

Mindfulness-Based Stress Reduction (MBSR) for Primary School Teachers

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Abstract Stress within the teaching profession has a negative impact on the health and well-being of individual teachers and on retention and recruitment for the profession as a whole. There is increasing literature to suggest that Mindfulness is a useful intervention to address a variety of psychological problems, and that Mindfulness-Based Stress Reduction (MBSR) is a particularly helpful intervention for stress. We investigated the effects of teaching a MBSR course to primary school teachers to reduce stress. The MBSR course was taught to a group of primary school teachers and evaluated to establish its effects on levels of anxiety, depression, and stress, as well as movement towards a stated goal and changes in awareness. The results showed improvement for most participants for anxiety, depression, and stress, some of which were statistically significant. There were also significant improvements on two of the four dimensions of a mindfulness skills inventory. These results suggest that this approach could be a potentially cost-effective method to combat teacher stress and burnout.

Keywords Mindfulness · Stress management · Teacher burn-out · Emotional literacy · Meditation

Introduction

There is an increasing need in many walks of life to manage stress, both to reduce mental illness and to improve health, happiness, and effectiveness at work. Within the field of education, several studies have explored the increasing levels of stress that teachers experience, the consequences on their health and careers, and ultimately on retention and recruitment (Bowers 2004; Howard and Johnson 2004; Kyriacou 2001).

Many approaches have been applied to maintaining health and reducing stress in a variety of settings. Some major approaches include cognitive behavioural therapy (CBT; Butler and Hope 2007; Gyllensten and Palmer 2005), computerised cognitive behavioural therapy (Eisen et al. 2008; Grime 2004), physical relaxation-based interventions (Ponce et al. 2008), and exercise-based regimes (Johansson et al. 2008). Mindfulness-based approaches are being recognised as effective ways to establish and maintain health and well-being (Baer 2003; Brown and Ryan 2003; Williams et al. 2001). Dialectical Behaviour Therapy (DBT; Linehan et al. 1999) is an established intervention, which incorporates specific forms of mindfulness training. Acceptance and Commitment Therapy (ACT; Hayes et al. 2004) also includes aspects of mindfulness. Mindfulness-Based Cognitive Therapy (MBCT; Segal et al. 2002) has been developed for the prevention of depressive relapse with efficacious results (Kuyken et al. 2008; Ma and Teasdale 2004).

Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn 1990) is a widely disseminated and frequently cited exemplar of mindfulness training. For example,

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Kabat-Zinn et al. (1985) reported improvements in pain, body image, activity levels, medical symptoms, mood, affect, somatisation, anxiety, depression, and self-esteem. Other studies have demonstrated benefits in helping people cope with many problems, including chronic pain (Kabat-Zinn et al. 1987), fatigue (Surawy and Roberts 2004), stress reduction (Astin 1997; Chang et al. 2004), various forms of cancer (Smith et al. 2005), heart disease (Tacon et al. 2003), type-2 diabetes (Rosenzweig et al. 2007), psoriasis (Kabat-Zinn et al. 1998), and insomnia (Yook et al. 2008). This research gives some indication of how MBSR can help people to cope with the impact on their lives, of various conditions and stressors.

MBSR is based on training attention through straightforward, secular, meditation techniques. It seeks to change our relationship with stressful thoughts and events, by decreasing emotional reactivity and enhancing cognitive appraisal (Teasdale et al. 1995). Our study investigated the first of a planned two-part project: (1) training teachers to be more mindful; and (2) using these teachers to teach mindfulness (using child-focussed methods) to their pupils. We reasoned that if mindfulness training proves beneficial for teachers, this would be worthwhile whether or not the teachers subsequently taught mindfulness to their pupils.

