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- Methods and outcomes of research exploring the use of a mindfulness-based intervention
- How the Warwick-Edinburgh Mental Wellbeing Scale works
- Use of video presentations to enhance learning on mindfulness practice

How a mindfulness intervention can improve patients' mental wellbeing

Key points

Mindfulness-based interventions have been shown to be effective in managing stress

The interventions are supported by evidence but there has been little research on their use in clinical practice

Wellbeing is an overall measure of mental health and functionality, as opposed to measures of specific mental illnesses

Patients in a day hospital in Fife participated in an eight-week mindfulness-based intervention

Participants' wellbeing improved over the course of the programme

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Abstract Mindfulness-based interventions have emerged from the original model of mindfulness-based stress reduction. They have been shown to be effective in helping people to develop resilience to a wide range of stressful situations. While there is robust research evidence to support these interventions, there is little research into their use in clinical practice. In 2015-17, patients at a mental health day hospital in Fife took part in an eight-week intervention, facilitated by two clinicians trained in mindfulness who were using it themselves in their daily lives. Participants' progress was measured using the Warwick-Edinburgh Mental Wellbeing Scale. By the end of the programme, their wellbeing had significantly improved, although the study design means causality cannot be proven.

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Mindfulness-based stress reduction (MBSR) was developed in the 1970s at the University of Massachusetts Medical School in the US. Since then, the original model has been adapted into a range of mindfulness-based interventions (MBIs), including mindfulness-based cognitive therapy (MBCT). Large-scale studies have shown MBIs to be effective in the management of stress-related responses in a range of physical and psychological conditions, but there is little evidence relating to their use in everyday clinical practice. This article discusses the use of an MBI in a mental health day hospital in Scotland.

Mindfulness-based interventions

Originally developed to help with the management of chronic pain, MBIs are systematised therapeutic approaches to educating patients that combine meditation techniques (also known as vipassana or

insight meditation) and hatha yoga. They are typically delivered in a group setting over an eight-week period, with participants also using 45-minute CDs for individual guided daily practice.

Since the development of MBSR, research has focused on its use as an intervention for chronic pain and a range of physical and psychological conditions. Studies in the field include those by Zgierska et al (2017), Van Vliet et al (2017), Poulin et al (2016), Zhang et al (2016), Mendes and Palmer (2016), Crowe et al (2016) and Ames et al (2014). MBIs have been shown to be effective at enabling people to develop resilience to, and take control over, a wide range of stressful situations.

From its inception, the goal of MBSR has been to deliver a form of adult education or training, as opposed to a form of psychotherapy. Kabat-Zinn (2004) described the approach as "a vehicle for active learning, in which people can build

on the strengths that they already have and come to do something for themselves to improve their own health and wellbeing". This resonates with UK health legislation such as the Patient Rights (Scotland) Act 2011 (Bit.ly/PatientRightsScotAct) and the Health and Social Care Act 2012 (Bit.ly/HSCAct2012). MBIs have been promoted by NHS Education Scotland in Scottish health boards and implemented in NHS settings across the UK. However, their evidence base remains in large international studies and there is no literature reporting on mindfulness interventions in everyday clinical practice.

Our study

Aim and methods

Measuring wellbeing is a way of measuring mental health and functionality, as opposed to specific mental illnesses or problems. We evaluated the impact of an eight-week mindfulness programme on the wellbeing of patients attending an NHS mental health day hospital in Fife. The study period covered the first two years of the programme's existence (2015-2017); the programme was delivered nine times and 68 participants completed it.

Our study, which was limited to the utilisation of data previously collected in the course of normal care (without an intention to use it for research at the time of collection), was approved by the East of Scotland Research Ethics Service. We had to ensure that only specific, pre-agreed information was extracted from the

records – namely the sex and age of participants, and their pre- and post-intervention scores on the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), which has been described by Tennant et al (2007) (Box 1). The higher a participant's WEMWBS score, the better their mental wellbeing.

Caldicott approval to extract the patient data (Caldicott Committee, 1997) was given by Tracey Whitton extracted data from the programme records, as she had routine access to the information. She then passed on the anonymous data to Graham Buchanan and Steve Smith, who analysed it using secondary data analysis.

Participants and facilitators

Among the 68 participants, 72% (n=49) were female; participants' age range was 19-64 years (mean 45 years and six months). We did not have access to diagnostic information so could not report on participants' medical diagnoses. However, this mirrors the goal of MBIs and fits with our own endeavour to avoid medicalising the complex psychosocial problems that bring patients to the day hospital.

