

Title: A real-world application of short mindfulness-based practices: a review and reflection of the literature and a practical proposition for an effortless mindful lifestyle.

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Abstract:

Mindfulness has become known to the Western world through mindfulness programs that entail different formal and informal mindfulness practices. To enable initiation and commitment to a practice of mindfulness, and to enhance the intrinsic motivation to follow and commit to a more demanding mindfulness program and facilitate a lifestyle adaptation, we argue that associating one short, accessible, and easy to use mindfulness practice with *implementation intentions* and *habit formation* may be the best way forward for novices in meditation and mindfulness. We trust that other theories and findings from psychological science can enhance and enable a mindful lifestyle, which will strengthen the capacity to upkeep optimal living and being.

Keywords: mindfulness; mindfulness-based interventions (MBI); Habitual Mindfulness Practice (HMP); Habit-Formation; Implementation Intentions

Introduction

The accumulation of mindfulness related findings from the past three decades suggest an alternative and complementary method of practice within medicine for enhancing health and well-being. While much research has indicated the positive effects of mindfulness practices (e.g.,¹), some systematic reviews reveal non-significant differences for assisting people with their physiological and psychological health when compared to other evidence-based treatments^{2,3}. In an attempt to identify where the problem lies, this manuscript reviews key literature that relates to mindfulness-based programs and practices. While other reviews focused on methodological rigor as a primary point of interest and criticism (which is often valid and indisputable – see e.g.,^{4,5}), this review will focus on *mindfulness practices* (e.g., Mindfulness Breathing Meditation, Body Scan, etc.) that are accumulated to form validated and regulated *mindfulness programs* (e.g., Mindfulness-Based Stress Reduction). Some of these practices have not been thoroughly investigated, which means that their inclusion within a mindfulness program (apart from the practitioner's experience and common sense) is not fully justified through research evidence. For example, the *raisin exercise*, which is proposed to be a practice suitable for weight regulation programs, and is included in mindful eating programs, has not been thoroughly investigated in isolation. Following the review of mindfulness-based programs, and inferring that much research needs to be conducted at an experimental level and with short mindfulness-based practices, this manuscript attempts to draw an association between mindfulness, implementation intentions and habit-formation. By drawing those associations we suggest that short mindfulness practices can form the basis of initiating, adhering and adopting mindfulness over the life-span. Instead of joining lengthy mindfulness programs, we instigate that by combining implementation intentions and habit formation with short(er) mindfulness practices that have been found to be useful in experimental research, clinicians may enhance the commitment to a mindfulness practice routine and the formation of a 'habitual mindfulness practice'.

Mindfulness Programs

Mindfulness practices involve intentionally observing the body and mind non-reactively, while embracing the individual experience and accepting things as they are⁶. Mindfulness practices, which are traditionally seen through mindfulness meditation, may be understood simply as attentional training, a process of consciously keeping one's awareness focused on whatever is present, without fixating on any particular part of that experience or engaging in any secondary processing⁷. Such non-judgmental present moment attention and awareness has been explored in contemporary research through state and trait approaches. State mindfulness has been observed predominantly in contemporary experimental research (or when changes in mindfulness are observed within a short timeframe – e.g., after 20 minutes of meditation), while trait mindfulness is seen more in the context of a general tendency to display mindfulness, or, mindfulness being a stable characteristic of one's personality that may be shifted by participating in a prolonged mindfulness program (e.g., over 8 weeks). Repetitive attempts to increase state mindfulness may lead to altering the general tendency to be mindful over time through the appropriate shorter (e.g., <3 minute) and longer (e.g., >30 minute) meditative practices. In other words, recurring efforts to engage with practices may each time increase state mindfulness, and, eventually, accumulate to develop a more mindful disposition and lifestyle. This is the underlying aspect of mindfulness programs, where a week-long engagement with one practice at a time is repeated over the course of the week (e.g., week 2 being central to sitting meditation, or, week 6 being central to loving-kindness meditation, etc.)⁸. Overall, mindfulness programs entail various practices of different durations that are taught over several weeks to create a collection of resources.

Indeed, such various different meditative practices frame empirically supported programs. These programs are based on mindfulness such as Mindfulness-Based Stress Reduction (MBSR⁸), Mindfulness-Based Cognitive Therapy (MBCT⁹), Mindfulness-Based Relapse Prevention (MBRP¹²), Mindfulness-Based

Eating Awareness (MBEA¹³) and the Mindful Self-Compassion Program (MSCP¹⁴) or informed by mindfulness, such as Dialectical Behaviour Therapy (DBT¹⁰), Acceptance and Commitment Therapy (ACT¹¹). Programs vary in duration and can last between 8-10 weeks, while participants meet weekly, practice mindfulness daily (45 minutes to an hour) through utilising several formal and informal exercises, and usually incorporate a one day retreat somewhere in the middle of the program⁸. While these programs form a lifestyle change for many people, where mindfulness becomes a part of their everyday life, some individuals are struggling with the commitment that is required during or after these programs^{15,16}. Researchers identified this difficulty and attempted to create similar programs and practices of shorter durations.