Methods

Participants

Participants were recruited from local suburban primary schools. Teachers were offered a short presentation on the background to Mindfulness, some evidence for its use in stress management and short meditation practices similar to those on the program. Nine qualified teachers and two teaching assistants from six local primary schools were recruited. Detailed demographic information was not collected. Of the eleven participants, one was male, with ages ranging from late 20 s to late 50 s. Participants were self-selected and all identified themselves as experiencing stress. None of the participants had any current medical or mental health difficulties that justified exclusion from the course, and none had any previous experience of meditation. Data from one participant are omitted, as this person did not provide post-course data.

Measures

To measure emotional status and stress levels, course participants completed the Depression Anxiety Stress Scales (DASS21; Henry and Crawford 2005; Lovibond and Lovibond 1995) before and after taking the MBSR course. DASS21 yields three psychometrically separate factors

(depression, anxiety, and stress) and has good overall reliability ($\alpha = .93$). Henry and Crawford (2005) also reported subscales to be reliable measures of depression ($\alpha = .88$), anxiety ($\alpha = .82$), and stress ($\alpha = .90$). Normative data were based on a large UK sample ($N = 1,794$) of 18 to 91-year olds (Henry and Crawford 2005).

The Global Problem scale item from the *Fear Questionnaire* (Marks and Mathews 1979) was utilized. Participants were asked to identify their main problem and rate its severity on a scale from 0 to 8. The related Main Goal scale was also used, with each participant required to define a Main Goal pre-intervention and rate percentage of achievement post-intervention.

The Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al. 2004), a 39-item self-report mindfulness measure, was used to evaluate how far an MBSR course enabled participants to become more mindful, and on which dimensions of mindfulness. The KIMS has adequate convergent and discriminant validity with other relevant constructs, good content validity, and internal consistency with alpha coefficients of between $\alpha = .83$ and $\alpha = .91$ for the four subscales (Baer et al. 2004). Administering the KIMS before and shortly after the MBSR course, we hoped to detect any changes on 4 subscales relating to mindfulness: Observe, Describe, Act with Awareness, and Accept without Judgement.

Intervention

Participants undertook an 8-week course taught by the first author, a psychotherapist registered with United Kingdom Council for Psychotherapist, an experienced MBSR teacher trained by staff from the Centre for Mindfulness Massachusetts. Participants were given information about the course and the importance of taking responsibility for their own well-being throughout the course. The course teacher was available by telephone or e-mail for support in between weekly sessions, and any participant who unexpectedly failed to attend was contacted. The course was delivered immediately following the school day, as 8×2.5 -h weekly sessions, including a 5-h 'silent day' conducted on a Saturday between weeks 5 and 6. Examples and discussions were drawn from the participants' working life in primary schools. The course syllabus closely followed those described by Kabat-Zinn (1990).

Results

Descriptive Statistics Pre- and Post- MBSR Training

Table 1 presents the participants' pre-training DASS scores. It shows that most teachers were suffering from

Table 1 Pre-course scores on depression anxiety stress scales (DASS)

Participant code	Depression	Anxiety	Stress
1	<i>16</i>	<i>18</i>	<i>26</i>
2	<i>10</i>	<i>6</i>	<i>16</i>
3	<i>10</i>	0	2
4	<i>12</i>	<i>6</i>	14
5	<i>14</i>	<i>10</i>	14
6	<i>32</i>	<i>14</i>	<i>26</i>
7	<i>16</i>	<i>20</i>	<i>28</i>
9	<i>14</i>	0	<i>26</i>
16	<i>10</i>	<i>6</i>	<i>6</i>
17	<i>22</i>	0	14
Summed scores	156	80	172
Group means	15.6	8.0	17.2
Range	10–32	0–20	2–28

The maximum possible score on each scale is 42. Scores above the normal range are in italics

Table 2 Post-course scores on depression anxiety stress scales (DASS)

Participant code	Depression	Anxiety	Stress
1	4	2	6
2	<i>12</i>	0	12
3	<i>16</i>	<i>20</i>	14
4	8	2	14
5	6	0	8
6	0	0	0
7	4	6	14
9	2	6	10
16	2	4	10
17	2	0	2
Summed scores	56	40	90
Group means	5.6	4.0	9.0
Range	0–16	0–20	0–14

Scores above the normal range are in italics

significant emotional distress. All scored above the threshold for depression, five being in the mild range. Eight scored above the clinical cut-off on either two or all three subscales with several of these falling within the severe or extremely severe ranges. Second, for some participants, this distress was associated with self-reported impairments of motivation, self-confidence, and concentration.