All sessions were delivered at the day hospital as part of routine therapeutic activities, and were facilitated by Graham Buchanan and Tracey Whitton. Both have completed the mindfulness practice training course and the training course for mindfulness teachers offered by NHS Education for Scotland, and both practise mindfulness daily.

Box 1. Warwick-Edinburgh Mental Wellbeing Scale

Developed at Warwick Medical School, University of Warwick, the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) is a 14-item scale in which each item is scored out of a maximum of five points to provide a total mental wellbeing score ranging from 14 to 70. The higher the score, the better the person's mental wellbeing. The scale has been used in large population surveys across the UK.

Wellbeing is defined as the ability to feel good about oneself and connected to those around oneself. The WEMWBS includes ideas such as hope for the future and satisfaction with the present. The 14 items are worded positively and cover:

- Feelings – such as optimism, cheerfulness and relaxation
- Functional aspects of mental wellbeing – such as self-acceptance, competence and autonomy

The Scale can be used as a proxy measure for the absence of psychological distress, even when the person may be living with a psychiatric condition. It does not provide a cut-off point for 'case-level' wellbeing to indicate the presence and severity of a condition, but is used to measure change over time. A change of 8 points is considered meaningful.

Stranges et al (2014) offered a statistical breakdown of WEMWBS scores:

- 14-42 = 'low' wellbeing
- 43-59 = 'middle' wellbeing
- 59-70 = 'high' wellbeing

More information can be found at: Bit.ly/WEMWBScale

Box 2. Thematic structure of the mindfulness programme

- Week 1: automatic pilot
- Week 2: dealing with barriers
- Week 3: mindfulness of the breath
- Week 4: staying present
- Week 5: allowing/let be
- Week 6: thoughts are not facts
- Week 7: taking care of ourselves
- Week 8: dealing with future stress

Structure and content

The programme comprised weekly two-hour sessions held over an eight-week period. As each session built on the learning and practice from previous ones, the group was closed to new participants after session 1. WEMWBS scores were completed at the start of session 1 and the end of session 8.

Structure and content were based on the standard MBSR and MBCT model. Key aspects included:

- Mindful breathing techniques;
- Sitting meditation;
- Mindful movement;
- Body scanning.

Box 2 shows the programme's thematic structure; more details are available online at Bit.ly/SSSWestonProject.

Each session:

- Was split into two halves, with a break after approximately one hour;
- Ended with a review and the circulation of handouts;
- Incorporated a combination of teaching, whole-group and small-group reflective discussion, emotional awareness exercises and guided practice.

We also used video presentations by international experts, and participants were given homework to complete between the sessions.

At the start of session 1, participants explored what they wanted to achieve and discussed their understanding of the terms 'mindfulness' and 'compassion' – the two ideas being linked to the core concept of 'letting go' of the ideas that often lead to distress. The two facilitators shared with the group how they came to mindfulness practice and why they cultivate it in their daily lives. The break was followed by exercises designed to introduce participants to mindfulness.

Video presentations

We adapted the MBSR and MBCT model to include video presentations by experts in mindfulness and related philosophies, to

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Table 1. Wellbeing scores before and after the intervention

	Warwick-Edinburgh Mental Wellbeing Scale score		
	Lowest	Highest	Mean
Pre-intervention	20	63	36.28
Post-intervention	17	65	46.26

promote a deeper understanding of the practices among participants. The programme included presentations by philosopher Alan Watts (who introduced key ideas underpinning mindfulness practice), Kristin Neff (a contemporary educational psychologist who has extensively studied self-compassion), and spiritual teacher and bestselling author Eckhart Tolle.

In week 7, participants watched *The Journey Into Now*, a video in which Eckhart Tolle discusses how most people habitually and unconsciously overlook the present moment despite the fact that their “entire life consists of the present moment” (Bit.ly/TolleJourney). He goes on to discuss the impact on one’s mind and thinking of engaging in a compassionate appreciation for one’s surroundings.

Inclusion of these video presentations not only gave participants a deeper contextual understanding than might have been available otherwise, but also provided a multimedia experience as well as links to external sources of support, such as mindfulness apps and websites. By offering materials that participants could revisit outside of the sessions, we also ensured that those who wanted to deepen their understanding could do so.

QUICK FACT
9.98
Increase in mean wellbeing score between start and end of intervention

Outcomes

WEMWBS scores

The mean WEMWBS score at the start of session 1 was 36.28. On completion of the programme it was 46.26, a positive change of almost 10 points (9.98). This is both a clinically meaningful change (which is defined as a change in score of 3-8) and a statistically significant one ($p < 0.0001$). There were no differences between scores according to sex or age.

