

## The Attitudes of Healthcare Students to Mindfulness-Based Interventions

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### Abstract

#### *Aims*

Mindfulness based Interventions (MBIs) have been shown to have applications and benefits amongst healthcare students and workers. This study aimed to assess the attitudes and knowledge of Irish healthcare students towards MBIs.

#### *Methods*

A cross-sectional survey of students of University College Dublin Schools of Medicine and Nursing.

#### *Results*

Eighty-three students completed the survey, 61.4% had previous knowledge and 53% previous experience with MBIs, most of whom found it beneficial and who maintained an ongoing practice, 61.4% of students had positive or very positive attitudes towards MBIs and engaged in it most commonly using online resources/mobile applications (apps). The majority (88%) felt there was a role for MBIs in healthcare students and workers as a tool for stress management. Three-quarters (76%) of students would consider referring patients for MBI in the future.

#### *Discussion*

The study showed high levels of knowledge and experience amongst students, with largely positive attitudes towards MBIs. Barriers to engaging with MBI centred on time and academic pressures, while potential facilitators included designated rooms and access to apps. The study suggests MBIs may be a valuable tool for healthcare students in their academic and professional journeys.

## Introduction

Mindfulness has been defined as “*the awareness that emerges through paying attention on purpose, in the present moment, and non-judgementally to the unfolding of experience moment by moment*”<sup>1</sup>. A variety of Mindfulness Based Intervention (MBI) programmes have been developed and adapted from the Mindfulness Based Stress Reduction (MBSR) programme developed by Kabat Zinn in the 1970s in which he integrated the Buddhist practices of mindful meditation into secular healthcare settings. The practice of mindfulness has been associated with a number of both psychological and physiological health benefits in a wide variety of conditions<sup>2</sup>. For the purposes of this paper the term MBI refers to all mindfulness based practices, ranging from participation in formal taught courses (such as the MBSR/ MBCT programmes) to personalised individual practices (such as using online applications).

Awareness and engagement with these practices has increased and attention has turned to the potential applications of these approaches in specific groups, including healthcare students and healthcare workers. These groups have higher rates of depression and mental health difficulties than the general population<sup>3,4,5</sup>. As burnout rates among healthcare professionals (and those in training) continues to rise, the importance of finding ways to mitigate against the strains of these demanding professions is important, both for the well-being of individual healthcare students and workers and the wider healthcare system<sup>6,7,8</sup>.

A growing body of literature demonstrates the positive outcomes associated with MBIs among healthcare students and professionals, which include decreasing levels of stress, depression and anxiety, and increasing measures of mood, self-efficacy, empathy and mindful attention scores<sup>9,10,11,12,13,14</sup>. Some of the additional benefits of MBIs as outlined by McKenzie *et al* include it being a wellness-enhancing, rather than pathology-reducing practice, being a non-stigma producing practice which is inexpensive to teach and practice, and accesible for participants to understand and use<sup>15</sup>.

A number of MBI-based programmes have been specifically tailored for both university students and healthcare workers in recent years<sup>16, 17, 18, 19</sup>. Examples include the Koru programme, which has a curriculum tailored towards university students where groups are led through a four week programme of 75 minutes sessions by a certified teacher/faciliator<sup>18</sup>. The attitudes and perceptions of healthcare students towards MBIs must be considered in planning how such courses might be offered to students. Research into the knowledge and attitudes of healthcare students towards MBIs has grown in recent years<sup>20</sup>. Gryffin *et al* found that the major barriers to the practice of MBI among healthcare students have been a lack of time and lack of knowledge regarding the benefits involved.