Table 2 presents the participants' post-training DASS scores. It shows that most participants' DASS scores improved following the MBSR intervention. One person scored as more distressed due, in part, to personal and not work-related reasons. Only four participants, however,

Table 3 Changes from pre- post course scores on DASS ($N = 10$)

Participant	Depression	Anxiety	Stress
1	-12	-16	-20
2	+2	-6	-4
3	+6	+20	+12
4	-4	-4	0
5	-4	-10	-6
6	-32	-14	-26
7	-12	-14	-14
9	-12	+6	-16
16	-8	-4	+4
17	-20	0	-12
Sums of. changes	-96	-42	-82
Mean changes	-9.6	-4.2	-8.2
Range	-32 to +6	-16 to +20	-26 to +12

scored within the clinically significant range on any subscale, and two of those only as mildly stressed. Table 3 shows shifts from clinically significant distress to normal levels.

With regard to severity of personally troubling problems, Tables 4 and 5 shows that all participants but one identified a main problem, and the mean severity (4.8) corresponded to the descriptor "Definitely disturbing/disabling". One participant, who did provide data on other measures, did not do so on the Main Problem and Main Goal, despite being reminded to do so. Unfortunately due to a misunderstanding, we did not record the change on this measure after the course, but the main goals identified were almost all directly related to the main problems and, on average, participants reported that they had progressed 60% of the way to their main goals.

Statistical Analyses of DASS and KIMS Scores Pre- and Post-MBSR Training

Pre- to post-training changes in DASS scores were analysed using the Wilcoxon Signed Ranks Test (Wilcoxon 1945). The improvements on depression and stress were significant ($p = .02$ for Depression; $p = .05$ for Stress) while the group's improvement on Anxiety was not statistically significant.

The Wilcoxon Signed Ranks Test was also used to assess whether there was a significant difference between pre and post scores on the Kentucky Inventory of Mindfulness Skills. As Tables 4 and 5 shows, taking all participants into account, the factors of: *Accept without Judgement* and *Total KIMS* were significantly higher post MBSR. There were improvements on the other factors, but these did not reach significance.

Table 4 Main problem and goal measure

Participant	Main problem (specified pre-course)	Disturbing/ disabling (0–8)	Main goal (set pre-course)	Goal achievement post-course (0–100%) (%)
1	Too many things in my head and not enough time to deal with them	6	To be able to prioritise more effectively and actually deal with issues without letting other issues intervene	80
2	Trying to do too many things at once	3	To learn to say ‘no’ to people and manage time better	50
3	[Omitted for reasons of confidentiality]	3	[Omitted for reasons of confidentiality]	100
4	[Omitted for reasons of confidentiality]	8	Relaxing and coming to terms with this	30
5	Inability to think through a problem—e.g. planning logically and to feel I’ve ‘covered all the bases’	6	To be able to think through a task and feel I’ve covered all eventualities	80
6	Lack of reward from working in school. Feeling of pressure to work in ways that are against children’s best interests. No control over direction and purpose of work	7	Improvement in self-esteem and feelings that what I am doing is appropriate and worthwhile	90
7	Lack of belief in my abilities, fear of the unknown	3	Quiet confidence in myself, stop putting off doing things	50
9	No relaxing time, always on the go, too much to do, never stop trying to succeed at everything etc.	4	Not to be so bothered about fitting it all in	60
16	[Omitted for reasons of confidentiality]	3	[Omitted for reasons of confidentiality]	0
17	No data			
Mean		4.8		60
Range		3–8		0–100