Brief Mindfulness Practices

Carmody and Baer¹⁵ conducted a review to examine the effect of session duration on outcome measures and found non-significant differences in the effectiveness of shorter programs when compared to the traditional programs that last for a minimum of eight weeks. More recently, Domarzo et al.¹⁶ reported similar effect sizes when eight and four session mindfulness-based programs were compared to a control group. Therefore, decreasing the time of program engagement is a matter of investigation and concern for many researchers and clinicians who are interested in patient benefits.

However, mindfulness programs represent a collection of practices, and short practices have received less attention in contemporary research. Zeidan, Gordon, Merchant and Goolkasian¹⁷ is one of those examples of research where a three-day mindfulness meditation intervention was used with a significant effect in reducing pain. The participants were asked to practice 20 minutes per day (hence, 60-minutes over the 3-day intervention), with different mindfulness meditation formats (e.g., day 1: meditation teacher and focused-breathing meditation, day 2: meditation audio tape and open awareness meditation, etc.) taught and practiced each day. One of their arguments was the constraint of time for chronic pain patients, and

their inability to participate in original mindfulness programs. While mindfulness programs appear to lose some momentum over short-term programs and practices, the positive results of shorter practices are not valued in isolation and are usually used as a reinstatement of the effectiveness of programs. In other words, experimental findings fail to fit within any other framework or rationale apart from the effectiveness of mindfulness program(s).

Brief mindfulness practices have been found to immediately effect emotion, mood, stress, and anxiety in a brief period of time. For example, Mohan et al.¹⁸ found that a twenty-minute meditation session significantly lowered stress responses when compared to a non-meditating control group. Furthermore, Berghoff et al.¹⁹ suggested that 10 minutes of daily practice was similarly effective to 20 minutes in decreasing stress, suggesting the potential of enhancing adherence to mindfulness programs. And indeed research has continued to adapt to the needs of people who want to engage with mindfulness interventions and practices. Examples of five-minute mindfulness manipulations are seen across the literature to improve wellbeing, such as decreasing heart rate and negative affect when compared to an emotional suppression control group²⁰, and increasing socio-cognitive functioning and empathetic concern when compared to a control group that was asked to be fully immersed with any experience that would arise²¹. Both of those examples display an ideal movement towards more time inhibited and applicable practices that are all-encompassing to facilitate realistic applications on mindfulness that can fit within different lifestyles. Nevertheless, again these findings on short and easy practices are reinstatements of longer and more demanding mindfulness programs.

Identifying the problems to advance mindfulness research

The lack of satisfactory research is certainly the case for most mindfulness-based programs. For example, the 'Mindful Eating and Living (MEAL²²) program utilizes a practice called the 'mindful raisin exercise'. Hong, Lishner, and Han²³ are the only authors whose research focused on the effectiveness of the mindful raisin exercise, where they found that the exercise increased levels of enjoyment when compared to a non-mindful raising exercise or a no-task condition. Whether mindful eating practices such as the raisin exercise are effective for weight regulation and eating disorders remains a question that has not been addressed in isolation as a mindfulness practice in contemporary research, but such practices are strategically included in obesity and disordered eating mindfulness treatments. There is a need to develop evidence that makes the inclusion justifiable, and move beyond the assumption that some practices are similarly helpful (that is, if some of them are at all). Similar cases are observed for breathing and loving-kindness meditations, which are core formal practice in most mindfulness meditation programs but have been inadequately investigated in experimental settings.

What adds a further level of complication in understanding and utilizing mindfulness practices in everyday life is the use of audio CDs with guided mindfulness meditations. While mindfulness meditation is usually practiced within the context of a group and the advice and guidance of a meditation teacher, the use of audio CDs has become typical in both research and practice. However, the evidence around audio files with guided mindfulness meditations is scarce, especially in comparison to regular meditation sessions. Some evidence that does exist proposes that the lack of specific directions indicative of the cue or situation in which to practice mindfulness meditation may lead to using mindfulness practices as an avoidance rather than acceptance tactic²⁴. In other words, when the decision to practice mindfulness meditation is left to the individual, and the individual is using it at times of pain and distress, the practice is coming in place to alter the present moment, rather than enhance the endurance within it.

