

Mindfulness and Legal Practice: A Preliminary Study of the Effects of Mindfulness Meditation and Stress Reduction in Lawyers

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Abstract

Research has shown that lawyers often experience symptoms of depression, anxiety, and stress in their lives. Mindfulness meditation may be an effective way to reduce the many negative effects associated with work stress. We asked a group of 46 lawyers to participate in an eight week mindfulness meditation program that was designed for lawyers. The mindfulness program was based on *The Anxious Lawyer* by Cho and Gifford (2016) and guided audio meditations were made available online. Participants were assessed before beginning the program and again when the program was completed. The results indicated that the mindfulness meditation program significantly reduced self-described depression, anxiety, stress, and negative mood. The meditation program also increased positive mood and psychological resilience. As well, participants in the program viewed themselves as being more effective at their work. Despite the strong effects observed in this study, we argue that much more research is needed to understand these benefits.

Keywords: mindfulness, stress reduction, psychological well-being, meditation, lawyers

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One of the most interesting developments in psychology over the past 20 years has been the mainstream embrace of mindfulness meditation. Although mindfulness practice has its roots in Buddhist traditions, many of the ideas and techniques from this practice have been adapted to contemporary secular life. In particular, there has been widespread interest in the benefits of mindfulness in the workplace (Glomb, Duffy, Bono, & Yang, 2011). This is a natural extension of mindfulness practice because most adults spend considerable time and effort at work. Workplace identity and culture is an integral part of who people are. As mindfulness becomes more widespread and more well known, it is only natural that it becomes part of the fabric of working life. This paper describes the results of a preliminary investigation into how a group of highly-trained professionals (in this case, lawyers) can learn to practice mindfulness and can benefit from a mindfulness program that is delivered online. We describe an eight-week program designed for lawyers and discuss how certain benefits of mindfulness practice can be measured and assessed. Our results, though tentative, suggest that there may be several clear mental health benefits that are associated with mindfulness meditation training. We also consider several ways to generalize and extend our research.

STRESS AND ANXIETY IN THE LEGAL PROFESSION

Lawyers, like other highly trained professionals, often experience high levels of stress and anxiety. As a result, lawyers report engaging in a variety of coping behaviours to deal with the stress and anxiety associated with their positions. In many cases, these may not always be healthy coping behaviors. For example, lawyers dealing with work-related stress may engage in alcohol and drug use and may experience sleep disturbances and relationship problems. Only a handful of research has examined this systematically, however. A pivotal study by Benjamin and colleagues (Benjamin, Darling, & Sales, 1990) surveyed 1148 attorneys from Washington and Arizona and found evidence of depression that was much higher than the population at large (19% in the lawyers compared to 3-9% in the general population). They also noted that approximately 18% of their sample were described as problem drinkers. A more recent and much larger study (Krill, Johnson, & Albert, 2016) surveyed over 12,000 practicing attorneys in the United States about their rates of stress, anxiety, depression and substance use abuse. They found an even higher rate depression stress and anxiety (20% or more scoring outside the normal range as measured by the DASS-21 (Lovibond & Lovibond, 1995)). As well, fully 20.6% of their participants scored at a level consistent with problem drinking on a substance abuse scale. The conclusion from these two studies, even 25 years apart, is that negative emotions, stress, and anxiety are still very much a problem for lawyers. Negative emotions and stress could lead to these problematic coping mechanisms like alcoholism, and the problem has not decreased since 1990. This is one of the motivations behind this current study. If lawyers are dealing with elevated levels of depression, anxiety, and stress, one possible solution is the consideration of mindfulness meditation.

MINDFULNESS IN THE WORKPLACE

Mindfulness is a psychological state that involves paying purposeful attention to the present moment in a non judgemental way (Kabat-Zinn, 2009). This requires open awareness to internal and external stimuli (Brown & Ryan, 2003). A state of mindfulness can be achieved in several ways but the the most common way is through the practice of meditation. Mindfulness meditation takes many forms but one of the most prevalent forms of meditation stems from the influential work of Kabat-Zinn, who developed the Mindfulness Based Stress Reduction (MBSR) program in the 1970s (Kabat-Zinn, 2003, 2009). MBSR has since become one of the standard forms of mindfulness practice and is the basis for many other mindfulness programs.

Clinical work has suggested that (among other things) mindfulness reduces stress and anxiety (Miller, Fletcher, & Kabat-Zinn, 1995), boosts immune function (Davidson et al., 2003) and even enhances the effectiveness of phototherapy as a treatment for psoriasis (Kabat-Zinn et al., 1998). Mindfulness has also been shown to be useful in the management of symptoms associated with depression (Ramel, Goldin, Carmona, & McQuaid, 2004) and post traumatic stress disorder (Kearney, McDermott, Malte, Martinez, & Simpson, 2012). Of particular interest to the broader public, however, are reports that mindfulness meditation is beneficial for everyday cognitive functioning: mindfulness practice has been associated with improved attention (Moore & Malinowski, 2009), cognitive flexibility (Greenberg, Reiner, & Meiran, 2012), insight problem solving ability (Ostafin & Kassman, 2012), and general decision making (Hafenbrack, Kinias, & Barsade, 2014; Kiken & Shook, 2011).

