Mindfulness-Based Interventions in Schools

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Mindfulness has become an increasingly common buzzword in schools. Indeed, developing “mindful teachers” and cultivating “mindful students” has been proposed as a worthy goal in educational settings (Renshaw & O’Malley, 2014; Schonert-Reichl & Roeser, 2016). Such interest is not necessarily unique to schools, however, as mindfulness has been popularized in many other corners of contemporary society (e.g., self-help and corporate business cultures). Wherever it crops up, interest in mindfulness appears to be undertaken for some therapeutic purpose—using mindfulness as a means to bring about valued personal or social outcomes. When it comes to school-based practice, the primary demand placed on the use of mindfulness has been that it is validated as an “evidence-based” approach to improving student and teacher outcomes. Careful looks at the literature suggest that the evidence supporting the use of mindfulness-based intervention (MBI) in schools is indeed promising (e.g., Klingbeil et al., 2017a; Klingbeil et al., 2017b; Klingbeil & Renshaw, 2018). Yet our understanding of how to efficiently and effectively use MBI in schools is far from complete. This is not simply because “more research is warranted” to generalize positive findings across populations or outcomes, but also because fundamentally different kinds of research are needed to address critical issues that will help guide school-based practice. The purpose of this chapter is to review the status of MBI in schools by raising and answering a handful of key questions that are relevant to researchers and practitioners interested in the topic:

1. What are mindfulness and MBI?
2. How are MBI structured and used in schools?
3. How effective are MBI with students and teachers?

4. What is still unknown about MBI in schools?
5. How can MBI be applied within a multitiered system of supports in schools?

What are Mindfulness and Mindfulness-Based Interventions?

The literature is full of differing definitions of *mindfulness*. Probably the most common definition is that offered by Kabat-Zinn (1994, p. 4), who described mindfulness as “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally.” A consensus definition developed by a renowned group of scholars defines mindfulness as a two-component construct, consisting of “the self-regulation of attention so that it is maintained on immediate experience” that is paired with “a particular orientation towards one’s experience in the present moment” (Bishop et al., 2004, p. 232). Within applied psychology and education, there seems to be agreement that mindfulness can be conceptualized as a skill (which can be taught and learned like any other skill), and that this skill can be operationalized behaviorally (Renshaw & Cook, 2017). The first behavioral component could be called *present moment awareness* (PMA) and consists of orienting one’s attention to the here-and-now. In short, PMA is about focusing on what one is thinking, feeling, sensing, or otherwise experiencing *right now*. PMA can be juxtaposed with remembering or ruminating on one’s past experiences as well as with forecasting or worrying about one’s future experiences. Examples of PMA are a student attending to the experience of her stomach-aching immediately prior to taking a test, or a teacher noticing his thoughts regarding how much of a “fantastic failure” the previous lesson was. Non-examples of PMA are a student getting caught up in recollections of past test failures, or a teacher pondering about how his failed lesson is an omen of his likelihood of failing further when attempting new and challenging teaching tasks in the future.

The second behavioral component of mindfulness could be called *responding with acceptance* (RWA) and refers to the quality of one's reactions to the contents of one's PMA. The core features of RWA are being curious about the nature of one's experience in the present moment while either (a) intentionally staying in contact with whatever one is experiencing, as long as it happens to last, or (b) persisting in accomplishing a valued activity with which the experience may potentially interfere with (Renshaw, 2017). RWA is antithetical to an avoidant response, which is characterized by changing the focus of one's attention or engaging in other behavior to escape contact with the contents of undesirable experiences. Given that it is experientially possible to engage in PMA without RWA, true mindfulness happens only when PMA and RWA occur together or, more specifically, when RWA immediately follows PMA. This is why Kabat-Zinn (1994) did not define mindfulness as simply *paying attention*, but rather as *paying attention in a particular way*. Continuing with the cases examples mentioned earlier, examples of RWA are a student continuing to attend to her stomach-aching and—despite being immensely uncomfortable—initiating the test anyway, or a teacher noticing how his thoughts about failure simply come-and-go as he prepares to teach his next section. Non-examples of RWA are a student asking to be dismissed during the test to see the school nurse because of her stomach-aching, or a teacher scheming to escape from giving the previously-failed lesson to another section of students (perhaps by also visiting the school nurse).

