

Mindfulness introduced into pre-existing social groups can significantly reduce feelings of stress and increase subjective wellbeing and results in high participant uptake and low rates of attrition; A mixed method exploratory study in ecologically valid locations.

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Abstract:

The growing mental health crisis and the impact of austerity means it is becoming increasingly urgent to develop cost effective strategies that promote good mental health. However, most of the research is carried out in locations that are not ecologically valid with convenient samples. This exploratory study introduces short mindfulness therapies into diverse pre-existing social groups. University students (N=7) are compared to two groups of older adults (N =19) from a deprived area. Measures of perceived stress and subjective wellbeing taken before and after six weekly mindfulness sessions are shown to significantly lower perceived stress and increased feelings of subjective wellbeing. It discovers that the short time commitment and the convenience of the location stimulates a high uptake, and a low rate of attrition. It identifies and explores possible reasons for the differences in baseline measures that were found to exist between the two older groups. A thematic analysis of focus group transcripts identifies reasons behind participation, participant’s intention to continue and the subjective experiences mindfulness. Emergent themes are discussed in relation to the empirical findings in order to gain insight into how to best move forward in the development of effective self-help programs that people will readily adopt.

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Introduction:

The benefits of meditation have recently experienced something of a renaissance. Once the domain of Eastern mystics, meditation first came to the attention of the West in the 1960s via the medium of ‘Transcendental Meditation’ (TM). Popularised by celebrities and pop stars seeking ‘inner peace’, TM focused on the repetition of ‘mantras’, often under the guidance of a Guru, in an attempt to achieve spiritual fulfilment. Although TM is still practiced, it has never entered everyday life in the way that contemporary Mindfulness Meditation (MM) has. Currently there are books, CDs, group therapy, online guided meditation and a plethora of phone apps which all promise to help us with our depression, anxiety, sleep etc. Moreover, all we need to do to access these benefits is to pay attention to the present moment. One study explored utilising virtual reality to enhance MM therapeutic possibilities (DBT®). The results found participants felt more relaxed and had significantly less anger, stress and anxiety after the VR mindfulness sessions (Navarro-Haro et al., 2017). Although the 44 participants being attendees at a Mindfulness Conference somewhat confound the results, it does demonstrate the increasing interest and innovation in the field and the desire for non-pharmaceutical interventions to support good mental health.

Mindfulness Meditation is meditation for the modern world. Despite deriving from The East and the same ancient Buddhist philosophy as TM, contemporary mindfulness meditation bears little similarity to the spiritual chanting practiced by pop stars in the sixties. Today, Mindfulness Meditation has lost its spiritual associations and is now a non-secular therapeutic practice that is becoming increasingly popular in mainstream society. Mindfulness based therapy has been shown to be effective as a treatment for alleviating the symptoms of diverse psychological and physiological disorders with mindfulness interventions now routinely available in both the private and public (NHS) sectors.

This reason for this renewed attention can be traced to the late 70s, and Dr Jon Kabat-Zinn, a molecular biologist whose interest in mind and body interactions led him to explore the possible clinical applications of Mindfulness Meditation (MM). By combining his personal knowledge of traditional Buddhist practice with his scientific background, he developed Mindfulness based stress reduction (MBSR) as a clinical treatment for stress related disorders. The concept is simple - “Mindfulness is awareness that arises through paying attention, on purpose, to the present moment”. This awareness of thoughts and physical sensations must be non-judgemental, “it’s about knowing what is on your mind” (Kabat-Zinn, 2003), to be mindful is to be conscious of the present moment both mentally and physically without bias.

Other mindfulness-based therapies were subsequently developed and, although initially intended as treatment for cognitive complaints, the beneficial effects are transferable to those with physical disorders. One early study found that mindfulness meditation could be useful in reducing suffering in people with treatment resistant chronic pain, stimulating substantial interest in MM for pain control. (Kabat-Zinn & Burney, 1981), (Kabat-Zinn, 1982). However, today the clinical applications of mindfulness have become so varied that there are few areas of clinical psychology where its use has not been explored. Mindfulness has been used to improve attentional regulation and promote positive behaviour in adults and children with

Autism (Cachia, Anderson & Moore, 2016). It has also been effective in preventing relapses in drug addiction and is particularly effective if there are coexisting depressive disorders (Zemestani & Ottaviani, 2016).

Investigation into the clinical applications of mindfulness rightly continues, but research is also emerging that explores delivering mindfulness to non-clinical (N-C) groups. Research is focused on two areas mindfulness to mediate happiness (Campos et al., 2016), or as a protective measure which may increase cognitive resilience (Jha, Morrison, Parker & Stanley, 2016). Recently there has been increased focus in preventative mental health, This is driven by two factors; firstly, by the reported increase in mental health disorders, and secondly by the growing financial burden this places on the state and private companies.

One UK study (N 2229) found 65% of responders reported they had previously suffered, or were currently suffering from, mental health issues, and for women and young adults this figure rises to more than 70%. Only 13% of the group reported having good MH (not only a lack of a clinical disorder but also a positive outlook and coping systems) (Mental Health Foundation, 2018). We are aware of actions that can protect our health such as exercise and social interaction, however, as we age utilising these measures can become problematic for some individuals. Poor health and mobility issues do not only affect older adults ability to exercise, it also restricts possibilities for meaningful social interaction just when many of our former support structures are naturally declining.

Retirement and the death of friends and family members often means our later years see a contraction of the social support networks we previously relied on. Negative effects can be somewhat offset by taking up group based activities and adopting or expanding our hobbies. However, many individuals do not feel they have enough meaningful social contact. A quarter (24%) of over 65s reported feeling depressed due to loneliness while 16% acknowledged that lack of significant social contact had triggered feelings of anxiety and depression (Mental Health Foundation, 2018).

Environmental stressors also have an impact on mental health, particularly economic pressure. A study commissioned by the Joseph Rowntree Foundation found that 26% of women and 23% of men from the lowest social economic class in the UK were at high risk for mental health problems (Mental Health Foundation, 2016). Living in poverty is recognised as being a major risk factor for developing mental health problems. Almost three out of every four people in the UK's lowest income bracket reporting having significant mental health issues, with financial stress being cited as the major contributory factor (Van Hal, 2015). Recent research has found evidence that elderly people from low socioeconomic groups are particularly vulnerable (Behanova et al., 2015). Unfortunately, current financial pressures also mean the increasing need for mental health services cannot be met, with austerity having a direct impact on the availability of effective treatments (Mills, 2017).

This study only looked at a snapshot from across the UK but its results are broadly in line with literature from the World Health Organisation that show that in most European countries the leading cause of

disability is poor mental health. On an individual level this can be devastating, but it is also extremely costly, with approximately 3% of a country's GDP being spent maintaining the 30-40% (country dependent) of its citizens that cannot, or are absent from, work due to chronic mental health issues (Euro. Who. Int, 2018).

Pharmaceutical interventions are the cheapest, and often the first, treatment with the NHS in England issuing 64.7million prescriptions for antidepressant in 2016; more than double the amount prescribed in 2006 and an increase of 3.7 million from the previous year (Digital.nhs.uk, 2018). Anti-depressants are also used for other disorders and can be remarkably effective but for many they merely improve symptoms and do not treat the underlying condition. Moreover, drugs come with risks of dependency and side effects such as nausea and sleep disruption are common. Doctors agree that ideally non-pharmaceutical options should also be considered. However, as Dr Stokes-Lampard, chair of the Royal College of GPs, states "*there is a severe lack of these services available in the community where they could be of great benefit to patients*" (Campbell, 2018). Unfortunately, the cost of behavioural therapies and the amount of therapists needed means that waiting lists are long and therapists are all too often restricted to a crisis management role.