Given the numerous clinical and non-clinical psychological benefits associated with mindfulness meditation, it is not surprising that meditation programs have been introduced in many companies as an employee wellness option (Gelles, 2015). Within this context, meditation has been shown to reduce negative reactions to stress and to improve reactions to depression and overall workplace satisfaction (Aikens et al., 2014; Glomb et al., 2011; Reb, Narayanan, & Chaturvedi, 2012). Company-based mindfulness meditation programs, however, are relatively novel. As a result, few studies have been conducted to assess their effectiveness.

One such study, administered to employees of Dow Chemical Company, noted increases in workplace satisfaction and decreases in stress (Aikens et al., 2014). In this study, Aikins et al. recruited 89 participants from Dow: 44 were randomly assigned to a mindfulness meditation program and 45 were assigned to a wait list control group. The mindfulness intervention was a seven week program that was delivered online via a series of webinar meetings and a custom designed set of basic meditations based on MBSR but tailored to Dow. Participants first completed five assessments of psychological well being: the Five Facet Mindfulness Questionnaire, the Perceived Stress Scale, the Connor-Davidson Resilience Scale, the Shirom Vigor Scale, and a series of lifestyle questions. Analyses showed that, compared to the group of wait listed controls, participants in the mindfulness group showed significant post intervention reductions in perceived stress, as well as improvements in resilience, vigor, and mindfulness (measured by the Five Facet Mindfulness Questionnaire).

THE PRESENT STUDY

Research suggests that high levels of stress, anxiety, and depression are common among those who work in the legal profession (Krill, Johnson, & Albert, 2016). Consequently, this study sought to examine the use of mindfulness meditation as a strategy for improving the psychological and emotional well being of lawyers. Using convenience sampling, we selected a group of lawyers and asked them to participate in an online, eight-week mindfulness meditation program. Participants were asked to complete a series of self assessments prior to the eight-week program and again at the end of the eight-week program. The pre/post design allowed us to measure changes in behaviour as a result of the mindfulness program. Based on prior studies that have adapted MBSR programs for use in the workplace (Aikens et al., 2014), our hypothesis was that participants would show increases in positive affect, resilience, and mindful cognition, as well decreases in negative affect, depression, anxiety, and stress. We also predicted that participants would show improvements in self reported indices of job competency.

We designed this study as part of a preliminary investigation into the effectiveness of mindfulness meditation programs for different kinds of professionals and leaders. In particular, this study was designed to evaluate the practicality of using online methods to disseminate a comprehensive and fulfilling mindfulness program and to collect data in a way that would allow us to detect measurable changes in behaviour. This study has several clear caveats, such as the lack of a randomized control group. This precludes us from drawing strong conclusions, the implications of which will be discussed in the General Discussion.

Method

PARTICIPANTS

Participants were recruited from the National Association of Women Lawyers (NAWL) via a virtual book club meeting in the fall of 2016. The club arranged to read and discuss *The Anxious Lawyer* by Cho and Gifford (2016) and to discuss how mindfulness meditation can be applied within the context of a legal practice. *The Anxious Lawyer* contains an eight-week program that includes weekly guided meditations and mindfulness practices.

The book club was sponsored by the NAWL and by Seyfarth Shaw LLP, a law firm with over 900 attorneys across in United States, Europe, and Asia. Participants were asked to attend three webinars for Continuing Legal Education (CLE) credit. The first webinar took place on September 7, 2016 and featured a representative from NAWL, a partner from Seyfarth and two of the study authors. The webinar was primarily a discussion about what mindfulness is, how to practice mindfulness, and how to integrate meditation into a legal practice. Attendees were presented with the option to participate in the present study and those that indicated an interest were contacted by a research assistant from the first author's lab.

Out of several hundred webinar attendees, 89 indicated interest in the study. Of these, 46 enrolled in and completed the study. The demographic information of these participants is presented in Table 1.

MATERIALS

Meditation guide. The primary guide for participants was Cho and Gifford's *The Anxious Lawyer* (2016). Participants were encouraged to buy the book or the ebook for the study, though this was not required. It was possible for participants to be enrolled in the study and not read the corresponding book.

Guided meditation audio. Weekly guided meditations were provided to registered participants via email and were also accessible on [The Anxious Lawyer](http://theanxiouslawyer.com/syllabus/) website (<http://theanxiouslawyer.com/syllabus/>). These meditations varied in length from 2-24 minutes and were narrated by the book's authors. The guided meditations are described in Table 2 and links to the audio are provided. These meditations were comparable to meditations that are used in other MBSR courses, though some of the surrounding context was specifically relevant to lawyers.

