

## **Interventions to promote mental health in health professional students.**

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### **Background and aims:**

Medical education is reported to be one of the most stressful academic curricula worldwide, negatively affecting the physical and mental health of students (Gupta et al., 2015). This project trialled two types of interventions for year 1 and 2 medical students and evaluated the impact on burnout, wellbeing and self-efficacy. The ultimate intention of this work was to consider different types of intervention that might support medical students in the early years of their education.

This study aims to:

- Evaluate the impact of a 5 week mindfulness course or 5 talking group sessions on student's degree of burnout, wellbeing and self-efficacy.
- Qualitatively evaluate the student experience of taking part in a 5 week mindfulness course or 5 talking group sessions
- Compare and contrast the experience, reach and efficacy of the two interventions

### **Methodology;**

#### **Participants**

First and Second year medical students at the University of Manchester were all eligible and invited to take part in a 5 week mindfulness course (February – March 2016) or 5 talking group sessions (October – November) \*timings are based on student availability at the university. Students were offered a Portfolio Certificate for taking part in the study once they had completed the evaluation measures.

**The Interventions:** Both intervention consisted of five weekly group sessions, each lasting one hour, and located in the Consultation Skills Learning Centre (CSLC) at Manchester Medical School. Tea, coffee and biscuits were provided at the beginning of a session

**Mindfulness:** The goals of mindfulness in medical education, according to Epstein (1999) are, 'to become more aware of one's own mental processes, listen more attentively, recognise bias and judgements, and thereby act with principles and compassion.' The mindfulness course was led by an experienced facilitator from the university Counselling service. The training included guided meditations and mindfulness skills teaching, with handouts covering key mindfulness concepts. A University of Manchester Podcast was developed, this included 3 guided meditations recordings, spoken by the facilitator, and was provided to all participants to supplement home practice. Blankets, mats and pillows were provided for comfort when meditating.

**Talking groups:** The talking groups were open discussion forums in which participants were able to share relevant stories (patient/education related) and in doing so challenge underlying assumptions and interpretations (Launer, 2008). Healthcare student's self-awareness of the influence their own personal qualities have on the way that they practice/learn medicine is a central phenomenon in Mead and Bowers' (2002) dimensions of providing patient centred care. Conversations were flexible according to the students' needs but were set up to cover a different topic each week; prior

experiences, role models, patient encounters, curriculum (formal and hidden) and societal expectations. The talking groups were facilitated by 2 graduated medical students and one health psychologist who were each paid £25 per session.

## **Design and Procedure**

This study was a pre post within participant's trial design.

Participants were recruited via adverts on the student's virtual learning environment and posters in the medical school. Students who indicated interest were provided with an information sheet and consent form to return. Participants were encouraged to commit to the full 5 week course of both types of interventions.

All participants completed a baseline set of measures prior to the first intervention session (mindfulness or talking group), following the final (5<sup>th</sup>) session and 6 months later. Measures were provided in paper or online according to participant preference. \*no students took part in both interventions.

## **Measures**

Validated questionnaires with known psychometric properties were used to measure standard outcomes. Demographics (age, gender, year of study, ethnicity, and previous experience of mindfulness) were taken at baseline.

The following questionnaires were all taken at baseline and end of trial.

*Burnout.* Participants completed the Maslach Burnout Inventory, Student Survey (MBI-SS) validated for use in a university student population. This is a 22-item questionnaire with a 7 point Likert scale which asks participants to rate how often they experience feelings relating to exhaustion, cynicism and professional efficacy Burnout is defined as a state of exhaustion, cynicism and a lack of professional efficacy (Maslach & Jackson, 1981). The MBI is the most frequently used questionnaire for determining the presence and severity of burnout (Kleijweg, Verbraak, Dijk, 2013). This is the study's primary measure.

*Self-efficacy.* Defined as an individual's belief in their ability to respond to novel or difficult situations and deal with any associated obstacles or setbacks (Schwarzer et al., 1995). Participants completed the General Self-Efficacy Scale (GSE), a 10-item Likert scale (1-4) that asks participants to indicate the extent to which a statement applies to them. Validation studies found that this scale to have acceptable psychometric properties and self-efficacy to be a universal construct (Scholz, Doña, Sud, & Schwarzer, 2002).

*Mental Well-Being.* The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) is a 14-item questionnaire that asks participants to rate how often they've experienced various positive feelings, such as feeling loved, optimism and confidence, in the past two weeks using a Likert scale (1-5). The measure was previously found to have good psychometric properties, with a test-retest correlation coefficient of 0.83, and is sensitive to change (Tennant et al., 2007).

Focus groups.

One month following the end of the each intervention all participants were invited to take part in a focus group to discuss their experiences. A semi structured interview schedule was created to guide the discussion. This focused on gathering experiences, challenges, and sustainability of skills.