There is a growing body of psychological research that is desirous of not only finding a way to treat disorders when they occur but to preventing mental health issues arising. Although psychologists cannot influence the environmental stressors which increase susceptibility such as age, poverty, ill health, and loneliness, they can explore ways to protect mental health and promote individuals with a degree of cognitive resilience. Due to rising demand and current financial restrictions psychology has by necessity turned its attention towards what could be considered 'self-help' therapies.

While people often take action to safeguard their physical health, unless there is a problem their mental health is often ignored. If disorders such as depression or anxiety do occur, the first and sometimes only treatment offered is often pharmacological. Nevertheless, there is another viable option. Mindfulness-based interventions have been shown effective in a wide variety of clinical disorders and have significantly improved many individual's quality of life. Findings suggest that these beneficial effects are greater in non-clinical populations (Sedlmeier. 2017), and this is driving research as to how they can be best delivered economically en masse to the general public.

One recent German study, 'Life Balance,' explored the possibility of utilising 'non-experts' to deliver cost-effective interventions to groups of between 12-15 people in over 80 different sites. Drawing on a foundation of mindfulness, Lyssenko and colleagues developed a programme that hoped to promote cognitive resilience and increase positive affect in the general population. Empirical measures were collected using three standardised questionnaires; The Hospital Anxiety and Depression Scale, The Resilience Scale, and a Satisfaction with Life Scale, from 1812 experimental participants and their matched controls. The results are encouraging, with participation in the 'Life Balance' programme significantly decreased anxiety and depression. The beneficial effects also appear to be enduring, with the experimental group maintaining a smaller but still significant improvement six months' post programme. In addition,

although not significant for resilience and satisfaction with life at $p=0.0521$ and 0.0533 , they did conclude that mindfulness based therapy does appear to promote overall good mental health (Lyssenko et al., 2015).

Life Balance was sponsored by AOK Baden-Württemberg, a large health insurance company, and although the results were promising it was still costly and difficult to coordinate (Lyssenko et al., 2016). Its strength lies in its size and the use of non-experts, who, after a five-day training programme, delivered an intervention to a non-clinical population that significantly improved depression and anxiety. However, there are several limitations in implementing a similar programme to the general population. Firstly, this programme was developed for non-clinical groups while those that volunteered showed significant mental distress (Lyssenko et al., 2015), suggesting that their sample may not be representative of the general population. While the substantial time commitment involved in attending seven, ninety-minute sessions certainly has a bearing on the ability and willingness, to participate. From the initial 29482 invited to take part less than 5000 replied, and from the 1812 initial participants, more than a third of the group (N 729) did not meet the four from seven session minimum criteria for inclusion in the first post-study measure. Financially implementing a programme like this is also challenging. Although this is less costly and can reach more people than employing trained therapists, it nevertheless still requires considerable funding to provide training, pay wages and acquire suitable locations to practice.

Other research has looked at delivering mindfulness remotely. Chadi and colleagues explored the effect of online mindfulness based interventions in adolescents with chronic illness that have difficulty accessing traditional group therapy sessions. Utilising technology to deliver group meditation in real time, participants were either randomly assigned to a traditional person led mindfulness group, or via audio-video technology to an online group. Results showed a significant lessening of depressive symptoms for both conditions and no significant group effect, making an interesting case for the integration of technology and mindfulness. (Chadi et al, 2018). However not all technology is equal.

A meta-analysis looked at data from over 40 yrs (1975- 2016) of in the workplace eHealth (web or app based) mental health interventions, and although there was a small overall positive effect, businesses are warned to choose their eHealth therapy wisely. Although eHealth interventions are increasingly being used instead of costly therapist led treatment, they are not homogenous and interventions can vary widely. Stratton and colleagues found that Stress Management interventions were diverse. Nonetheless, overall they did give was a moderate significant positive effect, $p < 0.05$, $g = 0.4$. While the CBT were comparable in method and content but gave a smaller but still significant positive effect, $p < 0.05$, $g = 0.15$. Mindfulness based interventions were also found to be analogous and have the most impact, with a moderate to large positive effect overall, $p < 0.01$, $g = 0.6$, a result the authors suggest “*has the potential to make a meaningful change when considered on a population level*” (Stratton et al., 2017).

While research is emergent regarding the diverse uses of mindfulness in non-clinical groups, there is still a paucity of studies exploring its delivery in naturalistic settings (Hone, Jarden & Schofield, 2014). In an attempt to address this shortage this exploratory study focuses on the development of an easily delivered,

financially viable mindfulness intervention within existing social settings. It utilises older adults and university students'; cohorts who are known to be at higher than average risk from developing mental health problems and who have been shown to benefit from mindfulness based therapy.

Mindfulness may be particularly beneficial for older adults who often suffer from reduced income, health issues, and social loss on a scale they have not so far encountered- any of which can act as psychological stressors (Gallegos et al. 2013), (Truxillo et al., 2015). This study looks at two groups that are predominantly attended by older adults'; One that is accessible Monday to Friday, completely funded, and provides a wide variety of free arts and crafts material, alongside organising outings to local places of interest. The other is in the same area but is under constant financial pressure and has had to cut their hours of opening from twice to once a week 10am -2pm. Although it also has opportunities to practise arts and crafts, this is on a much smaller scale than the former group and is self-funded. This group's primary function is to provide emotional support for women. It also offers the opportunity to obtain free financial advice from a local law firm and other organisations such as The Citizens advice bureau.

The third group, (university students), are also a cohort particularly vulnerable to mental health issues and report above average levels of psychological distress. One longitudinal study (N 16,460) found that over their time at university, student's depression and anxiety scores steady increased, and although it varied throughout the semesters, it never dropped to pre-university level (Cooke et al., 2006). Other studies have estimated that at least one third of all university students experience depressed and anxious moods resources means that seeing a trained councillor is becoming increasingly problematic and it is now essential that we find alternative ways to address the growing number of students who need but cannot access counselling in a timely manner. Work has recently been carried out that suggests that mindfulness can alleviate depressive symptoms in the student population (Azam et al., 2016), but there is also a need to find ways of supporting students who are aware of the heightened risk factors and wish to be proactive in protecting their mental health.

This study examines the effects of six short guided mindfulness meditations on two diverse cohorts; older adults from groups in a disadvantaged area, and students from the University of Glasgow. By comparing psychometric measures of perceived stress and subjective wellbeing taken pre and post mindfulness intervention, it aims to discover the effects of the meditation, and to explore its efficacy in the different groups.

Semantic data collected throughout the experiment and via the focus groups' is thematically analysed in order to discover individuals' reasons for participation, intention to continue and the subjective experience of mindfulness.

This study has three main objectives; Firstly, to discover if mindfulness meditation increased subjective wellbeing, and reduced perceived stress in each of these cohorts. Secondly, to explore any differences in

effect size between the three different groups. Finally, to explore uptake (decision to participate at all) and continuity (intention to continue) and the subjective experience of the meditations, predominantly through the gathering of semantic data.

Design:

Mixed-Methods.

Analysis 1. Used a within subject, repeated measures design, changes in Subjective Wellbeing was the dependent variable and mindfulness meditation was the independent.

Analysis 2. Used a within subject, repeated measures design. With changes in Perceived Stress as the dependent variable and mindfulness meditation as the independent.