Self report assessments. Self reports included a short questionnaire about personal demographic information, five psychological inventories, and a set of questions about workplace effectiveness. The five, primary measures (i.e. the psychological inventories) were selected based on their use in prior mindfulness-based studies. All measures were transcribed by the first author into Qualtrics, which is a platform that allows for rapid online data collection. Questionnaires that were designed specifically for this study (i.e. the demographic and job effectiveness questionnaires) are available in Appendix A.

Perceived Stress Scale. The Perceived Stress Scale (PSS, Cohen, Kamarck, & Mermelstein, 1983) is a short questionnaire designed to ascertain one's perceived occurrence of stressful events. Participants read the following instructions:

"The questions in this scale ask you about your feelings and thoughts during the last MONTH. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate."

Participants then read 14 items such as "How often have you been upset because of something that happened unexpectedly?" Each item was rated on a five-point scale ranging from 1 ("Never") to 5 ("Very Often"). Items were presented on a single screen.

Positive and Negative Affect Schedule. The Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) consists of 20 mood descriptors (10 positive and 10 negative) that ultimately provide a measure of both positive and negative affect. Participants first read the following instructions:

“This scale consists of a number of words that describe different feelings and emotions. Read each item and then use the scale to indicate the extent you have felt this way over the past month, on average.”

Participants then saw 20 words like “Excited” or “Upset” and rated their feelings as directed by the instructions on a scale of 1 (“Very slightly or not at all”) to 5 (“Extremely”). All items were presented on the same screen and positive and negative words were intermixed.

Brief Resilience Scale. The Brief Resilience Scale (BRS; Smith et al., 2008) is a six item index of psychological resilience. Participants were instructed to simply answer all six items. These items, such as “I tend to bounce back quickly after hard times” were rated on a five-point scale ranging from 1 (“Strongly Disagree”) to 5 (“Strongly Agree”). All items were presented on the same screen.

Five Facet Mindfulness Questionnaire. The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2008) is a 24 item scale that measures changes in thinking related to five aspects of mindfulness: observation ability, descriptive ability, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. Participants read the following instructions:

“Below is a collection of statements about your everyday experience. Using the scale below, please indicate how frequently or infrequently you have had each experience in the last month. Please answer according to what really reflects your experience rather than what you think your experience should be.”

Participants then read items such as “I’m good at finding the words to describe my feelings.” Items were rated on a five-point scale from 1 (“Never or very rarely true”) to 5 (“Very often or always true”). All items were presented on the same screen.

Depression, Anxiety, and Stress Scale. The Depression, Anxiety, and Stress Scale (DASS-21; Lovibond & Lovibond, 1995) is a 21 item non-clinical scale for measuring thoughts and attitudes related to depression, anxiety, and stress. Participants read the following instructions:

“Please read each statement and indicate how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.”

Following the instructions, participants read 21 items related depression, anxiety and stress, such as “I found it hard to wind down,” “I was aware of dryness of my mouth,” and “I couldn’t

seem to experience any positive feeling at all.” Items were rated on a four-point scale from 0 (“Never”) to 3 (“Almost Always”). All items were presented on the same screen.

Job effectiveness questionnaire. After the psychological assessments, participants were asked to complete a series of questions designed to measure their perceived ability to effectively display or demonstrate various job-related competencies. This questionnaire was designed specifically for this intervention; it is not part of a standardized psychological assessment. Participants first read the following instructions.

“Carefully read the definition of each job-related competency below and select the rating, from 1 to 7, that best represents your judgment of how effectively you perform this work behavior. Keep in mind the following: It is important to be as accurate as possible with your ratings. There can be a tendency to want to use only the top end of the rating scale. Please reflect carefully on the accuracy of your ratings and consider the whole scale when you rate each behavior.”

Following the instructions, participants read items such as “Decisiveness. The ability to make clear-cut and timely decisions with the appropriate amount of information.” Participants then rated themselves on a scale of 1 (“low”) to 7 (“high”). There was also an option for “not observed” if they did not observe this behaviour at all. Items were presented in sets of three to a screen. Items were presented on the screen three at a time.

PROCEDURE

The procedure took place according to the following schedule: recruitment, pretest, mindfulness practice, and posttest.

Recruitment phase. Initial recruitment was carried out at the end of the first webinar on October 5th, 2016. The first author described the nature of the study, what would be tested, and how long the study would take. Potential participants were then provided with a study email address and were informed that, if they were interested in being recruited for the study, they should contact the first author to indicate this interest. A research assistant or graduate student in the first author’s research lab then sent a link for the secure study site to the participant. The link to the study provided potential participants with a letter of informed consent. Participants were asked to read this letter and to click an “accept” button if they agreed and accepted the terms and conditions of the study. Upon accepting the letter, they were formally enrolled in the study and were asked to provide an email address to which study material could be sent. Email addresses were not stored with the collected data for confidentiality reasons.