The major benefits students attributed to MBI practice were stress-reduction, and enhanced focus and reflection<sup>21</sup>. A narrative review of 19 qualitative studies examining perceptions towards MBIs in healthcare student identified four overarching themes: awareness, barriers to meditation, improved focus, and the role of the facilitator. The theme of awareness was sub-divided into three further sections: emotional regulation, tools for future use, and relationship with others. The review reported that students found MBIs beneficial, and described them as a coping mechanism that reduced emotional distress and anxiety, improved learning, helped to build relationships, and provided tools for future careers. The review recommended the development of MBIs that specifically meet the needs of university students, and that future research should focus on the components of MBIs students perceived as most beneficial, as well as differences in perceptions among different student groups<sup>22</sup>.

This study aims to further explore some of these issues by assessing the attitudes, knowledge and experiences of Irish healthcare students towards MBIs and to assess some of the perceived barriers and facilitators towards engagement in MBIs.

## **Methods**

This study took the form of a cross-sectional survey of current undergraduate and postgraduate Medical and Nursing students attending University College Dublin (UCD). A participation invitation was emailed to all current students of the Schools of Medicine and of Nursing (n=3,320) along with the relevant consent and participant information forms between May and June 2022. The questionnaire gathered anonymised demographic information and data regarding the participants' attitudes, knowledge and previous experience of MBIs. The questionnaire was developed from a number of previous similarly themed surveys<sup>5, 15, 21</sup>. and consisted of 17 stems containing a mix of simple binary questions, Likert scales and open-ended free text questions which allowed a mix of qualitative and quantitative data be collected and analysed.

Data were collected using Google forms and later transposed onto Excel sheets for simple statistical analysis and SPSS for univariate and bivariate analysis. Simple statistical univariate analysis methods were used to examine the characteristics of the group – using as appropriate mean/median, range, standard deviations (SD) to examine the characteristics of the participants and their perspectives on various aspects of MBIs. SPSS was used to conduct bivariate analysis to examine differences between different subgroups of students using Chi-square test analysis.

## **Results**

### *Demographic Information of Participants*

Eighty-three healthcare students of the 3,320 invited completed the questionnaire, yielding a response rate of 2.5%. Half (53%) were in the 18-22 year old age-range, 75.9% were female, with 49 and 34 respondents from the schools of Medicine and Nursing respectively (Table 1).

#### *Knowledge, Attitudes and Experiences of HealthCare Students towards MBIs*

The majority of students had previously heard of Mindfulness/ MBIs (51, 61.4%), and of these 76.5% had positive or very positive attitudes towards them (Table 2). Of the 51 participants who had previously heard of mindfulness 44 (86.3%) had engaged in some form of practice, 37 (84.1%) found it to be beneficial and 32 (72.8%) had ongoing practice of MBIs (table 2). Asked to briefly outline their understanding of mindfulness the most commonly listed themes were as a tool for stress management, relaxation, calming and grounding and for fostering present-moment awareness.

The data were analysed for differences in the attitudes between specific groups of students. The only statistically significant difference was found to be the higher rates of favourable attitudes amongst postgraduate students compared with undergraduate students ( $p < 0.05$ ).

#### *Attitudes of Healthcare Students towards MBI in Educational Settings*

Study participants reported a need for the inclusion of a student well-being initiative on their schools curriculum, they saw a role for MBIs in this, and indicated their interest in taking part in such a course (see Table 3). Of the 41 students who saw a role for MBIs among healthcare students and workers the most commonly mentioned theme was as a stress-reduction tool (73.2%). The need to prioritise addressing difficult working conditions was the most common theme noted in those who felt MBI's had no role to play in their schools curriculum (3, 33%) as outlined in table 3.

Data were analysed for differences in the attitudes between specific group. Students in the School of Nursing were significantly more likely to favour a mobile application and medical students to favour a student-led session or a dedicated meditation room ( $p = 0.006$ ). Postgraduate students were significantly less likely to favour access to a MBI course ( $p = 0.001$ ). Those students which previous positive experience of MBI were significantly more likely to favour a course ( $p < 0.001$ ).