Analysis 3. Used a between groups design, with one independent variable: group attended, with three levels: Pearce Institute, University of Glasgow, or Elder Park centre. The dependent variable was Subjective Wellbeing scores.

Analysis 4. Used a between groups design, with one independent variable: group attended, with three levels: Pearce Institute, University of Glasgow, or Elder Park centre. The dependant variable was Perceived Stress scores.

Thematic Analysis. In order to explore any issues associated with delivering mindfulness interventions in existing social settings semi-structured focus group interviews were conducted. Semantic data was thematically analysed, and emergent themes were identified and explored. Material collected via the researcher's field diary is also analysed, integrated and presented to support identified themes.

Participants:

Group: 1, 2, 3. Pearce Institute Govan.

After an initial speculative approach in which the nature of the research, and the concept of mindfulness was introduced alongside data sourced from the NHS mindfulness website (Mindfulness-NHS.UK, 2018), fourteen individuals from Tea in the Pot, (a female only social group located within The Pearce institute in Govan, Glasgow G51) expressed an interest in participation. Eleven agreed to participate. The other three consented to complete the accompanying weekly measures as a control (Group 3). One participant did not meet the minimum criteria of attendance of four of the six sessions, leaving an experimental group of ten

(Groups 1&2). Ages ranged from 37- 83 and the average age was 65.5 years. The majority of the participants were above retirement age¹ and lived locally, having a G51 or G52 postcode.

Tea in the Pot is a non-profit organisation, run by women for women. Its main function is as a drop in centre and has been endorsed by local GPs and community nurses as a valuable social support group. Tea in the Pot also provides friendship and activities, alongside legal and financial advice and benefit workshops (Teainthepot.org.uk, 2018). The group meets once a week for 4 hrs (10am-2pm) and is well used; the average group size at any one time is around 20.

Group: 6 The Elder Park Centre, Govan.

After an initial speculative approach (see Pearce Institute for details), nine participants, seven of which were female, were recruited from The Craft Café situated within The Elder Park centre in Govan. Ages ranged from 68 to 78 with an average age of 71.2 and lived locally. The group is predominantly a crafting and indoor activity group and is funded by the charity Impact arts (“Impact Arts”, 2018), and is open every weekday 10am-4pm.

The Pearce Institute and the Elder Park centre are located in the same area of Glasgow- Govan, an area that is consistently ranked 1, in the Scottish Index of Multiple Deprivation (SIMD), placing it among the top five per cent of the most deprived areas in Scotland.

Groups: 4. 5 The University of Glasgow.

Participants for the University of Glasgow group (UoG) were sourced through social media, with a request that offered mindfulness for stress reduction alongside a plea for volunteers. Of those who replied seven agreed to participate, three others who were unable to attend the session time agreed to act as controls (group 5).

The participants ranged in age from 21 to 59 with an average age of 32.4, six were female. One participant was in her first year of studies and received course credits for participation, while the others were 4th year students from across the various schools in the university. The University of Glasgow’s intake is predominantly from the middle and higher socio-economic sections of society, with only 11.5 % of its intake in 2014-2015 (year of starting for most participants) coming from individuals who reside in areas that are considered by the SIMD to among the most deprived 20 % (Sutton trust, 2016). This makes the University of Glasgow cohort highly likely to have a higher socio-economic-status than the Govan based groups.

All participants were white British, and no payment was given.

¹ Seven of the 10 participants (Group 1) began sessions on 13.10.17, while three participants (Group 2) did not begin till 20.10.17 and performed a breathing intervention in wk. 6. For the purpose of the experiment, these groups have been merged and these ten participants are now all in Group 1.

Session Environment:

Pearce Institute.

Sessions were held in a room adjacent to the main social space and furnished with assorted chairs arranged in a circle. There was a low-level ambient noise from traffic and passing conversations. The lighting was dimmed for sessions.

University of Glasgow.

Sessions were held in a pre-booked side room in the university library, furnished with chairs arranged round a central table. There was very little ambient noise. The room was bright and naturally lit.

Elder Park Center.

Sessions were held in one end of a large multipurpose social space, furnished with couches and chairs set around a table. There was a medium level of ambient noise from ongoing activities in the hall and occasional load noise due to the proximity of the outer door. The room was bright and naturally lit.

Materials:

Audio CD, of Mindfulness meditation. Co-Authors; Professor Mark Williams, former Professor of Clinical Psychology and Principal Research Fellow in the University of Oxford Department of Psychiatry, and Dr Danny Penman, an award winning journalist (Williams and Penman, 2011). Selected due to length of meditations high online customer ratings and, John Kabat-Zinn's previous endorsement of the authors.

The Warwick-Edinburgh Mental Well-being scale (see appendix:3). This scale is designed to explore how you have been feeling recently, and covers the emotional and functional characteristics of mental wellbeing. It consists of 14 positively worded questions, (e.g. I have been feeling useful), and responses via Likert scale (1-5) are summed to provide an overall well-being score ranging from 14, never to all questions, and 70, always to all questions, being the optimum score (Warwick.ac.uk,2018).

Cohens Perceived Stress Scale 10 item (see appendix:2). Adapted from the original to give a weekly rather than monthly measure. This scale is widely used and has six positively and four negatively worded questions (reverse scored). Responses, via Likert scale (0-4), are summed to give an overall stress score, ranging from zero for no stress in the past week, to 40 representing very significant stress (Cohen, Kamarack and Mermelstein, 1983).

HP Pavilion 15 Notebook was used to deliver the guided meditation via windows media player with the volume at the highest level. Data was analysed using RStudio, a free to download statistical software programme.

Method: 1

In the first session the experimenter briefly communicated information regarding the concept of mindfulness, and a pack containing further information was distributed to those who expressed an interest. Initial measures of stress and wellbeing levels were collected from participants and necessary documentation regarding consent was completed (appendix: 1). In all other sessions, participants were invited to sit comfortably, and to concentrate on the guided mindfulness meditation track delivered via PC placed on the central table. Four tracks were used over the six sessions, and groups received the tracks in the same sequence (table 1). After each session the researcher distributed paper copies of the subjective wellbeing scale and the perceived stress scale for completion by the participants.

Method: 2

After the final experimental sessions, all groups were asked to participate in a short focus group interview to gather additional data. Participants were informed the data would be anonymised and were asked to be as honest as possible. Topics of particular interest were reasons for participation and intention to continue. These were introduced by the researcher and discussed alongside other themes that emerged. On completion, participants were thanked for their time, and debriefing form was distributed. The focus groups sessions were recorded via the researchers pc and were later transcribed (see appendix: 4 for example). The researcher facilitated and participated in all mindfulness sessions.

Table 1: Meditation session schedule.

Session	Track	Meditation Type	Length
Session 1	1	Mindfulness of body and Breath	8 mins
Session 2	2	Body Scan	15 mins
Session 3	4	Breath and Body	8 mins
Session 4	1	Mindfulness of body and Breath	8 mins
Session 5	5	Sounds and Thoughts	9 mins
Session 6	2	Body Scan	15 mins

Results:

Hedges g is used here as an effect size. This is similar to Cohen's d but is more suited to groups of less than 20 participants ("Hedges' g : Definition, Formula", 2018).

Hypothesis 1. Mindfulness meditation will increase subjective wellbeing.

Hypothesis 2. Mindfulness meditation will decrease stress.

Hypotheses 3. The effects will differ between the experimental groups.

