and initial response.

	Intervention Group			
	Memory		Total Brain Workout	
Factor	N	%	N	%
Race: African American/Black	2	4.0%	1	4.8%
Race: White	48	96.0%	20	95.2%
Marital Status: Married	29	58.0%	14	66.7%
Marital Status: Widowed	14	28.0%	4	19.0%
Marital Status: Divorced/Separated	6	12.0%	2	9.5%
Marital Status: Never Married	1	2.0%	1	4.8%
Educational Level: High School	0	0.0%	1	4.8%
Educational Level: Some College	6	12.0%	3	14.3%
Educational Level: College	10	20.0%	7	33.3%
Educational Level: Graduate Degree	34	68.0%	10	47.6%
Employed/Volunteer < 40 Hrs	21	42.0%	4	19.0%
Not Employed/Volunteer, Looking	5	10.0%	5	23.8%
Not Employed/Volunteer, Not Looking	24	48.0%	12	57.1%

	Intervention Group			
	Memory		Total Brain Workout	
Factor	T1 M (SD)	T2 M (SD)	T1 M (SD)	T2 M (SD)
Brain Health Quiz	.92 (.08)	.96 (.05)	.94 (.07)	.95 (.10)
GDS-Revised	.17 (.17)	.14 (.16)	.17 (.22)	.15 (.22)
Daily Habits	-	-	5.01 (.73)	5.56 (1.04)
MCI-Present Ability	4.85 (.99)	5.17 (1.04)	-	-
MCI-Potent. Imprvmnt	5.47 (.84)	5.73 (.97)	-	-
MCI-Effort Utility	5.43 (1.13)	5.48 (1.36)	-	-

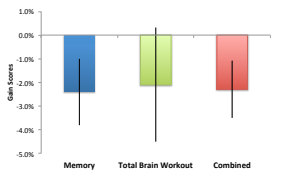
Results

A



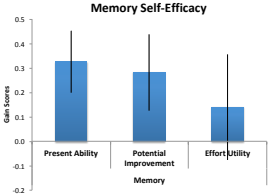
TBH Memory Gain: F (1,49) = 40.66, MSE = .002, p < .001*
TBH Brain Workout Gain: F (1,18) = 11.27, MSE = .001, p = .010*
TBH Combined Gain: F (1,67) = 66.13, MSE = .001, p < .001*

B



TBH Memory Gain: F (1,47) = .25, MSE = .011, p = .62
TBH Brain Workout Gain: F (1,20) = .95, MSE = .005, p = .36
TBH Combined Gain: F (1,67) = .15, MSE = .008, p = .70

C



TBH Memory Gain (Ability): F (1,48) = 4.99, MSE = .61, p = .032*
TBH Memory Gain (Improvement): F (1,48) = 17.41, MSE = .71, p < .001*
TBH Memory Gain (Effort Utility): F (1,46) = .90, MSE = 1.31, p = .35

D

TBH Brain Workout Gain: F (1,19) = 4.39, MSE = .89, p = .066

Conclusions

- We found that both TBH programs showed significant improvement on brain health knowledge and this improvement did not differ by group.
- The TBH Memory group showed improvements in memory self-efficacy.
- The TBH Brain Workout group showed marginal improvements in health habits.
- No improvements were found for depression in either group.
- Overall, these pilot results show promise for both the TBH Memory and TBH Brain Workout programs.
- Further research is needed to gather objective measures of cognition and should include both active and passive control groups.

References

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