pursuit

PILOT OF HEADTEACHER HEART HEALTH PROGRAMME

for members of the EPHA Executive

"I don't go home broken any more."

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November, 2021

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Foreword

The unprecedented demands of the last eighteen months have greatly increased Headteachers' stress levels, so there is a need to find practical, cost-effective, evidence-based solutions in order to protect and sustain this vital workforce.

Many believe that disruption necessitates grit; that we just have to 'push through' until the storm passes. However, evidence shows that 'gritting through' challenge ultimately impedes performance, wastes time and resources, and can dangerously impact health.

While Headteachers may know that stress negatively impacts their health, many don't have evidence-based tools to address this efficiently or effectively.

The purpose of this pilot was to assess the effectiveness of the Pursuit *Headteacher Heart Health* programme at a time of critical need.

We would like to thank Pam Langmead and the EPHA Executive for their support and collaboration in carrying out this very successful pilot programme.

Maria Brosnan and Dr. Carla Stanton
November, 2021.

Executive Summary

In order to assess the effectiveness of the *Headteacher Heart Health* programme, a pilot was carried out in partnership with Essex Primary Headteacher Association (EPHA) from June 2021 to November 2021. The programme was rolled out to 12 participants from the EPHA Executive, recruited on a voluntary basis.

The programme is built on the understanding that psychological stress is now a well-established health risk factor, and is an independent risk factor for coronary heart disease (Wirtz and von Känel, 2017).

Key findings

1. **By November 2021, stressors remained extremely high in schools.**

At the start of the academic year many had hoped for a gradual reintroduction of accountability measures and a more 'normal' return to life following the pandemic, however this did not happen and as well as coping with the strains of the pandemic, the majority of participants had very significant ongoing issues in school, from serious HR, legal and staffing concerns to safeguarding, catering for children with serious SEND concerns to parental issues and complaints. Many also had significant life events happening outside school including divorce, serious family illness or other important family issues. It was noted that Headteachers in small rural schools face extreme and unique stressors:

> *"I'm so tired, exhausted, and fed up. The crisis is taking its toll."*
>
> *"I can feel cold hard tendrils of anxiety."*
>
> *"People haven't seen my inner emotional state - my inner turmoil."*

Relationships with Chairs of Governors have a crucial impact on Headteachers, and can be a considerable support or stressor. Perceptions of support from the Local Authority varied greatly while support from EPHA was consistently considered excellent.

2. **Reducing stress levels positively impacts overall health and wellbeing.**
   We used three measures to assess this:
   a. A scientifically validated health questionnaire used pre- and post-pilot (PROMIS-29).
   b. Physiological Data from the Heart Rate Variability biofeedback technology.
   c. Qualitative data from pre- and post-pilot interviews.

All participants found the practical tools provided by the programme all the more pertinent during a time of intense and ongoing challenge and change and given the immense pressure Headteachers were under at the time, the positive rate of engagement across the cohort throughout the programme was encouraging. Feedback from participants showed that there was a clear understanding of the value of the programme:

> *"I can honestly say it helps. My heart rate on average was 110/120. It's down to 88 now."*

“It has given me strategies to deal with day-to-day stress and be able to manage it appropriately.”

“The Heart Health Programme really does make a tangible difference to how I am able to deal with the many challenges I face on a daily basis.”

3. **The use of scientifically-validated tools and training makes it possible to efficiently, effectively and rapidly reduce stress in the midst of relentless challenge and change.**

   Participant feedback was overwhelmingly positive. All participants commented that the programme had met or exceeded their expectations. The structure and content of the course received high praise and brought tangible, lasting change to participants’ lives. The average wellbeing score of all those who completed the course increased by 16%.

   “It has been really useful [to have] tools to use to improve my wellbeing. I have found that I am able to recognise triggers that could instigate a negative mindset and in turn, inconsistent heart rates. I now have strategies to use in my day to day life to keep my heart healthier and lower my heart rate when triggered by a stressful situation.”

   “Heart Health has been a really welcome opportunity to explore my stress response, understand the physiology and start to make some positive changes to manage pressures in a healthier, more positive way.”

   *“I have used your general strategies and coherent breathing a lot….**At the end of last term I was going to leave as the stress had overwhelmed me, however I am still here and am managing so much better.”***

Section 1 Introduction

1.1 Context

The overall wellbeing score (WEMWBS score) for education professionals in the UK remains significantly lower than the score for the general population (Teacher Wellbeing Index 2020). The impact has been felt nationally. Concerns about the recruitment and retention of Headteachers have reached crisis levels, as 89% described themselves as 'stressed' and 59% have considered leaving the profession in the last 2 years.

When discussions about the pilot began with Pam Langmead, Professional Officer of EPHA in May 2021, the interruptions and pressures caused by the pandemic measures had already taken a heavy toll on the health and wellbeing of educators across the county. Headteachers had borne the brunt of the responsibility and many were showing severe signs of stress.

With this evidence in mind, we recognised not only the likely increased risk of heart disease within the cohort of current Headteachers, but more importantly, an opportunity to address this risk with a viable solution. The proposal from Pursuit to the Essex Primary Headteacher Association (EPHA) was to pilot the Pursuit *Headteacher Heart Health* programme. This is a practical, research-driven programme designed to specifically address the key issue of heart health, as heart disease is the number one cause of death in the UK and globally. The objective was to assess the efficacy of this programme with twelve Headteachers across fourteen primary schools in Essex.

We designed a pilot programme specifically for Headteachers consisting of four sessions delivering evidence-based tools and techniques, with the main focus on understanding and reducing stress. The sessions could be for individuals or small groups of 6-8 participants.

