

Testing the use of mindfulness to reduce stereotype threat and improve girls math performance and self-efficacy

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Background and Objectives

Stereotype threat occurs due to automatic associations between groups and certain stereotypes about that group, e.g. that boys are academically superior to girls in mathematics. Awareness of this stereotype about their group increases anxiety which leads the threatened group to perform worse on a task than the non-threatened group. However, recent research with undergraduate students has shown that mindfulness may be a useful tool to reduce the negative effect of stereotype threat on women's maths performance. As yet, this has not been applied and tested in the context of school aged children. In particular, we expect that completing a short mindfulness breathing exercise just before sitting practice maths exam questions would attenuate threat and result in a negative association between anxiety and performance, but a positive association between mindfulness, and efficacy, and performance. In particular these associations would differ by gender, such that the effect would be more pronounced for girls than boys.

Methods

Participants were 87 Year 6 (aged 10-11 years) children at a UK primary school. All of the children completed a 5-minute mindful breathing exercise developed for children aged 7-12 years. After the mindfulness exercise the children were given a question pack that contained measures of mindfulness, self-efficacy, anxiety, perceived stereotype threat, and maths SAT style questions (to assess actual performance).

Results

T-tests revealed that boys scored significantly higher on self-efficacy than girls, and that girls perceived marginally more threat than boys. However, there were no significant differences between girls and boys scores on mindfulness, anxiety or performance. Multiple regression revealed that gender and self-efficacy were associated with performance, and mindfulness and self-efficacy were associated with anxiety. Analyses split by gender showed that self-efficacy was a significant predictor of performance and anxiety for boys, but only anxiety for girls, contrary to our hypotheses.

Discussion and Conclusion

The survey data did not support our hypotheses, however anecdotal evidence from the children suggested that children felt calmer and more relaxed after completing the mindfulness task. As such our next steps will be investigate more closely the effect of the brief mindfulness task.