Pretest phase. Upon providing informed consent, participants were asked to complete the pretest. The first set of questions related to demographic items such as age, sex, level of education, what kind of law firm they were employed in, and for how long they had been employed in their current position. The second set of questions asked about prior personal

experience with meditation, yoga, and any other contemplative practices. After answering these questions, participants completed the previously described self assessment measures in the following order: PSS, PANAS, BRS, FFMQ, DASS-21, job effectiveness questionnaire. The order of tests was selected randomly prior to the study and the same order was used for all participants.

Mindfulness practice phase. After completing the pretest, participants began the mindfulness program. They were encouraged to read a section of *The Anxious Lawyer* each week and were provided with a link to a guided meditation audio file (see Table 2). Instructions on how often to meditate were not overly prescriptive but participants were encouraged to find a time that allowed them to practice as often as they could. Weekly e-mail correspondence from the researchers reminded participants to make a note of when and for how long they meditated each week. At the 4-week mark, a second webinar was conducted and participants who were enrolled in the study were encouraged to attend. At the end of the 8 weeks, a final webinar was conducted.

Posttest phase. After the final week of the mindfulness program, participants were contacted by the first author via email and were provided with a link to the posttest survey. The posttest was nearly identical to the pretest except that we did not include questions about demographics or prior contemplative experience; instead, the posttest survey included several questions about how many days per week participants meditated and how many minutes, on average, that they meditated each time they practiced.

Results

The results section is organized into two subsections. First, we examine psychological changes in participants as a function of the mindfulness manipulation on each of the primary dependent measures. The second analysis examines the relationship between participant scores on each measure and how many minutes, on average, participants meditated per week.

SCORING

Each psychological assessment was scored according to the method described by the authors in each corresponding original article. For each participant, we calculated a single pretest score and a single posttest score for every measure. These pre and posttest measures were submitted to paired samples t-tests. In cases where the assessment has multiple subscales (e.g. the DASS-21) we used a Bonferroni correction to adjust the alpha level to account for the number of comparisons being done. This was done in an effort to reduce the probability of Type I errors. Where m is the number of comparisons, the new alpha level ($\bar{\alpha}$) is given by: $\bar{\alpha} = \frac{\alpha}{m}$. Both the exact p values (unless they are less than .001) and effect sizes (Cohen's d) are reported.

PRE- AND POSTTEST COMPARISONS

Refer to Table 3 for the pre and posttest descriptive statistics of each measure, as well as the associated t-test statistics.

Perceived Stress Scale. Pre- and posttest PSS scores were compared with a paired-samples t-test using $\alpha = .05$. This analysis revealed a significant decrease in PSS scores between the pretest and posttest phases. This decrease amounted to a 22.73% reduction in the scores.

Positive and Negative Affect Schedule. For both the Positive and Negative affect subscales, pre- and posttest PANAS scores were compared with a paired-samples t-test using $\alpha = .025$. This analysis revealed a significant increase in scores on the Positive affect subscale (a 13.65% change) and a significant decrease in scores on the Negative affect subscale (a 17.78% change) between the pretest and posttest phases.

Brief Resilience Scale. Pre- and posttest BRS scores were compared with a paired-samples t-test using $\alpha = .05$. This analysis revealed a significant increase in BRS scores between the pretest and posttest phases, or a 10.36% change.

Five Facet Mindfulness Questionnaire. For each of the five subscales, pre and posttest FFMQ scores were compared with a paired-samples t-test using $\alpha = .01$. This analysis revealed a significant increase in scores on every subscale (i.e. Observing, Describing, Acting with Awareness, Nonjudging of Inner Experience, and Nonreactivity to Inner Experience) between the pretest and posttest phases. This was an average change of 15.61% across the five subscales.

Depression, Anxiety, and Stress Scale. For each of the three subscales, pre- and posttest DASS-21 scores were compared with a paired-samples t-test using $\alpha = .02$. This analysis revealed a significant decrease in scores on every subscale (i.e. Depression, Anxiety, and Stress) between the pretest and posttest phases. Depression scores decreased by 28.84%, anxiety scores decreased by 30.29%, and stress scores decreased by 32.45%.

Job effectiveness questionnaire. The job effectiveness questions were not designed to assess any specific psychological construct and they are not part of a published psychological test. Instead, these items were included for qualitative insight into how participants perceived their own ability to perform on the job. As such, there is no standard way to interpret the results. In order to obtain an overall idea of workplace effectiveness, we averaged across the items to obtain a mean job effectiveness score for each participant. Pre- and posttest effectiveness scores were compared with a paired-samples t-test using $\alpha = .05$. This analysis revealed a significant increase in effectiveness scores between the pretest and posttest phases, or an increase of 6.15%.