We proposed that by the end of the four sessions, participants would be able to:

- Reduce anxiety, panic, stress or overwhelm, through the application of scientifically validated self-regulation techniques.
- Reduce the impact of stress before, during, and after a difficult conversation or challenging situation.
- Improve their ability to problem-solve and communicate effectively in the face of challenge, thus improving relationships.
- Improve the quality of sleep and general feelings of wellbeing.

1.2 What the evidence shows

Psychological stress is now a well-established health risk factor, and is an independent risk factor for coronary heart disease (Wirtz and von Känel, 2017).

Research using biofeedback technology shows that by learning scientifically validated self-regulation techniques, 'frontline workers can learn to quickly mitigate the detrimental impact of stress, thereby enhancing their physical, mental and emotional health over time' (Buchanan *et al*., 2019).

The positive impact of such approaches are well established, several of which are outlined below:

- Increased calmness and wellbeing (McCraty, 2015).
- Reduced blood pressure in hypertension (McCraty *et al*., 2003).
- Increased emotional stability and cognitive performance (McCraty, 2005).
- Increased functional capacity in patients with heart disease (Luskin *et al*., 2002).
- Reduced stress and anxiety (Ratanasiripong *et al.,* 2012).
- Increased employee life satisfaction, blood sugar levels, and markers of cardiovascular inflammation (Lord *et al*., 2019).
- Increased ability to effectively address incivility in the frontline working environment (Clark and Gorton, 2019).

1.3 Biofeedback technology

Biofeedback has repeatedly been shown to improve outcomes when undertaking wellbeing interventions (Lemaire *et al*.,, 2011). This is a process whereby real-time technological monitoring of a normally automatic physiological function is used to train a participant to improve their voluntary influence on that physiological function, thus enhancing their performance in a measurable way.

Lightweight biofeedback devices were used to assess the real-time heart rhythms of participants, providing them with instant feedback about their physiological stress in each moment. These were worn for short periods of time (3-10 minutes per day). Through the application of the scientifically validated techniques taught on this course, participants could use the technology to guide themselves back to a state of greater physiological order, calm and wellbeing, and objectively measure their ability to do this.

Section 2 Pilot Rollout

2.1 Participating Headteachers

The twelve Headteachers participating in the pilot represented all primary key stages. These Heads were self-selecting; within hours of an email from EPHA to the 35 members of the EPHA executive inviting them to express interest in participating in this pilot, all twelve places had been filled.

2.2 Pilot launch for participants

As part of the programme, all participants:

- Were invited to an introductory 1-to-1 interview to assess and document their individual circumstances. This session focused on their personal, professional and physical challenges, opportunities and strengths.
- Completed an initial online assessment based on the clinically validated questionnaire tool *PROMIS-29*.
- Received an *'Inner Balance'* portable biofeedback device linked to a phone app. With this technology, which measures the beat-to-beat changes in heart rhythm, known as HeartRate Variability (HRV), they were asked to take a 5-minute measurement of their heart rhythms during a natural 'resting' state, to serve as a baseline physiological measurement prior to the intervention.
- Were divided into two groups by the organiser:
    - five participants received 1:1 coaching with Maria
    - seven received group coaching with Maria.
- Were offered 4 coaching sessions;
    - There was 100% attendance in the individual coaching sessions; and
    - 86% attendance in the group coaching sessions.
- Were invited to a final 1:1 wrap-up session at the end of the pilot to answer a questionnaire; complete a final clinical PROMIS-29 assessment; and take a final HRV (heart rate variability) baseline, as described above. Those who could not attend completed this debrief online.

Figure 2.1 Inner Balance, Biofeedback sensor and phone app

2.3 The programme

The programme is made up of a unique combination of three core components:

1. Biofeedback technology.
2. Coaching (1:1 or group).
3. Education, specifically about the autonomic nervous system (ANS), the stress response and how this affects the heart.

2.3.1 The technology

The Inner Balance biofeedback technology and app by HeartMath was one of the three core components of the programme. The device captures data specifically about Heart Rate Variability (HRV), Coherence and Autonomic Nervous System (ANS) function.

Heart Rate Variability (HRV) is a measure of the variation in time between each heartbeat. It is now a well-established biomarker for health, reducing by an average of 3-5% per year. An abnormally low HRV relative to one's age is a strong and independent predictor of future health problems, including all-cause mortality (Tuomainen *et al*., 2005), and multiple studies have demonstrated that low HRV is associated with a range of risk factors for heart disease and stroke, including inflammation, hyperglycemia, hyperlipidemia, and hypertension (Jarczok *et al*., 2019).High HRV is positively correlated with increased health and longevity, whilst low HRV is associated with an increased risk of cardiovascular disease and mortality.

The Inner Balance devices measure the participants' heart rhythm 125 times per second, creating a very accurate real-time assessment of participants' physiological status in the moment as it pertains to stress, as well as their ability to induce changes in their physiology. This physiological data harnesses the phenomenon that the heart does not beat like a metronome; it is constantly changing in rhythm depending on the stressors taking place within the brain and body, and is therefore a real-time indicator of stress and resilience.

Cardiac Coherence in this context is the optimal state of physiological balance of the autonomic nervous system: the system that regulates all biological processes within the body, and governs the stress and relaxation response. A coherent heart rhythm pattern is indicative of a nervous system that can effectively adapt to and recover from stressful situations by restoring optimal physiological balance and homeostasis, which is essential to wellbeing and performance.

Greater coherence generated through practices, such as those shared on the programme, have been associated with improved blood sugar levels, reduced markers of cardiovascular inflammation (Lord *et al*., 2019) and blood pressure (McCraty, 2005), as well as increased functional capacity in patients with heart disease (Luskin, 2002), and improved calmness and wellbeing (McCraty *et al*., 2003).

We taught participants specifically how to identify three states of the **Autonomic Nervous System** (ANS): Ventral vagal (regulated, calm and connected), Sympathetic arousal (fight or flight response) or Dorsal vagal (freeze or collapse response). The Inner Balance demonstrates and measures the balance between these three parts of the ANS.