Given this two-component, skills-based definition of mindfulness, MBI can be understood broadly as any technique or combination of techniques that trains PMA and RWA to bring about changes in valued outcomes. The important characteristic of MBI, then, is not necessarily the *structure* of the intervention, but rather the *functions* of the intervention. If the

intervention increases students' or teachers' PMA and RWA—and these increases in mindfulness are demonstrated to be associated with improvement in other outcomes—then the technique may be functionally considered an MBI (Renshaw, 2016). If the technique does not serve one or the other functions, then it should not be labeled an MBI. These intervention functions can be thought of as *process* outcomes and *primary* outcomes, respectively (Klingbeil et al., 2017b). It is experimentally possible that a *purported* MBI could yield changes in the process outcome (i.e., mindfulness) but not in the primary outcome (e.g., emotional symptoms), and vice versa. A *verified* MBI will have proved itself to produce changes in both. It may seem like a fairly straightforward requirement for any intervention that posits a therapeutic process, such as MBI, to have to empirically demonstrate that the process is activated by the technique and results in positive outcomes. Yet this mandate has not been heeded often within psychological intervention research generally (Rosen & Davison, 2003) nor within MBI research particularly (Hayes & Shenk, 2004). Although there are several unknowns regarding the use of MBI in schools, probably the most concerning issue is that it is still empirically unclear if the positive effects of MBI on primary outcomes can be attributed to positive changes in mindfulness processes (Klingbeil et al., 2017b). To put it more bluntly, we still do not know whether it is actually the acquisition and application of mindfulness skills per se that are responsible for the desirable behavior changes produced by purported MBI (see “What is Still Unknown About Mindfulness-Based Intervention in Schools?” for further support for this point).

How are Mindfulness-Based Interventions Structured and Used in Schools?

MBI has a long and interesting history, which is beyond the scope of this chapter (see

Renshaw & Cook, 2017, for a short tour). Suffice it to say the structure and use of MBI in schools is mostly modeled after the structure and use of MBI in medical and clinical settings, where it evolved first as a group-based treatment for targeting physical and psychological problems and then, later, as a more intensive approach to treatment (or adjunct to treatment) for targeting more intractable behavioral problems. There are currently several therapeutic approaches that could be conceptualized as MBI, as they purport that their techniques drive changes in mindfulness processes that, in turn, facilitate changes in valued life outcomes. Some of these therapeutic approaches, such as mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT), focus exclusively or primarily on mindfulness processes (see Greco & Hayes, 2008). Other approaches, such as dialectical behavior therapy (DBT) and acceptance and commitment therapy (ACT), target mindfulness as one of several potential therapeutic processes (again, see Greco & Hayes, 2008). Although there is some evidence suggesting that MBCT, DBT, and ACT can be used effectively with youth, the majority of research and practice in schools uses MBSR-type programming, which is a small group-based intervention modified for use in classroom settings. School settings have also given rise to a new form of MBI that combines MBSR-type practices with content and techniques derived from more traditional social–emotional learning (SEL) curricula (e.g., The Hawn Foundation, 2011). Like DBT and ACT, these SEL-type MBI target mindfulness as one of several therapeutic processes that are purported to drive positive outcomes.

When used in schools, MBSR-type and SEL-type MBI take the form of treatment packages that are typically structured as educational curricula. These treatment packages are usually administered as “lessons” on a weekly or biweekly basis, either in the classroom or

outside it. When targeting students, school-based MBI can be administered by teachers, other trained school personnel (e.g., school psychologists and social workers), or researchers and outside service providers contracted by the school (e.g., independent psychologists and educational consultants). When targeting teachers, MBIs have historically been administered only by researchers and outside service providers, and they are typically delivered outside the regular school day. Despite varying in format regarding the number and duration of sessions, most MBI used in schools share several similar structural features: (a) psychoeducation regarding mindfulness and its purported relationship to valued life outcomes, (b) metaphorical and experiential exercises for practicing and applying mindfulness, (c) psychoeducation regarding other emotional–behavioral regulation strategies that might be used in conjunction with mindfulness, and (d) metaphorical and experiential exercises for practicing and applying these other emotional–behavioral regulation strategies. Although detailed descriptions of the several different MBI available for use in schools is also beyond the scope of this chapter, interested readers can access comparative summaries of available programs via journal articles and book chapters (e.g., Greco & Hayes, 2008; Semple, Droutman, & Reid, 2017). Practitioners and researchers can also directly purchase and review curricula for several common MBI used in schools, including *MindUp* (The Hawn Foundation, 2011), *Learning to Breathe* (Broderick, 2013), and *A Still Quiet Place* (Saltzman, 2014). Other MBI curricula, however, are not available to researchers and practitioners until they pay for and receive direct training from the consultant company that created the materials (e.g., Mindful Schools: <https://mindfulschools.org>; Mindfulness in Schools Project: <https://mindfulnessinschools.org>).