MEDITATION DURATION

In the posttest phase, we asked participants about how many days per week they meditated and how many minutes, on average, they meditated each time that they practiced. From this, we calculated the number of minutes per week (approximately) that each participant meditated. It was calculated that, on average, participants meditated 57.98 minutes per week

(min = 0, max = 315, $SD = 63.89$)¹. This is comparable to what has been observed in other studies (Aikens et al., 2014). Although we did not have an explicit prediction regarding the relationship between the amount of time that people spent meditating and their scores on the measures of interest, we examined the correlations between these variables to see if any relationships did, in fact, exist. These correlation scores are presented in Table 4. Although there were some modestly sized correlations, most were not significant. Those that were found to be significant possessed relatively high p values, suggesting that these relationships were not especially strong. Overall, there does not appear to be a systematic relationship between the number of minutes spent meditating per week and the outcomes on the measures that we considered.

Discussion

Results from this study provide preliminary evidence that an online mindfulness meditation program may be an effective strategy for improving the psychological and emotional well being of those who work in the legal profession. At the beginning of this study, participants scored fairly high on measures of depression, anxiety, and stress. Scores on each of these measures were significantly reduced following the eight-week mindfulness intervention. The intervention was also associated with decreases in negative mood and increases in both positive mood and psychological resilience. Importantly, pre and posttest comparisons revealed significant increases in five different facets of mindful cognition; this suggests that the observed changes are likely to be related to mindfulness, specifically, rather than general relaxation.

HIGHLIGHTS OF THE PRESENT STUDY

This is the first study of its kind looking at the possible benefits of mindfulness meditation in lawyers. As noted in the introduction, stress, anxiety, and depression occur at high levels among those in the legal profession (Krill et al., 2016). Consistent with earlier research by Krill and colleagues, we observed fairly high levels of depression, anxiety, and stress in our sample. In fact, our sample generally scored higher on these variables than the sample of lawyers assessed by Krill et al. Table 5 presents a comparison of the pre and posttest DASS-21 scores obtained from our sample with DASS-21 scores reported by Krill et al. Scores on this measure can be assigned to diagnostic categories of severity.² For each of the three subscales, we have listed the proportion of our respondents who fell within each of the five diagnostic categories: Normal, Mild, Moderate, Severe, and Extremely Severe. Compared to Krill et al.'s sample, our sample is characterized by a higher pretest proportion of participants falling in the Moderate, Severe, and Extremely Severe ranges. Table 5 also shows that the mindfulness intervention shifted our respondents from the more severe categories to the less severe categories.

¹ The minimum of 0 hours is the result of a single participant who indicated that they never meditated. In order to determine if that one participant's data affected our results, all the analyses were run without that participant's data and the effects still held.

² It is important to note that these are not clinically diagnostic categories but are used for illustrative purposes. See (Lovibond & Lovibond, 1995) for detail on the DASS 21.

There are several reasons why our sample might have shown more severe scores relative to the participants in Krill et al. First, theirs was a very large sample (12,825) which implies that their observed scores will be closer to a true mean. Second, our sample was collected from a subset of lawyers who belonged to the National Association of Women Lawyers. Krill et al. found that women lawyers scored higher than men on the Anxiety and Stress (though not Depression) subscales of the DASS-21. As such, our sample of primarily female lawyers may have had elevated levels of anxiety and stress. Third, our study was conducted during the 2016 US presidential election, which was noted to be a stressful time for many Americans (American Psychological Association, 2016). In particular, our posttest concluded during the week of the election. Our sample comes from a group likely to be aligned with the Clinton candidacy. It is possible, therefore, that the rancor of the election may have elevated levels of stress and anxiety, though clearly not to a degree that would have prevented us from observing a reduction in these variables during the posttest. Finally, our sample was a convenience sample of participants who wanted to enroll in a mindfulness study. As such, it is possible that these individuals enrolled specifically because they were experiencing high levels of stress, anxiety, etc. This is a possible shortcoming of our design that future studies will address through the use of randomized controls.

A second key feature of this work is that supports the general idea that mindfulness meditation programs can be effectively delivered via a web-based platform. As such, this study provides support for the work of (Aikens et al., 2014). Our program was based on a popular book, *The Anxious Lawyer* by Cho and Gifford (2016), and the meditations were hosted on SoundCloud (see Table 2). Participants meditated on their own and were reminded to practice on a weekly basis. This differs from the gold-standard MBSR program which would have required a greater investment of both time and money from participants. In addition, MBSR programs have been designed to work most effectively with persons suffering from acute stress and anxiety. Our participants showed elevated levels of stress and anxiety but many others showed levels that were consistent with baseline levels that have been observed in lawyers. The use of a customized online platform, therefore, allowed for the development of a program that was context-specific and convenient yet, nevertheless, effective.

Finally, the fact that there was no clear relationship between the amount of meditation and scores on the outcome measures suggests that meditation, in general, may confer a benefit on psychological well being. Scores on our self report assessments improved regardless of how much time that participants spent meditating. What mattered was just that they meditated.