#### *Attitudes of Health Care Students towards MBI in Workplace Setting*

Three-quarters ( $n = 76$ , 91.6%) of students would consider referring patients for MBI in their future careers. Of the conditions students listed which they understood MBIs might be useful in treating, 78.1% related to mental-health conditions and 21.9% to physical health conditions (Table 4). Participants had more positive perceptions as to the potential applications of MBIs in the realm of mental healthcare (45, 54.2%) than physical healthcare

(26, 31.3%). A lack of knowledge about the potential applications of MBI in the areas of mental and physical health was acknowledged by 15.7% and 20.5% respectively (table 4).

The data were analysed for differences in the attitudes between specific groups. There were no significant differences in attitude between those with and without experience of MBIs. Those students who favoured access to an MBI course were significantly more likely to see a role for MBI in their future clinical work ( $p < 0.001$ ), or to wish to refer ( $p < 0.001$ ).

## Discussion

The results of this study demonstrates widespread knowledge and exposure to MBIs among this group of healthcare students and illustrates favourable attitudes towards MBIs, especially amongst healthcare students with previous knowledge of mindfulness practices. The themes that emerged when students outlined their understanding of mindfulness were of fostering present-moment awareness and its role as a tool for stress management, relaxation, calming and grounding. These themes are reflective of previous research in the area (e.g. <sup>5, 22, 24</sup>). The majority of those with previous experience of MBI reported beneficial outcomes including stress reduction/relaxation (63.7%), improved concentration/ focus (15.9%), enhanced present moment awareness (15.9%), improved emotional regulation (13.6%), benefits to mental health /self-care (11.4%), improved sleep (4.5%) and enhanced reflection skills (2.3%). Students who reported no benefit from their previous practice included the inefficacy of techniques themselves, academic and workplace time pressures, and uncertainty regarding the practicality of MBI in a workplace/ academic environment.

Most students with previous experience of MBI maintained an ongoing formal practice, with over a quarter having an ongoing daily practice. Previous research has shown that informal practices are maintained in novice meditators for longer periods than formal practices (24). The shorter time periods used by students in this sample who continued their practice suggests this may be one of the keys to a successful ongoing practice.

Most students believed a student well-being initiative should be part of their schools curriculum (79, 95.2%) and saw both a role for MBIs among healthcare students and workers and would be interested in taking part in a mindfulness course themselves (73, 88%). The most commonly perceived application of MBIs in healthcare students/ workers reflected the benefits students had listed from their own practices i.e. stress-management, increased productivity, improved mental health and self-care, fostering compassion and empathy and preventing burnout. The themes that emerged amongst the students who felt there was no role for MBI amongst healthcare students related to poor uptake, time pressures, work environment, and concerns regarding both religious associations and the scientific basis of such practices. These themes were similar to themes noted in previous literature in which lack of knowledge of the benefits of mindfulness practices was shown to

be an additional barrier (21, 22, 25). As a result it was surprising that there were no significant difference in attitudes between those with and those without experience of MBIs: perhaps this is related to the relatively low number of participants, or it may reflect the heterogeneity of the MBIs experienced.

#### *Consideration of integrating findings into practice*

The most commonly cited barriers to participation in MBIs were time pressures and academic prioritisation—themes common in previous studies (e.g. 21). The most cited facilitators to engaging with MBIs – “having a meditation space/room”, “having a mobile app”, “staff-led lunchtime meditation session”, and “student-led lunchtime meditation sessions” – were similar to those identified in a study of undergraduate nursing students (23). These findings suggest simple, cost-effective ways of facilitating student engagement with MBIs, such as having access to a designated practice rooms, student Apps and drop-in lunchtime sessions. The study also highlight the perception amongst healthcare students around the current lack of integration and engagement with MBI approaches within their schools where 73 (88%) students felt it was non-existent or minimal. As reported by Bamber et al in their review, there is a need for MBIs that specifically meet the identified needs of university students (22).

