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**What Defines Mindfulness-Based Programs? The warp and the weft**  
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## What Defines Mindfulness-Based Programs?

The warp and the weft

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There has been an explosion of interest in Mindfulness-Based Programs (MBPs) such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) in the last two decades. MBSR has accrued a robust evidence base in improving mental health outcomes in those with chronic physical health problems (Bohlmeijer, Prenger, Taal, & Cuijpers, 2010). MBCT is an adaptation developed to teach those at high risk of depressive relapse skills to stay well and has been shown to be effective (Kuyken et al., 2016). There are multiple other MBPs with varying levels of research evidence at each stage of the research journey (Dimidjian & Segal, 2015).

For the sustainable development of the field there is a need to pause and address some fundamental questions. Dimidjian and Segal (Dimidjian & Segal, 2015) analyzed the status of the extant evidence using the National Institutes of Health (NIH) Stage Model (Onken, Carroll, Shoham, Cuthbert, & Riddle, 2014). This is a model of behavioral intervention development composed of six stages: basic science (Stage 0), intervention generation, refinement, modification, and adaptation and pilot testing (Stage I); traditional efficacy testing (Stage II); efficacy testing with real-world providers (Stage III); effectiveness research (Stage IV) and; dissemination and implementation research (Stage V). The mapping of the MBP evidence base onto this model by Dimidjian and Segal clarifies that the evidence is heavily saturated in Stage I, lightly represented in Stages 0 and II, and that to date there is minimal research in stages III, IV and V. Overall, in their analysis they identify significant strengths (e.g. breadth of clinical problems and populations targeted), and significant weaknesses (e.g. the need for an integrated and systematic approach to core research questions across all stages of the research from basic through to implementation science). In this editorial we focus on a critical underpinning issue throughout the Stage Model – namely the fidelity/integrity of the intervention itself. Fidelity is central to all stages but has particular salience at Stages I and V. Stage I involves the development of the intervention, which requires great clarity about for whom it is intended, and a theoretical exposition of what mechanisms are being targeted. It also requires careful consideration of what clinician training and supervision is required to deliver the intervention effectively. Stage V addresses implementation, which raises similar issues about what key aspects of fidelity need to be maintained when implementing in real world settings.

Given the proliferation of MBP development and research, there is a need to re-clarify the core ingredients of mindfulness-based programs, and the implications this has for professional training, supervision and implementation. This clarity is important for the field so that existing research can be meaningfully

interpreted, future research uses agreed definitions and established protocols, MBP teachers are trained appropriately, and the general public are assured that programs titles accurately describe what is delivered.

### **Mindfulness-Based Programs in Context**

MBSR was developed as an education and training vehicle for people with chronic health problems and those suffering from the mounting demands associated with psychological and emotional stress, to learn to relate in new ways to life challenges (Kabat-Zinn, 2013). Other programs based upon the foundational approach and structure of MBSR have since been developed with particular aims across a broad range of settings, including hospitals, schools and prisons, and are gaining interest from policy makers (Mindfulness All Party Parliamentary Group, 2015; Ryan, 2013).

MBP developments are nested within a wider context of empirical developments within psychology, medicine, health care and education which include ‘mindfulness-informed’ programs such as Acceptance and Commitment Therapy (Hayes, Strosahl, & Wilson, 2011), Compassion Focused Therapy (Gilbert, 2009), Dialectical Behavioral Therapy (Linehan, 1993), Mindful Self Compassion (Neff & Germer, 2013) and developments in the field of Positive Psychology (Seligman & Csikszentmihalyi, 2000). These mindfulness-informed developments are part of the third wave of empirically tested psychotherapies (first wave being behavioral therapy; second wave being cognitive behavioral therapy). Third wave approaches have a decreased emphasis on controlling internal experience, and an increased emphasis on themes such as acceptance, metacognition and how people relate to their experiences. Mindfulness-informed programs share several underpinning theoretical ideas with MBPs, and many include some mindfulness meditation practice in their approach. However, a distinctive feature of MBPs is that systematic and sustained training in formal and informal mindfulness meditation practices (for both teacher and participants) is central both to the therapeutic approach and underpinning theoretical model. They are *based* on mindfulness.

