To what extent is mindfulness meditation effective in improving wellbeing?
Abstract

Mindfulness meditation is a relatively recent topic of investigation within a Western context, with a recent proliferation of research with clinical samples for treating mental illness. The majority of research in this area looks at improving standard of life in some aspect, and so the research question investigated was: **To what extent is mindfulness meditation effective in improving wellbeing?**

Wellbeing is a societal construct referring to several characteristics that define positive mental health (Seligman, 2011). Research in this area is very broad, considering there are many meditation methods, so this investigation focuses primarily on Mindfulness Based Stress Reduction (MBSR), a method developed in 1979 by Kabat-Zinn (Kabat-Zinn, 1990). By evaluating research into many aspects of wellbeing, it was found that mindfulness meditation is effective in improving elements of wellbeing such as stress, anxiety and attention, but also in elements such as creativity, pain reduction and compassion (Bishop, 2002). The vast majority of published experimental studies support these positive benefits of mindfulness meditation practice. However, it must be considered that many studies only consider small, specific samples, with many lacking control groups, which limits generalisability of findings. Most research is conducted from a Western perspective, despite the origins of mindfulness practice being from traditional Eastern religious practice. It can be suggested that the improvement across all areas can be attributed to a greater control over cognitions as a result of the mindfulness training.

Though much of the research is methodologically flawed, it still shows support for the efficacy of mindfulness meditation in improving aspects of wellbeing. It was concluded mindfulness meditation methods may be used alongside other treatments until the programs are shown to be entirely effective in relieving disorders rather than only symptoms, or in an eclectic approach to prevent relapse.

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**Introduction**

Mindfulness meditation has roots in eastern religious traditions, from a range of practices including “Buddhist, Christian, Islamic, Hindu and Jewish traditions” (Lutz, Slagter, Dunne & Davidson, 2008). Mindfulness can generally be defined as “a state in which one is highly aware and focused on the reality of the present moment, accepting and acknowledging it, without getting caught up in thoughts that are about the situation or the emotional reactions to the situation” (Bishop 2002). Today, mindfulness meditation techniques have been adapted by Western researchers to treat a wide variety of clinical samples such as depression, anxiety and stress as an alternative or complimentary treatment to drug therapy.

Though on the surface research supports the efficacy of mindfulness meditation, one must be critical of the limited samples and methodologies used in empirical studies. These limitations of evidence must be considered if a holistic view of mindfulness meditation methods is to be achieved. This paper aims to highlight strengths and limitations of research in mindfulness meditation in an effort to discern the validity and reliability of supporting evidence.

The quest of the Western world for the ‘ultimate lifestyle’ has become exponentially more popular in recent decades, but has roots in history. Aristotle suggested “all human action is to achieve happiness” and happiness is an element of modern wellbeing theory (Seligman, 2011). In Western nations, the 20th century has been dominated by the positive psychology movement, a school of thought primarily concerned with achieving wellbeing, rather than focusing on abnormalities and dysfunction.

While the dictionary proposes wellbeing is, most simply, “the state of being comfortable, healthy or happy” (Merriam-Webster Incorporated, 2014), this limited definition fails to consider many aspects of wellbeing. Wellbeing is a societal construct defined by several characteristics; this means it is conceptual and not based in empirical evidence (Oxford Dictionary, 2014). Earlier researchers, such as Jahoda (1958), proposed a definition of ‘ideal mental health’, which is similar to the notion of wellbeing proposed in more recent models. According to Jahoda (1958), wellbeing includes: self-attitudes (realistic levels of self-esteem, identity); personal growth and self-actualisation; integration (able to cope with stress);
autonomy; accurate perception of reality and mastery of environment (able to work, solve problems, be creative, love, adjust to new situations). (Jahoda, 1958)

Another definition of wellbeing is proposed by Carol Ryff (1989), in which she proposes 6 key aspects of wellbeing. These are: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (Ryff, 1989). From this, Ryff developed test scales that can be used to ‘measure’ wellbeing in clinical and natural settings.

