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Effects of mindfulness training on preadolescents' self-regulation and school-related outcomes

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Introduction

- **Self-regulation (SR)** is characterized by intrinsic processes of cognitive, emotional, and behavioral control, which are aimed at flexibly adapting oneself to the current context or at achieving a goal (cf. Nigg, 2017).
- **SR** is associated with academic achievement, wellbeing, and health (ibid.).
- **Preadolescence** has been proposed as key developmental stage to foster SR skills.
- **Mindfulness-based programs** are discussed as a promising intervention strategy to this end.

**Goals** of the present study: investigating effects of mindfulness practice on preadolescents’ SR, school-related and health outcomes by:

- contrasting mindfulness training with a concentration training (active control group) and effects of maturation/schooling (passive control group)
- combining measures of objective performance, self-report, and physiological measures in terms of cortisol day profiles

**Hypotheses**: Mindfulness training enhances SR, school-related & health outcomes more strongly than a concentration training (active control group) and maturation/schooling (passive control group).

**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 (Kabat-Zinn, 2005)
- Concentration training: German Marburg Concentration Training (Krowatschek, Krowatschek, & Reid, 2011)

**Selected dependent measures**

- Impulsivity score of the IVE (Stadler et al., 2004)
- Stress-regulation strategies of the SSKJ 3-8 (Lohaus et al., 2006)
- Diurnal cortisol profiles (intervention groups only)

**Statistical analysis**

- Linear mixed-effects modeling
- Predictors: participant, gender, time (pre- vs. posttest), group, interaction of time with group
- Graphs display results of selected dependent measures and are accompanied by significant effects (p < .10).

**Method**

**Design**

<table>
<thead>
<tr>
<th>Condition</th>
<th>T1 (9/2013)</th>
<th>Treatment</th>
<th>T2 (2/2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental (n=16)</td>
<td>Pretest</td>
<td>Mindfulness training</td>
<td>Posttest</td>
</tr>
<tr>
<td>Active control (n=8)</td>
<td>Pretest</td>
<td>Concentration training</td>
<td>Posttest</td>
</tr>
<tr>
<td>Passive control (n=10)</td>
<td>Pretest</td>
<td>-</td>
<td>Posttest</td>
</tr>
</tbody>
</table>

**Results**

**School-related outcome: VLMT**

- main effect of time, χ²(1) = 12.87, p = .0003

**Conclusions**

- Mindfulness training does not enhance SR, school-related and health outcomes more strongly than a concentration training (active control group) and maturation/schooling (passive control group).
- Both mindfulness training and concentration training showed improved problem-focused coping and diurnal cortisol profiles.
- Results differ from positive effects of mindfulness training on several computer-based cognitive measures found in the same sample of preadolescents (Wimmer et al., 2016) and they partly contradict a recent meta-analysis of mindfulness-based interventions with youth (Klingbeil et al., 2017).
- Future investigations of mindfulness could benefit from a multi-method perspective.

**References**


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