SHORTCOMINGS OF THE PRESENT STUDY

There are two clear shortcomings to this study that must be addressed in subsequent work. First, our study did not make use of a randomized control group. Because of the way our sample was recruited —as a part of a larger initiative to expose individuals to mindfulness and how it can be useful to lawyers— we were not able to recruit a comparable control group. This reduces our ability to attribute, with certainty, significant changes to our mindfulness intervention. Instead, changes may have been the result of a retest effect (i.e. completing the measures a second time) or happenstance (i.e. levels of depression, anxiety, and stress simply

happening to be higher at the time that the pretest was administered than when the posttest was conducted). The lack of a control group reduces our ability to make strong conclusions about the nature of these effects. However, there are two arguments that favour the experimental hypothesis and suggest that the lack of a control group is not necessarily problematic in this case. First, the effects that we observed were quite strong and robust and, based on prior research, all were in the predicted direction. This argument is especially compelling given that these directional predictions were confirmed despite the posttest being administered during the week of the presidential election when, presumably, levels of stress may have been higher than normal. Second, if some of the effects were simply due to chance, we might have observed some significant predictions in the opposite direction than what was expected. Given that all of our effects were in the predicted direction, these results should hold under a more rigorous design.

A second concern is that all of our participants enrolled in this study because they wanted to learn about the possible benefits of mindfulness meditation. This raises the possibility of expectancy effects whereby, because they expressed a desire to learn about mindfulness, changes may have occurred simply because participants expected to see improvements in these key areas. Consequently, we are not able to claim conclusively that the observed effects were a result of the mindfulness intervention. This issue is exacerbated by the fact that our primary dependent measures were self reports. Participants may have answered the questions differently between the pre and posttests because they expected their answers to change. Again, however, we counter these concerns by noting that the effects we observed were quite strong (with high Cohen's *d* values) and were consistent with other studies on mindfulness meditation (Aikens et al., 2014).

Clearly, there are some serious limitations to this study. Although we observed strong effects in only the predicted directions, our results should be interpreted with caution. We suggest that these be taken as preliminary results and that a fully randomized study be carried out to verify the results that were observed in this study. Ideally, a followup study would have high power (i.e. a large sample size) and would employ a randomized, delayed control group design. This would address both the concern associated with the lack of a proper control group and the possibility of expectancy effects.

CONCLUSIONS

Despite the limitations in our design, our study is the first to examine the possible psychological effects and benefits of an MBSR program for lawyers. We examined a sample of lawyers and found high levels of depression, anxiety, and stress. Following the completion of an eight-week mindfulness program, participants reported lower levels of depression, anxiety, stress, and negative mood, as well as increased levels of positive mood, resilience, and workplace effectiveness. Because we did not observe a strong relationship between how often our participants meditated and these observed changes, we suggest that these improvements are available with varying levels of meditation. What matters is that people simply engaged in the meditations. We also suggested several possible avenues for future research, namely a fully randomized, delayed control group design.

Compliance with Ethical Standards

Funding. This work was supported by an Insight Development grant awarded to the first author by the Social Sciences and Humanities Research Council of Canada, #RES000162.

Ethical approval. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The research was approved by the lead author's Institutional Research Ethics Board.

Informed consent. Informed consent was obtained from all individual participants included in the study.

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Table 1. Participant characteristics.

Variable	Value
Total <i>N</i>	46
Females; <i>n</i> (%)	38 (83%)
Age; <i>M</i> (<i>SD</i>)	46.39 (11.25)
Years in Current Position; <i>M</i> (<i>SD</i>)	9.12 (9.21)
Hours/Week Worked; <i>M</i> (<i>SD</i>)	41.92 (11.03)
Highest Level of Education	
Doctoral Degree; <i>n</i> (%)	5 (11%)
Master's Degree; <i>n</i> (%)	1 (2%)
Professional Degree; <i>n</i> (%)	38 (83%)
3-4 Year University Degree; <i>n</i> (%)	1 (2%)
2-Year College Degree; <i>n</i> (%)	1 (2%)
Kind of Law Firm	
Am Law 200 or Similar; <i>n</i> (%)	9 (20%)
Small firm; <i>n</i> (%)	13 (28%)
In-house counsel; <i>n</i> (%)	5 (11%)
Solo practitioner; <i>n</i> (%)	12 (26%)
Other; <i>n</i> (%)	7 (15%)
Functional area	
Partner; <i>n</i> (%)	11 (24%)
Attorney - not partner; <i>n</i> (%)	20 (43%)
Other; <i>n</i> (%)	15 (33%)
Prior Meditative Experience	
20+ Years; <i>n</i> (%)	6 (13%)
1 - 3 Years; <i>n</i> (%)	8 (17%)
6 - 12 Months; <i>n</i> (%)	6 (13%)
3 - 6 Months; <i>n</i> (%)	2 (4%)
1 - 3 Months; <i>n</i> (%)	7 (15%)
None; <i>n</i> (%)	17 (37%)

Table 2. Guided meditations.