As alluded to earlier, one practical barrier impeding the use of MBI in schools is the

financial cost and time required for training. Given the treatment package structure of most MBI, the materials must be purchased—and, in some instances, substantial training must be received—before administering the intervention. Although this is not necessarily “a bad thing,” it is, nevertheless, “a big thing” when considering the scarcity of time and resources available for facilitating intervention in schools. At this point, it is worth recalling the functional definition of MBI provided earlier. Given that MBI are not dependent on any particular techniques—but rather on their usefulness in improving PMA and RWA—there is no scientific reason to prefer particular trade-marked treatment packages, especially because research has yet to demonstrate that any given MBI curriculum is more-or-less effective than any other (see the later discussion for more on this point). The reason for adopting such marketed curricula is therefore entirely practical, and decisions made by schools or individual practitioners within schools are likely to be based more on the feasibility of a given MBI (e.g., time and resource costs for implementation) rather than its effectiveness (which is fairly comparable across the available options). It is also worth noting that most teachers and other school-based practitioners interested in using MBI in schools do not received adequate pre-service training and supervision in this approach, and are therefore likely to be dependent on the “crutch” of pre-packaged curricula and/or consultant-based training. That said, we can imagine that this might not be the case forever, as it is possible that future generations of educational professionals may gain fluency with MBI during pre-service training.

How Effective are Mindfulness-Based Interventions with Students and Teachers?

Original research regarding MBI in schools has proliferated over the past 15 years, especially as it relates to student outcomes. Several systematic reviews and meta-analyses have

also been undertaken to summarize the empirical literature, so that researchers and practitioners might know how to best proceed with testing and using MBI. The upshot of these reviews has been consistent on at least two points: MBIs appear to have small-to-moderate, positive effects across a variety of valued student outcome domains, and much more research is needed to further specify the effects of MBIs for particular outcomes and populations. What follows is a selective review of the most recent and comprehensive meta-analyses, not necessarily an exhaustive review of all available systematic reviews. Although interested readers are encouraged to peruse the other systematic reviews, it is noteworthy that scientific and practical conclusions derived from these other reviews do not differ much from the meta-analyses discussed here (cf. Black, Milam, & Sussman, 2009; Burke, 2010; Harnette & Dawe, 2012; Meiklejohn et al., 2012; Felver et al., 2016; Black, 2016).

Zenner et al. (2014) published a meta-analysis of MBI conducted with youth and in schools, including 24 studies that used group-based research designs. Their analysis found overall small positive therapeutic effects for MBI across both controlled comparisons and pre-post comparisons (no control group used). Follow-up analyses showed some differential effects, with MBI having moderate positive effects on cognitive measures and small effects on measures of stress and emotional problems. Another meta-analysis, by Zoogman et al. (2015), identified 20 group-design studies investigating MBI with youth in schools and other community settings. Findings from this analysis were similar to those of Zenner et al. (2014), showing an overall small positive effect across outcome domains. Additional analyses failed to show differential effects, instead demonstrating consistently small positive effects for measures of mindfulness, psychological symptoms, and non-symptom outcomes. Kallapiran et al. (2015)

conducted a similar but more restrictive meta-analysis, using different inclusion criteria and targeting 11 controlled, group-design studies testing MBI with youth across multiple settings. Their analysis again showed an overall small positive effect across outcome domains. The most targeted and methodologically different meta-analysis to date is probably that conducted by Klingbeil et al. (2017a), who synthesized the effects of 10 single-case design studies testing the effect of MBI on youths' disruptive behavior across school and other settings. This meta-analysis found that MBI were moderately effective at decreasing disruptive behavior in individual youth with developmental disabilities and psychiatric diagnoses.