Discussion

This small initial study focused on stress, depression, and anxiety within a self-selected sample of primary school teachers. The results showed that most teachers were suffering from emotional distress. All scored above the clinical threshold for depression, with eight scoring in the clinically significant range on two or all three subscales. The distress of some participants was associated with self-reported impairments of motivation, self-confidence, and concentration. Due to the small sample size, it is not possible to draw generalisable conclusions as to whether the sample itself was atypical, or whether teachers in English primary schools are a distressed occupational group.

Most participants experienced reductions in stress, depression, and anxiety as a result of participating in the MBSR course, as shown by changes in the DASS scores. Post-intervention, only four scored within the clinically significant range on any subscale, with two of those only as mildly stressed. One participant reported more anxiety and stress at follow-up, despite achieving their personal goal and feeling that the course had been helpful. This may be explained by life events occurring during the course and could have been independent of it. All other participants

improved. These findings broadly reflect others’ findings about the effectiveness of MBSR as a stress management strategy (Baer 2003; Brown and Ryan 2003; Williams et al. 2001).

Despite the KIMS scale scores showing marked increases in mindfulness on all 4 factors, only the increase in *Acceptance without judgement* yielded a statistically significant effect. However, *Observe* did demonstrate a positive trend and lends some strength to KIMS change scores as a result of MBSR training.

Before the MBSR course, participants set main goals for their desired achievements through taking the course. On average, participants reported that they had progressed 60% of the way to these goals in less than three months. Although small, these findings are sufficiently positive to encourage further study. If our findings prove to hold more widely, MBSR may be an efficacious and potentially cost-effective intervention for occupationally stressed teachers.

Our evaluation was not designed with a specifically qualitative methodology. However, participants made some important and revealing statements about the impact the course had on them. For example, participants commented, “I wish I’d known about it 30 years ago”, “I now find time to sit quietly” and another noted “enjoying the moment”.

Table 5 Post-test minus pre-test KIMS changes using Wilcoxon's Signed Ranks test (continues on next page)

	<i>N</i>	Mean rank	Sum of ranks	Statistic	Standard deviations and significance
Observe					
Negative ranks	1	6.5	6.5	Z	-1.90
Positive ranks	8	4.8	38.5	Asymp. Sig. (2-tailed)	0.056
Ties	1				
Total	10				
Describe					
Negative ranks	2	3	6	Z	-1.7
Positive ranks	6	5	30	Asymp. Sig. (2-tailed)	0.085
Ties	2				
Total	10				
Act w/awareness					
Negative ranks	2	6.7	13.5	Z	-1.1
Positive ranks	7	4.5	31.5	Asymp. Sig. (2-tailed)	0.285
Ties	1				
Total	10				
Accept without judgement					
Negative ranks	1	4	4	Z	-2.2
Positive ranks	8	5.1	41	Asymp. Sig. (2-tailed)	0.03*
Ties	1				
Total	10				
Total KIMS					
Negative ranks	2	3.5	7	Z	-2.1
Positive ranks	8	6	48	Asymp. Sig. (2-tailed)	0.04*
Ties	0				
Total	10				

Asterisk denotes significance level (2-tailed)

In describing the effect on their stress, the teachers said, “The key ideas for me are being accepting and non-judging”, “It is very useful in times of crisis, like an invisible tool box you can carry around with you”, “Responding not reacting, it teaches us to take control”, “It has been helpful for me to notice unhelpful thinking patterns and nipping them in the bud”. Comments on the way their teaching was affected included, “It has been very useful during OFSTED” and “Because I am calmer I meet deadlines and I do it better”.

