The effect of emotional regulation self-efficacy on visual working memory of college students

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Introduction

- Visual working memory (VWM) is used for the temporary storage and processing of information in advanced cognitive activities, handling visual stimuli(Luck & Vogel, 1997).
- People with higher self-efficacy are likely to exert more effort and persist longer in tasks (Bandura, 1986).
- Regulatory Emotional Self-efficacy (RES) is closely related to stress coping and cognitive functions (Tang et al., 2010). It affects the executive functions, with those having high RES exhibiting stronger inhibitory and switching capabilities (Wei, 2016)
- The n-back paradigm is a standard method for assessing working memory updating tasks, reflecting an individual's updating capacity (Pan, 2023)
- **In summary**, individuals with higher RES have better emotion regulation abilities, potentially leading to optimized allocation of cognitive resources and improved working memory performance.
- The **current study** aims to explore the impact of RES on VWM in college students.

Hypotheses

H1: The High Regulatory Emotional Self-efficacy group performs better those in the low RES group in visual working memory tasks

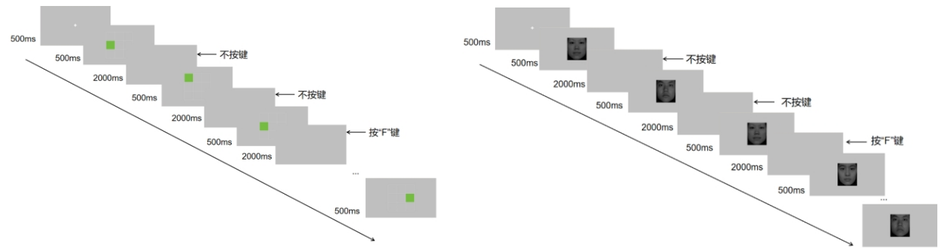
H2: Compared to neutral and positive emotional stimuli, people have better working memory performance with negative emotional stimuli.

Methods

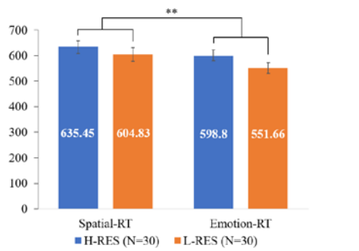
DESIGN: 2 (RES: high, low) × **2** (VWM type: emotional, spatial) mixed design.

PARTICIPANTS: 112 students will fill out the survey with RES scale (Zhang et al., 2010) on it. Select them by the scores, Top 27% for H-RES, bottom 27% for L-RES. 60 students will be selected to continue the experiment.

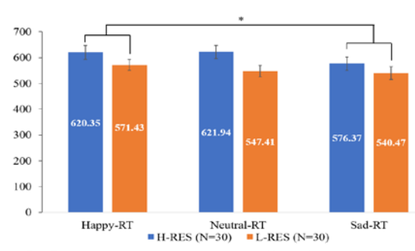
TEST: Working Memory 2-back paradigm (Fellman, 2020; Wang, 2021)



Results



Tips: The error bars represent the standard error, *p <.05,**p <.01, ***p <.001



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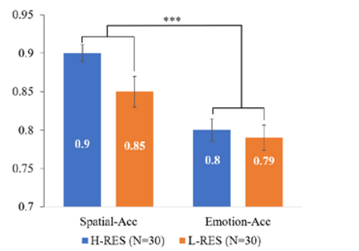

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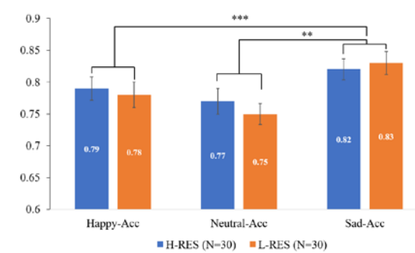

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There is a the significant main effect of **VWM type**.

Unfortunately, the main effect of **RES was not significant**, and neither were the various interaction effects.

Discussion

Discussion 1: The main effect of RES is not significant.
This suggests that RES may not directly influence VWM. There could be mediating or moderating variables, such as emotion regulation or emotions themselves, that play a role.

Discussion 2: Negative Bias in Emotional Working Memory
The accuracy rate for sad emotions was significantly higher than for happy (p=0.003) and calm (p<0.001) emotions. This aligns with the theory of negative bias in emotions proposed by Huang & Luo (2009).

Conclusion:

- No significant impact of RES on VWM task performance was found.
- College students exhibit a negative bias in emotional working memory tasks.

References

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