Baseline measures showed variances between the groups initial score at baseline. The PI group had a mean SWB score of 37.6(SD 9.86) from a possible 70, while the UoG and EPC groups scored 47.71(SD 5.85) and 48.33(SD 10.34) respectively. (table 2)

They also differed in perceived stress with the PI group having an average score of 25(SD 7.64) from a possible 40 points, while the UoG and EP groups were considerably lower at 16(SD 5.71) and 15.78(SD 6.5) respectively. (table 3)

Graphs show variances between weekly group means, and the differences between the groups. (Figs 1 & 2).

Fig: 1. Mean Weekly Subjective Wellbeing Scores.

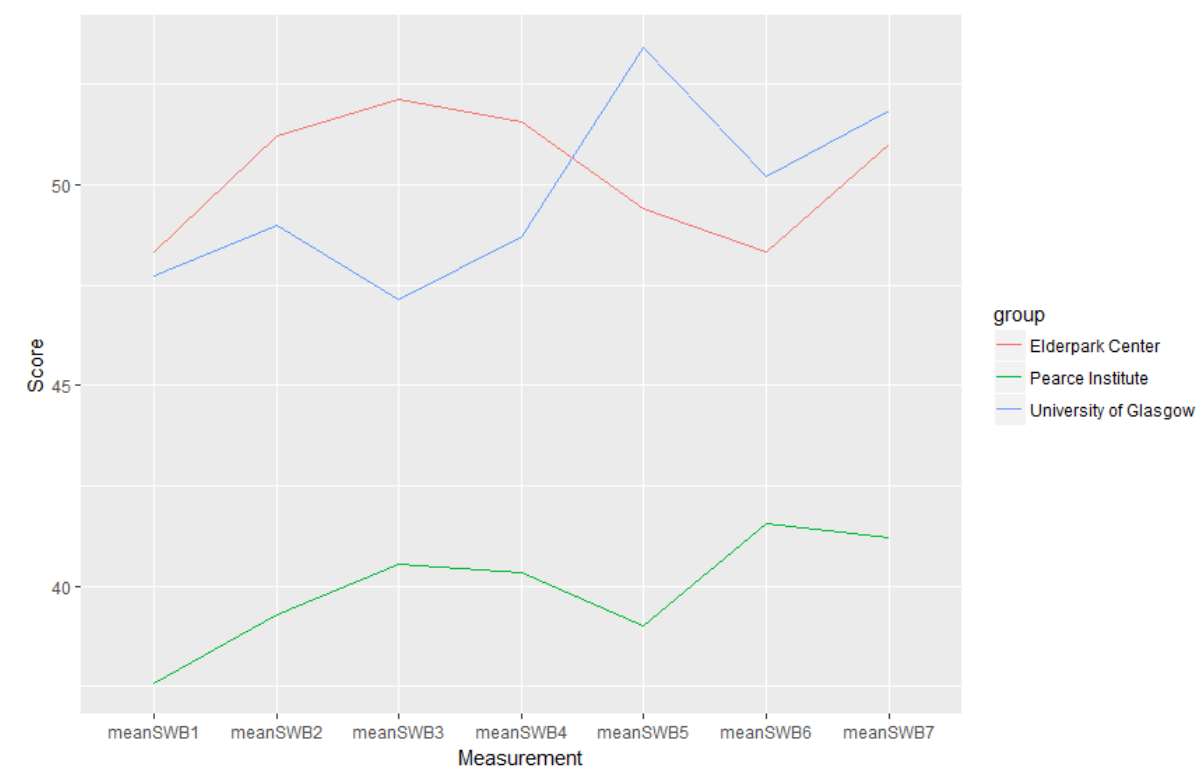


Fig: 2. Mean Weekly Perceived Stress Scale Scores.

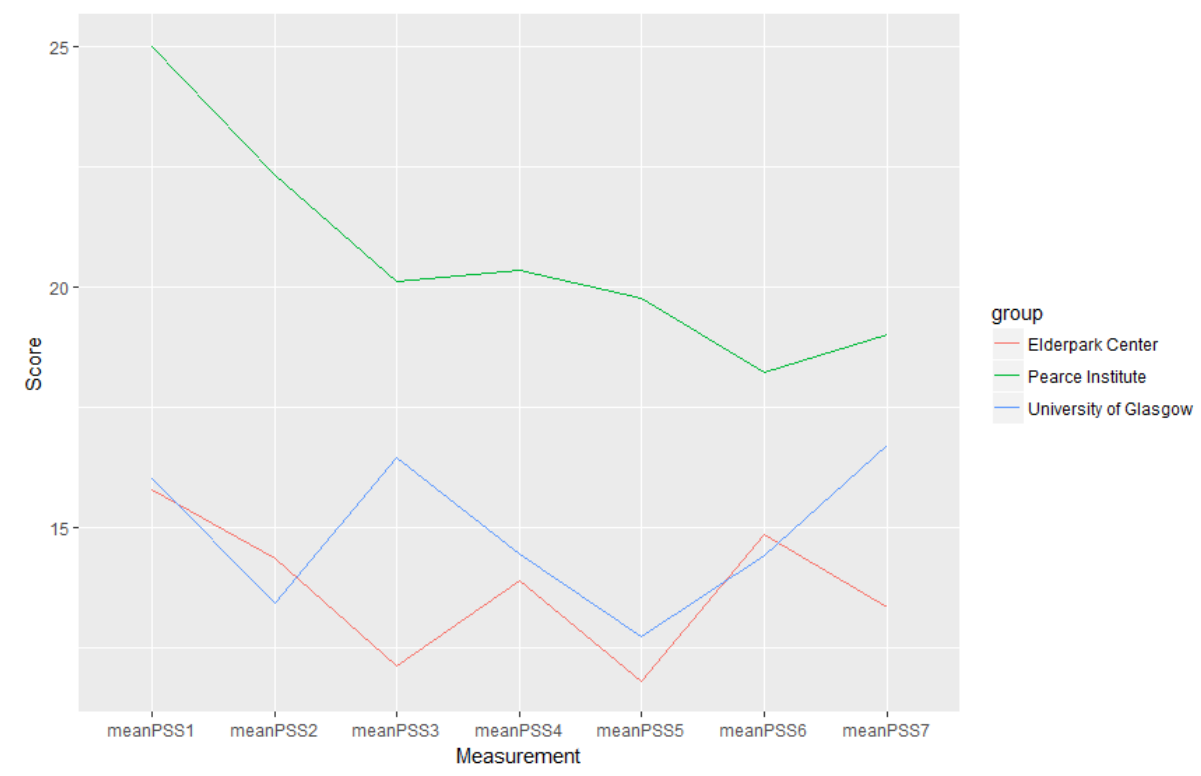


Table 2: Weekly mean subjective wellbeing score.

Group	Week 1 MeanSWB	Week 2 MeanSWB	Week 3 MeanSWB	Week 4 MeanSWB	Week 5 MeanSWB	Week 6 MeanSWB	Week 7 MeanSWB
Pearce Institute	37.60	39.30	40.55	40.33	39.00	41.55	41.22
University of Glasgow	47.71	49.00	47.14	48.71	53.42	50.20	51.86
Elder Park center	48.33	51.22	52.11	51.55	49.40	48.33	51.00

Table 3: Weekly mean perceived stress score.

Group	Week 1 Mean PSS	Week 2 Mean PSS	Week 3 Mean PSS	Week 4 Mean PSS	Week 5 Mean PSS	Week 6 Mean PSS	Week 7 Mean PSS
Pearce Institute	25.00	22.30	20.11	20.33	19.75	18.22	19.00
University of Glasgow	16.00	13.42	16.42	14.42	12.71	14.40	16.71
Elder Park center	15.78	14.33	12.11	13.89	11.80	14.83	13.33

Perceived Stress.