There was a lack of a clear consensus amongst participants as to the favoured format of any future MBI courses. Over half of student participants (42, 50.6%) suggested that MBIs be offered as a mandatory course in either early preclinical years (21.7%), or later clinical years (28.9%). The most popular selected duration for such courses were four (28.4%) and six weeks (35.1%) with shorter sessions times being preferred reflecting the finding of time pressure being the most commonly cited barrier to the practice of MBIs and highlighting the challenge of how such course might be incorporated into busy academic schedules and calendars. Most students (76, 91.6%) would consider referring patients for MBI one day. Those who would not cited “*not knowing enough about it*” and believing “*there is insufficient evidence of its efficacy*” as their reasons to not do so. This is consistent with the wider literature: in their study, Gryffin et al reported lack of time and lack of knowledge regarding the benefits involved as the main barriers to the practice of MBI in healthcare students (21). The majority of conditions students understood would benefit from MBI practice related to mental health but specific physical conditions such as chronic pain were also listed.

#### *Limitations*

This study successfully gathered and interpreted data outlining current knowledge, attitudes and experiences towards MBIs. Limitations include the low response rate (2.5%) and small sample size which limited the power of many statistical analyses. There was also potential for selection bias amongst the participants, as students with an interest in MBIs might be more likely to select a survey on this topic. The study did not collect data on the

detail of MBI programmes previously accessed, and was therefore unable to make comparisons between formal MBI programmes and more informal practices: this might be an area for future research. There is need for research into the acceptability, uptake and outcomes associated with various formats of mindfulness provision in third-level educational settings, to include mobile application-based and online formats.

The results of this study of healthcare students shows there is widespread knowledge of MBIs, and high rates of previous mindfulness practice experience in this group. Respondents generally had positive attitudes towards MBIs and a wide range of potential benefits were identified by participants, particularly as a tool for managing stress. The majority of those with previous mindfulness practice experience reported ongoing formal practice. The main barriers to engaging with MBI included time constraints and academic pressures. Facilitators to engaging with MBIs which were proposed included access to designated rooms, access to apps and lunchtime drop-in sessions. Many questions remain to be answered as to how best meet this need in healthcare education, but MBIs may be a valuable tool with which to equip healthcare students in their often demanding academic and professional journeys.

**Declarations of Conflicts of Interest:**

None declared.

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**Table 1: Socio-demographic characteristics of participants (n=83)**

Category	Sub-Category	Frequency (%)
<b>Sex</b>	Female	<b>63 (75.9)</b>
<b>Age</b>	18–22 years	44 (53)
	23-30 years	25 (30.1)
	31-40 years	9 (10.8)
	41-50 years	4 (4.8)
	50+ years	1 (1.2)
<b>School</b>	Medicine	49 (59)
	Nursing	34 (41)
<b>Year of Study</b>	Undergraduate 1-3	<b>51 (61.4)</b>
	Undergraduate 4+	<b>15 (18.1)</b>
	Post-Graduate	17 (20.5)
<b>Ethnic Group</b>	White Irish	53 (63.9)
	White Irish Traveller	1 (1.2)
	Other white background	9 (10.8)
	Black or black Irish/other black	<b>2 (2.4)</b>
	Asian or Asian Irish/other Asian	<b>14 (16.8)</b>
<b>Religious Background</b>	Roman Catholic	44 (53)
	Protestant	2 (2.4)
	Muslim (Islamic)	7 (8.4)
	Hindu	1 (1.2)
	Buddhist	2 (2.4)
	Atheist	17 (20.5)
	Other	<b>10 (11)</b>