Biofeedback technology performs three vital functions. It can:

1. Demonstrate physiological stress in real-time.
2. Guide the participant back to physiological states of calm and wellbeing in a very short space of time.
3. Provide the participant with an objective measure of their ability to do this.

A simple wheel graphic guides the users and acts as a breathing pacer. Red, blue or green colours indicate the levels achieved, with green indicating high levels of coherence and red indicating low levels. This tool has been shown to **increase self-awareness** and thus **encourage self-regulation** using a guided technique, and is thus one of the most efficient ways of dealing with stress in the moment.

Figure 2.2 Inner Balance breathing pacer and coherence indicator

In between the live sessions, participants were invited to practise daily with the Inner Balance device. This started at 3-minutes per day at the beginning of the programme, progressing to 10 minutes per day by session three.

2.3.2 Coaching

Individual coaching sessions typically lasted for an hour when Maria took participants through the education aspect of the programme, coaching them through specific practices and methodologies. The nature of the coaching was personal, in-depth and tailored to the individual.

Group sessions were ninety minutes and covered the same material as for the 1:1 participants although they were, by nature, less personal and more collaborative. All coaching was carried out during the working day.

2.3.3 Education

This third core component focused on explicitly teaching participants the risks of stress and the impact it has on heart health. We educated Headteachers on the role the autonomic nervous system plays in stress and recovery, as well as self-awareness exercises and scientifically validated techniques to influence it in a positive way.

Section 3 Evaluation

3.1 Overview of completion rates and timing

Given the timing of the pilot, the high engagement rate (100% attendance in 1:1 coaching sessions, 86% attendance in group coaching sessions) was encouraging.

Evaluation comments gave us several valuable insights:

- How people were feeling at the end of June, fifteen months into the pandemic. This showed up most clearly in the introductory interviews where most people expressed their complete exhaustion.
- How valuable a good break is, but also how much people rely on holidays to recover as they 'grit through' term time.
- How much of a 'roller coaster' the typical academic year is, in terms of stress. This was a key part of the education aspect of the programme, where we continually referred to the 'stress/performance curve', and methods of disrupting this unhelpful cycle.

These insights suggest that this is a programme best completed over a ±12 week period, with approximately 3 weeks between each coaching session to embed the practices. We recommend that this programme would be most effective if carried out outside of school holidays, although it could be very helpful for people to practise over breaks from work.

3.2 Impact metrics

Before starting the programme, we invited participants to take a baseline wellbeing questionnaire based on a scientifically validated clinical assessment tool called PROMIS-29 (Patient-Reported Outcomes Measurement Information System), which measures a spectrum of health-related domains through 29 simple questions. In this case a higher score reflected a greater level of function and wellbeing. Figure 3.1 shows the change in these scores between starting and finishing the course, for the 10 participants who completed the programme.

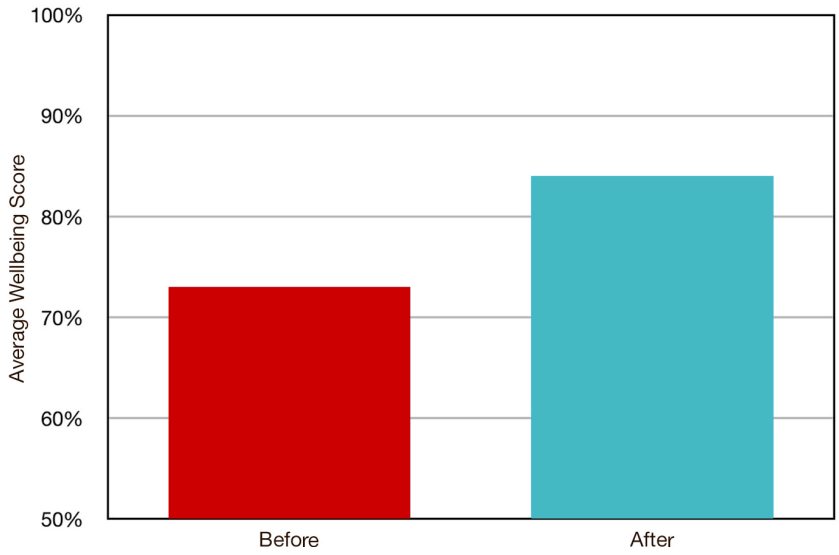


Figure 3.1 Change in wellbeing scores for completing participants

The average score before starting was 109/150 (73%), and increased by an average of 16% to 126/150 (84%) following the intervention, demonstrating a significant impact to wellbeing as a result of completing the programme.

Using the PROMIS-29 data, we decided to further investigate thirteen stress-related symptoms. In this case, a lower score reflected a greater level of physiological function and wellbeing.

Nine participants completed wellbeing questionnaires at the beginning and end of the programme. Figure 3.2 shows the thirteen stress-related symptoms captured on the questionnaire before and after the intervention. In this case, a lower score reflects a greater level of physiological function and wellbeing. For all thirteen categories, the responses demonstrate a significant improvement in cumulative scores for the participants who completed the questionnaire.