Week	Topic	Meditation
1	Beginning to Meditate	Body Scan (6 or 24 min)
2	Mindfulness	Breathing Focus (12 min)
3	Clarity	Following Your Thoughts (12 min)
4	Compassion Towards Others	Compassion Towards Others (12 min)
5	Self-Compassion	Self-Compassion (12 min)
6	Mantra Repetition	Mantra (two different 6 min)
7	Heartfulness	Heart Focused (two different 6 min)
8	Gratitude	Repeat Week 6 or 7

Table 3. Results from key measures.

Variable	Pretest		Posttest		<i>t</i>	<i>df</i>	<i>p-value</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Perceived Stress Scale (PSS) ^a								
Score	31.57	8.58	24.39	8.76	8.22	45	< .001	1.21
Positive and Negative Affect Schedule (PANAS) ^b								
Positive Affect	29.28	7.80	33.91	6.53	-4.92	45	< .001	-0.73
Negative Affect	28.37	8.26	23.33	8.09	4.98	45	< .001	0.73
Brief Resilience Scale (BRS) ^a								
Score	3.01	0.91	3.36	0.88	-3.48	45	.001	-0.51
Five Facet Mindfulness Questionnaire (FFMQ) ^c								
Observing	12.83	3.84	13.80	3.64	-3.01	45	0.004	-0.44
Describing	17.11	3.60	18.89	3.58	-3.78	45	< .001	-0.56
Awareness	13.17	4.36	16.33	3.40	-5.93	45	< .001	-0.88
Nonjudging	13.20	4.57	16.48	4.47	-5.19	45	< .001	-0.77
Nonreactivity	11.20	4.19	14.41	3.75	-6.03	45	< .001	-0.89
Depression, Anxiety, and Stress Scale (DASS-21) ^d								
Depression	11.61	9.49	8.26	8.33	3.27	45	0.002	0.48
Anxiety	9.04	7.05	6.30	5.08	2.90	45	0.006	0.43
Stress	19.57	8.91	13.22	8.78	5.93	45	< .001	0.87
Job Effectiveness Questionnaire ^a								
Score	5.10	0.77	5.43	0.79	-3.71	45	< .001	-0.55

Notes: ^acritical $\alpha = .05$. ^bcritical $\alpha = .025$. ^ccritical $\alpha = .01$. ^dcritical $\alpha = .02$.

Table 4. Correlations between number of minutes spent meditating per week and scores on key measures.

Variable	<i>r-value</i>	<i>p-value</i>
Perceived Stress Scale (PSS)		
Score	-0.32	0.03
Positive and Negative Affect Schedule (PANAS)		
Positive Affect	0.30	0.05
Negative Affect	-0.26	0.08
Brief Resilience Scale (BRS)		
Score	0.22	0.14
Five Facet Mindfulness Questionnaire (FFMQ)		
Observing	0.15	0.34
Describing	0.08	0.61
Awareness	0.22	0.15
Nonjudging	0.08	0.59
Nonreactivity	0.15	0.34
Depression, Anxiety, and Stress Scale (DASS-21)		
Depression	-0.26	0.08
Anxiety	-0.06	0.69
Stress	-0.20	0.19
Job Effectiveness Questionnaire		
Score	0.17	0.25

Table 5. Comparison of the data from Krill et al. (2016) with the present pretest and posttest DASS-21 data.

Diagnostic Category	Depression			Anxiety			Stress		
	Krill et al	Pre	Post	Krill et al	Pre	Post	Krill et al	Pre	Post
Normal	71.7	50.0	65.2	80.7	41.3	65.2	77.3	32.6	67.4
Mild	9.5	17.4	13.0	8.6	8.7	15.2	8.8	13.0	8.7
Moderate	10.4	15.2	13.0	5.0	32.6	15.2	8.2	19.6	10.9
Severe	4.0	6.5	2.2	2.5	10.9	2.2	4.4	30.4	10.9
Extremely Severe	4.4	10.9	6.5	3.1	6.5	2.2	1.3	4.3	2.2

Note: Values in each cell represent the percentage of the total sample in each diagnostic category

Appendix: Questionnaires Designed for the Present Study

Demographic Questionnaire

Please indicate your responses to the following demographic items.

- 1) Gender
 - Male
 - Female
- 2) Age:
- 3) Highest level of education obtained
 - Less than high school
 - High school/GED
 - Some college
 - 2-year college diploma
 - 3-4 year university degree
 - Master's degree
 - Doctoral degree
 - Professional degree
- 4) How long (in years) have you been employed in your current position?
- 5) How many hours do you work per week (on average)?
- 6a) Are you in a formal leadership position?
 - Yes
 - No
- 6b) If yes, how many people directly report to you?
- 7) Indicate your job title:
- 8) Indicate your functional area
 - Partner
 - Attorney (not partner level)
 - Other
- 9) Indicate the size of your firm or company
 - Am Law 200 or similar
 - Small Firm
 - Boutique Firm
 - Solo Practitioner
 - In House Counsel
 - Other

The items below ask you to provide some information about yourself and your experience with activities related to mindfulness. Please take a few minutes to answer the following:

- 10a) Do you have any prior meditative or contemplative practice experience?
 - Yes
 - No
- 10b) If yes, how long have you practiced?
 - 1 - 3 months

3 - 6 months

6 - 12 months

1 - 3 years

3+ years (please indicate number of years) _____

10c) If you practice currently, how often do you practice?

