

The Effect of Meditation on the Cognition of Memory

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Abstract

- Americans report experiencing high levels of stress and poor coping.
- Chronic stress has deleterious effects on an individual's brain health and memory performance.
- Meditation has been found to improve cognitive processes such as attention, memory, and executive functions.
- The current study's hypothesis states that if participants practice meditation then their memory will improve.
- This study obtained secondary data from the National Health Interview Survey
- The study included 108,131 participants who were ages one to 85 years-old.
- Chi-square tests were conducted to evaluate the association between meditation and participants need to seek therapy to improve their memory.
- A statistically significant relationship was found between meditation and not obtaining therapy for memory improvement.
- Overall, the findings suggest that meditation may be an effective coping mechanism to mediate the effects of stress on memory.

Introduction

Significance of the Study

- Studies have found that chronic intense stress can become detrimental to brain health and memory.
- Chronic stress can make individuals more susceptible to anxiety and depression disorders, which have been found to impact and impair memory.
- In the United States 71% of adults 18 and older reported experiencing at least one symptom of stress, including headaches and feeling anxious or overwhelmed.
- Adolescents reported elevated stress levels, with 30% feeling overwhelmed, depressed, and sad.
- College students experience increased stressors during this life transition.

Purpose

- To examine the relationship between meditation and memory.

Research Question

- What is the effect of meditation the cognition of memory?

Hypothesis

- If individuals practice meditation then the cognitive function of memory will improve.

Literature Review

- Memories are dynamic entities that are greatly impacted by stressful events.
- Stress' impact on memory and learning results in inflexible and less specific memories that are difficult to coalesce with existing memories.
- Research suggests practicing meditation could improve memory as well as guard against the negative impacts of stress.
- The research on the effects of meditation on memory is fairly new and standardized procedures are needed in order to compare studies and to better understand what factors of meditation contributing to the outcomes.

Methods

Research Design

- The current study is a secondary data analysis of data collected by the National Health Interview Survey (NHIS).
- The NHIS is an annual cross-sectional household interview with 13 waves, conducted by the National Center for Health Statistics in 2012.
- The original study took place in the United States across all 50 states, with approximately 51,000 families and 108,131 persons.
- The current study examined wave 3 and 11, because these waves obtained information on participants stress levels, memory, and meditation practices.

Sample

- The sampling frame utilized for the NHIS was a multistage area probability design that enabled a representative sample of households in the United States.
- The mode of data collection included a computer-assisted personal interview (CAPI), as well as an in-person interview and telephone interview.
- From each household, a sample adult and sample child were randomly selected and information from each was gathered with the Sample Adult Core and Sample Child Core questionnaires.
- The current sample examined all the participants from the original study, the table below displays the demographic information of participant.

Variable	Percentage	Variable	Percentage
Age		Ethnicity	
1-10	11	White	51.5
11-20	10.7	Black	11.3
21-30	11	Chinese	1
31-40	12.8	Filipino	1.2
41-50	10.1	Asian Indian	1
51-60	11.3	Native American	1
61-70	6.4	Hispanic	17.3
71-80	3.7		
80-85+	1.5		

Measures

- The family level questionnaire inquired about the conditions and limitations of the participant's health care and collected their demographic information.
- The adult sample questionnaire asked specific questions about health conditions, physical activity, alcohol consumption, cigarette smoking, mental health, activities of daily living, and health care access and utilization.
- The independent variable, meditation was measured by questions asking participants if they have practiced mantra meditation.
- The dependent variable, memory was evaluated based on a question asking participants if they had sought therapy lp for memory improvement.

Results

- A chi-square test of independence was conducted to determine whether there was an association between practicing mantra meditation and seeking help for memory and concentration improvement.
- The results of the chi-square analysis indicated there was a significant relationship between mantra meditation and use of therapy for memory improvement, $X^2(1, N = 2070) = 12.40, p = .00$.
- In addition, a chi-square was conducted to analyze the relationship between obtaining therapy for stress and practicing meditation. The relationship between seeking therapy for stress reduction and mantra meditation was significant, $X^2(1, N = 2069) = 7.75, p = .01$.

	Mantra meditation		Chi-Square	df	p
	Yes	No			
	Yes	No			
	%	%			
Memory therapy					
Yes	39.3	31.8	12.40	1	.00*
No	60.7	68.2			
Stress therapy					
Yes	77.3	71.8	7.75	1	.01*
No	22.7	28.2			

Note: *p< .01

Discussion

Strengths & Limitations

- The current study's limitations include: a cross-sectional design and utilizing a secondary-data set limited the ability to control for confounding variables.
- The current study's strengths include: the study was national and had a diverse sample and the research was conducted by a reputable source.

Implications & Future Research

- The results suggest that meditation could mediate memory loss and the negative effects of stress.
 - A statistically significant relationship was found between meditation and not seeking therapy for memory improvement.
 - There was a statistically significant relationship between practicing meditation and not seeking therapy for stress reduction.
- Meditation could be an effective coping skill that improves memory and mediates the effects of stress.
- If more research is conducted, the benefits of meditation could be better understood and become more optimized in the field of social work.

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