So far, the most comprehensive and broad meta-analysis appears to be the review conducted by Klingbeil and colleagues (2017b), who aggregated the effects of 76 group-design studies published before January 2016. Their analysis is noteworthy given that it identified over 2.5 times more studies than any of the previous meta-analyses (reviewed earlier) and therefore allowed for more targeted exploratory analyses. Like the previously discussed studies, Klingbeil et al. (2017b) found overall small positive effects of MBI across youth outcomes—for both controlled and pre–post studies. Results from a smaller subset of 12 studies that looked at maintenance effects showed that these positive outcomes persisted over time, even after the interventions were withdrawn. Furthermore, analyses demonstrated consistently small treatment effects across all observed outcome domains: mindfulness, meta-cognition and cognitive flexibility, emotional and behavioral regulation, academic achievement and school functioning, externalizing problems, internalizing problems, negative emotion and subjective distress, positive emotion and self-appraisal, physical health, and social competence and prosocial behavior. Exploratory moderator analyses also showed that MBI were just as effective

when implemented in school versus non-school settings.

Taken together, findings from these several meta-analyses suggest that MBI are generally effective with youth and in schools—that they do indeed work to change several valued outcomes for the better. None of these meta-analyses yielded null or iatrogenic effects for overall or targeted outcome domains, further suggesting that MBI are safe and ethically-sound for use with youth. It is noteworthy, however, that the effect sizes observed when applying MBI with youth and in schools are generally smaller than those observed when using MBI with adults, whether healthy or clinical samples (e.g., Khoury et al., 2013). However, the research with youth also supports a much broader array of positive effects—showing small effects ranging across several more adaptive outcome domains compared with adults. Interpreting these effects, Klingbeil et al. (2017b) suggest that MBI may be best conceptualized as a subtype of preventive intervention based on the SEL principles of self-awareness and self-management (see the Collaborative for Academic, Social, and Emotional Learning: <https://casel.org>), as the effects yielded by MBI are similar in magnitude and breadth to other common SEL interventions based on these principles (cf. Durlak, Weissberg, Dynmicki, Taylor, & Schellinger, 2011). Those advocating the use of MBI with teachers have made similar arguments, positing that mindfulness training is a means of enhancing educators’ social–emotional functioning, which, in turn, facilitates positive outcomes in the domains of student–teacher relationships, effective classroom management, and even more effective implementation of SEL-based intervention for students (Jennings et al., 2013).

Although much empirical work has tested MBI with clinical and healthy samples of adults, far fewer studies have focused specifically on the effects of MBI with teachers. Indeed,

the number of conceptual papers and presentations recommending the use of MBI with teachers seems to rival the number of actual empirical studies testing this practice. Yet it is safe to say that some solid groundwork has been laid for this line of work, as at least three systematic reviews on the topic have been published within the last year alone. Lomas et al. (2017) reviewed 17 studies using MBI with undergraduates studying education, elementary and secondary teachers, and post-secondary teachers; Emerson et al. (2017) reviewed 12 studies targeting pre-service and in-service teachers; and Hwang et al. (2017) reviewed 16 studies focusing solely on in-service teachers. The upshot of these systematic reviews is that MBI have mostly been used to target teachers' mindfulness, self-efficacy, stress, and burnout, and that the observed effects of these interventions have mostly been positive, with the occasional negligible effect. The most clarifying review to date, however, is probably the recent meta-analysis by Klingbeil and Renshaw (2018), which provides the first true quantitative synthesis of MBI with teachers. Findings from their analysis of over 20 group-design studies demonstrated moderate positive overall effects—with small-to-moderate effects found for the domains of mindfulness, emotional-behavioral regulation processes, psychological distress, psychological wellbeing, and classroom climate. Although MBI with teachers are theorized to indirectly effect student achievement and performance (Roeser, 2016), it is noteworthy that these reviews identified no teacher-based studies that actually investigated student-level performance outcomes.

What is Still Unknown About Mindfulness-Based Interventions in Schools?