### **Statistical Analysis**

We compared outcomes on all three questionnaire measures pre and post the six-week intervention. Histograms and box-plots were used to screen the data for normality and extreme outliers. As the data were found to be non-normally distributed, we used a Wilcoxon Signed Rank Test to compare differences in median scores and statistical significance was set at  $p \leq 0.05$ . All statistical analyses were performed using IBM SPSS Statistics 22 for Windows.

### **Qualitative Analysis**

The focus groups were transcribed verbatim and analysed utilising the principles of framework analysis (Ritchie and Spencer, 2002). Framework analysis is a more structured version of thematic analysis. This type of analysis was chosen as it provides coherence and structure to otherwise potentially cumbersome data. There are 5 key stages in the analysis;

1. Familiarisation; time was spent reading through the transcription
2. Developing a thematic framework: when familiar with the data the main themes were identified and developed into a framework, this framework was tested and refined until a good fit was generated.
3. Indexing: Each theme was numbered and quotes within the transcript which matched the theme were numbered accordingly.
4. Charting: A chart was made for each theme. The quotes from the transcript were lifted verbatim and entered into the chart. At this point another researcher was employed to view the data and rated how much they felt the quote fitted with the description of the theme. This technique known as inter rate reliability was employed to ensure the analysis was trustworthy.
5. Mapping and Interpretation: At this point the narrative from the data was generated. Quotes were selected to illustrate the theme and the opinions of different participants.

### **Initial findings**

#### **Mindfulness – surveys**

68 students attended the first session and completed the first questionnaire. 46 students completed the follow-up questionnaire at the end of the study

Table 2 presents the change in median scores before and after MM training on all questionnaire measures. A Wilcoxon Signed Rank test revealed a statistically significant increase in in positive mental wellbeing following participating in the training programme,  $z = -4.30$ ,  $p < .001$ , with a medium effect size ( $r = 0.45$ ). Self-efficacy also increased significantly post-training,  $z = -3.99$ ,  $p < .001$ , with a medium effect size ( $r = 0.42$ ). Two components of the MBI-SS showed a significant decrease, emotional exhaustion (EE),  $z = -3.07$ ,  $p = .002$ , with a medium effect size ( $r = 0.32$ ) and

cynicism (CY),  $z = -2.09$ ,  $p = .036$ , with a small effect size ( $r = 0.22$ ). There was no significant change on the professional efficacy (PE) sub-scale,  $z = -1.18$ ,  $p = .238$ , with a medium small size ( $r = 0.12$ ).

Overall, 13% of students met the criteria to be classified as 'burnt out' before MM training with 9% meeting the criteria after training. The mean number of sessions attended by the participants was four (range: 0 – 5 sessions).

Table 2: Questionnaire scoring for all components of the MBI, GSE and WEMWBS.

	Emotional Exhaustion (EE)		Cynicism (CY)		Professional Efficacy (PE)			Self-Efficacy	Well-being
	Median	n (%) high EE score	Median	n (%) high CY score	Median	n (%) low PE score	n (%) Burned out	Median	Median
<b>All participants n = 68</b>	21	53 (78%)	10	31 (46%)	26	22 (32%)	6 (9%)	30	44
<b>Pre-just T1/T2 n = 46</b>	21	35 (76%)	11	24 (52%)	27	14 (30%)	6 (13%)	30	44
<b>Post-just T1/T2 = 46</b>	18	28 (61%)	8	18 (39%)	27	9 (20%)	4 (9%)	32	50

MBI cut-offs: High EE  $\geq 16$ ; high CY  $\geq 11$ ; low PE  $\leq 5$ .

### Mindfulness – focus group

One Focus group was conducted with 7 participants (0 males, 5 females, 3 1<sup>st</sup> year, 2 2<sup>nd</sup> year). The following 3 themes emerged from the data. (These are comparable with the themes that emerged from the previous mindfulness study)

#### 1. Awareness of thoughts on behaviour:

- *Acknowledging pressure*
- *Using the skills of mindfulness*

#### 2. (Un)acceptance of stress

##### 1. a. Awareness of thoughts on behaviour: *Acknowledging pressure*

Students acknowledged that they self-imposed a significant amount of pressure on themselves to achieve and be successful. This pressure was often self-inflicted although expectations from the medical school and colleagues to attain grades and keep up with the work was perceived as stressful.

'I'm not gonna remember it all and I don't know PBL and you know I'm gonna look stupid in front of all of my group' (1<sup>st</sup> year)

'feel like everywhere else you have to have like game face all the time' (1<sup>st</sup> year)

‘coming up onto exam season ... you start seeing so many people go crazy they’re like I can’t I can’t do anything I can’t do that because I have to be up at my desk at half eight on a Saturday morning to start work’

### **1. c. Awareness of thoughts on behaviour: *Using the skills of mindfulness***

The participants described different ways in which the skills they had learnt from mindfulness impacted on their day to day lives.