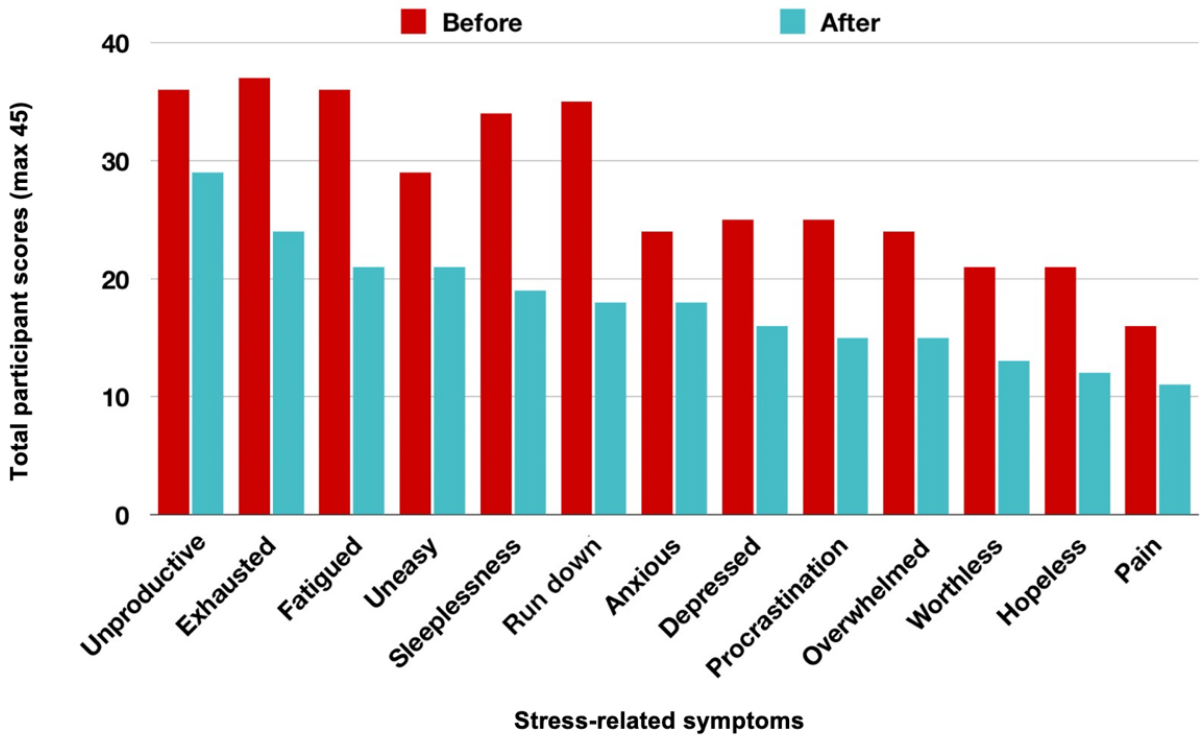


Figure 3.2 Changes in stress related symptoms from validated PROMIS-29 questionnaire data n=9

3.3 Participant feedback

3.3.1 Overall satisfaction

We asked participants whether the course had met their expectations. All participants answered that the course had either met or exceeded their expectations (Figure 3.3).

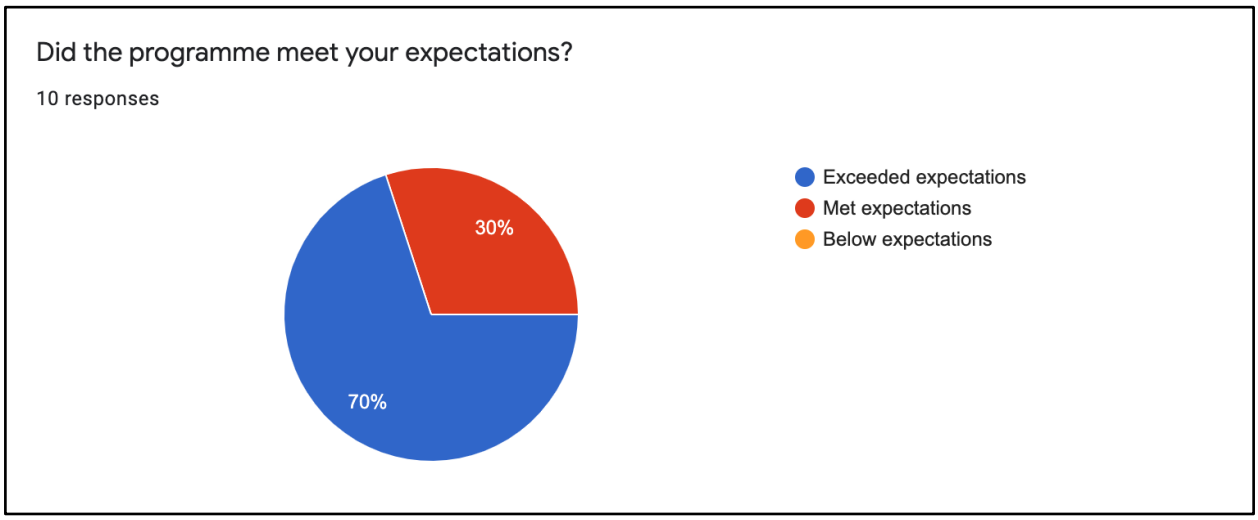


Figure 3.3 Satisfaction with the programme

As well as gathering numerical data on completion rates, impact on wellbeing scores, and overall satisfaction, we gathered a large body of qualitative feedback from participants.

3.3.2 One thing: the most significant benefit of the programme

We asked participants to identify the 'one thing' they would take from the course and continue to use. The vast majority of participants referred to the breathing techniques as most beneficial. Here are some direct quotes from participants:

- *"Knowing that I can control stress with self-regulation"*
- [Knowing] *"when I am aware that I am at increased levels of anxiety and in particular when feeling flight or fight."*
- [Feeling] "*better for the health of my heart."*

Other comments included:

- *"Increased awareness of time and of boundaries."*
- *"Calming myself and taking time to slow down."*
- *"The knowledge of the link between the nervous system and heart rate variability. Using the heart rate monitor how quickly I can now get coherence."*
- *"The one thing I'll continue to do is check in with myself regularly."*

3.3.3 The most helpful aspects of the programme

We asked participants for feedback on what they found most helpful about the programme. The main themes were*:*