More recently, five aspects of wellbeing are outlined by Martin Seligman in his 2011 book ‘Flourish’: positive emotion, engagement, meaning, positive relationships and accomplishment (Seligman, 2011). Seligman highlights that wellbeing, unlike happiness, can only be measured by considering a number of different aspects. Wellbeing cannot be operationalized, and consists of a number of measures, none of which define wellbeing alone, and which in themselves are only measurable to a certain extent. This differentiation between happiness and wellbeing is crucial in understanding the implications of meditation for general wellbeing. Furthermore, the lack of operationalisation of variables means it is difficult to quantify and scientifically measure wellbeing, particularly outside of Western cultures, considering these definitions of wellbeing come from Western researchers.

The similarity in these definitions (Ryff, 1989; Jahoda, 1989; Seligman, 2011) suggests while there may be consensus on the general aspects of wellbeing, it remains difficult to measure holistically and test individual elements. In many published studies, no effort is made to understand that wellbeing may be defined differently in different cultures, and this must be considered when looking at the generalisability of findings from Western perspectives. It must also be considered that while Western society emphasises wellbeing as a life goal, this importance may be different in other cultures.

**Benefits of meditation**

Mindfulness meditation has been shown in many studies to improve the wellbeing of participants. The key aspects investigated in terms of mindfulness meditation, including stress, anxiety and attention relate to the definitions of wellbeing. High stress levels, for
example, can impair an individual’s access to ‘positive emotion’, as well as interfering with the ‘positive relationships’ an individual seeks.

At first glance, meditation as a strategy for improving wellbeing seems a viable possibility. As Chen et al. (2012) assert, meditation can help avoid the side effects of medication for issues such as clinical anxiety or stress. This has many benefits, as there are no long-term negative health effects of meditation (or as yet uncovered by research), unlike drug treatments such as SSRIs (Mayo Foundation for Medical Education and Research, 2014). Additionally, participation in meditation programs avoids the “stigma of psychiatric treatment”. (Chen et al, 2012)

Generally, meditation programs are also able to overcome barriers such as cost. One study (Issakidis, Sanderson, Cony, Andrews & Lapsley, 2004) found meditation programs are one of the most cost-effective treatments for anxiety disorders, particularly in contrast to drugs. This may be because mindfulness-based solutions are often group-centred, hence less expensive. Additionally, mindfulness meditation programs may be more accessible than other treatment options. All these benefits warrant further research into the efficacy of meditation, as they break down barriers to treatment for many individuals.

Stress reduction has been found to be a major benefit of undertaking meditation training. The majority of research on this topic deals with stress reduction in relation to Mindfulness-Based Stress Reduction techniques, a method of mindfulness meditation developed by Jon Kabat-Zinn (1982). Mindfulness-Based Stress Reduction (MBSR) is used in a structured group, which employs mindfulness techniques, aiming to “alleviate suffering associated with physical psychosomatic and psychiatric disorders” (Grossman, Niemann, Schmidt, Walach, 2004). The program is designed to be non-religious and non-esoteric (Grossman et al, 2004), and as the name suggests, the primary objective is stress reduction. The method consists of “breath-focused attention…to the transient nature of sensory experience” and “shifting attention to present moment awareness” (Goldin & Gross, 2010). This method has been successfully applied to many varied samples, such as cancer patients (Carlson & Garland, 2005; Mackenzie, Carlson, Munoz & Speca, 2007), college students (Oman, Shapiro, Thoresen,
Plante & Flinders, 2008), survivors of childhood sexual abuse (Kimbrough, Magyari, Langenberg, Chesney & Berman, 2009) and health care professionals (Irving, Dobkin & Park, 2009). This diversity in samples suggests the meditation technique is valid throughout a variety of different personal situations. Research into stress reduction is crucial in wellbeing, accounting for Jahoda’s (1989) aspect of ‘integration’, which specifically allows for an individual’s ability to cope with stress. Furthermore, attention can enhance resilience, an important aspect in positive mental health. It is also incorporated in Seligman’s (2011) ‘positive emotion’ aspect of wellbeing.

Stress itself can derive from a variety of situations, for example occupational stress in primary school teachers (Gold, Smith, Hopper, Herne, Tansey & Hulland, 2010), working adults (Klatt, Buckworth & Malarkey, 2009) and health care professionals (Irving, Dobkin & Park, 2009) could be different to health-related stress in cancer patients (Carlson & Garland, 2005; Mackenzie et al., 2007; Ando et al., 2009). So while the narrow samples limit the generalisability of studies, the breadth of research including a wide variety of specific samples suggests meditation is effective throughout a wide range of people.