Analysis utilising paired t-tests showed that although the PI groups' stress score had significantly decreased with, $t(9) = 2.414, p = 0.039, g = 0.755$, and an average drop of 6 points, the UoG groups' mean reported stress increased on average by 0.71 points, with no stress reduction found for participation in the mindfulness sessions, $t(6) = -0.386, p = 0.712, g = 0.143$. The Elder Park Centre group had an overall mean improvement of 2.44 points but this was not significant with, $t(8) = 2.012, p = > 0.079, g = 0.396$.

Subjective wellbeing.

Analysis found that the PI and UoG groups had significantly improved in feelings of subjective wellbeing with the PI showing an average increase of 3.6 points, $t(9) = -3.907, p < 0.05, g = 0.374$, and the UoG mean score increasing by 4.14 points, $t(6) = -2.704, p = 0.0356, g = -0.730$. However, the EPC increase of 2.67 points was not significant at, $t(8) = -1.985, p = ns$.

Thematic Analysis:

EPC = Elder Park Centre PI = Pearce Institute U = University of Glasgow FD = Field Diary

Thematic Analysis was carried out in line with the methods devised by Braun and Clark (Braun & Clark, 2006), and five key themes were identified: motivation behind participation, session environment, meditation preferences, everyday application and intention to continue. The thematic analysis is supplemented by data from a field diary (FD). Direct quotes are presented in support of themes. Initials are used to preserve anonymity.

Theme 1. Reasons for Participation. Three main reasons were given for participation, curiosity, reengagement, and possible stress reduction. A fourth reason, assisting myself as a researcher also emerged, however as this motive was given in tandem with identified subthemes this will not be discussed,

“I came into the group... well, for yourself as you were so enthusiastic, but also as I’ve done mindfulness before and I know I don’t do it as I should; regularly”. (RM, PI, lines 12-13).

1a. Curiosity; although all of the contributors reported having heard of the concept of mindfulness, it was more prevalent among the students who all bar one had a clear idea of what it entailed and beneficial effects. However, many of the older cohort admitted to being somewhat unclear on the concept. Participation therefore was a way of discovering the basic ideas behind mindfulness.

“Well I was curious, I wanted to know a wee bit more about mindfulness. To me it’s the same as the things... people have looked at in the past for relaxation, meditation and things like that, but now it’s mindfulness”. (LB, PI, lines 2-4)

“I’ve heard about mindfulness and stuff; I thought this would be a good opportunity to try it out” (CS, U, lines 7-8).

“My daughters’ been doing mindfulness; she’s got something on her phone! But I didn’t fancy that. This sounded a good way of trying it out”. (LK, EP, lines 8-9)

“I’d read a bit about it in magazines and things”. (AC, EPC, line 6)

“Just the same. Sounded as if it might be good for me”. (HH, EPC, line 16)

1b. Re-engagement and opportunity to practice. Many of the participants had previously tried some form of meditation, and although they had found it helpful, they had subsequently stopped. A lack of motivation and poor self-discipline were given as the most common reasons for previous disengagement. Participation was therefore an opportunity to re-engage with meditation.

“I’ve done a bit of mindfulness in the past but I prefer doing mindfulness in a group, I find it very very hard doing it on my own... I like other people with me for support”. (MR, PI, lines 5-7)

“If you’re on your own your thoughts wander more. You can concentrate better in a group”. (LB, PI, lines 8-9)

“I used to teach yoga but I had a stroke a few years ago and can’t do it now. I’ve always been interested in meditation and things like that so I thought I’d give this a try. (AG, EPC, lines 2-3)

“I’ve done a wee bit of mindfulness before...I liked the fact that this seemed a good excuse to spend time doing mindfulness stuff”. (AG, U, lines 4-5)

1c. Stress reduction: This theme was echoed by all groups, but whereas the PI and EPC groups were unspecific about the stressors they hoped to alleviate.

“Im a terrible worrier. I’d worry if I’d nothing to worry about” (HH, EPC, lines 16-17)

“Hoping it will help me relax a bit”. (MR, PI, FD)

The University groups’ primary concern was finding a way of negating university related stress.

“I thought it would be really good for me as I get really stressed around exam time” (TB, U, line 9-10).

“Well I know this year’s going to be stressful so I thought... might help me out in fourth year”. (CS, U, 6-7)

This brought general agreement from the rest of the group, as did AG’s comment that identified another major cause of anxiety among students.

“And [for] essays”. (AG, U, line 11)

Theme 2. Session Environment; the three settings used for the meditation sessions were very different, (see method), and corresponding focus groups provided an insight into any of the pros and cons associated with their location and the meditation environment’.

2a. Pearce Institute; Participants at the PI were overall satisfied with the meditation environment and had few criticisms. Some found the ambient noise useful in meditation, by giving them something to focus on. One striking thing about this location was the social support aspect that spontaneously emerged after the sessions. This group tended to remain in situ after the weekly MM and data collection discussing various aspects of mental health. Although this was only alluded to in the focus group, *“And the discussion after its good too” (LF, PI, line 13)*, it was a theme also picked up in the earlier field notes.

“It makes you realise you’re not the only one, (while discussing depression in general) but when you’ve got it you think nobody understands how bad you feel” (LB, PI, FD). “People think when you get old you’re quite happy to stay in but if I didn’t come to places like this I think I’d go mad” (BH, PI, FD).

2b. Elder Park Center: This location was noisier than the others were, and although the background noise was not considered problematic, sudden bangs from the outside door were particularly off putting.

“It would defiantly be much better if it was quieter its ok, but when the door bangs it takes a bit to get back into it”. (AG, lines 37-38)

“I’m a bit deaf so the noise in the background noise is fine, I can’t really hear it anyway, but that door slamming shut does put me off” (HH, lines 40-41)

“Aye that bloody door”. (JC, lines 54),

“It’s a pity we can’t just lock the door”. (LK, line 42)

2c. University of Glasgow; this was the closest to traditional meditation session, being in the library and almost silent, and the participants appreciated the proximity of the location and the calm in the otherwise hectic university.

“I think it’s been really good” (DR, line 14)

“Plus it’s in a central point, and this is a really good room to do it in you can just switch off” (TB lines 15-16).

“It’s like a little bubble away from all the like noise”. (AG, U, line 16)

The silence of the library although desirable for relaxation, was however not conducive to all tracks, the impact of the lack of noise will be explored in theme three meditation preferences

Theme 3. Meditation Preference: Participants were encouraged to identify any preferences from the tracks presented (Breathing, Body Scan, Body and Breath, Sounds and Thoughts). The breathing meditation was reported as being the simplest and the most popular with both the UoG and the EPC groups.

“I just seemed to get into that quicker, the rest I found more difficult” (TB, UoG, line 24-25).

“I liked that one too” (JS, UoG line 26).

“Me too, that was my favourite” (CS, UoG line 27)

“The breathing one for me, some of them I found a bit complicated to follow but I just concentrated on my breathing (AC, EPC, line 48).

“I think the breathing is the easiest one and you can do it anywhere”. (HS, EP, line 51)

Environmental differences meant some meditations seem better suited to some locations than others. The almost silent environment caused the University Group to have difficulty with the track that required concentration on environmental noise.

“I found the sound the hardest, hardest to listen to and concentrate on because it’s really quiet in here”. (DR, U, lines 30-31)

“Yes, just the air conditioning”. (JS, U, line 32)

“I kept losing concentration on that one”. (TB, U, line 33)

For the PI group and the Elder park group the ambient noise made this track easier.

