My Resilience in Adolescence (MYRIAD) Project Findings

Executive Summary

“The MYRIAD project carefully tested the effects of a brief mindfulness intervention for early teens and found it to have no impact on preventing mental health problems or promoting well-being. In order to improve well-being for young people, it is likely we need to make broader systemic changes in schools that both teach them new coping skills and support staff to create environments where youth feel valued and respected.”

Mark T. Greenberg, Founding Director, Edna Bennett Pierce Prevention Research Center, Pennsylvania State University

<table>
<thead>
<tr>
<th>Main Messages</th>
<th>Sub-messages</th>
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<td>A wide-ranging study programme explored whether schools-based mindfulness training could improve the mental health of young people in early adolescence (11-14 years olds).</td>
<td>The MYRIAD project involved several studies spanning seven years of research, carried out by scientists at the Universities of Oxford, Cambridge, Exeter, Kings College London, University College London and Pennsylvania State University. It involved more than 28,000 children, 100 schools, 650 teachers and 20 million data points. The main studies have been published in a special issue of the British Medical Journal Evidence-based Mental Health.</td>
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<td>The standardised schools-based mindfulness training programme did not help the early teenagers’ mental health or well-being overall. However, it did improve the school culture and reduced teachers’ burn out.</td>
<td>The researchers found that there are a multitude of factors that affect young people’s mental health, including their environment, school culture and individual differences. There is no one-size-fits-all approach– the researchers argue that future studies should explore different support systems for different groups of young people.</td>
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<td>This was not what the researchers predicted, and there are several possible explanations.</td>
<td>Young people aged 11-14 did not for the most part do the recommended mindfulness home practice. They also had mixed views of the mindfulness</td>
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training, with some viewing it very positively and others rather negatively. The researchers suggest that committed staff, resources and a lot of teacher training and support is needed to teach mindfulness well. The researchers conclude that any such programmes are likely to be more effective if co-designed with young people.

What problem were we trying to solve?
Young people face a range of challenges and stressors in an increasingly complex world. As many as one in five teenagers experiences mental health problems. How can we prevent mental health problems arising during adolescence and enable young people to enjoy good mental health?

What do we know already?
There are good reasons to focus on adolescence, the period of life between 10 and 24. It is crucial to prevent mental health problems before they arise in the first place. Three quarters of all mental illnesses that anyone will ever develop, start before the age of 24. For example, the peak age of onset of depression is between 13 and 15 years of age. So early adolescence is a window of vulnerability to mental health problems.
During, adolescence, the brain and the mind undergo substantial development. As we transition from childhood to adulthood, our sense of who we are undergoes profound change, and the skills we use to navigate our lives continue to develop. Thus, adolescence is also an important window of opportunity in terms of preventing mental health problems and promoting well-being.
Young people spend much of their waking lives at school. While the primary purpose of schools is academic teaching, many have argued their remit is broader – to prepare young people for productive, happy lives by teaching foundational life skills. There have been a number of attempts to develop and evaluate programmes to prevent depression and improve mental health in schools.
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Our work to date has shown that mindfulness training can prevent depression and improve mental health in adults (see here). Mindfulness training has been shown to improve skills such as attention and self-regulation, especially in the face of challenging situations. It can help people across the full spectrum of mental health, from those experiencing difficulties through to those who are flourishing. Our own pilot work and review of the research suggested that mindfulness training in adolescence might be associated with improvements in mental health (Dunning et al., 2019; 2022) and that schools-based mindfulness training has the potential to be offered universally to improve the mental health of young people (Tudor et al., 2022).

In this seven-year programme of work we set out to investigate whether mindfulness training can have the same positive effects in adolescence as we have seen in adults.

What did we do?

This programme of research was based on the idea that, just as physical training is associated with improved physical health, mindfulness training is associated with better mental health outcomes. By promoting good mental health and intervening early, in early adolescence, we wanted to see if we could build young people’s resilience and help to prevent mental health problems developing.

We did several studies, published in a series of academic papers. These studies involved more than 28,000 children, 100 schools, 650 teachers and 20 million individual points of data. The main findings are published in a special issue of the British Medical Journal – Evidence-based Mental Health[hyperlink]

In one of our studies, a large randomised controlled trial involving 85 schools and 8376 teenagers, we evaluated the effectiveness and cost-effectiveness of a schools-based mindfulness training on risk-for-depression, social-emotional-behavioural strengths and difficulties, and well-being in 11-14 year olds. The mindfulness training was developed by the Mindfulness in Schools Project. It was taught by school teachers, after they had first learned mindfulness for themselves and then attended a four-day training to teach mindfulness to students. We compared the mindfulness training to current standard social-emotional teaching in schools. We also explored whether mindfulness training had wider effects on teachers’ mental health and school climate (Kuyken et al., 2017; Montero-Marín,
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Nuthall, et al., 2021). Finally, we explored the challenges of offering mindfulness training more widely in schools, and what is needed to do this well (Montero-Marin, Taylor, et al., 2021; Wilde et al., 2018).

What did we find?

Mental health remains a huge challenge

In an earlier study, a survey of 85 schools and 26,885 11-14 year olds, replicated what others have found – that the mental health challenge in young people persists. If anything it has got a bit worse. In our initial survey of 26,885 11-14 year olds in 85 schools across the UK between 2016 and 2018, we found that as many as 33% of young people reported significant social-emotional-behavioural problems and depressive symptoms. The remainder were coping reasonably well, and a smaller group were flourishing (16%). Replicating previous studies we found that certain groups were more likely to report problems: girls, older teenagers and those living in urban areas as well as areas of greatest poverty and deprivation (Ford et al., 2021).