As Mohan, Sharma & Bijlani, (2011) highlight, the effects of stress can, to a certain extent, be beneficial in particular circumstances. Most of the research in this area considers stress as a barrier to wellbeing, and this view is justified in clinical samples where the population suffer severely due to stress. However, in non-clinical samples, moderate levels of stress may cause increased performance and not a negative reaction. For example, for students undertaking final exams, a certain level of stress allows them to maintain their productivity.

Another benefit of meditation is a reduction in anxiety. Minimisation of anxiety improves wellbeing by allowing the individual to relax and live daily life without significant impediment. Within Seligman’s (2011) definition, limiting anxiety contributes to ‘engagement’, because anxiety may interfere with the enjoyment people get out of tasks. Most participants in research about anxiety reduction have a clinically diagnosed anxiety disorder, as classified by the DSM current at the time of research. This ranges from DSM-III-R in Miller, Fletcher & Kabat-Zinn (1995) to DSM IV in Goldin, Ramel and Gross (2009). The inconsistency in
diagnostic criteria may affect validity of research, and the temporal validity of studies must be considered when comparing results. In a literature review by Chen et al. (2012), it was found that 25 of 36 studies using meditative therapies for reducing anxiety were statistically effective (compared to controls).

In an analysis of literature on the relationship between mindfulness meditation and anxiety, Toneatto & Nguyen (2007) found the changes in anxiety and depression were ambiguous, sourcing 15 studies. The benefits were most clear when there was no active control group, suggesting improvements may have been due to other factors (Toneatto & Nguyen, 2007). Theoretically, mindfulness meditation practice may improve anxiety because of the skills and techniques it provides participants with to reduce rumination and negative thoughts.

Another key benefit of mindfulness meditation is improved attention. The ability to focus one’s attention on positive rather than negative emotional experiences is another crucial aspect of wellbeing investigated in terms of mindfulness meditation (Valentine & Sweet, 1999). The ability to focus attention is an aspect of environmental mastery (of Ryff’s 1989 model) – overcoming barriers to become competent within any environment depends on the way we turn our attention. The impact of mindfulness meditation on attention is less defined than other areas of mindfulness research, partially because attention itself is a wide domain, partially because it has less application to clinical situations. Nevertheless, research suggests mindfulness meditation training can improve attention (though often to a lesser degree than other areas). Studies such as Chambers, Lo & Allen (2008) show participants in a mindfulness meditation program showed significant improvements in sustained attention. Jha, Krompinger & Baime (2007) found that because of the nature of the MBSR program used, participants demonstrated “improved attention-related behavioural responses by enhancing functioning of specific subcomponents of attention” (Jha et al., 2007). Additionally, they found different types of meditation presented different improvements; concentrative meditation caused the emergence of receptive attentional skills, whereas MBSR “improved the ability to… orient attention” (Jha et al., 2007). Valentine & Sweet (1999) assert superior performance of long-term participants in sustained attention tests, as well as suggesting that mindfulness meditators performed better than concentrative meditators, similar to Jha et al.
On the contrary, Josefsson & Broberg (2011) found Buddhist and Western mindfulness meditators showed no difference to non-meditators in sustained and executive attention. Additionally, Lykins, Baer & Gottlob (2012) found no significant difference for long-term meditators (as compared to demographically matched controls) having better attention and memory functioning. This difference may be due to the difference in tests of attention used, or classification of ‘long-term’ and ‘short-term’ meditation.

Though not as much research has been done in other areas (outside of stress, anxiety and attention), some studies suggest practicing mindfulness meditation could also improve academic achievement (Nidich et al, 2011), brain and immune function (Davidson et al., 2003), visualspatial processing (Kozhevnikov, Louchakova, Josipovic & Motes, 2009), emotional coping (Wisner, Jones & Gwin, 2010), compassion (Engström & Söderfeldt, 2010) and creativity (Horan, 2009). This research suggests meditation can improve wellbeing in non-clinical samples, and that the content of the meditation practice can impact on results of that practice. Perhaps the improvement across all areas can be attributed to a greater control over cognitions as a result of mindfulness training.