**Table 2: Knowledge, Attitudes and Experiences of HealthCare Students towards MBIs (n=83)**

		<b>Frequency (%)</b>		
<b>Previous Knowledge of MBI (yes)</b>		51 (61.4)		
<b>Previous MBI Practice (yes)</b>		44 (86.3)		
<b>Describe your Attitude towards MBIs'</b>	5 Very positive	20 (39.2)		
	4 Positive	19 (37.3)		
	3 Neutral	10 (9.6)		
	2 Negative	1 (2)		
	1 Very Negative	1 (2)		
<b>Was your MBI Practice Beneficial</b>		37 (84.1)		
<b>MBI Practice:</b>	<b>Beneficial</b>	n (%)	<b>Non-Beneficial</b>	n (%)
<b>Why Beneficial/ Non-Beneficial?</b>	Stress Reduction/Relaxation	28 (63.7)	Techniques not helpful	4 (44.4)
	Concentration/Focus	7 (15.9)	Time pressures	4 (44.4)
	Present moment awareness	7 (15.9)	Not practical	1 (11.1)
	Emotional Regulation	6 (13.7)		
	Mental Health/self-care	5 (11.4)		
	Sleep	2 (4.5)		
	Reflection	1 (2.3)		
<b>Frequency of Ongoing Practice</b>	Daily	12 (27.3)		
	At least once weekly	8 (18.1)		
	> Once a week)	12 (27.3)		
	No current practice	12 (27.3)		

**Table 3: Attitude of Healthcare Students towards MBI in Educational Settings**

		Frequency (%)*
Should a student well-being initiative be in curriculum? (yes)		79 (95.2)
Is there a role for MBI amongst Healthcare Students? (yes)		73 (88)
Would you be interested in taking part in an MBI course		79 (95.2)
What role do you see for MBIs in Healthcare students?	Stress management	30 (73.2)
	Increasing efficiency/productivity	5 (12.2)
	Mental health/Well-being	12 (29.3)
	Fostering compassion/empathy	2 (4.40)
Why do you see no role for MBI in Healthcare Students?	Prioritise working conditions	3 (33.3)
	Not practical	2 (22.2)
	Poor Uptake	1 (11.1)
	Religion/ Scientific concerns	2 (22.2)
	Time Pressure	1 (11.1)
Are there Barriers to participation in MBI course? (yes)		35 (47.3)
Please Describe Barriers	Time pressure	26 (74.3)
	Academic/work priority	12 (34.3)
	Privacy concerns/setting	6 (17.1)
	Lack of motivation	5 (14.3)
	Not enjoyable	1 (2.9)
	Stigma	1 (2.9)
Facilitators to your participation in MBI?	A meditation room /space	52 (70.3)
	A Mobile App	43 (58.1)
	Staff led lunchtime sessions	28 (37.8)
	Student-led lunchtime sessions	20 (27)
	Student champion	6 (8.1)
	Other (please describe)	5 (6.8)
To what extent does your school currently encourage incorporate MBI's	Non-existent	32 (38.6)
	Minimal	41 (49.4)
	Moderate	9 (10.8)
	Good	1 (1.2)
	Extensive	0 (0)
In what form should MBI Courses should be offered?	Mandatory (pre-clinical students)	18 (21.7)
	Mandatory (clinical students)	24 (28.9)
	Elective (pre-clinical students)	17 (20.5)

	Elective ( clinical students)		10 (12)	
	Other (Please briefly describe)		14 (16.9)	
Proposed Duration of MBI	<b>Session</b>	<b>n (%)</b>	<b>Course</b>	<b>n (%)</b>
	< 30 mins	25 (33.8)	2 weeks	8 (10.8)
	30-45 min	30 (40.5)	4 weeks	21 (10.8)
	45- 60 min	17 (23)	6 weeks	26 (35.1)
	60-90 min	2 (2.7)	8 weeks	20.1 (20.3)
	90-120 min	0	Other	4 (5.4)
*When the difference between students with and without experience of MBIs was examined across these variable there were no significant differences between the two groups.				