1 - 2 times per day

1 - 2 times per week

3 or more times per week

A few times a month

Other (please indicate how often) _____

10d) Do you use any of the following apps or technologies to assist with your meditation (check all that apply)?

Insight Timer

Headspace

Muse

Buddhify

Calm

Mindfulness App

Other _____

11a) Do you practice yoga regularly (e.g., one or more times weekly)?

Yes

No

11b) If yes, how long have you practiced?

1 - 3 months

3 - 6 months

6 - 12 months

1 - 3 years

3+ years (please indicate number of years) _____

12a) Do you practice tai chi or any other mind-body practice (e.g., Qigong, Aikido, etc)?

Yes

No

12b) If yes, how long have you practiced?

1 - 3 months

3 - 6 months

6 - 12 months

1 - 3 years

3+ years (please indicate number of years) _____

Job Effectiveness Questionnaire

Carefully read the definition of each job-related competency below and select the rating, from 1 to 7, that best represents your judgment of how effectively you perform this work behavior. Keep in mind the following: It is important to be as accurate as possible with your ratings. There can be a tendency to want to use only the top end of the rating scale. Please reflect carefully on the accuracy of your ratings and consider the whole scale when you rate each behavior.

EXAMPLE: Risk Taking: The willingness to take sound, calculated risks, based on good judgment, in situations where the outcome is uncertain.

How EFFECTIVE are you at performing each behavior?	1.	2.	3.	4.	5.	6.	7.	Not Observed
	Low			Moderat e			High	
				X				

In this example, the respondent has indicated that he or she is MODERATELY EFFECTIVE at Risk Taking.

Read the description below and rate how EFFECTIVE you are at performing the behavior.

1) Decisiveness: The ability to make clear-cut and timely decisions with the appropriate amount of information.

2) Creativity: Demonstrating the ability to initiate original and innovative ideas, products, and approaches.

3) Thoroughness: The ability to attend to detail and develop a comprehensive approach to problems.

4) Objectivity: The ability to maintain a realistic perspective and keep personal biases to a minimum.

5) Prioritizing: The ability to quickly identify critical tasks and manage time accordingly to complete these tasks without getting distracted by less important matters.

- 6) Mental Agility: Generating multiple solutions to problems quickly and demonstrating the ability to comfortably and easily change topics during conversation and continue to offer penetrating insights.
- 7) Intellectual Horsepower: Quickly grasping complex concepts and relationships.
- 8) Emotional Depth: Applying a depth of understanding and emotional maturity that allows the appropriate amount of emotion to guide decisions and actions.
- 9) Making Tough Calls: Making difficult decisions in a timely manner.
- 10) Open-Mindedness: A willingness to consider new ideas and approaches, as well as input from others.
- 11) Interpersonal Relations: Relating to others in an outgoing, friendly, warm, and personable manner in order to establish and maintain effective interpersonal relationships.
- 12) Social Astuteness: The ability to accurately read and respond diplomatically to organizational trends and norms, as well as effectively deal with organizational politics.
- 13) Conflict Management: The ability to mediate and resolve conflicts and disagreements in a manner best for all parties involved.
- 14) Communication: Keeping direct reports and leaders informed about decisions, events, and developments that affect them.
- 15) Persuasiveness: The ability to sell others on ideas, approaches, products, and services.
- 16) Negotiation: The ability to negotiate outcomes that further the interests of the organization, and when possible, also further the interests of opposing groups.
- 17) Listening: Taking the time to listen to others' questions, concerns, and viewpoints, identifying the relevant information, and conveying it to the other person.
- 18) Achievement and Motivation: Demonstrating the motivation to work hard, be successful, achieve difficult goals, and complete challenging tasks.
- 19) Independence: The ability to be self-starting and work independently of others when necessary.
- 20) Emotional Control: Maintaining personal composure during times of stress or pressure, when things are uncertain, or when faced with conflict or disagreement.
- 21) Dependability: The ability to be counted on to meet commitments and deadlines.
- 22) Integrity: Demonstrating a high quality of character including being honest, ethical, trustworthy, and sincere, and effectively representing and respecting company values.

23) Desire to Learn: Embracing new challenges and the opportunity to learn, as well as demonstrating the motivation to grow and develop by responding positively to constructive feedback.

24) Assuming Responsibility: The willingness to step forward and take charge of a difficult situation, without being asked to do so.

25) Vision: Seeing the "big picture" in the organization, industry, and economy, including having a clear sense of the company's ideal future state and communicating this to others in a compelling way.

26) Productivity: Accomplishing an above average quantity and quality of work.

27) Work/Life Balance: Maintaining a healthy and productive balance between work responsibilities and life outside of work.