**Evaluation of research**

Despite many studies asserting the efficacy of mindfulness meditation programs, there are several methodological, cultural, sampling, and other limitations that must be considered. While MBSR techniques have been shown effective in various situations, many studies involve an inadequate number of participants (from narrow populations) for rigorous statistical testing. Statistical tests with fewer participants must use non-parametric tests, which consider less information, and are therefore less reliable than parametric tests. For example some studies use as few as 14 participants (Evans, Ferrando, Carr & Haglin, 2011), or 22 participants in Miller et al. (1995). Comparison of the efficacy of the treatment and generalisation of findings are therefore limited in these studies.

Most of the measures used for stress are self-reporting scales. Self-report data is subjective to individual personality types. For example, different individuals may have the same biological level of stress, as measured in cortisol levels (as in Mohan et al., 2011) or blood pressure (as in
Broome, Orme-Johnson & Schmidt-Wilk, 2005), but report stress levels differently, depending on their personality and culture. As Mesquita & Walker found (2003), different cultures express and interpret emotion differently, so culture may play a role in the extent to which individuals express the amount of stress they are feeling. Culture is another possible factor to consider – the majority of research on meditation has been conducted from a Western viewpoint in Western countries (mostly the USA). This is concerning particularly considering the origins of meditation are as a practice of Eastern religious tradition. Further cross-cultural studies using an etic approach could be used to investigate the relationship between culture, expression of stress, and the perception of wellbeing, particularly in relation to mindfulness meditation.

Some researchers account for this use of subjective reporting by using the term perceived stress, recognising what is measured is merely an individual’s perception of change as recorded in a questionnaire-style response. The main fault with this method is that stress is difficult to measure, because it’s intangible. As psychology generally aims to fulfil the scientific method, the idea of quantifying something that is ultimately unmeasurable poses a methodological challenge with all research on stress. While the majority of research suggests reduction in an individual’s perceived stress can be attained by MBSR (or other mindfulness meditation methods), it also doesn’t recognise physiological responses to stress. Furthermore, there is no differentiation within samples for ‘high’ levels of stress as opposed to ‘low’ levels of stress, which could impact on the efficacy of treatments.

Biological aspects are investigated through the use of Brain Imaging Technologies (BIT). BITs such as fMRIs are used by Goldin, Ramel & Gross (2009) to investigate the relationship between mindfulness meditation and psychological responses. Goldin et al (2009) found participants with symptoms of social anxiety disorder, as diagnosed by the DSM-IV, reported “increased self-esteem and decreased anxiety, reduced activity in brain systems implicated with conceptual linguistic self-view”, suggesting the MBSR program allowed participants to decrease anxiety symptoms through neural activity in the dorsomedial prefrontal cortex and frontal cortex, or more generally in central cortical brain regions. Goldin & Gross’s (2010) study showed that participants who used MBSR demonstrated improvement in symptoms of
anxiety and depression, from supporting fMRI scans. Participants completed MBSR training for two months. The fMRI scans demonstrate during a breath-focused attention task, there was increased activity in the brain regions associated with attention and reduced activity in the amygdala (area associated with emotional response). A case study of a Tibetan Buddhist revealed “compassion meditation is accompanied by activation in brain areas involved with empathy as well as with happy and pleasant feelings (i.e., the left medial prefrontal cortex and the anterior cingulate gyrus)” (Engström & Söderfeldt, 2010) The use of BIT such as in these studies allows for further investigation of the links between physiology and cognition, however it must be noted that BIT scans lack precision. Particularly with the case study method in Engström & Söderfeldt (2010), there is limited generalisability, greater potential for researcher bias as they may expect results are a result of meditation. Biological, empirical links to the effects of meditation allow us to see a more holistic picture by considering both cognitive and biological aspects.