“I liked the sound one because I felt it helped me to understand that you can still remain quiet within yourself. And you can identify the sounds and think, that’s the underground train passing by, and it’s fine because I’m here”. (RM, PI, line 23-25)

“I quite liked that (talking about sound meditation) normally every ones talking at the same time but with that one I tried to pick out sounds, think it said sounds within sounds, I heard the kettle boiling things like that”. (AG, EPC, line 53-54)

Although the PI did also like the simple breathing meditation they also enjoyed the Body Scan and agreed with MR, LF, and LB, who all selected this as their preferred meditation.

“Body scan”. (MR, PI, line 19)

“Body scan for me as well”. (LF, PI, line 20)

“Me too” (LB, PI, line 21)

Theme 4: Everyday Applications: Participants spoke of using mindfulness to negate stress giving example of when it had been, or could be, useful in everyday life.

“It doesn’t take very long to do, so it’s practical. So if you’re stuck in a traffic jam instead of ... and then when you get to where you’re going you’re wound up in the first place because, well, beside everything else you’ve got going on”. (DR, U, lines 88-91)

“Yes, you can just sit at your desk and do it”. (JS, U, line 48)

“You can do it anywhere that’s the thing”. (TB, U, line 49)

“Like on a bus”. (JS, U, line 50)

“Well... I was at the new hospital getting a scan... I was worried about being enclosed and if I’d be able to lie still long enough...I did the sound one and it was fine. (AC, EPC, lines 26-29 & FD)

“My sister said something that really wound me up, I got my home rower thing out, and I done my breathing and my mindfulness meditation, and I’ll tell you what, it shifted the negative energy and tension, it definitely does”. (RM, PI, lines 33-37)

“...I definitely think it’s helping my concentration I’ve been doing it nearly every night and im sure im getting faster at Sudoku I can finish the hard one now”.(LK, EPC, lines 60-62)

Theme 5: Intention to continue. The final theme explored was intention to continue. Copies of the audio track had already been given to some participants and the focus group brought more requests. However, some individuals had developed further strategies to facilitate continuity. Two of the PI participants had joined a local mindfulness group, and another expressed interest in joining.

“Remember I told you that me and MR had joined another group. Well that was week two there and I’m really enjoying it”. (LB, PI, lines 64-65)

“So am I”. (MR, PI, line 66)

“Is there spaces”, “I’m going to give that a go”. (FC, PI, lines 70, 72)

While others from the PI suggested that the current mindfulness sessions should be continued on a regular basis.

“I actually think we should carry this on as an optional thing, Even when you weren’t in we could put it on and say who wants to come and do it”. (RM, PI, lines 75-76)

“A Tea in the Pot thing”. (LB, PI, line 77)

“We could do the breathing one then another one”. (LB, PI, line 79)

The UoG Group also looked for ways to continue with group sessions, suggesting that the University should provide them.

“Yes, and I think it would be good if the university had some groups”. (DR, U, line 71)

“I would definitely go”. (AG, U, line 73)

“So would I”. (JS, U, line 74)

“I think it would have to be small groups though I don’t think it would work in a room filled with people”. (DR, U, lines 75-76).

“Maybe we need mass MN”. (DR, U, line 81).

All groups mentioned the use of the internet to find suitable meditation, and it is reasonable to assume that some may continue to use this medium to practice mindfulness. Nonetheless, the UoG planned to further utilise technology by the use of downloadable mindfulness applications, emphasising both the pervasiveness of mindfulness, and a commitment to practice.

“I’ve downloaded an app”. (DR, U, line 91)

“I have one too”. (AG, U, line 92)

“I did too”. (JL, U, line 95)

However, they did find that the choice of free apps was somewhat restricted.

“It’s a bit limited. Most of them insist that you take out a subscription and it’s not something I’m wanting to do. (DR U, lines 97-98)

They were also aware that in order to gain maximum benefits practise was essential.

“It’s easier if you’ve practiced it before”, “It’s more of a maintenance thing”. (DR, U, line 56, 58)

“It’s definitely getting easier the more I do it” (LK, EPC, FD)

“I know I don’t do it as I should, regularly and things”. (RM, PI, line 15)

“I’ve been doing it for years, and it’s got me through some very tough times”. (WC, EPC, line 82)

Discussion

Overall Beneficial Effects.

The results show that short sessions of mindfulness can have positive psychological benefits when delivered in situ to pre-existing social groups. They also show that some groups benefitted from the intervention more than others. The Pearce Institute group showed a significant improvement in both feelings of wellbeing and in perceived stress. The student group also benefited from a significant increase in subjective wellbeing, however, their levels of perceived stress remained almost static. Although, as the sessions concluded two weeks before the end of the first semesters, a time of deadlines and looming exams, it could be argued that the lack of change was an important finding, as a reason for participating was to control exam related stress *“I thought it would be really good for me as I get really stressed around exam time” (TA)*. Although The Elder Park group showed improvements in both measures, these did not reach statistical significance. However, this could be due to other factors that will be discussed.

Baseline Differences

One of the most unexpected findings of this study was not the impact of mindfulness but the difference in the initial baseline measures of the two groups of older adults. They should be broadly analogous as they share similar demographics, with the Elder Park centre group having a median participant age of 72 and the Pearce Institute 69, and being situated less than half a mile apart. However, their initial psychometric measures were very different.

The regulars at Tea in the Pot located in the Pearce Institute appear to be carry a far greater psychological burden than do the patrons of the Craft Café in the Elder Park Centre. Both groups are located in areas that are ranked by their postcodes as ‘1’ in the Scottish Index of Multiple Deprivation, identifying them as two of the most deprived parts of Glasgow (Scottish Index of Multiple Deprivation, 2018), and all participants live locally. It would be reasonable to suppose that the environmental factors such as poverty, age related health issues, and loneliness that represent risk factors would be the same for both groups. Nevertheless, the Elder Park Centres initial measure were much nearer the University students than the other older adult cohort from the Pearce Institute.

The mean baseline stress score for the PI was 25 points- almost 9 points higher than the average score for women of all ages of 16.14 (SD 7.56). When age is taken into account, the PI score is even further from the norm of 11.09(SD 6.77) in the over 65 age group. The older adults from the EPC initial stress score of

15.78 was surprisingly found to be more in line with the UoG students stress score of 16 (Cohen & Janicki-Deverts, 2012).

Subjective wellbeing in the Pearce Institute was considerably lower than the Scottish norm of 51.93 (SD 8.66) and the lowest of the groups at 37.60. The other two groups SWB scores were comparable with each other but also lower than average, at 47.71 for the UoG and 48.33 for the EPC. However, they were still well within the normal range (The Scottish Government, 2009).

Possible reasons for baseline differences.

Several factors could be associated in producing the extreme differences that were found between the initial scores of the older cohort. The group's opening hours were very different. The Elder Park Centre group was recruited from the Craft Café a charity funded project located within the EPC, which is open every weekday from 10am to 4pm. Tea in the Pot is located within the PI and is funded by grants from the local council and charities and due to lack of funding has had to decrease its opening hours from twice to once a week for four hours. Moreover, while the Craft Cafés focus is on crafting, hobby work, and providing indoor leisure activities, the primary purpose of Tea in the Pot is as a women's support group. It also allows access to legal and financial advice via voluntary organisations. Therefore, there is a strong possibility that the Pearce Institute group are under more pressure than more general older group would be. Differences resulting from the group's remit may be conflated by benefits from increased social interaction by patrons of the Elder Park Centre, or by the craft related activities; both factors that are known to protect mental health in the elderly (Mental Health Foundation, 2018). However, as the Pearce Institute were the only group to significantly benefit in both measures of stress and of wellbeing this study has perhaps found further evidence that indicates mindfulness meditation is particularly suitable for those who are already under a degree of psychological stress (Jha et al., 2016).