‘using that body scan to try and relax has helped in the last week or so’ (1<sup>st</sup> year)

‘...awareness focus expansion. it was those principles that I would like be aware of like your breathing where you are focus on just the breathing and then like trying to push that like expansion out across like your whole body and I found that I have been sleeping a bit better recently’ (2<sup>nd</sup> Year)

‘to the listen to the thoughts and the traffic as it were but don’t judge it don’t step in just let it just let it go and that’s really good’ (1<sup>st</sup> year)

I find that I still practice mindfulness in emotional situations (2<sup>nd</sup> year)

‘it’s the way that you communicate with yourself rather than the way that you communicate with your patients but erm in changing and being nicer in your approach in the way that you communicate with yourself it’s then going to lead onto the way that you communicate with other people is going to be different’ (1<sup>st</sup> year)

‘the first week I walked in and I was I was like furious I was just like a tiny tiny ball of angry angry rage and then like after the mindfulness session I was like a completely different person’ (1<sup>st</sup> year)

### **2. (Un)acceptance of stress**

It was felt unanimously that stress was not very well accepted by medical students, to some extent it was discussed as having a stigma associated with such concerns. However within the mindfulness sessions this stigma was not evident, people felt accepting of how things were, the reality of every day stress which in turn relieved some of the day to day pressure.

‘I’d say that that stigma of mental health issues particularly in medicine is so bad’ (1<sup>st</sup> year)

‘You start to think I don’t wanna reach out for help because I don’t need that on my record’ (2<sup>nd</sup> Year)

‘really nice it was like no there was no pressure (in mindfulness) there’s no expectation you don’t have to do anything achieve anything you just got to come and it was really nice’ (2<sup>nd</sup> Year)

‘I think every everyone in the world would benefit from sitting down for a few minutes a day and just like just checking in with themselves’ (1<sup>st</sup> year)

### **Talking groups - Survey**

**Participants:** 23 students attended, 16 from year 1 (9 male, 7 female), 7 from year 2 (4 male, 3 female). Average age was 21.87.

Preliminary analysis indicates no significant results were found, that is to conclude the talking groups did not impact on students feeling of burnout, wellbeing or self-efficacy.

### **Talking group – Focus group**

One Focus group was conducted with 7 participants (1 male, 2<sup>nd</sup> year; 5 females, 1<sup>st</sup> year). The following 4 themes emerged from the data.

This data has not yet been analysed.

### **Discussion**

Our findings indicate that MM can significantly increase mental well-being and self-efficacy and lower levels of emotional exhaustion and cynicism in first and second year medical students. Given that more than half the participants (57%) didn't use the Podcast at all, we theorise that classroom training may play an important role in mediating positive change. It was clear the skills of mindfulness were quickly assimilated.

This project has been based on a small and self-selecting group of students which poses challenges in our conclusions. In reality it also ensures we ask the question about how to reach the harder to reach students for whom these interventions do not appeal. In addition no matter how small there is a student body in need of these interventions who have gained from being part of them.

It is important for each division within the university to be addressing the wellbeing needs of their unique student body and ensuring there is a programme of support available. In running this project we have been able to pilot different supportive programmes and build momentum to continue this into the future with the acknowledgement of its importance.

### **Strategic goals**

This project falls in line of the University's strategic goals by enhancing the learning and student experience through supportive methods to enable students to manage and cope with the demands of a university course. This holds the upmost importance in a professional degree such as medicine demonstrated and supported by the GMC summary guidance on supporting students with mental health conditions includes in its suggestions to Medical Schools that they "provide sessions on techniques such as mindfulness and meditation" (GMC 2013).

### **Dissemination**

This project has been disseminated locally and internationally though oral presentation at the recent International Meeting on Well-Being and Performance in Clinical Practice (Greece, May 2016). We were also invited to speak at the European society for person centered healthcare and were awarded the society's bronze award in recognition of person centred healthcare advocacy.

The results are currently being analysed with a view to publication in medical education within the next two months. We are working closely with the Student Wellbeing and Professionalism support services within the medical school to affect change and continue to discuss and disseminate our work via social media and local meetings.

Shepherd SC, Mimmagh C., Hart J., and Walsh, M. Mindfulness for pre-clinical medical students. 2nd International Meeting on Well-Being and Performance in Clinical Practice. 18-22 May 2016

## **Budget**

This project had a robust budget plan which meant our costs were covered on target. In terms of taking our work forwards without the funding from CHERIL we will need to work with the medical school to see what we are able to fund. We believe there were benefits shown by taking part in a talking group and perhaps graduated medical students would be interested in running these groups on a voluntary basis. Similarly the provision of mindfulness has had profound effects upon our student body yet it is an expensive course to run. Currently an author (SS) is being trained in passing mindfulness skills on by the counsellor who delivered the sessions, whilst this is not the best case scenario this will ensure there are still mini workshops based in mindfulness available to medical students. This project has shown our team how important different interventions are in attending to different students' wellbeing needs, we will continue to develop and pilot our wellbeing programme and be directed by our main priority, ensuring student wellness.