- *"Learning about the nervous system and physical symptoms of stress and being able to recognise them. Recognising my triggers for an accelerated heart rate."*
- *"The sessions re-focused me each time and built on and reinforced my understanding of the science behind it. The use of the app and sensor gave me something concrete to do."*
- *"Talking and sharing."*
- *"Having someone to coach you into it, followed up by the checking in sessions holding you to account."*
- *"All of it as a package, especially the science behind it."*
- *"One thing that really resonated with me was the 'story, state, strategy' triangle you showed us, and how much of our challenge comes down to the story we tell ourselves about it. I think about that all the time."*
- *"The breathing exercises and the group sessions."*

3.3.4 The least helpful aspects of the programme

We asked what participants found least helpful in the programme. The majority said they didn't find anything unhelpful, but a couple mentioned:

- *"Not quite understanding the role of the tech (initially)."*
- "*Feeling under pressure to do the sessions - but that's an issue with my engagement not the programme. Also, the struggle to achieve coherence physically (initially)."*

3.3.5 Professional impact

We asked participants how they felt the programme had impacted them professionally. Some mentioned how it helped them to deal with stress:

- *"Regulating stress more effectively. Reflecting on the changes I can make easily to working life."*
- *"By giving me strategies to deal with day to day stress and be able to manage it appropriately."*

Similarly, participants commented on being able to use the techniques to help them 'feel calmer':

- *"I catch myself on occasions at work when I practice the deep, focused breathing which I didn't do before."*

The course also helped Headteachers to look at their own wellbeing, which has resulted in a 'better quality of life':

- *"It's given me 'permission' to find time to focus on my own wellbeing during the working day - guilt free."*
- *"Having some time during my working day to look after my own health and wellbeing."*
- *"Made me think and reflect on me, my reactions and responses."*

Several commented on the impact more widely on colleagues and that they have shared the techniques with staff and pupils:

- *"Keeping calm and the outward techniques had an impact on my leadership team."*

- *"I'm trying to notice the staff when they're in a different state; to understand but trying not to preach. I say 'just take a breath'."*

- *"I have brought it into staff meetings and explained what I've learned. I did it in an assembly with 210 children all in one go. 'We're all a little bit sparky, so let's just sit here and breathe. This is something I've been doing - we're going to do this 10 times and then we're going to start our assembly.' It was great. Instantaneous quiet. Instantaneous! There was a physical calm. And less fiddling."*

In general the course has given the participants the tools to step back and manage stressful situations:

- *"I think it helped me reframe situations - it allows me to change the tone of a conversation to become more solution focused, particularly in supporting other people's wellbeing as well as your own. That's really helped. I listen better."*

- *"By regulating and having a clearer thought process you can be calmer about your response to those outside agencies that are going to want to come in."*

3.3.6 Personal impact

Given that participants were experiencing personal as well as professional challenges, we wanted to know how they felt the programme had impacted them personally. Their comments indicate:

- Improved relationships
    - *“A healthier life and better relationships.”*
    - *“I've become a bit less reactive; a bit less sharp tempered to try and manage all of the different things going on at home.”*
    - *“This has shifted my day a bit, meaning I go into work earlier and come home earlier and spend more time with the people at home, which is nice.”*
- The importance of taking more care of oneself
    - *“I now make more time for me.”*
    - *“Valuing time and making time for good moments in life.”*
    - *“It's really helped my sleep.”*
- A feeling of greater control over life
    - *“The sessions have made me more aware of my own movement through the different zones and more self-aware.”*
    - *“Realised I can be in control and how to respond to stressors - bringing me back to how I experience the world and how it really is.”*
    - *“A growth of more comfort with oneself - a sense of 'what will be will be’ rather than latching onto anxiety in the house. More resilience and more ability to stop ‘piling in’.”*
- A fuller sense of wellness
    - *“Reinforced the need for a holistic approach to my wellbeing. I have a better understanding of the interconnectedness of things.”*
    - *“Because I do the breathing at home, it sets the tone for the day.”*
    - *“Actually I think it's helped in all kinds of other ways - once you're feeling more positive in yourself the knock on effect makes you more careful and mindful about other things as well like diet and fresh air. Even in the dark in the mornings, I step outside to breathe the fresh air for a few seconds.”*

3.3.7 Physical impact

We asked participants how they felt the programme had impacted them physically. Several mentioned effects on sleep and rest:

- *“Sleep improved, exercise more frequently.”*

- *“It has helped me relax and sleep better and also to make better food choices.”*

- *“Less tired; better sleep; less fatigued. Less racing thoughts.”*

- *“I feel more rested and more energised.”*

Others are now more aware of heart health:

- *“I feel better physically for taking part in the pilot. My heart feels healthier. I feel like I'm back in control of my thoughts and mindset. I have started to lose weight and feel better about myself in general.”*

- *“My heart rate has decreased over the timeframe.”*

or have begun to exercise again:

- *“To consider making more time for physical activity and enjoy the small things in life.”*

- *“I'd stopped regularly exercising and it (the programme) was a factor in kick-starting me back into it.”*

The science behind the course has given some Headteachers greater understanding of physical, emotional and mental health*:*

- *“I feel that I am better equipped to stay in the ventral vagal state for longer and deal with things quicker so that I do not end up in the dorsal vagal state.”*

- *“Exploration of background influences to psychology behind thinking and electrical influence in the body.”*

3.3.8 Understanding of Heart Health

We asked participants if they felt they better understood the risks of stress and the impact it can have on their heart health. All the participants said they did, with additional helpful comments:

- *“I'd like to know more about how it relates to conventional or historical understanding of heart disease.”*
- *“Yes, and my heart rate has decreased over the timeframe.”*
- *“Yes, lots of scientific background shown.”*
- *“Yes, explaining the coherence and looking at the images has explained it.”*
- *“Yes, but I would have liked a bit more, to understand the heart a bit more. I was doing it each day and looking at the data, but I wasn't really sure what the data meant, particularly how I could improve.”*