Another way of recounting the appropriate use of mindfulness practices is through the association between stimulus and response. When mindfulness practice (i.e., the response) is initiated as a response to negative feelings, emotions, thoughts or situations (i.e., the stimuli), the practice becomes associated with adversity and suffering. The practice automatically becomes context specific, more challenging, and its use related to being unhappy or challenged. This does not only hinder a lifestyle adaptation and change, but also makes the practice outcomes weaker when mindfulness is put aside during happy and content times and a sudden major life event mandates the utility of mindfulness. Another way to describe the diverse nature that the initiation of mindfulness practices may take is the *wanting* (i.e., establishing a regular practice) versus the *needing* (i.e., meditating when in distress), which represents either a lifestyle adaptation, or, a temporary (and frequently unsuccessful) coping paradigm, respectively. When having a negative thought or emotion (or a candy apple), utilizing the knowledge of mindfully meditating (or brushing one's teeth) should be used as an additional method of enhancing health and wellbeing (or dental hygiene), and not as a limited stimulus for initiating mindfulness practices (taking care of one's teeth). In other words, 'brushing one's teeth' should be a regular practice, and used in addition to 'sticky' situations, rather than the latter being the only occasion of practicing 'dental hygiene'.

A novel model of habitual mindfulness practice.

Implementation Intentions and mindfulness practice.

Short mindfulness practices need to be considered within the psychological science and medical literature to assist in enhancing commitment to a lifestyle change. There are two lines of research that could strengthen the commitment to mindfulness practices. First, *implementation intentions* (i.e., if-then propositions of plans concerning when, where and how the intended behavior will be performed) over *goal intentions* (i.e., defining the end goal – see^{25,26}) may be useful in forming the foundation of a regular practice. In other words, forming implementation intentions (e.g., "If I park the car when I get into work,

I will meditate for 5-minutes”, “If I take the train into work, I will meditate for 5-minutes” or “If I brush my teeth, I will meditate for 5-minutes”) may be a stronger translation of commitment and development with the mindfulness practice than forming goal intentions (e.g., “I intend to meditate to feel better”). After establishing the time, place and method of enabling a regular practice, the practice can become a coping/wellbeing element that is practiced in response to stress, anxiety, or depression (e.g., “If I feel stressed, I will meditate for 5 minutes”), without stripping away the nature of mindfulness and the meaning of being aware of what is happening in the present moment. Initiating mindfulness practices exclusively as a method of overcoming adversity and not accepting what the present moment has to offer, or using the practice as a method to feel better, may create the wrong type of expectations, enhance disappointment, and lead to eventual discontinuation of the practice²⁴.

Habit Formation and mindfulness practice.

Second, the consensus over *habit formation* states that habits are acquired through a systematic strengthening of the relationship between a situation (e.g., taking a lunch break) and an action (e.g., breathing meditation). This is usually achieved through repeating a behavior in a consistent and reoccurring everyday situation, which gradually increases the automaticity in which the behavior is initiated and performed (e.g., ²⁷⁻³¹). In essence, repetitive attempts to increase state mindfulness leads to an incremental escalation of the general tendency to be mindful in a more automatic manner.

According to Lally et al.²⁹, the average time for participants to reach the asymptote of automaticity is 66 days; however, with notable variation ranging from 18 to 254 days. Overall, as time lapses, and the behaviour is enacted several times, the cognitive effort required to turn to the behaviour (in this case, mindfulness practice) decreases, and initiation could become ‘second nature’³⁰. Roemer and Orsillo ³² noted the need to conduct experimental research further, and argued how the form of delivery and the ability of non-striving may propose a more effective model within psychotherapy. The ability to use one

brief 5- or 10- minute mindfulness meditation repetitively within the context of habituation of cues (or situations) to reach an asymptote of automaticity represents a novel approach to lifestyle change and incorporation of a mindful lifestyle.

Beyond repetition, Verplanken²⁷ suggested there is a need to consider literature around automaticity (e.g.,³³), and the mental efficiency and lack of awareness surrounding such habitual behaviours. The notion of initiating mindfulness meditation more automatically postulates a desirable audio file that is easily accessible, easily enacted, and without the need for any conscious decision making, but rather an initiation based on predetermined cues of instigation.