Introducing mindfulness training improved school climate

We found that a more positive school climate (for example, an atmosphere of mutual respect), was associated with better mental health in the students (Ford et al, 2021; Hinze et al, in preparation). Furthermore, the mindfulness training improved the school climate compared with our comparison group, at least as described by the teachers, though these effects reduced over the one-year follow-up (Kuyken et al., 2022).

The universal schools-based mindfulness training did not help the young people overall

When comparing schools-based mindfulness training with regular social-emotional teaching we found no evidence that the mindfulness training programme that we used, was more effective than usual social and emotional teaching in helping young people’s mental health or well-being. There was some evidence that mindfulness training may be better value for money than standard social-emotional teaching, but this was only true for one of four measures of effectiveness we used to look at cost-effectiveness (Kuyken et al., 2022). This wasn’t what we had predicted, so we explored it further.

For the most part young people did not engage with the mindfulness training.

The young people in this trial (11-14 year old teenagers in the UK) had mixed views of the
mindfulness-training curriculum, with some rating it highly and others rather negatively. The majority (>80%) did not do the required mindfulness practice homework (Montero-Marín et al., 2022).

The mindfulness training was not easy to introduce into schools.

We also learned that implementing mindfulness training into schools requires committed staff, adequate resources, efforts to address misperceptions about mindfulness, and even when all these are in place, it takes time (Wilde et al., 2019). Also, preparing schoolteachers to offer mindfulness training is hard. It took a lot of training and mentoring to get teachers ready to teach mindfulness to children, and even then, although most became competent, only a small minority were able to teach it really well (Crane et al., 2020).

Our results suggested mindfulness training might work for some children and not for others, and under some conditions, but not others

We learnt that perhaps “one size doesn’t fit all.” There was some suggestion that this form of mindfulness training helps some groups (for example, older teenagers) yet is unhelpful for others (for example, young people with more mental health problems) (Montero-Marín et al., 2022).

We learnt that young people who did the mindfulness practices reported better mental health and better mindfulness skills at follow up. And young people taught by the teachers who were most skilled in teaching the mindfulness training also reported practicing mindfulness more often and learning the new skills (Montero-Marín et al., 2022).

We now need to replicate these preliminary findings and explore this question of what works for which groups of children.

Teacher benefits – less burnout

The teachers who underwent mindfulness training benefited (Montero-Marín, Taylor, et al., 2021); they reported lower levels of burnout than teachers who didn’t do the training (Kuyken et al. 2022).

Call to action: where to next?

The physicist Thomas Edison famously said it took many “failed” attempts before the light bulb was invented. He was making the point that scientific progress involves trial and error.
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The burden of mental health problems is large, our best treatments are insufficient and prevention has eluded us. We ran a large-scale study, which provided no support for the mindfulness training we tested being effective. So, what have we discovered?

1. Many things affect young people’s mental health: their environment (for example, poverty and deprivation); their school (for example, school climate); and individual differences (for example, girls are at higher risk of developing mental health problems than boys). Many other studies have also shown that poverty, genetics, family stress and exam stress can compromise mental health.

   *So, we need to focus on what we know supports resilience and mental health in young people, in terms of: policy and intervention on wider systems (for example, poverty and deprivation); and education policies and school structures that shape school climate.*

2. The mindfulness curriculum we tested was relatively brief (ten 30-50 minute sessions).

   Such a brief programme may be insufficient to create positive change. *Schools should consider programs that are longer and are integrated into wider systems in their schools that support youth and teacher well-being.*

3. Implementing any social-emotional learning curriculum in schools requires committed staff, adequate resources, efforts to address misperceptions about mindfulness and social-emotional learning, and training and ongoing support of teachers. *It may be that such curricula are only effective when all these conditions are in place.*

   *Our work adds to the evidence that translating mental health treatments into classroom curricula is difficult and that teachers may not be best placed to deliver them without considerable training and support – another model would be for mindfulness practitioners to deliver to those at risk of poor mental health and expressing an interest in attending.*

   *Tamsin Ford, Professor of Child and Adolescent Psychiatry, University of Cambridge*

4. Mindfulness training improves teachers’ burn out in the short term and may also improve school climate. *The next generation of research needs to consider how best to support teachers’ mental health and school climate, and in sustainable ways that create durable changes for both teachers and for the wider school.*

   *There is a saying, “if you treasure it, measure it.” UK schools face conflicting external pressures for what they measure. The MYRIAD study findings suggest that OFSTED*
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should prioritise school climate and student wellbeing. Both of these have also, in other research been linked with other important school outcomes, including academic attainment.’

_Liz Lord, Schools Liaison for the MYRIAD project at the University of Oxford_

5. Among young people, one size doesn’t fit all. **It is likely that different approaches will be needed for different young people, and indeed in different schools.** Perhaps young people might learn key life skills best through what they like and are already doing: friendship, sport, music, gaming ... Future research should consider our finding that among young people, one size does not fit all, and explore different support systems for different groups of young people.

6. **Mindfulness skills are associated with mental health, but we need a different approach to enabling young people to learn these skills and apply them in their lives.**

>“The findings from MYRIAD show that the idea of mindfulness doesn’t help – it’s the practice that matters. If today’s young people are to be enthused enough to practice mindfulness, then updating training to suit different needs and giving them a say in the approach they prefer are the vital next steps.”

_Mark Williams, Emeritus Professor of Clinical Psychology, University of Oxford_

7. **It is likely that if interventions are co-designed with young people, they will be more accessible, engaging and effective.** We need to rethink who teaches these programmes and develop teacher selection and training that helps young people to learn these skills, and motivates them to continue these skills in their lives.

All the key papers are available as open access papers [here](#).