The evidence supporting the use of MBI with students and teachers is promising, but it is far from definitive or compelling. Much is still unknown, empirically speaking, and thus much

more research is needed to establish a true evidence-based approach to using MBI in schools. Although many words have been written about future directions for advancing the science and practice of MBI (e.g., Felver et al., 2016; Renshaw & Cook, 2017), what follows is only an overview of three key unknowns that are especially relevant for guiding future practice in schools. For starters, it is unknown whether some MBI treatment packages or curricula are more-or-less effective than others. The research with both students and teachers has preceded primarily by multiplying variants of MBI, only a few of which have been replicated—and none of which have yet to be directly tested in comparison with each other. Thus, to take just a couple of examples, it is unknown whether *Learning to Breathe* is more effective for decreasing students' psychological distress than *A Still Quiet Place*, or whether the *SMART-in-Education* program is better than *Cultivating Awareness and Resilience in Education* (CARE) for reducing teachers' work-related stress and burnout. The practical problem resulting from this lack of comparative research is that there is no ready guide for determining which MBI techniques are likely to be more-or-less useful in helping practitioners achieve particular therapeutic goals. Relatedly, there is a similar lack of comparative research testing the many variants of MBI against other non-MBI that have similar therapeutic aims, such as traditional SEL curricula for students or other stress-reduction programming for teachers (Klingbeil et al., 2017b). As a result, there is also no current means for determining whether MBI are likely to be more-or-less effective than non-MBI when targeting particular outcomes in schools.

Next, it is unknown whether existing MBI can be optimized or refined to become more efficient and/or more effective than current status quo arrangements. As mentioned earlier, most MBI, whether intended for students or teachers, are structured as treatment packages

that are implemented as lessons that extend over several weeks or months. These lessons include components focusing on psychoeducation and skill-training, and the skill-training components typically include a variety of different experiential exercises. It is therefore unknown whether the effects of *Learning to Breathe*, for example, are primarily attributable to the psychoeducational components, the experiential components, or both types of components in combination. It is likewise unknown whether it is necessary to use all of the experiential exercises included in the curriculum (i.e., mindful breathing, mindful eating, mindful body scanning, and several metaphorical exercises) to train mindfulness effectively or whether one exercise might be more-or-less useful compared with other exercises for facilitating overall mindfulness or for promoting PMA versus RWA, and so on. The practical problem arising from this lack of component analysis research is that there is no way to determine whether we might be implementing superfluous or ineffective practices within the context of a given MBI treatment package. There is also no way to know whether we might make MBI more efficient or more effective by spending more time on the active ingredients and eliminating the spurious elements. This problem is further magnified when considering MBI that include non-mindfulness components, such as CARE, which also trains teachers in other emotional-behavioral regulation strategies.

Finally, assuming that all school-based intervention should function within a data-based decision-making framework, it is unknown how assessment procedures and resulting data might be used to inform the selection of MBI as an appropriate intervention in the first place. The modus operandi for current practice seems to be matching MBI with presenting problems based on some precedent of supporting research. Yet the boundaries for problem areas that

match with MBI appear to be ever-expanding in the literature—ranging from psychological distress to academic achievement to physical health to subjective wellbeing and beyond. And the effects of more targeted intervention approaches, which are designed to address specified problem areas (e.g., direct instruction for academic skill acquisition or group contingencies for improving classwide behavior), are much stronger than the effects of MBI for the same problems. That said, the outcome-matching approach, if used in a true data-based fashion, is unlikely to recommend MBI as the preferred approach for intervening with any particular target problem in schools. It might, however, recommend MBI if the practical goal is targeting multiple problem areas using a preventive approach. But this suggests that MBI is only likely to be useful in schools at the universal or Tier 1 level (see the later discussion for more on this point). An alternative approach might be to select MBI based on the measurement of purported process variables, such as low scores on a mindfulness screening measure. But this approach makes assumptions that have yet to be supported empirically. Specifically, there is little consensus that the mindfulness measures available for youth are valid for their intended purpose (Renshaw, 2017), and there is very little evidence showing that responses to mindfulness measures are sensitive to change via intervention or predictive of responsiveness to intervention (Klingbeil et al., 2017b).

The three unknowns described earlier clearly illustrate that, despite the growth in mindfulness research in recent years, we are still far from establishing a true evidence-based approach to using MBI in schools. This does not mean that it is impossible to get there, just that we have yet to arrive. Researchers could help hasten this arrival by reorienting scholarly agendas to address the points laid out previously: (a) comparing the differential effects of

existing MBI treatment packages (as opposed to proliferating new variants of treatment packages), (b) conducting component analyses to identify the active ingredients within current treatment packages (as opposed to advocating the integration of mindfulness techniques with other emotional-behavioral regulation skills), and (c) developing assessment procedures that could be used to determine when MBI would be more-or-less useful for targeting particular problem areas (as opposed to promoting an uncritical application of MBI that is loosely based on problem-matching). Practitioners could likewise help by accurately representing the state-of-the-science of MBI in schools and by being appropriately cautious in selecting and applying MBI with students and teachers. Specifically, practitioners would do well to (a) clearly communicate the nature and limits of the research base supporting MBI to clients, (b) provide a solid rationale for why MBI was selected over other available intervention approaches for targeting a particular problem area, and (c) ensure that the effectiveness of MBI is evaluated in real-time via assessing implementation fidelity and progress-monitoring outcomes. Such tacks are likely to go a long way toward preventing researchers and practitioners from “reaching beyond the data” and “putting the [practice] cart before the [science] horse.”

