



Effect of Breathing Placebo on Working Memory

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Abstract

The placebo has the ability to both positively and negatively affect short term memory (Leibowitz et al., 2019; Oei & Hartley, 2005; Stern et al., 2011). The purpose of our study was to test the effect of placebo on working short-term memory. Participants were asked to play a simple matching card game, with ten matches. Participants in the placebo condition were then asked to perform a breathing exercise and told this would enhance short-term memory. All participants then played the matching card game again. There was a decrease in time taken to complete the matching game after performance of placebo breathing exercise. Future research will be discussed.

Previous Research

The placebo effect is a positive response that improves the baseline status of the person to a false treatment, the placebo, which is different than the baseline effect of no treatment (Gaab, 2019). One effect of placebo is to change the way someone perceives their abilities even if there is no change (Oei & Hartley, 2005). For example, Kvavilashvili and Ellis (1999) showed that self-reports on a memory test change showed improved performance after completing a placebo activity described as helping memory. Placebo's effectiveness can be altered by a person's preconceptions of placebos and information given about placebo (Leibowitz, Hardebeck, Goyer, & Crum, 2019).





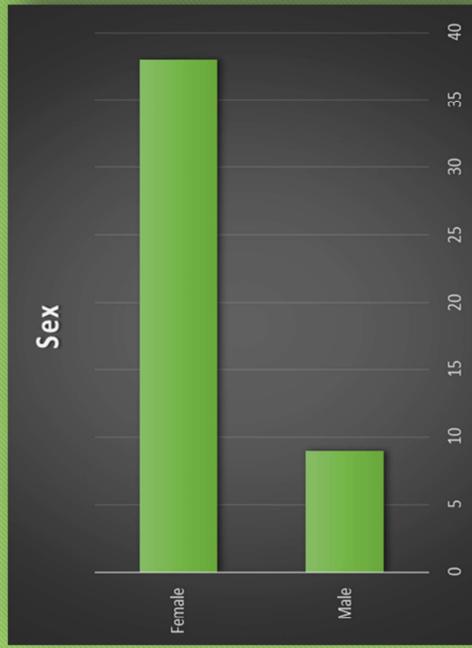
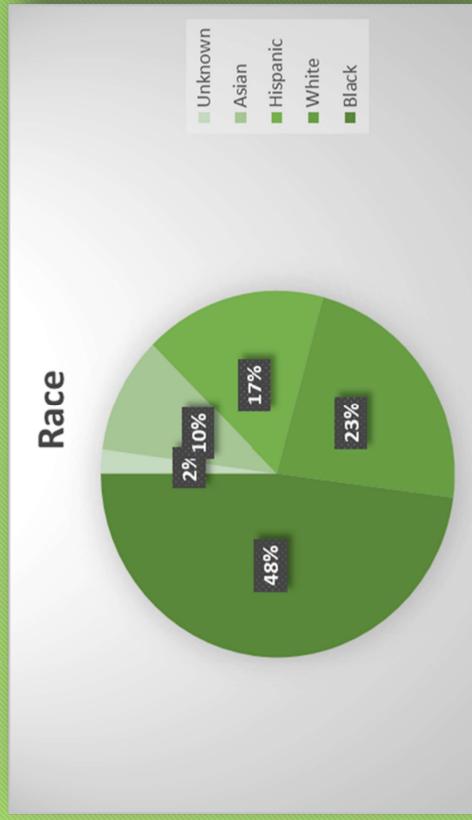
“ It is hypothesized that using a breathing exercise, said to enhance working memory, will decrease the time to play a 10 card memory matching game. ”

Operational definition

Participants

$n = 47$

Age: $M = 21.88$ $SD = 3.50$





Method

Materials

- 1) Standard deck of playing cards.
 - 1) All face cards removed
 - 2) Cards are separated by color
- 2) Stopwatch

Procedure

- 1) Using either the red or black cards, laid out cards face down in a 5 x 4 formation
- 2) Explained rules of matching game to participants
- 3) Once all cards were matched stopped time and recorded
- 4) Informed participants in placebo condition of memory enhancing breathing exercise
1) inhale for 7 seconds and hold breath for 3 seconds and exhale. Repeat five times.
- 5) Participants did breathing exercise
- 6) After completion of breathing exercise repeated steps 1-3
- 7) Participant to completed survey