Motivation

One of the study's objectives was to explore what factors influence participation and the focus groups identified three key reasons; curiosity, stress reduction, and opportunity to practice. Most participants had heard of mindfulness but some were unclear as to what it entailed, and for those this was an opportunity to discover more. While students were already aware of possible beneficial effects and were primarily intending to utilise the mindfulness sessions and the techniques practiced as a protective measure against course work related stress, "... *I get really stressed around exam time*" (TA). Several of the participants had previously practiced mindfulness regularly and were aware of the techniques but preferred group as opposed to solo practice, "... *I prefer doing mindfulness in a group; I find it very very hard doing it on my own...*" (TA).

Uptake and Attrition

Due to the exploratory nature of the study, no exact record of participant uptake exists. The University group were recruited through a post on social media to which fifteen people replied and were sent

information. Of the 10 who subsequently were interested in participating, three could not attend due to other commitments but agreed to submit weekly measures via online questionnaire. At the Pearce Institute and the Elder Park centre, the researcher approached participants in a group, and approximately half of the people present at the information session agreed to take part in the study.

The rate of attrition for this study was excellent, with only one of the twenty-seven original participants not meeting the minimum four from six session inclusion criteria. This is particularly striking in the student cohort where it has been found that upcoming exams and coursework deadlines can negatively affect attendance at non-compulsory activities. This is particularly true for students who have been identified as at a higher risk of developing anxiety and depression related disorders (Azam et al, 2016). The low dropout rate for this study is no doubt in part due to the ease of access and the short time commitment involved

Intention to continue

When asked about any intentions to continue the UoG group express a desire for further small groups to be organised where they could practice, “... *I think it would be good if the university had some groups*” (TA). The Pearce Institute group were particularly proactive in their intentions to continuing, with some members already having joining a dedicated mindfulness group, “*Remember I told you that me and MR had joined another group ...*” (TA). They proposed that the mindfulness sessions could be continued on an impromptu basis, “*I actually think we should carry this on as an optional thing... we could put it on and say who wants to come and do it*” (TA). This suggestion was met with general agreement, “*A Tea in the Pot thing*” (TA). However, there were indications that they would have preferred longer meditations. “*We could do the breathing one then another one*” (TA). In addition, when the researcher asked about what meditations the participants had preferred, both the Elder Park and the University groups expressed a preference for the easy 8-minute breathing meditation, while this group preferred the more complicated but much longer 15-minute body scan. “*Body scan*”, “*Body scan for me as well*”, “*Me too*” (TA). However, there was another interesting feature found only in the PI group. Post MM and data collection this group tended to remain in situ and discussed different aspects of mental health, individual issues, mindfulness, and different ways of coping, “*The discussion after it is good too* (TA)”. This impromptu support session may have augmented any beneficial effects derived from the MM and perhaps this peer support factor partially explains the large effect size, ($g = 0.75$) for reduction in perceived stress. This peer support is an unexpected development and a factor that future researchers should keep in mind and perhaps attempt to exploit.

Peer Support

Groups appear to be a popular way to practice mindfulness not only providing a regular opportunity to practice but by giving mutual support “*I find it much easier in a group*” (TA). Peer support can be particularly valuable for students. Moir and colleagues found that medical students preferred to seek peer support in times of stress rather than approach staff or university counselling services (Moir et al., 2016). The reasons for this vary from embarrassment, to not being clear on what services are available. However,

almost half (46.7%) said that treatment length of the treatments was an issue, and reported that they didn't have the time for traditional therapist led consultations (Downs & Eisenberg, 2016). Whereas Moir did not find a significant result from peer led mindfulness sessions, he did find a positive effect on depression and anxiety and high rates of compliance. However, others have found that short group mindfulness sessions can make a significant difference in reducing subjective stress and increasing self-compassion (Erogul et al., 2014).

Everyday Application

Participants reported adopting mindfulness strategies in their everyday life in order to reduce stress. In order to lie still while undergoing a scan, one woman had used the previous week's sounds and thoughts meditation "*I did the sound one and it was fine*" (TA), and another had been practicing mindfulness while travelling, "*... it's practical, so if you're stuck in a traffic jam...*" (TA). This was a theme picked up by all groups and the reported benefits ranged from stress relief, "*... I'll tell you what, it shifted the negative energy and tension, it definitely does*" (TA), to an increased ability to solve puzzles, "*I'm sure I'm getting faster at Sudoku I can finish the hard one now*" (TA), but they also intended to utilise technology to enhance solo practice.

Solo Mindfulness

Many of the participants had requested, and were supplied with, copies of the CD to facilitate home practice (FD). The internet was also utilised to access different meditations by participants in all groups. However, the student group were the only ones who planned to use digital Applications (Apps) via their smart phones. Although these are relatively new, they are becoming increasingly popular. Initial research looks promising as to the possibility that mindfulness based apps could make a meaningful difference to individuals' quality of life. However, as there is such a plethora available with mindfulness being used from everything, from stopping smoking (Oikonomou et al., 2016), to treating mental health issues related to infertility (Monteiro et al., 2016), to it can be hard to know which one to choose. One randomised clinical control trial found that smartphone apps increase positive affect and decrease of depressive symptoms and had the ability to significantly enhance some aspects of wellbeing. Though, they point out that the content and the person-activity fit aspects are of vital importance (Howells et al., 2014). A meta-analysis by Firth and colleagues have found evidence that for sufferers of depression apps are a promising self-management tool (Firth et al., 2017)

The importance of finding an appropriate app was also noted by the student group, "*I liked the calm app, that has sound effects like the rain*" (TA), but they also that the selection is limited unless you were prepared to pay, "*most of them insist you take out a subscription...*" (TA)". This study suggests that institutions such as universities could support the development of an app that would not only deliver mindfulness instruction, but would also enable like-minded individuals to join virtual peer groups, as previous findings suggest that these can be as beneficial as physical groups (Chadi et al, 2018).

Practice Effects

While many participants indicated that they had practiced mindfulness outside of the session environment no analysis was carried out that took the additional amount of time into account. Previous research has found a direct correlation between the amounts of time spent engaging with mindfulness and the level of positive effect. Carmody and Baer found evidence that additional time spent in home practice is significantly related to the extent of the improvement in stress and wellbeing (Carmody & Baer, 2007). Further studies should endeavour to have a measure that would clearly indicate the amount of practice individuals engaged in, and although this study did not systematically log practice time it does seem intuitively correct to suppose that this would be the case. However, a willingness to engage further and practise mindfulness in day to day life does indicate that individuals are aware that MM is not a quick fix and are aware that agency, commitment and perseverance are also required, “It’s *easier if you’ve practiced it before*”, “It’s *more of a maintenance thing*” (TA).

