

## APPENDIX

# Integrating Mindfulness Into School-Based Substance Use and Other Prevention Programs

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The majority of school-based prevention programs—whether for prevention of substance use, conduct problems, obesity, or bullying—focus on behavioral skills training. Arguably this training has its roots in social psychological perspectives such as Bandura’s social cognitive theory (Bandura, 2001), and requires an objective structured approach to learning that is intended to follow a process that teachers typically use in everyday education to impart learning. Such a process typically includes: (1) providing an overview of general principles or objectives so that students have a framework for what they are to learn, (2) modeling of the skill by the teacher or another individual, (3) student experiential practice of the skill in the classroom (also referred to as role-play), (4) Socratic discussion of the skill with feedback about skill performance, and (5) extended practice in real life settings outside of the classroom (i.e., homework assignments; Pentz, 2003).

This process has been variously referred to as guided participant modeling (Pentz, 2003) or active learning, which includes the explicit statement of learning objectives, a focus on specific skills, and activities designed to act on the skills taught (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Following this process, behavioral skills training has achieved modest effects in preventing health risk behaviors among school-aged youth when delivered as a universal prevention program (Durlak et al., 2011; Pentz, 2003).

Most behavioral skills training programs assume that all students are prepared or “ready to go” in terms of participating in a structured learning process and acquiring the skills being taught. For various reasons, most students are not so readily prepared. First, youth must settle down in the classroom before optimal learning can occur. Chaotic classroom environments will create distracted students. Second, if some students are agitated or anxious about learning something new or in response to

immediate classroom conditions such as being teased by peers, they will not be able to redirect attention to the learning situation at hand. Third, behavioral skills training often does not directly address emotional triggers preceding the acquisition of new health behavior skills or may interfere with their practice after skill acquisition.

In the field of substance use prevention, this last point could be interpreted as a failure of most skills training programs to address the neurocognitive dual processing of information that may increase risk for substance use. Dual processing consists of both implicit, associative, and emotional cues for behavior as well as the more explicit cognitions related to that behavior which are often taught as concepts such as self-efficacy, motivation, and intentions in behavioral skills training programs (Pokhrel, Herzog, Black, Zaman, Riggs, & Sussman, 2013).

Some behavioral skills training prevention programs have advanced to address the emotional components of behavior. Three advances are noted here: social emotional learning, prevention translation, and executive function training. Social emotional learning programs include self-awareness, self-management, and social awareness as well as relational skills and decision-making as sets of skills to promote social and academic competence, which are hypothesized to protect against health risk behavior (Durlak et al., 2011). Prevention translation has focused on identifying risk factors that are common to multiple behaviors in addition to substance use, considered as deficits, and then targeted as prevention program mediators in behavioral skills training (Pentz, Jasuja, Rohrbach, Sussman, & Bardo, 2006; Riggs, Sakuma, & Pentz, 2007; Sakuma, Riggs, & Pentz, 2012). For example, emotional regulation and impulse control skills are strengthened as a means to improve healthy eating behavior and physical activity, and prevent substance use (Riggs, Spruijt-Metz, Chou, & Pentz, 2012).

Executive function training builds skills in emotional control, behavioral control, organization, and planning, either for the general purpose of building competence (Diamond & Lee, 2011) or to apply to specific health risk behaviors such as substance use (Pentz & Riggs, 2013; Riggs et al. 2007). While it could be argued that the mechanics of dual processing is implied in these advancements, other aspects of learning preparedness—settling, centering, calmness—are not typically given sufficient attention. Considering this, mindfulness training is a means to prepare students for behavioral skills training by (1) helping them to relax, (2) removing distractions, (3) increasing awareness of and attention to the emotions that trigger behaviors, and (4) enhancing acceptance of self and behavioral options that should yield increased self-efficacy, behavioral skills acquisition, and practice (see review by Black et al., 2009).

However, there are several challenges to integrating mindfulness into school-based prevention programs, and also preconditions that are required to make mindfulness training successful in the context of school-based prevention efforts. The first challenge is program design, specifically how to sequence and integrate steps of mindfulness with training of executive function skills that represent emotional control, behavioral control, organization, planning, and behavior. For example, should mindfulness lessons on self- and other-acceptance precede or follow the initial executive function skill of *planning*? Should the sequence follow a reciprocal feedback loop? Such questions relate to program development that can be addressed by the use of adaptive treatment designs that vary sequencing or dosing of mindfulness, executive function, and behavioral skills depending on which immediate behavioral outcomes are attained (Pentz, 2004).