3.3.9 Suggested improvements

We asked participants how the programme could be ‘even better if...?’ The most common feedback was around timing, *“I would avoid spanning the summer holidays.”* Also:

- *“I would have liked to have the handouts and maybe some pre-session reading in advance.”*
- *“To link the theory with the technology more. i.e. ‘this is what we're trying to do and these are the things to look out for’”.*
- *“I wish it (the programme) was for a longer period of time.”*

3.3.10 Technology: Overall feedback

We encouraged participants to do use the technology at different times of the day, observe the differences in readings, and ideally find a regular time to practise that worked for them. The majority did this, though some practised on an ad hoc basis. We observed that those who took this approach practised less frequently overall. We also asked participants if they felt they understood the technology. The majority said they felt confident about using the technology or became used to it over time:

- *"I found the app and sensor gave me something concrete to focus on."*
- *"I found the technology very useful and it aided me to achieve high coherence."*
- *"Was visual and helpful to see the coherence and heart rate pattern."*
- *"The technology has helped practise the breathing, and I think you need it until you've habitualised it."*
- *"I don't think I would have stayed focused on the breathing without it."*
- *"It was really easy to use; easy to download. It was simple and straightforward."*

However, it is worth noting that a small number either felt they didn't understand it or didn't find it a comfortable practice to start with.

3.3.11 Applying the practices

We asked participants if they had been able to apply the practices they learned, with or without the technology during the day. All responded positively:

- *"Stressful situations can be given distance and time to adapt/react to achieve calm. OFSTED for example: highly stressful time but made more manageable by utilising the breathing techniques to gain clarity of mind."*
- *"I can now achieve high coherence without the technology as I have learnt the strategies."*
- *"Tried it when I encountered challenging situations at the office."*
- *"On occasions when I didn't have the monitor with me I could visualise the breath pacer."*
- *"Sometimes I do it in the car too, and I've done it enough to know what good coherence feels like."*

3.3.12 Coaching

The coaching aspect of the programme was very well received, with many noting how helpful it is to have an independent professional to talk to. All of the coaching was carried out during the working day. Many commented that this took some getting used to and some even felt guilty about taking time out of their day for themselves. They quickly grew to value this time for themselves:

> *"The coaching sessions were really helpful in giving us the strategies to deal with the day to day challenges we face in our profession. A big reminder of how important it is to focus on our own wellbeing and be the best we can be for ourselves and others."*

Those who had 1:1 coaching commented:

- *"I've enjoyed the 1-1 sessions though I wasn't really prepared for the counselling / therapy aspects of the sessions."*
- *"Very informative, not rushed. Maria was very supportive and shared her knowledge and expertise readily to my context. I did not feel this to be 'over academic'."*

- *“I personally would not have engaged in a group sessions. 1:1 is muuuuuuuch better...also includes the therapeutic aspects.”*
- *“One of the interesting elements of this process is you - having someone to hold you to task, a bit like a personal trainer. You can sign up to the gym but you won't get the most of it unless you have someone prodding and poking you and saying get on with it. That's the interesting thing about working with you: having the accountability.”*

The group coaching was equally helpful even if there were some initial concerns:

- *“I wasn't sure I would find the group comfortable but actually felt reassured that we are all pretty much feeling and experiencing the same thing even if from different stimuli.”*
- *“I've enjoyed the group coaching. Our group was great at sharing how we felt, especially when we were going through challenging situations.”*
- *“I enjoyed the experience of the group. It was really helpful to hear what others were saying. It either clarifies your own view or lets you hear what other people are experiencing. It's helpful to know that other people's stressors are similar as well. Or the strategies other people are using. I don't really know those people and it didn't feel uncomfortable at all.”*
- *“I found these sessions beneficial, sometimes it's good to know you're not alone.”*

We concluded that individual and group coaching worked equally well, in different ways. Ideally the choice would rest with the individual. We could consider a blended model too.

3.3.13 Quality of the trainer

We were encouraged by the extremely positive feedback in this category.

- *“Thank you for supporting me through this very useful training. I look forward to seeing how we can apply it with school leaders and disadvantaged learners.”*
- *“Built an environment of trust and a safe place to talk.”*
- *“I have thoroughly enjoyed our sessions and I have learnt a lot about myself, my health and how my job affects my mental wellbeing and physical wellbeing. Thank you for sharing this knowledge with us all and facilitating our sessions together.”*
- *“Very professional and portrayed a calm approach throughout. Very knowledgeable.”*
- *“She is fabulous....very insightful, adaptive questioning and very understanding. Excellent.”*
- *“I've not had a problem in trusting you and the way that you've dealt with things when we touched a nerve and you guided me, and listened to me. You've been excellent and dealt with it all very well, then managed to get us back into the conversation around coherence and heart health.”*
- *“You've been great to work with, right from the start. I felt through you and your facilitating we were able to make good headway quite quickly. It's not the kind of thing you would normally share in a professional context, it's quite personal stuff and your coaching and facilitating was very skillfully done.”*
- *“Very much appreciated the discussions around further psychotherapy options and understanding.”*
- *“I would recommend the course but advise a colleague to do some pre-reading/ research before the first session.”*

3.3.14 Satisfaction with the teaching and materials

As Figure 3.4 shows, all participants rated the teaching and materials either excellent (90%) or good (10%).