The study has a number of limitations. The small sample size leads to tentative conclusions. In addition, there was the theoretical danger of an under-powered study failing to detect real effects of the intervention. In fact, that statistically significant effects were found indicates a replication study with a larger sample would be worthwhile. As the sample was self-selected, it is difficult to conclude whether or not the high levels of distress reported are typical of primary school teachers.

The lack of a control group further limits the study as it is not possible to establish whether any observed change is directly due to the intervention itself. In addressing this issue, a larger study could investigate both MBSR in

comparison to a control group, as well as a second treatment arm of another stress reduction intervention. This two-treatment arm trial design would allow comparisons to be drawn between evidence-based stress reduction interventions, exploring any additional benefits mindfulness practice has upon reducing reported stress, anxiety, and depression.

Given mindfulness training is intended to bring lasting, as well as short-term benefits, having a follow-up after a period of at least several months would further strengthen the study, and may have demonstrated different effects to the findings reported here. Failing to record changes over time on the Main Problem measure limited the usefulness of this measure and as a result, the amount of information gleaned. The KIMS is a self-report measure of mindfulness, which suffers the limitations of most self-report measures, in that participants might have a vested interest in viewing themselves as more mindful after investing time and effort in mindfulness training. Changes in the KIMS may also be due to the participants' better understanding of what mindfulness is and a longer term follow-up would address this issue by investigating long-term changes and the stability of such changes.

In sum, our results indicate that benefits may accrue following mindfulness training in terms of personal well-being, reduction in mental health difficulties, achievement of personally relevant goals, and enhanced ability to cope with the demands of teaching in a modern primary school.

