**MBCEPP course 1 evaluation**

15 people completed the course

The course started on 2 May 2014 and ended on 27 June 2014

11 participants completed a pre-course survey (referred to here as Q1)

All 15 participants completed a post-course survey (Q2) between 4-11 July 2014 (i.e. within 2 weeks of the end of the course)

11 participants completed the follow-up survey (Q3) between 8-23 January 2015 (i.e. within 7 months of the end of the course)

We have complete data (i.e. 3 complete surveys) for 9 participants

|  |  |
| --- | --- |
| **Sex** |  |
| Female | 10 |
| Male | 5 |
|  |  |
| **Age** |  |
| 25-34 | 3 |
| 35-44 | 5 |
| 45-54 | 4 |
| 55-64 | 1 |
| Unknown | 2 |
|  |  |
| **Highest qualification** |  |
| AS/A levels/Highers/NVQ or BTEC level 3 | 3 |
| Undergraduate degree/equivalent professional qualification | 4 |
| Postgraduate degree/postgraduate professional qualification | 6 |
| Unknown | 2 |
|  |  |
| **Income** |  |
| £10,000-£19,999 | 1 |
| £20,000-£29,999 | 1 |
| £30,000-£39,999 | 1 |
| £40,000-£49,999 | 3 |
| Over £50,000 | 6 |
| Prefer not to say | 1 |
| Unknown | 2 |

N.B. ‘Unknown’ is because of people who didn’t answer the first survey.

11 people completed both survey 1 and 2 and we therefore have ‘before’ and ‘after’ measures for them

**Question 1**

This table compares the scores given for each statement on questionnaire 1 with questionnaire 2 (n=11).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Mean (SD) Q1 | Mean (SD) Q2 | 2 tailed p | 1 tailed p |
| (a) I am aware of how I create habits | 4.5 (1.8) | 7.4 (2.0) | .001 | .0005 |
| (b) I am aware of how I can change my habits | 5.2 (1.38) | 7.5 (1.5) | .004 | .002 |
| (c) I am aware that my mind often works on ‘automatic pilot’ | 7.2 (2.3) | 9.3 (0.7) | .011 | .0055 |
| (d) I am aware of how the surrounding environment can affect my behaviour | 6.9 (1.8) | 8.4 (1.7) | .045 | .0225 |
| (e) I am aware of how different emotions can affect my behaviour | 7.2 (1.2) | 8.7 (1.6) | .032 | .016 |
| (f) I am aware of how mental shortcuts (such as confirmation bias and future discounting) can affect my behaviour | 5.7 (2.4) | 8.5 (1.1) | .003 | .0015 |
| (g) I am aware of how my values and beliefs can affect my behaviour | 7.0 (1.7) | 8.7 (0.9) | .008 | .004 |
| (h) I am aware of how social norms can affect my behaviour | 7.3 (1.8) | 8.5 (1.1) | .052 | .026 |
| (i) I understand why others find changing their behaviour difficult | 6.9 (1.9) | 8.4 (1.3) | .056 | .028 |
| (j) I empathise with the difficulties others experience when trying to change behaviour | 7.4 (1.5) | 8.4 (1.2) | .084 | .042 |

Scale was 0-10; 5 = neutral; 7–8 agreement; 9+ strong agreement

**All differences in means are significant at the .05 level (i.e. 95% confidence) without a correction for multiple tests (for one-tailed test i.e. hypothesis that agreement will increase).** With Holm-Bonferroni correction, statements (a), (b), (c), (f) and (g) show a significant increase in mean score and statement (e) shows an increase approaching significance.

There is argument about whether such a correction should be applied or not.

(SD = standard deviation. This is a measure of how much the scores vary: smaller SD means that there wasn’t much variation between participants in the scores they gave for a statement.)