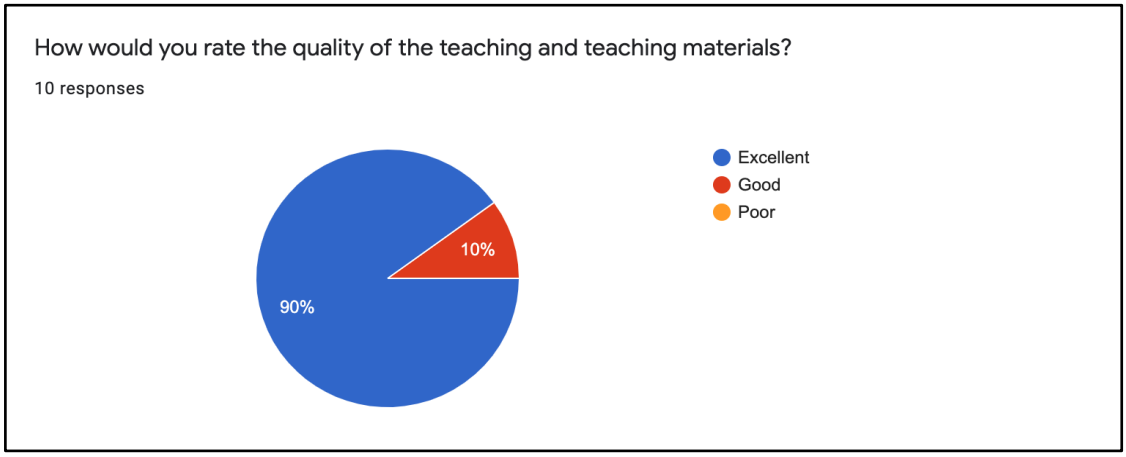


Figure 3.4 Satisfaction with the teaching and materials

3.3.15 Overall feedback

Overall feedback on the programme was overwhelmingly positive. The course was described as *'very enjoyable'* and *'enlightening and refreshing*' and participants described how they have *'benefited greatly'* from completing it.

Participants felt that it both helped them to focus on their own wellbeing, and to support and nurture those around them. Some participants also indicated that the resources included in the programme were helpful to share with the children and at home. Though the course had wide benefits for the participants, the individual and personal nature of the course was praised many times for creating a safe, private space.

Many participants referenced the practical steps and strategies that they have put in place as a result of the programme. The *'scientific background and research behind the programme'* was also highly praised, helping participants to have a greater understanding of their own experience.

Finally, the programme structure received positive feedback. Generally, participants felt that the structure worked well, and that the combination of technology, coaching and education was unique and powerful.

As we have discussed elsewhere in this report, the only criticism of the programme was its timing within this specific pilot, at a time when some participants had conflicting priorities. Those who did complete the course felt that it was of benefit, particularly within this context.

Section 4 Physiological data

4.1 Analysis of physiological data

Physiological data was taken throughout the intervention to gain insight into the 'heart health' status of participants, and objectively measure any changes that took place.

4.1.1 Heart Rate Variability (HRV) data

There are several ways to calculate HRV, so we selected a measure called RMSSD (root mean square of successive differences between normal heartbeats) because it has been proposed as a novel marker of cardiovascular risk in recent literature (Jarczok *et al*., 2019). We measured the HRV of the participants at the beginning and end of the study, to generate an objective way of measuring any sustained physiological changes that might have occurred as a result of the intervention.

The HRV data was collected as follows:
Participants were asked to sit quietly for 5 minutes with the device measuring their heart rhythms, and were instructed specifically not to 'try' to do anything; they were asked to keep their eyes open, and just to sit quietly as if they were waiting for a bus. Only four participants of the twelve were able to complete this task, but as Figure 4.1.shows, in all four cases, the HRV increased significantly by over 200% on average.

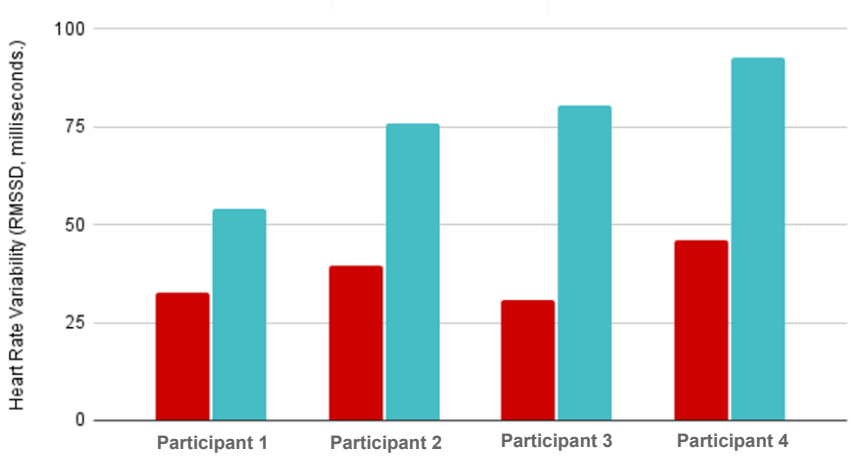


Figure 4.1. Changes in Heart Rate Variability (HRV) per Headteacher

Given that HRV is a sensitive marker and predictor of heart health and wellbeing, this data (albeit from a small cohort) is very compelling.

4.1.2 Cardiac coherence data

Cardiac coherence is a measurement of the regularity of the heart rhythm, and is also highly clinically significant. The more uniform the heart rhythm cycles, the greater the coherence, which reflects optimal balance of sympathetic and parasympathetic outflow and DHEA: cortisol levels (McCraty, 2015).

During the course of the five month pilot, Headteachers were taught various self-awareness exercises and validated techniques which have been shown to improve cardiac coherence.

They were encouraged to wear the biofeedback devices whilst practising these techniques throughout the intervention for five minutes or more once a day.