A second challenge is gaining additional acceptance of mindfulness practice as a benefit to schools and the families they serve. Programs that target executive function and mindfulness can improve academic achievement (Diamond & Lee, 2011; Durlak et al., 2011), which is clearly a benefit to schools and youth. However, as with most school-based prevention programs, effects on target behaviors depend on the quality of program implementation delivered by teachers (Little, Riggs, Shin, Tate, & Pentz, 2013). Teachers' engagement in mindfulness training is enhanced if they themselves are trained in a formal mindfulness program and maintain a daily mindfulness practice. Moreover, if school-based programs included mindfulness training for parents, such training could conceivably improve both parent acceptance of the program as well as modeling of mindfulness practice at home (Pentz & Riggs, 2013).

Several preconditions may be required to move the domain of mindfulness forward as an accepted part of prevention programming in schools. One is that adequate time is provided within the school day for initial and repeated practice of mindfulness. A second is teacher and administrator "buy in" of mindfulness practice as a desirable strategy to promote learning, improve classroom environment, and lessen teacher strain or anxiety. Stud-

ies are just starting to show that mindfulness can improve aspects of the learning environment (Black & Fernando, 2013). A third is that mindfulness is applied across different types of learning and behavioral contexts throughout the school day, not just in the context of substance use prevention lessons. The challenges and preconditions noted here are intended to serve as ideas for future research on school-based prevention programs that include mindfulness training.

### Declaration of Interest

The author declares no conflict of interest. The author alone is responsible for the content and writing of this paper.

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### REFERENCES

- Bandura A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26.
- Black, D. S., & Fernando, R. (2013). Mindfulness training and classroom behavior among lower-income and ethnic minority elementary school children. *Journal of Child and Family Studies*. Online first DOI: 10.1007/s10826-013-9784-4
- Black, D. S., Milam, J., & Sussman, S. (2009). Sitting-Meditation interventions among youth: A review of treatment efficacy. *Pediatrics*, 124(3), 532–541.
- Diamond, A., Lee K. (2011). Interventions shown to aid executive function development in children 4 to 12 years old. *Science*, 333(6045), 959–964.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B, Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: a meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405–432.
- Little, M. A., Riggs, N. R., Shin, H. S., Tate, E. B, & Pentz, M. A. (2013). The effects of teacher fidelity of implementation of Pathways to health on student outcomes. *Evaluation & the Health Professions*. Online first DOI: 10.1177/0163278713489879
- Pentz, M. A. (2003). Evidence-based prevention: characteristics, impact, and future direction. *Journal of Psychoactive Drugs*, 35(S1), 143–152.
- Pentz, M. A. (2004). Form follows function: Designs for prevention effectiveness and diffusion research. *Prevention Science*, 5(1), 23–29.
- Pentz, M. A., Jasuja, G. K., Rohrbach, L. A., Sussman, S., Bardo, M. T. (2006). Translation in tobacco and drug abuse prevention research. *Evaluation & the Health Professions*, 29(2), 246–271.

- Pentz, M. A., Riggs, N. R. (2013). Longitudinal relationships of executive cognitive function and parent influence to child substance use and physical activity. *Prevention Science, 14*(3), 229–237.
- Pokhrel, P., Herzog, T. A., Black, D. S., Zaman, A., Riggs, N. R., & Sussman, S. (2013). Adolescent neurocognitive development, self-regulation, and school-based drug use prevention. *Prevention Science, 14*(3), 218–228.
- Riggs, N. R., Sakuma, K. L., & Pentz, M. A. (2007). Preventing risk for obesity by promoting self-regulation and decision-making skills: pilot results from the PATHWAYS to health program (PATHWAYS). *Evaluation Review, 31*(3), 287–310.
- Riggs, N. R., Spruijt-Metz, D., Chou, C. P., & Pentz, M. A. (2012). Relationships between executive cognitive function and lifetime substance use and obesity-related behaviors in fourth grade youth. *Child Neuropsychology, 18*(1), 1–11.
- Sakuma, K. L., Riggs, N. R., & Pentz, M. A. (2012). Translating evidence based violence and drug use prevention to obesity prevention: development and construction of the pathways program. *Health Education Research, 27*(2), 343–358.

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