11 people completed Q2 and Q3 (not the same 11 as did Q1 and Q2)

This table compares the scores given for each statement on questionnaire 2 with questionnaire 3 (n=11).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean (SD) Q2 | Mean (SD) Q3 | 2 tailed p |
| (a) I am aware of how I create habits | 7.3 (1.9) | 7.6 (1.2) | .690 |
| (b) I am aware of how I can change my habits | 7.1 (1.4) | 7.7 (1.1) | .401 |
| (c) I am aware that my mind often works on ‘automatic pilot’ | 9.2 (0.8) | 8.7 (1.3) | .228 |
| (d) I am aware of how the surrounding environment can affect my behaviour | 8.1 (1.7) | 8.4 (1.2) | .709 |
| (e) I am aware of how different emotions can affect my behaviour | 8.6 (1.6) | 8.5 (1.0) | .821 |
| (f) I am aware of how mental shortcuts (such as confirmation bias and future discounting) can affect my behaviour | 8.2 (1.5) | 7.8 (1.6) | .204 |
| (g) I am aware of how my values and beliefs can affect my behaviour | 8.5 (1.0) | 8.1 (1.1) | .389 |
| (h) I am aware of how social norms can affect my behaviour | 8.5 (1.1) | 8.3 (1.1) | .496 |
| (i) I understand why others find changing their behaviour difficult | 8.3 (1.3) | 8.2 (1.0) | .733 |
| (j) I empathise with the difficulties others experience when trying to change behaviour | 8.4 (1.2) | 8.4 (1.5) | .857 |

**There are no significant differences in means i.e. at the time of the follow-up, participants’ awareness had not decreased or increased compared to how it was at the end of the course**

**Question 1 continued**

Considering the data from 9 people who completed all three questionnaires.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean (SD) Q1 | Mean (SD) Q2 | Mean (SD) Q3 |
| (a) I am aware of how I create habits | 4.8 (1.8) | 7.3 (2.2) | 7.6 (1.3) |
| (b) I am aware of how I can change my habits | 5.3 (1.3) | 7.3 (1.6) | 7.7 (1.2) |
| (c) I am aware that my mind often works on ‘automatic pilot’ | 7.0 (2.5) | 9.3 (0.7) | 8.8 (1.4) |
| (d) I am aware of how the surrounding environment can affect my behaviour | 6.7 (1.9) | 8.3 (1.8) | 8.3 (1.2) |
| (e) I am aware of how different emotions can affect my behaviour | 6.9 (1.2) | 8.7 (1.7) | 8.5 (1.1) |
| (f) I am aware of how mental shortcuts (such as confirmation bias and future discounting) can affect my behaviour | 6.1 (2.1) | 8.6 (1.2) | 8.2 (1.2) |
| (g) I am aware of how my values and beliefs can affect my behaviour | 6.9 (1.6) | 8.6 (1.0) | 7.9 (1.0) |
| (h) I am aware of how social norms can affect my behaviour | 7.6 (0.9) | 8.6 (1.3) | 8.1 (1.0) |
| (i) I understand why others find changing their behaviour difficult | 6.9 (2.1) | 8.3 (1.4) | 8.4 (1.0) |
| (j) I empathise with the difficulties others experience when trying to change behaviour | 7.8 (1.2) | 8.4 (1.3) | 8.2 (1.6) |

Because there are more than 2 time points to compare, we first need to use repeated measures ANOVA to test whether there are significant differences in the mean scores at the 3 time points for each statement.

These tests showed that we are justified in examining differences in the scores for statements (a), (b), (c), (e), (f) and (g). There are no significant differences in the scores for the other statements.

For statements (a), (b), (c), (e) and (f), there are statistically significant differences (at the 95% confidence level) in the scores between Q1 and Q2, and between Q1 and Q3, but not between Q2 and Q3. In other words, participants expressed increased agreement with these statements at the end of the course compared to prior to starting it, and again at the time of the follow-up, compared to before the course.