It should also be noted that other MBPs exist alongside MBSR/MBCT which also share this emphasis on the practice of mindfulness-meditation as a central pedagogical component. An important example are ‘second generation’ mindfulness-based interventions which are openly spiritual in nature, make the linkage to the Buddhist teachings explicit within the pedagogy and are more traditional in the manner in which they construct and teach mindfulness (Van Gordon, Shonin, & Griffiths, 2015). These programs are at an earlier stage of development and research is now underway. However, the boundary to the analysis in this paper are

what have retrospectively become termed ‘first-generation’ MBPs – i.e. MBSR and MBCT (which represent the strongest evidence within the field), and the range of programs which have developed out of these (e.g. Bowen et al., 2009; Duncan & Bardacke, 2010; Kristeller, Sheets, Wolever, & Bolinskey, 2012). These first generation MBPs, whilst drawing aspects of their underpinning models and practices from aspects of Buddhism, aim to clearly re-contextualise both the program content and theoretical underpinnings within the mainstream. That is to say, the aim is to ensure MBPs are based in science and contemporary approaches to managing mental and physical health and supporting well-being; that they are suitable for delivery in mainstream public institutions across a range of settings and cultures; and that they are maximally accessible to people with diverse values and religious affiliations.

It is also important to note that while MBPs have been developed for particular issues such as stress and depression, there are other empirically supported approaches for such difficulties. There is as yet no compelling evidence for specificity of hypothesized mechanisms or differential outcomes. This may be an artifact of the many shared components between these approaches, or it may simply be that this work has not yet been done. Our hope is that the clarity we aim to offer in this editorial will support measurement, mechanisms, and mediators research, as a recent editorial has argued is needed (Davidson, 2016).

### **Development Trajectory for Mindfulness-Based Programs**

In the context of high interest and rapid proliferation Dimidjian and Segal (2015) identify several key challenges for the next phase of research developments. This editorial focuses on one of these challenges - research and practice issues in the arena of MBP fidelity. If these challenges are not carefully addressed they will undermine the developing science as well as the quality and integrity of implementation in routine practice. Mindfulness training in various forms is rapidly being applied within different contexts and populations, and morphing into multiple curriculums of differing lengths and teaching methods. Mindfulness can be intuitively appealing to teachers and participants. There is consequently a grassroots spread of practice into populations and contexts, which at times is ahead of the evidence. The word mindfulness has become a word conveying a multitude of meanings and practices. This is a confusing context within which to systematically build the science and the practice integrity of MBPs.

### **The Essential and Variable Elements of First Generation MBPs**

We use the metaphor of ‘warp and weft’ to represent the ‘fabric’ of MBPs. In weaving, the warp is the term for the fixed thread that runs vertically through the cloth, while the weft is the term for the transverse thread that makes each tapestry unique. The warp is the thread that is fixed when the loom is set up, while the weft varies in texture and color. The essential, constant and integral threads that define an MBP regardless of population or context make up the ‘warp’; they are what make it a *mindfulness-based* program. Each adapted MBP then introduces a unique ‘weft’ that seeks to target the training to a particular population and/or context. Within each aspect (program and teacher) we examine what is warp (i.e., essential to an MBP), and what is weft (i.e., will vary depending on context and/or population) (Table 1). The warp elements of the framework are anchored within the program forms of MBSR and MBCT. We suggest that the framework we offer can provide some unifying clarity for the wider MBP field on what an MBP is and is not.

### **The Essential (‘Warp’) Elements of Mindfulness-Based Programs**

#### ***The MBP program***

1. *Is informed by theories and practices that draw from a confluence of contemplative traditions, science, and the major disciplines of medicine, psychology and education*

The key influences that have shaped MBPs are:

*Contemplative mindfulness practices:* MBPs are underpinned by theories about the human mind-body drawn from aspects of early Buddhist psychology, which articulate the ways in which people can come to recognize universal habitual psychological patterns that create and maintain distress. This philosophy and psychology is nuanced and complex. It includes a wide array of teachings and practices found across the breadth of both Buddhist and other traditions, which are beyond the scope of this paper (Williams & Kabat-Zinn, 2013). However, there is high level consensus on common features found within the cultivation of mindfulness. These include that people can learn that habitual reactive patterns stem from unhelpful habits of the mind; that fear, denial and discrepancy-based thinking create and exacerbate distress; and that skillful ways of relating to experience can be developed through awareness, wise discernment and practice which offer the potential for (moments of) freedom from reactivity (Gethin, 1998).

MBPs address some universal features of human experience using mindfulness practices as a vehicle for a systematic training of the mind in the service of developing greater awareness of self and others, and

thus, greater understanding. It is therefore not surprising that mindfulness practices can be found in many of the world's contemplative wisdom traditions. MBPs draw on aspects of these traditions whilst leaving behind their religious, esoteric and mystical elements. Crucially they are presented in an invitational way, asking people to use the mindfulness practices in whatever way best supports their aims and aspirations. The practices and frameworks employed within MBPs are thus re-contextualized for implementation within mainstream settings by ensuring that they are delivered in inclusive and culturally appropriate ways.