How Can Mindfulness-Based Interventions Be Applied Within a

Multitiered System of Supports in Schools?

A multitiered systems of supports (MTSS) is a general framework for organizing efficient and effective service delivery in schools. At bottom, an MTSS seeks to serve all students while also providing differential supports to students as a function of their need for such supports. Traditional MTSS models operationalize this framework in a three-tiered system, where Tier 1 (universal level) is characterized by low-intensity service delivery to all students within a school

population, Tier 2 (targeted level) is characterized by moderate-intensity service delivery provided to students who fail to respond adequately to Tier 1 supports, and Tier 3 (intensive level) is characterized by high-intensity services provided to students who warrant even more supports to be successful in school (Stoiber, 2014). Although MTSS was originally conceived of as a framework for promoting student success, this same train of service-delivery logic could apply to supporting the success of teachers and other school staff. What follows, then, is a sketch of how MBI might be applied within an MTSS in schools, for both teachers and students. This sketch is intended to be illustrative, not prescriptive (see Felver et al., 2013, and Renshaw et al., 2017, for other examples). It also aims to stick as close as possible to reasonable generalizations that can be derived from the current research base of MBI in schools. Thus, although one might imagine more creative or thoroughgoing applications of MBI within an MTSS than those described next, what follows is intended to be a modest portrayal that uses low-level inferences from the research base.

The most straightforward and uncontroversial application of MBI within an MTSS is at Tier 1, where preexisting treatment packages and curricula might be used at the schoolwide or classwide level for universal prevention or wellness promotion programming. Given that the majority of research testing MBI with youth has been conducted using group-designs at the classroom level (Klingbeil et al., 2017b), and that the bulk of research with teachers has used group-designs at the schoolwide level (Klingbeil & Renshaw, 2018), it is safe to assume that MBI are likely to be effective when used at this level of service delivery. A nice summary and description of available curricula (of which there are several) that might be used at the universal level with students can found in Semple et al.'s (2017) review article. Far fewer

options are available for use with teachers, but examples of treatment packages with some empirical support include *CARE* and *SMART-in-Education*, among others. MBI administered at Tier 1, whether for students or teachers, are likely to range in duration from several weeks to several months and could consist of mindfulness-only content or mindfulness-plus-other-SEL content. Given that mindfulness itself can be considered a core SEL skill (Lawlor, 2016), it also seems reasonable that MBI could be used at the universal level as an adjunct to traditional SEL or mental health prevention programming, which are both structured and used similarly to MBI in schools (cf. Durlak et al., 2011). Although some scholars have suggested that stand-alone mindfulness exercises—such as mindful breathing or mindful STOP (Renshaw, Bolognino, Fletcher, & Long, 2015)—might be used as more parsimonious and efficient Tier 1 prevention practices (e.g., Renshaw, 2012), it is worth noting that there has yet to be a study yielding positive effects of such stand-alone practices outside the boundaries of a traditional MBI treatment packages (cf. Long, Renshaw, & Camarota, 2018). Thus, a stripped-down approach to MBI, however feasible it might seem, should not yet be recommended for regular Tier 1 practice.

