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Cognitive effects of a mindfulness training with fifth graders

Introduction

- **Mindfulness** is the nonjudgmental, accepting awareness of moment-by-moment experience (Bishop et al., 2004; Kabat-Zinn, 2005).
- **Goals** of the present study: investigating the cognitive effects of mindfulness practice in fifth graders by
 - contrasting mindfulness training with a concentration training (active control group) and effects of maturation/schooling (passive control group)
 - testing hypotheses derived from the two-component model of mindfulness by Bishop et al. (2004)
- **Hypotheses:** Mindfulness practice enhances **sustained attention, cognitive flexibility, cognitive inhibition, data-driven** (as opposed to concept-driven) **information processing** more strongly than a concentration training (active control group) and maturation/schooling (passive control group).

Method

Design

Condition	T1 (9/2013)	Treatment	T2 (2/2014)
Experimental (n=16)	Pretest	Mindfulness training	Posttest
Active control (n=8)	Pretest	Concentration training	Posttest
Passive control (n=10)	Pretest	-	Posttest

- **Participants:** 34 pupils (age: mean=10.80, SD=0.53; gender: 16 male, 18 female)

Interventions

- Mindfulness training: adapted version of the Mindfulness Based Stress Reduction method (MBSR, Kabat-Zinn, 2005); essential exercises: breathing meditation and bodyscan
- Concentration training: German Marburg Concentration Training (Krowatschek, Krowatschek, & Reid, 2011)

Dependent Measures

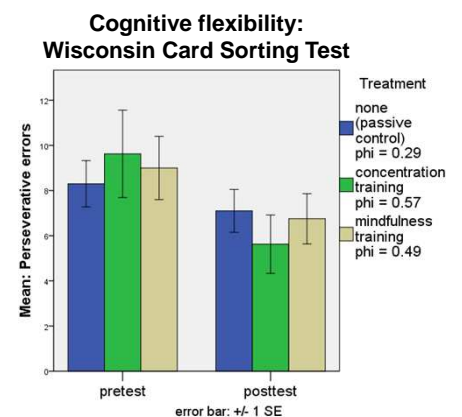
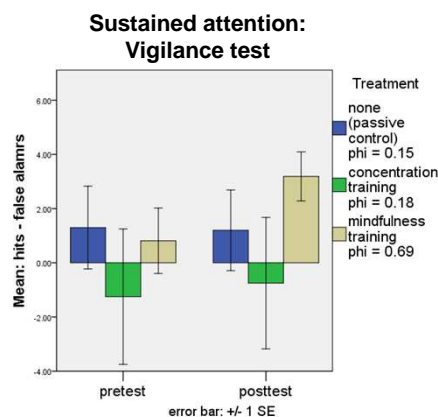
- Sustained attention: vigilance test
- Cognitive flexibility: among others Wisconsin Card Sorting Test
- Cognitive inhibition: Stroop test
- Data-driven information processing: among others recognition of prototypical faces

Results

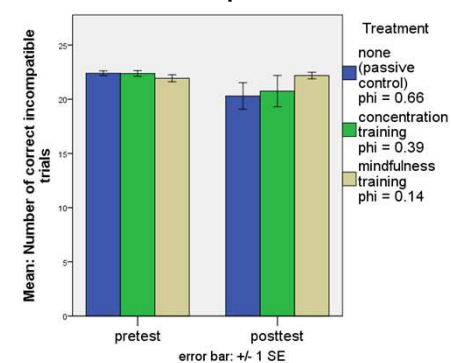
General approach for analyses:

- Non-parametric analysis methods due to high heterogeneity
- Pairwise comparisons for each experimental condition
- Interpretation of results based on effect sizes

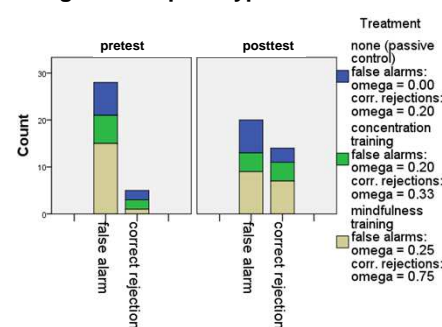
Graphs display results of selected dependent measures.



Cognitive inhibition: Stroop test



Data-driven information processing: recognition of prototypical faces



Conclusions

- As shown by all corresponding dependent measures, mindfulness training was superior to maturation/schooling and concentration training in fostering
 - sustained attention
 - cognitive inhibition
 - data-driven information processing
- Cognitive flexibility was not specifically promoted by mindfulness practice
- Results are generally in line with meta-analysis by Zenner et al. (2014): Mindfulness trainings with pupils effectively enhance cognitive abilities

References

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