The WEMWBS has been used in population surveys in Scotland, England and Northern Ireland, which produced mean WEMWBS scores of 50, 51 and 50, respectively (McLean et al, 2017; Stranges et al, 2014; Lloyd and Devine, 2012). In our study, the level of wellbeing reported by participants at the start of the programme (36) was considerably lower than the national aggregate mean (50). However, by the end, the mean score (46) was much closer to the national norm. This is an encouraging outcome.

Even more encouraging is the change in the range of WEMWBS scores over the course of the programme. At the outset, the scores reported by participants ranged from 20 to 63, with only four patients (6%) scoring above the national mean of 50. At the end of the programme, the scores ranged from 17 to 65, with 29 patients (43%) scoring >50. Table 1 outlines the WEMWBS scores before and after the intervention.

It can be seen that, while the total range did not change greatly, over the course of the programme, WEMWBS scores increased by ≥ 3 points for 56 (82%) participants and by ≥ 8 for 38 (56%). However, for three participants (4%), scores decreased by ≥ 3 points. These changes are summarised in Table 2.

While we cannot be certain that the positive changes were a direct result of patients’ participation in the programme, we were pleased to note that the majority reported meaningful improvements in their wellbeing.

Statistical breakdown

Using Stranges et al’s (2014) categories:

- 53 participants (78%) had a low wellbeing score;
- 14 participants (21%) had a middle wellbeing score;
- 1 participant had a high wellbeing score.

On completion of the programme:

- 22 participants (32%) had a low wellbeing score;
- 42 participants (62%) had a middle wellbeing score;
- 4 participants (6%) had a high wellbeing score.



Meditation, which can help to improve a person’s mental wellbeing, formed a fundamental part of the mindfulness intervention

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Table 2. Changes in wellbeing scores over the course of the programme (n=68)

Variation in score	Number of participants
Decrease of ≥ 3 points	3 (4%)
Increase of ≥ 3 points	56 (82%)
Increase of ≥ 8 points	38 (56%)

Table 3 details the number of participants in each wellbeing score category pre- and post-intervention. Again, while we cannot claim there is a direct causal relationship between these changes and participation in the programme, it is worth noting that, by the end of the programme, two-thirds of participants (68%) had 'middle' or 'high' levels of wellbeing, compared with less than a quarter (22%) at the outset.

“Future work would benefit from including attrition data and from having some form of comparison group”

Advantages and limitations

The goal of the sessions was not to encourage participants to talk about their own mental health problems, but simply to help them gain skills in practising mindfulness. The advantage of this was that group formation was not dependent on diagnosis, age, sex, level of education or cognitive ability. However, participants' ability to maintain mindfulness practice was arguably an important factor in whether they completed the programme.

Beyond participants' ability to engage in regular mindfulness practice, another success factor is the facilitators' involvement. Having observed MBSR instructors at a stress-reduction clinic at the University of Massachusetts, Segal et al (2002) noted that “a vital part of what the MBSR instructor conveyed was his or her own embodiment of mindfulness in interactions with the class”. The authors

supported the view that this 'embodiment of mindfulness' could only be achieved if instructors practised mindfulness daily. In our case, both facilitators had a long-standing and regular mindfulness practice, which was a pre-requisite for facilitating the programme.

Mindfulness is growing in popularity, which means the number of MBIs is rising. We believe it is important to ensure these are facilitated by instructors who have solid empirical training in, and ongoing commitment to, mindfulness practice; this could be a challenge for some clinical teams who would like to set up a similar programme.

This study has a number of limitations. As it uses secondary data analysis, it depends on previously collected data. We only extracted data for participants who had completed the programme, but it would have been useful to know how many had started but failed to complete it. Data on participants' diagnoses would also have been interesting, if only to provide a clearer picture of the study population.

Finally, a comparison group would have been useful, as it would have allowed us to determine whether the improvements seen in participants' wellbeing (which appeared to be significant) actually had been caused by participation in the programme. Future work would benefit from including attrition data and from having some form of comparison group.

Conclusion

Given the limitations discussed above, we cannot make any assertive claims about what resulted in the study outcomes.

However, we can say that, while participants were on the programme, the vast majority experienced a clinically meaningful and statistically significant improvement in their mental wellbeing. We strongly believe that participation in the mindfulness programme was at least a contributing factor, but now need a more robust study to explore this more fully. **NT**

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Table 3. Number of participants in each wellbeing score category pre- and post-intervention

	Wellbeing score category		
	Low	Middle	High
Pre-intervention, n	53 (78%)	14 (21%)	1
Post-intervention, n	22 (32%)	42 (62%)	4 (6%)

Note: percentages have been rounded down or up, so may not add up to 100%; categories are as suggested by Stranges et al (2014).



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