Indeed, one question that becomes evident is whether we are talking about the initiation or practice becoming more automatic. We are discussing the initiation, although the practice could become more automatic as well. When we think of mindfulness in terms of the self-regulation of attention³⁴, there is a cycle within the practice of mindfulness that suggests some automaticity that builds up over time. The cycle usually entails drawing attention to one specific aspect of the present moment experience (such as the breath), and observing, noticing and acknowledging when the mind wanders away in a non-critical and non-judgmental way, to enable the redirection of attention back to the primary focal point (i.e., in this case the breath). The ability to recognise and accept any mind wandering, and techniques such as labelling any thought (such as “I am worthless” as a “thought”) and any feeling (such as “I feel stressed” as a “feeling”) becomes more of an automatic response to the natural mind wandering that occurs to all of us. Therefore, despite the uniqueness of the present moment, and the different experiences that arise in each moment, the response to it may be to become more automatic or habitual. In other words, while the ability to be attentive of the present moment is a very consciously driven enactment, the cycle of acceptance and nonjudgment may become more of an automatic response. For now, however, our proposition only relates to the initiation of short mindfulness practices with the intent of making it a habit.

Detailed guidance for Clinicians

One aspect that needs further consideration is that individuals differ, and some practices feel more appropriate and easy than other practices. To enable a Habitual Mindfulness Practice (HMP), clinicians should have access to a toolbox of short mindfulness practices. The initiation and engagement of patients with mindfulness may be easier by trialling different tools and different durations to identify one that is suitable to the individual and his/her lifestyle. The next step would involve an identification with the client of regular occurrences in everyday life (such as walking to work) that could be coupled with the identified mindfulness practice (such as mindfulness walking). Overall, the practice should be regular, to enable the benefits of mindfulness to act more efficiently when mindfulness is needed (e.g., when feeling anxious). Re-evaluation of the patients' practice, and exploring alternative practices or shorter durations may propose adjustments of ensuring a regular practice, and reinforce the need to keep the practice at a tailored to the individual. Clinicians need to remember that a 3-minute practice can be seen universally as short, but some patients may think that 5-minutes are equally short and fitting within their lifestyle.

My research team is currently working on pre-meditation instructions, which derived from our latest research with mindfulness colouring books³⁵. What we found was that some of our volunteers were distracted by the voice that was providing mindfulness instructions in the background. Currently, we are working on pre-meditation instructions for both mindfulness meditation and mindful colouring, and initial findings suggest that pre-instructions are similarly effective to ongoing instructions. Here are the instructions that we provide to non-meditators in our current research and allow them to practice in silence:

First, find a quiet and safe place. Second, sit comfortably, regardless of where it is (sofa, chair, or floor) and close your eyes. You can even lay down, but it may be tricky to stay awake. Third, focus your full attention to your breath, coming in and going

out, coming in and going out, continuously and with your full attention, nothing more and nothing less. You may feel that it is more notable or intense through your nose and mouth, or you may feel the sensations of your breath coming in and out through your chest or belly. Whichever is more notable is the one you should go with. Fourth, watch the fireworks go! Thoughts, many times random and many times more frequently as one of your breaths will overtake your attention, and instead of focusing on your breath you are thinking of what to have for dinner, your workload, house chores, the kids, how to control your eating and to whether anyone walked the dog, thoughts of any kind that exists in your head. Our minds do that, and this is fine! You did not fail, but rather you did what you are supposed to do. You observed how your focus shifted from your breath to thoughts, and now it is time to shift your attention back to your breath. This cycle of being attentive of your breath, your attention shifting to any thoughts or feelings, acknowledging that your attention shifted, and returning your full attention to your breath is the purpose of the exercise. Be prepared to repeat this cycle over and over again, and think of it as walking and circumventing other pedestrians. You can not make other pedestrians disappear, but you can acknowledge that they will appear from time to time (depending on how busy the sidewalk is), and your body moves away from your path and right back into it. You are not changing paths (because this would be losing yourself in your thoughts) and you are not pushing them away to pass because it is not nice to push, control or force your way when you walk (and this applies to your thoughts as well).

Conclusion

To support clinicians with flexible mindfulness practices that could be easily suggested to patients, research should focus on: (a) state mindfulness, (b) observations of practices in isolation (and outside mindfulness programs), (c) test the benefits of shorter practices, and (d) utilise experimental and eventually longitudinal methodologies to enhance the science behind each practice. Making mindfulness a habitual response in essence requires less time, commitment, and effort, and may eventually lead to a genuine interest and uptake of longer, more demanding, and potentially more rewarding mindfulness practices and programs. Lifestyle adaptation and change with and through mindfulness may come through 5-minutes of being in the moment, as long as implementation intentions and habit formation methods underpin the initiation, recurrence and prolongation of a short mindfulness practice to develop a Habitual Mindfulness Practice (HMP).

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