References

- Astin, J. A. (1997). Stress reduction through mindfulness meditation: Effects on psychological symptomatology, sense of control, and spiritual experiences. *Psychotherapy and Psychosomatics*, *66*, 97–106.
- Baer, R. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice*, *10*, 125–143.
- Baer, R. A., Smith, G. T., & Allen, K. A. (2004). Assessment of mindfulness by self-report: The Kentucky inventory of mindfulness skills. *Assessment*, *11*, 191–206.
- Bowers, T. (2004). Stress, teaching and teacher health. *Education*, *3–13*(32), 73–80.
- Brown, P., & Ryan, R. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*, 822–842.
- Butler, G., & Hope, T. (2007). *Manage your mind: The mental fitness guide*. Oxford: Oxford University Press.
- Chang, V. Y., Palesh, O., Caldwell, R., Glasgow, N., Abramson, M., Luskin, F., et al. (2004). The effects of a mindfulness-based stress reduction program on stress, mindfulness self-efficacy, and positive states of mind. *Stress and Health*, *20*, 141–147.
- Eisen, K. P., Allen, G. J., Bollash, M., & Pescatello, L. S. (2008). Stress management in the workplace: A comparison of a computer-based and an in-person stress reduction intervention. *Computers in Human Behavior*, *24*, 486–496.
- Grime, P. (2004). Computerized cognitive behavioural therapy at work: A randomized controlled trial in employees with recent stress-related absenteeism. *Occupational Medicine*, *54*, 353–359.
- Gyllensten, K., & Palmer, S. (2005). Working with a client suffering from workplace stress in a primary care setting: A cognitive behavioural case study. *Counselling Psychology Review*, *20*(4), 6–16.
- Hayes, S. C., Strosahl, K., & Wilson, K. (2004). *Acceptance and commitment therapy: An experiential approach to behaviour change*. New York: Guilford.
- Henry, D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, *44*, 227–239.
- Howard, S., & Johnson, B. (2004). Resilient teachers: Resisting stress and burnout. *Social Psychology of Education*, *7*, 399–420.
- Johansson, M., Hassmén, P., & Jouper, J. (2008). Acute effects of qigong exercise on mood and anxiety. *International Journal of Stress Management*, *15*, 199–207.
- Kabat-Zinn, J. (1990). *Full catastrophe living: How to cope with stress, pain and illness using mindfulness meditation*. London: Piatkus.
- Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine*, *8*, 163–188.
- Kabat-Zinn, J., Lipworth, L., Burney, R., & Sellers, W. (1987). Four-year follow-up of a meditation-based program for the self-regulation of chronic pain: Treatment outcomes and compliance. *Clinical Journal of Pain*, *2*, 159–173.
- Kabat-Zinn, J., Wheeler, E., Light, T., Skillings, A., Scharf, M. J., Corpley, T. G., et al. (1998). Influence of a mindfulness-based stress reduction intervention on rates of skin clearing in patients with moderate to severe psoriasis undergoing phototherapy (UVB) and photochemotherapy (PUVA). *Psychosomatic Medicine*, *60*, 625–632.
- Kuyken, W., Byford, S., Taylor, R. S., Watkins, E., Holden, E., White, K., et al. (2008). Mindfulness-Based Cognitive Therapy to prevent relapse in recurrent depression. *Journal of Consulting and Clinical Psychology*, *76*, 966–978.
- Kyriacou, C. (2001). Teacher stress: Directions for future research. *Education Review*, *53*, 27–35.
- Linehan, M., Schmidt, H., Dimeff, L., Craft, J. C., Kanter, J., & Comtois, K. (1999). Dialectical Behaviour Therapy for patients with borderline personality disorder and drug-dependence. *American Journal on Addictions*, *8*, 279–292.
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, *33*, 335–343.
- Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology*, *72*, 31–40.
- Marks, I. M., & Mathews, A. M. (1979). Brief standard self-rating for phobic patients. *Behaviour Research and Therapy*, *17*, 263–267.
- Ponce, A. N., Lorber, W., Paul, J. J., Esterlis, I., Barzvi, A., Allen, G. J., et al. (2008). Comparisons of varying dosages of relaxation in a corporate setting: Effects on stress reduction. *International Journal of Stress Management*, *15*, 396–400.
- Rosenzweig, S., Reibel, D. K., Greeson, J. M., Edman, J. S., Jasser, S. A., McMearty, K. D., et al. (2007). Mindfulness-based stress reduction is associated with improved glycaemia control in Type 2 Diabetes mellitus: A pilot study. *Alternative Therapies in Health and Medicine*, *13*, 36–38.
- Segal, Z., Williams, M., & Teasdale, J. (2002). *Mindfulness-based cognitive therapy for depression*. New York: Guilford.
- Smith, J., Richardson, J., Hoffman, C., & Pilkington, K. (2005). Mindfulness-based stress reduction as supportive therapy in cancer care: Systematic review. *Journal of Advanced Nursing*, *52*, 315–327.
- Surawy, C., & Roberts, J. (2004). The effect of mindfulness training in mood and measures of fatigue, activity and quality of life in patients with chronic fatigue syndrome on a hospital waiting list: A series of exploratory studies. *Behavioural and Cognitive Psychotherapy*, *33*, 103–109.
- Tacon, A., McComb, J., Caldera, Y., & Randolph, P. (2003). Mindfulness meditation, anxiety reduction and heart disease. *Family and Community Health*, *21*, 25–33.
- Teasdale, J. D., Segal, Z. V., & Williams, J. M. G. (1995). How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help? *Behavioural Research and Therapy*, *33*, 25–39.
- Wilcoxon, F. (1945). Individual comparisons by ranking methods. *Biometrics*, *1*, 80–83.
- Williams, K., Kolar, M., Reger, B., & Pearson, J. (2001). Evaluation of a wellness-based mindfulness stress reduction intervention: A controlled trial. *American Journal of Health Promotion*, *15*, 422–432.
- Yook, K., Lee, S.-H., Ryi, M., Kim, K.-H., Bhoi, T. K., Suh, S. Y., et al. (2008). Usefulness of mindfulness-based cognitive therapy for treating insomnia in patients with anxiety disorders. *Journal of Nervous and Mental Disease*, *196*, 501–503.

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