**Table 4: Attitude of Healthcare Students towards MBI in Workplace Settings (n=83)**

		Frequency ( %)		
Would you refer patients for MBI? (yes)		76 (91.6)		
If not, this is because:	I don't know enough about it	3 (42.9)		
	Insufficient evidence of efficacy	4 (57.1)		
Are you aware of conditions that MBIs might be useful in treating? (yes)		50 (60.2)		
If yes please list	Anxiety/OCD/PTSD/GAD	38 (45.8)		
	Depression	24 (29)		
	Mental Health Other	7 (8.4)		
	Chronic conditions	7 (8.4)		
	Stressful life event /Burnout	6 (7.2)		
	Chronic pain	6 (7.2)		
	Cancer diagnosis	3 (3.6)		
	Other	2 (2.4)		
	Terminal Illness	2 (2.5)		
	Other	0		
Potential for MBI in preventing Mental/Physical Health Problems (number on Likert scale)	<b>Mental Health n (%)</b>	<b>Physical Health n (%)</b>		
Non-existent (1)	1 (1.2)	Median (range) 4 (0-5)	2 (2.4)	Median (range) 3 (0-5)
Mild (2)	5 (6.7)		15 (18.1)	
Moderate (3)	19 (22.9)		23 (27.7)	
Good (4)	28 (33.7)		18 (21.7)	
Extensive (4)	17 (20.5)		8 (9.6)	
I don't know enough to comment (0)	13 (15.7)	Mean (SD) 3.2 (1.6)	17 (20.5)	Mean (SD) 2.6 (1.6)

**Table 5: Illustrative quotes from students**

**What is your understanding of Mindfulness? Please briefly describe (< 30 words)**

*"Taking time to become aware of your surroundings and your self in attempt to ground self"*

*"A form of meditative exercises used to focus attention/combat stress."*

**Please briefly describe (<30 words) in what way you found your previous MBI practice beneficial**

*"It is beneficial as it helps me to relax more, and prevents me becoming too overwhelmed"*

*"Less stress and anxiety. You don't feel in control but you're okay with that"*

*"...helps to address stresses and see problems for what they are"*

*"... helped me to concentrate better on my tasks"*

*"...slows heart rate, more focused, mind more clear, more intentional for the day, enjoy the little moments during the day more"*

*"...sets me up for the day, I feel that my emotions are better regulated having taken time to ground myself in morning"*

**Please briefly describe (<30 words) in what way you found your previous MBI practice non-beneficial.**

*"I would like it to work but I feel like I spend too much time thinking about other things instead of clearing my head"*

*"...in my opinion not practical in a busy hospital environment"*

*"makes me anxious, not being productive"*

**Please briefly describe why you see a role for MBI amongst healthcare students/ healthcare workers?**

*"I think there is such a need for it with healthcare students. Training and working in healthcare is so overwhelming and stressful, that I really believe you need some coping strategies in place to help you get through your training."*

*"A lot of my friends seem to have damaged mental health from the academic pressure and were only 1st years"*

*% "...definitely benefit from having some material available to us, of simple techniques to help with stress especially during exams"*

*%, "In a stressful career that requires us to be compassionate and caring towards others it's important to take note of our needs mentally also. You can't be your best self for others if you're not treating yourself with similar compassion"*

**Please briefly describe why you don't see any role for MBI amongst healthcare students/ healthcare workers?**

*“Although MBIs might help some, in my opinion the only way to improve healthcare students/workers conditions or any other job/study condition changes must occur to the whole educational system/work environment rather than individualism”*

*“ ...not practical in current working environment. I think staff group debriefing is more beneficial and allows us to reflect in a more constructive way”*

**Please briefly describe ( if applicable) any barriers that might prevent you from participating in mindfulness practice (<50 words)**

*“Busy environment, busy clinical and academic schedules = poor participation”*

*Over worked.. too much to do ... no time*

*I would not want to discuss my personal life with classmates. I would only want to attend a course that was focused on learning and practicing different types of MBI (not a group therapy session!)*