For statement (g), there was a statistically significant difference in the mean score between Q1 and Q2, but not between Q1 and Q3 or Q2 and Q3. A slightly odd result.

**Question 1 continued**

This table compares the scores given for each statement on questionnaire 2 with the scores people gave on questionnaire 2 for how they would rate themselves prior to the course. (N=11 people who did both surveys)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Mean (SD) Q2 | Mean (SD) Q2 hindsight | 2-tailed p | 1-tailed p |
| I am aware of how I create habits | 7.4 (2.0) | 4.9 (2.0) | .010 | .005 |
| I am aware of how I can change my habits | 7.5 (1.5) | 4.8 (2.2) | .007 | .0035 |
| I am aware that my mind often works on ‘automatic pilot’ | 9.3 (0.7) | 5.9 (2.6) | .002 | .001 |
| I am aware of how the surrounding environment can affect my behaviour | 8.4 (1.7) | 6.5 (1.9) | .001 | .0005 |
| I am aware of how different emotions can affect my behaviour | 8.7 (1.6) | 7.4 (1.6) | .016 | .008 |
| I am aware of how mental shortcuts (such as confirmation bias and future discounting) can affect my behaviour | 8.5 (1.1) | 5.4 (2.5) | .000 | .000 |
| I am aware of how my values and beliefs can affect my behaviour | 8.7 (0.9) | 6.4 (2.1) | .002 | .001 |
| I am aware of how social norms can affect my behaviour | 8.5 (1.1) | 6.6 (1.4) | .000 | .000 |
| I understand why others find changing their behaviour difficult | 8.4 (1.3) | 6.4 (1.9) | .009 | .0045 |
| I empathise with the difficulties others experience when trying to change behaviour | 8.4 (1.2) | 6.0 (1.7) | .001 | .0005 |

**All differences in means are significant at the .05 level with a Holm-Bonferroni correction for multiple tests applied i.e. people agreed more with all statements at the end of the course.**

Alternatively, I would use this larger sample:

This table compares the scores given for each statement on questionnaire 2 with the scores people gave on questionnaire 2 for how they would rate themselves prior to the course. (N=15 people who did 2nd survey)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean (SD) Q2 | Mean (SD) Q2 hindsight | 2-tailed p |
| I am aware of how I create habits | 7.4 (1.7) | 5.1 (1.9) | .001 |
| I am aware of how I can change my habits | 7.4 (1.3) | 4.8 (2.0) | .001 |
| I am aware that my mind often works on ‘automatic pilot’ | 9.1 (0.7) | 6.3 (2.4) | .000 |
| I am aware of how the surrounding environment can affect my behaviour | 8.2 (1.5) | 6.5 (1.8) | .000 |
| I am aware of how different emotions can affect my behaviour | 8.7 (1.4) | 7.5 (1.6) | .007 |
| I am aware of how mental shortcuts (such as confirmation bias and future discounting) can affect my behaviour | 8.0 (1.6) | 5.4 (2.3) | .000 |
| I am aware of how my values and beliefs can affect my behaviour | 8.5 (1.0) | 6.5 (2.1) | .000 |
| I am aware of how social norms can affect my behaviour | 8.4 (1.1) | 6.7 (1.3) | .000 |
| I understand why others find changing their behaviour difficult | 8.3 (1.1) | 6.6 (1.7) | .003 |
| I empathise with the difficulties others experience when trying to change behaviour | 8.2 (1.3) | 6.1 (1.5) | .001 |

**All differences in means are significant at the .05 level with a Holm-Bonferroni correction for multiple tests applied i.e. people agreed more with all statements at the end of the course.**

Interestingly though, there were no statistically significant differences between the scores people gave on Q1 and those they gave on questionnaire 2 when they were asked to think about how things were before the course. In other words, after the course, they didn’t downgrade their pre-course awareness.