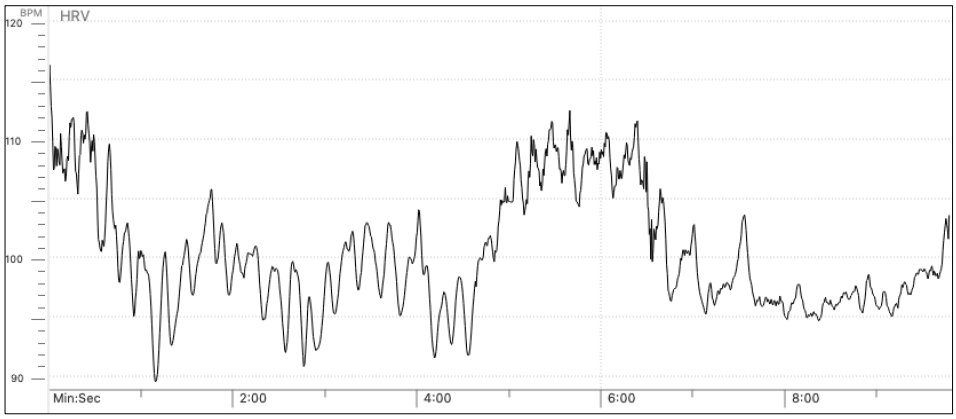
At the end of the study, we calculated the average coherence of the first 10% of all practice sessions, and the final 10% of all practice sessions for each participant, to assess any changes in cardiac coherence before and after the intervention. Encouragingly, of the 10 participants who engaged regularly with the technology, there was an average increase in cardiac coherence of 25%.

4.1.3 Other heart health changes noted

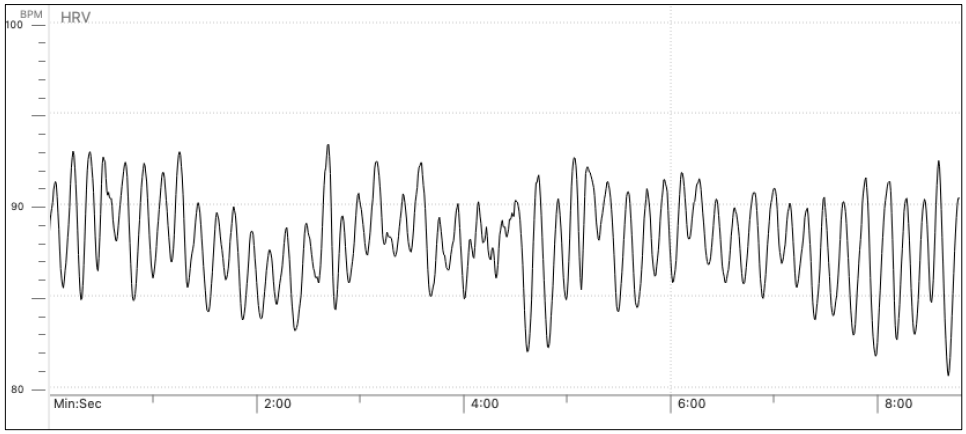
Anecdotally, one of the participants who participated in the pilot was a 46-year-old Headteacher new to his school, Mr LL. In his intake interview, he shared that he had always had a high average heart rate (around 110-120 bpm, as measured by his Fitbit device). He informed us that this had been investigated by various cardiologists and nothing physically had been found to explain this anomaly. Given that the heart's rhythms are a real-time indicator of stress, we hypothesised that if Mr LL were to do the self-regulation practices frequently, he may be able to reduce his resting heart rate over time.

This proved to be the case, as his Fitbit following the intervention reported an average heart rate reading of 88 bpm. Figure 4.2 shows his heart rhythm recordings taken from the biofeedback technology during two practice sessions, one at the beginning of the programme, and the other, at the end of the intervention. After the intervention his heart rate (indicated by the y-axis) significantly dropped, his cardiac coherence (regularly of rhythm) improved, and his heart rate variability (the variation in heart beats over time) also increased.

Figure 4.2 Mr LL's Heart rhythm recordings before and after the programme



Before intervention



After intervention

Section Five Summary of pilot outcomes and recommendations

We know that psychological stress is a well-established health risk factor, and is an independent risk factor for coronary heart disease (Wirtz and von Känel, 2017).

Research shows that self-care and self-compassion are strongly correlated with fewer mental health symptoms; reducing the severity of symptoms of stress, anxiety and depression, and increasing overall health and happiness (Van Dam *et al*., 2011).

Whilst it is clear that Headteachers are experiencing extreme and sustained pressure, it is critical that they receive the support they need NOW, or there is a very real risk and associated costs of increased sickness, absence, burnout, or large numbers leaving the profession adding to the already heavy burden of costs in recruitment and retention.

There has never been a more urgent need to support Headteacher health and wellbeing. It is clear, both from the qualitative and quantitative data that this programme is tangibly helping to do this. As a result of completing this course participants felt better in themselves, were able to put concrete strategies into action to improve their wellbeing, and were able to positively influence the wellbeing of those around them – staff and pupils.

As a result of the striking physiological and qualitative findings, we strongly recommend a larger scale rollout of the Heart Health programme, which has the potential to significantly improve measures of quality of life as well as heart health and wellbeing for Headteachers.

A future rollout of the programme should be based on:

1. **An approach specifically for leadership:** Offering a programme of support specifically for Headteachers' heart health and overall wellbeing is critical right now. Once this is established, building a culture of wellbeing across the school might help mitigate feelings of 'this is not important' or 'I should be doing something else.'

2. **A regular, unpressured schedule:** Most participants did the practices 'occasionally' as time allowed. There is clearly a delicate balance to strike between offering support but not pushing it. Frequency of doing the work was important but hard to manage. We would recommend that participants schedule regular time without pressure. This would ensure a clear message that the benefits of the practices will pay dividends on the time invested in doing them.

3. **Continuing support:** Since the programme was very well received and highly beneficial, we would suggest an on-going programme of support so as not to lose the momentum of the programme. This could take the form of continued 1:1 or group coaching or regular half-termly check in or group-coaching session.

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