There is a significant lack of reliability in diagnosis of mental disorders, which may skew results, as in most studies participants are selected based on their disorder. Often, patients suffering from a mental disorder are also affected by other psychological disorders, and this limits the validity and reliability with which one can directly determine the effects of meditation on anxiety specifically. For example, in Goldin and Gross’s experiment (2010), participants included “two patients with obsessive– compulsive disorder, three with dysthymia, and four with major depressive disorder; … three with generalized anxiety disorder, three with specific phobia, and one with panic disorder without agoraphobia.” Participants with multiple conditions mirror real life situations more accurately, but make results less specific to individual disorders. However, considered under the umbrella of wellbeing, the differences between psychological disorders are not of large importance, as they all contribute to several of the characteristics of ‘ideal mental health’ (Jahoda, 1989). The severity of the symptoms is not considered in studies such as this, and this is another limitation to the research, as improvements are only measured relative to previous symptoms.

Studies such as Jazaieri, Goldin, Werner, Ziv & Gross (2012) compare MBSR training to aerobic exercise in patients with social anxiety disorder (SAD). They found little difference
between the effects of MBSR programs and aerobic exercise, though both conditions showed reductions in social anxiety and depression more than a control group. So while MBSR may be effective in relieving the symptoms of SAD, comparatively, aerobic exercise is a less expensive, simpler, equally effective treatment. Alternately, as the authors of the study suggest, both treatments could be used in conjunction with other therapies or together (Jazaeri et al, 2012). An eclectic approach may be best to treat anxiety disorders, and other mental disorders such as depression (clearly also a barrier to wellbeing), as different treatments provide different means of support for patients. Because of the cognitive training mindfulness meditation practice involves, it may act as a prevention mechanism for relapse, used with other treatments (Segal, Williams & Teasdale, 2003)

While the use of control participants allows comparison over a period of time, there is still a large degree of environmental influence on most experiments. Due to the practical difficulty of conducting long-term, controlled lab experiments, most studies have participants complete a certain amount of meditation within a controlled environment and then go about their regular lives between sessions. This can introduce several extraneous variables to the experiment. Ideally, researchers would have control over variables such as this, and studies such as Chambers et al (2008) use a 10-day intensive retreat to do this. Overall, the influence of other variables outside of meditation practice is a serious methodological limitation limiting the reliability and validity of findings.

Many studies merely measure changes and improvement in symptoms of the anxiety rather than the anxiety disorder itself as clinically diagnosed (Chen et al., 2012). Ultimately, this aspect of research is difficult because mental disorders can only be studied empirically as a function of an expression of their symptoms. Measuring improvement of disorders themselves is difficult as diagnosis is primarily a label and each manifests itself differently in each individual. A recent literature review by Chen et al. (2012) suggests meditation is an effective strategy for relieving symptoms of clinical anxiety disorders. However most of the methodologies of experiments on anxiety only address symptoms rather than causes of disorders, limiting the extent to which we can know if mindfulness meditation improves wellbeing by reducing anxiety.
Though commonly investigated alongside other factors in wellbeing, decreases in tendencies for rumination have been shown across several studies, particularly in relation to anxiety disorders (Campbell, Labelle, Bacon, Faris & Carlson, 2012; Chambers et al., 2008; Jain et al., 2007; Ramel, Goldin, Carmona & McQuaid, 2004; Oman et al., 2008). The relationship between any benefit of mindfulness meditation and a direct link to wellbeing is difficult to measure as both are relatively intangible and parameters of definitions are difficult to contain. Perhaps this is due to increased control over cognitive function as a result of mindfulness meditation training; mindfulness practice can be used as a strategy not only to improve wellbeing, but also maintain wellbeing.

Different experiments use different time frames, and it is difficult to find research specifically investigating the effect of the length of a mindfulness training program. The total length of programs ranges from a 10-day intensive program (Chambers et al., 2008) to 3 years (Miller et al., 1995). Most commonly, a two-month (8-week) program is used (Mackenzie et al., 2007; Evans et al., 2011; Carlson & Garland, 2005; Baer, Carmody & Hunsinger 2012; Jha et al., 2007; Moss et al., 2012; Oman et al., 2008). Coppola & Spector (2009) found just 15 minutes twice a day for 4 weeks to be effective. These differences suggest the time period of training is not necessarily an influencing factor, as all the aforementioned studies found significant results. However, this is an area of ambiguity in the research; if it is favourable as an accessible treatment, minimum time investment must be determined. Furthermore, the effects of meditation on neuroplasticity, and the time required for permanent effects is not clear in published research studies. The practice of mindfulness might be effective during the study, but there is uncertainty as to whether the effects continue after conclusion of the study.