This table compares the scores given for each statement on questionnaire 3 with the scores people gave on questionnaire 3 for how they would rate themselves prior to the course. (N=11 people who did 3rd survey)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean (SD) Q3 | Mean (SD) Q3 hindsight | 2-tailed p |
| I am aware of how I create habits | 7.6 (1.2) | 5.4 (1.1) | .000 |
| I am aware of how I can change my habits | 7.7 (1.1) | 5.4 (1.4) | .001 |
| I am aware that my mind often works on ‘automatic pilot’ | 8.7 (1.3) | 6.3 (1.1) | .000 |
| I am aware of how the surrounding environment can affect my behaviour | 8.4 (1.2) | 6.1 (2.0) | .012 |
| I am aware of how different emotions can affect my behaviour | 8.5 (1.0) | 6.5 (1.4) | .001 |
| I am aware of how mental shortcuts (such as confirmation bias and future discounting) can affect my behaviour | 7.8 (1.6) | 5.2 (1.9) | .000 |
| I am aware of how my values and beliefs can affect my behaviour | 8.1 (1.1) | 6.8 (0.8) | .014 |
| I am aware of how social norms can affect my behaviour | 8.3 (1.1) | 6.3 (1.4) | .013 |
| I understand why others find changing their behaviour difficult | 8.2 (1.0) | 5.8 (2.4) | .008 |
| I empathise with the difficulties others experience when trying to change behaviour | 8.4 (1.5) | 6.9 (1.3) | .006 |

**All differences in means are significant at the .05 level with a Holm-Bonferroni correction for multiple tests applied i.e. people said agreed more with all statements at the time of the follow-up compared to before the course.**

**Question 2**

0.6 ≤ α < 0.7 acceptable

0.7 ≤ α < 0.9 good

α ≥ 0.9 excellent

Alpha values for scales measuring five facets of mindfulness:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Survey 1 | Survey 2 | Survey 3 |
| Observing | .849 (8 items) | .765 | .735 |
| Describing | .953 (8 items) | .963 | .939 |
| Nonreacting | .726 (7 items) | .763 | .738 |
| Nonjudging  | .942 (8 items) | .967 | .904 |
| Awareness | .578 (8 items) | .822 | .850 |

Alpha fine except for ‘Awareness’ scale on survey1.

If get rid of item 6 “I rush through activities without being really attentive to them” alpha becomes acceptable at .640. Higher alpha can be obtained by leaving more items out but if want scale to be closest possible to standard, best to delete as little as possible.

Alternatively, could argue that although alpha poor, the scale has been found to be reliable before and the low alpha may be due to small sample.

**Comparing pre- and post-course data (n=11):**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean Q1 | Mean Q2 | p (2 tailed) |
| Observing | 3.3 | 3.6 | .128 |
| Describing | 3.4 | 3.7 | .044 |
| Nonreacting | 3.0 | 3.2 | .327 |
| Nonjudging | 3.2 | 3.5 | .314 |
| Awareness | 2.8 | 3.0 | .008 |
| Awareness without A6 | 2.8 | 3.0 | .018 |

If no correction for multiple testing is applied, difference in mean score is significant (at 95% confidence level) for Describing and Awareness scales.

But with correction applied, difference in mean score is only significant for ‘Awareness’ aspect of mindfulness, and only for the full scale, which is dodgy.

**Basically, I’m not confident we can claim that the 5 facet mindfulness scale shows any statistically significant increases from before to after the course.**

**Considering the data from 9 people who completed all 3 questionnaires:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Mean Q1 | Mean Q2 | Mean Q3 |
| Observing | 3.2 | 3.6 | 3.7 |
| Describing | 3.2 | 3.7 | 3.7 |
| Nonreacting | 2.9 | 3.2 | 3.6 |
| Nonjudging | 3.4 | 3.7 | 4.0 |
| Awareness | 2.8 | 3.1 | 3.2 |
| Awareness without A6 | 2.9 | 3.1 | 3.2 |

Because there are more than 2 time points to compare, we first need to use repeated measures ANOVA to test whether there are significant differences in the mean scores at the 3 time points for each mindfulness facet.