Location

One of the study’s primary objectives was to discover what kinds of spaces could be used for the delivery of the meditation. Despite an abundance of studios and spas offering mindfulness in tailor-made surroundings, there is little research into what sort of location is most conducive to delivering this type of intervention. While silence may intuitively appear to be essential, in fact the lack of noise in the university library was problematic for one track that focused on the mindful acceptance of sounds, “*just the air conditioning*” (TA). However, that does not mean that all noise is always desirable. The only group to show no significant improvement in either measure located in the EPC had found their location too noisy, and although they could concentrate to some extent, sudden noises made immersion impossible, “*It would definitely be much better if it was quieter... when the door bangs it takes a bit to get back into it*” (TA). The PI group considered the location suitable for all meditations, and a low level of ambient noise was helpful for some “*...And you can identify the sounds and think, that’s the underground train passing by, and it’s fine because I’m here*” (TA). Demonstrating that a wide variety of non-traditional locations could be suitable, and that meditations should be tailored to suit the delivery environment.

Limitations.

This study due to its exploratory nature does have several limitations. The experimental sample was 85% female, but this seems to be a constant concern in work of this kind with women being far more likely to speak about and attend mental health interventions. In addition, there was no data regarding the current mental health status of the participants, making generalisation difficult.

Studies such as this have a self-selection bias and participants may have particular characteristics that are not found in the general population. One large German study found, as have others, that self-help programmes are disproportionately taken up by individuals who are already have an above average degree of cognitive distress (Lyssenko et al., 2016). However, this study’s findings that the cohort that showed the

highest level of cognitive distress was also the cohort who benefited the most, suggesting that this may be a way to target the population who are most at risk.

Further research should concentrate on groups who are at a higher risk than the general population, and in carrying out ecologically viable studies in already existing social spaces. They should also utilise a well-defined or paired control group alongside accurate measures of home practice. In addition, a longitudinal approach could be undertaken to discover how long lasting the effects and the motivation to practise mindfulness continues.

Conclusion:

This exploratory study has shown that lack of money for expert led mental health treatments need not mean a lack of good mental health. It has shown that mindfulness therapies introduced into pre-existing social groups can have significant beneficial effects, and that short meditations appears to promote a high take up rate and a low rate of attrition. It demonstrates that, with the support of technology, an enthusiastic amateur can easily facilitate short guided mindfulness meditations that these can significantly improve feelings of stress and subjective wellbeing. It also discovered that some groups responded better to mindfulness interventions than did others, and that the larger the psychological burden the more effective the MM appear to be.

While the empirical evidence is important in quantifying effects, this study also gathered subjective data. Reasons behind participation, how the subjects felt about the intervention, and intentions to continue are factors that are critically important when trying to devise a programme that appeals to the general population, but are often overlooked. The thematic analysis shows that group mindfulness is favoured over solo due to the defined practice schedule and feelings of peer support it solicits. However, these short sessions must be in convenient and easily accessible locations in order for individuals to attend regularly. The semantic data tells us that participation stimulates further interest in the concept and that appears to motivate individuals to actively seek out further ways to engage and continue the practice. This seems to be particularly true if there is an acknowledged danger to mental health such as stress from exams. In addition, the inclusion of qualitative data allowed the researcher to report on the Pearce Institutes impromptu peer counselling sessions, which were unexpected but may have augmented any beneficial effects.

The results suggest that further work should be undertaken in this area with a view to developing a solid framework of mindfulness therapy that could be tailored to fit specific cohort, both in needs and in length, with a view to self-implementation after a brief instruction and information session.

The researcher acknowledges that facilitating both the mindfulness sessions and the focus group may have had an impact in the participants' willingness to voice criticism. While it was in the best interests of the study for the researcher to participate in the meditations they accept that it may have implications in their subsequent objectivity, however, every effort was taken by the researcher to remain neutral throughout the study.

Finally, I would like to thank my supervisor Steve Draper for all his help, and for allowing me the freedom to do a project that turned out to be more complicated than I expected, but also more satisfying.

Research information

Mindfulness and stress reduction.

Researcher Freda Murray, email; 2107880M@student.gla.ac.uk
Supervisor Steven Draper, email; Steve.Draper@glasgow.ac.uk

You have been invited to participate in a study conducted as part of my Maxi project in Psychology. The supervisor of the project is Dr Steve Draper.

Purpose of the research: The purpose of the study is to investigate the usefulness of mindfulness as a protective mental health measure over diverse groups.

Procedure: The study consists of: (Group A) completing 1 personality questionnaire, practicing Mindfulness meditation once a week for 6 weeks, and completing 2 simple questionnaires each time. (Group B) Completing 1 personality questionnaire and then completing 2 simple questionnaires each week for 6 weeks. Each session should take approximately 20 mins including questionnaires for group A and less than 5 mins for group B. An informal interview to gather your opinions regarding the usefulness of mindfulness will be carried out post data collection.

Participation and anonymity: Your participation is entirely voluntary and you can withdraw from the study at any time, without disclosing why. All information gathered in the study will be kept confidential through data analysis and write up. Any personal information you have given will not be made public, and only the researchers will have access to it.

If you have any questions or want more information about the study, please do not hesitate to contact Steve Draper or myself.

Thank you for your participation.

Consent

Form

If you agree to participate in this study, then please read the following statements and sign your name below to indicate your consent.

- I understand that my participation in this project is for the purposes of research, and is in no way an evaluation of me as an individual;*
 - I have read the Research information for participants and so understand the procedures and have been informed about what to expect;*
 - I agree to participate in this study, which uses different types of psychological measures to investigate cognitive abilities.*
 - I understand that my participation in this study is voluntary, and that I can withdraw from the study at any time and for any reason, without having to give a reason to the researcher;*
 - I understand that I may omit any questions that I would prefer not to answer;*
 - I understand that any information collected in the investigation will be made and kept anonymous and will remain confidential, and no information that identifies me will be made publicly available;*
 - I understand that I can contact the researchers for this project; by e-mail to receive more information.*
-

Name of Participant _____ Date _____ Signature _____



Thank you for taking part in this study, its aim was to explore if practising mindfulness led to a decrease in stress and increased feelings of well-being. The study also intends to investigate whether individual personality factors have any impact on the effectiveness of mindfulness.

In order to compare mindfulness across diverse groups you have been in one of two groups, a local area Social Group or a University Students group.

The results will be analysed in order to explore whether mindfulness is viable as a protective mental health technique across diverse populations, secondary analysis will explore whether personality is a factor, and also investigate any differences between the groups.

Please direct any questions regarding the study to myself, Freda Murray, at

2107880m@student.gla.ac.uk or 0796123772

or to

Steve Draper at Steve.Draper@glasgow.ac.uk

Appendix: 3. Cohens Perceived Stress Scale.

Participant No/Initials

The follow questions ask about your feelings and thoughts during the past week. In each question you will be asked how often you felt or thought a particular way. Although some of the questions are similar, there are small differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly without too much thought.

	Never	Almost Never	Sometimes	Fairly Often	Very Often
1. In the past week , how often have you been upset because of something that Happened unexpectedly ?	0	1	2	3	4
2. In the past week , how often have you felt unable to control the important things in your life ?	0	1	2	3	4
3. In the past week , how often have you felt nervous or stressed ?	0	1	2	3	4
4. In the past week , how often have you felt confident about your ability to handle personal problems ?	0	1	2	3	4
5. In the past week , how often have you felt things are going your way ?	0	1	2	3	4
6. In the past week, how often have you found that you could not cope with all the things you had to do?	0	1	2	3	4
7. In the past week, how often have you been able to control the irritations in your life?	0	1	2	3	4
8. In the past week , how often have you felt that you were on top of things ?	0	1	2	3	4
9. In the past week, how often have you been angry because of things that happened that were outside your control?	0	1	2	3	4
10. In the past week , how often have you felt that difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Appendix: 4**Warwick-Edinburgh health and well-being scale**

Participant number

Date.....

Venue...

In the last week

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

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