Though several limitations to research in this area have already been identified, there are yet more than may be considered. The need to separate mindfulness practice from relaxation is not identified in many studies. This leads us to question whether significant results are due to the relaxation caused by meditation exercises, or whether they are due to the actual practice of mindfulness meditation. Research into the similarities and differences between hypnosis and meditation practice suggests both emphasise attention, concentration and letting go of
thoughts (Halsband, Mueller, Hinterberger & Strickner, 2009). However, brain plasticity changes in hypnosis were vastly different to changes seen in meditating participants. However, even if meditation is only effective due to relaxation, this does not reduce the efficacy of it as a treatment.

As there is a multitude of ‘pop psychology’ information available on benefits of mindfulness meditation, many participants may believe the treatment will improve them, and hence report enhanced results, demonstrating the placebo effect (Chen et al, 2012). However, results from study comparing the effects of practicing meditation with practicing ‘sham’ meditation found even though all participants in the ‘sham’ condition believed they were practicing meditation, only participants with guided meditation showed improvements in heart rate and blood pressure (Zeidan, Johnson, Gordon & Goolkasian, 2010). The ‘sham’ condition consisted of participants being told they were meditating, without the guidance required to make it meditation.

Very few studies deal with everyday stress, and mostly deal with clinical samples. This means there is very limited generalisability to the public. If meditation can be effective for patients with clinical anxiety disorders, perhaps there is an application for everyday anxiety or stress. For example, meditation could be employed as a strategy for stressed school students. Initial research by Wisner et al. (2010) suggests school-based meditation programs could also be effective in increasing attention and decreased anxiety (Beauchemin, Hutchins, Patterson, 2008). Further research on benefits of meditation for non-clinical samples could have enormous impact on stress levels in the general public, though it would be more difficult to measure changes as a result of the program as there are no specific diagnostic criteria.

**Conclusion**

Though mindfulness mediation is currently widely used to treat various clinical conditions such as stress, anxiety and depression, there seems to be no strong basis in research that justifies the use of methods such as MBSR. Though the volume of research is broad, results often are derived from methodologically limited studies that consider a small number of participants from a narrow sample (demographically, culturally, age etc.), for a short period of time with no
adequate control over their practice outside of the study. Improvements in wellbeing may be due to increased control over cognitive function, which is a key element of mindfulness training (in any form).

A major flaw in this investigation is the methodology used in both experimental and correlational studies. Many studies use quasi samples, that is, participants are selected for inclusion based on already having the independent variable being investigated. For example, participants are selected for already having a mental health condition or for being ‘experienced’ in meditation. This often means samples are not representative of the general population.

Due to the methodological limitations involved with studying clinical populations, mindfulness meditation methods should be used alongside other treatments until programs are shown to be entirely effective in relieving symptoms as well as the wellbeing of individuals. As there is so much emphasis on relieving conditions, we must be wary that wellbeing isn’t merely the absence of a psychological condition; as Jahoda (1958), Ryff (1989) and Seligman (2011) highlight, there are elements of finding fulfilment in life, positive relationships and autonomy.

The affects of meditation on stress, attention, anxiety and pain in the general population are unclear, and this is a possibility for further research as often stress and anxiety in mild forms can impede our wellbeing. Furthermore, due to the difficulty of defining wellbeing, it is difficult to conclude on the direct relationship of mindfulness mediation on wellbeing. However, it is clear that practice of mindfulness meditation can reduce stress and anxiety, and can improve attention of practicing mindfulness mediation, even if only in clinical samples.

Reflexivity must be noted, that this essay has been written from a Western perspective. Because of this, the investigation was undertaken with the underlying assumption that achievement of ‘wellbeing’ is a desirable circumstance. Furthermore, as the essay was written from within a highly individualist culture (Hofstede, 2001), where people emphasise freedom and free will as factors in overcoming mental disorder. These assumptions may have impacted
on interpretation of results, and this may have compromised the objectivity of the investigation.

References