These tests showed that we are justified in examining differences in the scores for the observing and nonreacting scales. For the observing scale, post-hoc t-tests showed that there was a significant difference between the mean score for the scale at the time of the follow-up survey, compared to the pre-course survey, but not between the pre- and post-course surveys or the post-course and follow-up surveys. For the nonreacting scale, there was a significant difference between the score on the follow-up survey compared to the pre-course survey, and for the post-course survey compared to the follow-up survey. These results suggest that although there is no statistically-significant increase in scores on the mindfulness facets immediately after the course, there may be a longer-term effect.

**Question 3 (survey 2 only; N=13 as two people didn’t answer)**

This was an attempt to create 2-statement scales to measure the 5 mindfulness facets, to capture data from those who didn’t complete survey 1 as well as the others.

Spearman-Brown coefficient

|  |  |  |
| --- | --- | --- |
|  | Survey 2, N=13  | Survey 3, N=11 |
| Observing (O) | .948 | .600 |
| Describing (D) | Negative value - problem | .752 |
| Nonreacting (R) | .763 | .879 |
| Awareness (A) | .850 | .958 |
| Nonjudging (J) | .943 | .505 (too low) |

Mean values for survey 2, N=13: (scale 0-10; 5=neutral)

O: 7.0

A: 6.9

R: 7.0

J(R): 6.7

D1: 5.9

D2: 6.0

Mean values for survey 3, N=11 (scale 0-10; 5=neutral)

O: 7.4

D: 6.0

R: 7.9

J(R): 7.5

A1: 7.8

A2(R): 6.5

Basically shows that *respondents thought* that they were more mindful with regards all the facets, though not very strong agreement.

[(R) means the scale/score was reversed, because of the way the statement was phrased, positively or negatively]

**Question 4**

I learnt things on the course that are useful…

|  |  |  |
| --- | --- | --- |
|  | Survey 2 mean (SD) n=13 | Survey 3 mean (SD) n=11 |
| …for my personal life | 8.9 (1.0) | 8.9 (0.7) |
| … when engaging with colleagues | 8.3 (1.2) | 7.9 (1.4) |
| …for my work directly or indirectly related to behaviour change | 7.4 (1.7) | 7.8 (1.5) |
| …for my work in general | 7.8 (1.7) | 7.5 (1.5) |

Scale 0-10; 5=neutral; 7-8 agreement; 9+ strong agreement

**Participants agreed that the course was useful in all these respects. Most useful for personal life.**

N.B. Can’t make direct comparisons between the stats for surveys 2 and 3, because the 13 people who did survey 2 are not the same as the 11 who did survey 3. So, for e.g., can’t say that agreement that the course was useful for “my work directly or indirectly related to behaviour change” increased after the end of the course. I did do statistical tests for the 9 people who did both survey 2 and 3 and found no significant differences in their answers to this question (but am not sure that’s worth reporting as we weren’t expecting such differences, were we?)

**Question 5 (survey 2 only; N=13 as two people didn’t answer)**

3 said they would probably continue with some form of mindfulness practice

10 said they would definitely continue

Occasionally (less than once a week): 1

One or two days a week: 6

3-4 days a week: 5

5 or more days a week: 1

**Question 5 survey 3 n=11**

**5a How much of the course did you attend?**

1 person attended all 8 sessions

8 attended 6 or 7

2 attended 4 or 5

**5b How much mindfulness practice did you do during the course, on average?**

Occasional practice (less than once a week): 2

1-2 sessions a week: 3

3-4 sessions a week: 5

%+ sessions a week: 1

**5c Are you continuing with some form of mindfulness practice?**

No: 2

Yes: 9

of whom: 3 occasionally (less than once a week)

3 doing 1or 2 days a week

2 doing 3-4 days a week

1 doing 5 or more days a week