At Tier 2, the use of MBI with targeted groups of at-risk students is less clearly supported. There are a few studies demonstrating that small-group-based MBI can be effectively implemented with youth identified as having emotional or behavioral risk, though these studies have all been conducted in clinical or community settings, not in schools (e.g., Biegel, Brown, Shapiro, & Shubert, 2009; Jee et al., 2015; Semple, Lee, Rosa, & Miller, 2010). These studies have also targeted youth with greater levels of risk than what is typically considered to be appropriate for services provided at the “targeted” level in schools. That said,

the small-group-based format of service delivery is akin to how other Tier 2 interventions (e.g., SEL or traditional social skills training) are administered in schools, and so it seems reasonable to suggest that MBI might be used in this way at this level. For example, a small group of at-risk students might be removed from class once or twice a week, for 20 to 50 minutes, to attend a “mindfulness group” based on a preexisting treatment package that has shown to be effective, such as *Learning to Breathe*. That said, the burden on practitioners is to determine whether this approach to Tier 2 intervention, however socially valid it might seem, is likely to be just as effective as other Tier 2 interventions for targeting similar problem areas. If such confidence cannot be established, it is recommended that use of MBI at Tier 2 be confined to an adjunct component that functions to complement another approach to intervention that has been shown to be more effective. For instance, a brief, stand-alone mindful breathing exercise (e.g., Renshaw et al., 2015) might be added as an adjunct component to a Check In–Check Out intervention, which has been shown to be consistently effective for reducing target students’ disruptive behavior in the classroom (e.g., Todd, Campbell, Meyer, & Horner, 2008). Decisions about how and when to use MBI in this adjunct manner are, admittedly, squarely in the realm of *art* as opposed to *science*.

At Tier 3, the use of MBI is not as strongly supported as it is at Tier 1, but its use at this level is somewhat better established than at Tier 2. As mentioned earlier, results from a meta-analysis of single-case design studies demonstrated that MBI have been used to effectively reduce disruptive behavior in individual youth with developmental disabilities and psychiatric diagnoses, both in school and home settings (Klingbeil et al., 2017a). The majority of MBI used in these intensive studies were not formal treatment packages or curricula. But at least one

approach, known as *Soles of the Feet* (e.g., Felver, Frank, & McEachern, 2014), has been manualized and may be a viable option at Tier 3 for practitioners with little prior training in mindfulness. An important point for practitioners to remember, however, is that no research has yet shown that MBI can be used effectively for treating youth with severe emotional problems in school settings. In fact, a recent study suggested ambiguous and potentially iatrogenic effects for three students with depression or anxiety disorders that were treated with an MBI in schools (Malboeuf-Hurtubise, Lacourse, Herba, Taylor, & Ben Amor, 2017). Although there is a substantial amount of research showing that MBI are very effective for treating depression and anxiety with adults (Khoury et al., 2013), and there are several studies suggesting that therapeutic approaches that integrate mindfulness as one of several components may be effective for treating adolescents with severe emotional problems in non-school settings (e.g., Halliburton & Cooper, 2015), these findings are not yet generalizable to school-based practice. Thus, practitioners working with students with intensive emotional problems at Tier 3 would do well to only use MBI as a complementary component to other, well-validated approaches for addressing this problem area in schools (see Mychailyszyn, Broadman, Read, & Kendall, 2012, for a meta-analysis of effective approaches).

Conclusion

The purpose of this chapter was to review the status of MBI in schools by raising and answering a handful of key questions that are relevant to any researcher or practitioner interested in the topic:

1. What are mindfulness and MBI?
2. How are MBI structured and used in schools?

3. How effective are MBI with students and teachers?
4. What is still unknown about MBI in schools?
5. How can MBI be applied within an MTSS in schools?

Responses to these questions have (a) framed mindfulness as a skill that can be taught and learned like any other skill in schools, (b) shown that the research base supporting the use of MBI with students and teachers is promising across an array of outcome domains, (c) emphasized key shortcomings of the empirical literature that have to be addressed to establish a truly evidence-based approach to using MBI in schools, and (d) offered a sketch of how MBI might be reasonably applied—given what is and is not yet known—within multiple levels of service delivery in schools.

The upshot of this overview is that although MBI with students and teachers has become a substantive area of scientific inquiry, our understanding of how to efficiently and effectively use MBI in schools is still far from complete. Researchers and practitioners are therefore encouraged to be scrupulous in their practice and wary of potentially dubious over-generalizations of the research that are used for the sake of advocating the use of MBI in schools. As Greenberg and Harris observed in 2012, there are many well-intentioned yet overzealous champions for mindfulness whose “enthusiasm for promoting [MBI with youth] outweighs the current evidence” (p. 165). Although the research base has likely more than doubled in the past 6 to 7 years since this warning was published, their sentiment continues to ring true today. Enthusiasm for MBI must be checked-and-balanced by a realistic appraisal of the available empirical evidence to promote the best outcomes for students and teachers.

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