*Science:* The development of MBPs is grounded in developments in theory, cognitive neuroscience (Tang, Holzel, & Posner, 2015), translational research (Meadows et al., 2014; Strauman & Merrill, 2004) and evidence-based practice across a range of disciplines. Empirical evidence informs the theoretical models underpinning MBP's aims and innovations, and continues to refine understanding of what works best, at what time, for which group of participants (Davidson, 2016).

*Medicine:* MBSR, the original MBP, was developed within a medical framework and culture, as a form of participatory medicine in which patients are challenged to discover and draw upon their own resources for learning, healing, and transformation (Kabat-Zinn, 2003).

*Psychology:* MBPs were introduced and incorporated into the field of psychology through the development of MBCT (Segal, Williams, & Teasdale, 2013). Psychological theory and research now guides the development of many MBPs (Dimidjian & Segal, 2015). Indeed, the field of cognitive science has to a large extent taken over the detailed work of investigating the precise mechanisms by which MBPs alleviate distress and enable flourishing. The process involves mapping theories and empirical understanding across a range of disciplines.

*Education:* The pedagogical processes employed in MBPs draw on educational principles that are experiential, interactive, participatory, student-centred and relationship-centred (Santorelli, 2000).

2. *Is underpinned by a model of human experience which addresses the causes of human distress and the pathways to relieving it*

The confluence described in the previous section is supported by a model of distress that applies across MBPs that explains certain facets of how human distress is created and maintained, and how mindfulness training deals with these maintaining factors, and thus alleviates distress and supports mental health and well-being e.g. (Kabat-Zinn, 2013; Segal et al., 2013). It draws on aspects of cognitive science (e.g., attention and executive control and decentering (Barnard & Teasdale, 1991)) and trans-diagnostic work (e.g. repetitive thought and experiential avoidance (Dudley, Kuyken, & Padesky, 2011)). This emerging model is being clarified and developed as empirical understanding is built (e.g. Brewer, Elwafi, & Davis, 2013; Chiesa, Serretti, & Jakobsen, 2013; Gu, Strauss, Bonda, & Cavanagh, 2015; van der Velden et al., 2015). The field is young and emergent, and the underpinning frameworks are the subject of debate and empirical investigation.

3. *Develops a new relationship with experience characterized by present moment focus, decentering, and an approach orientation*

An underpinning premise of the MBP model is the understanding that how people relate and respond to various forms of distress (rather than the distress itself) lies at the core of many problems and disorders. It is this that determines both the capacity and the extent to which distress can be relieved and transformed. The training aims to enable participants to recognize habitual, conditioned modes of reacting and make a radical shift in their *relationship* to their thoughts, feelings and body sensations, as well as to outer circumstances. The shift in relationship is based on what is called decentering (Segal et al., 2013) or re-perceiving (Shapiro, Carlson, Astin, & Freedman, 2006), in which the MBP participant is trained to attend to thoughts and feelings as mental events by noticing how they come and go in the mind and how each has consequences in the very next moment. For example, a person who is rushing to a meeting, might come to realize that in addition to the stress of being late they are compounding the stress by the thought 'if I'm late everybody will think I am not coping'. Whereas in an approach such as cognitive therapy, a person might be taught to challenge such a thought, in MBPs the emphasis is on seeing it as a mental event, noticing its effects on the body, and the way it creates further feelings and thoughts that were not part of the original situation. Gradually people come to see that their thoughts are not necessarily valid representations of reality.

4. *Supports the development of greater attentional, emotional and behavioral self-regulation, as well as positive qualities such as compassion, wisdom, equanimity.*

Attentional training within MBPs offers a foundation for the attitudinal dimensions of mindfulness to emerge. MBPs seek to support the ability to meet experience with curiosity, equanimity and compassion (Feldman & Kuyken, 2011). An experiential understanding develops that pain is an inherent part of human experience and is ever changing. An orientation of mind characterized by curiosity, patience and equanimity supports the development of compassion and wisdom. There is an intention to cultivate an internal climate of friendliness towards experience – whether it be pleasant or unpleasant. This supports a shift away from habitually battling with experience. MBPs also aim to cultivate positive qualities such as joy, and the ability to recognize and savour nourishing and pleasant experiences.

5. *Engages the participant in a sustained intensive training in mindfulness meditation practice, in an experiential inquiry-based learning process, and in exercises to develop insight and understanding.*

Direct experiential, systematic and intensive engagement in formal and informal mindfulness meditation practices is foundational to teaching/learning in MBPs. The training develops familiarity with and understanding of the mind and body, and appreciation that attention can be regulated, fine-tuned, and optimized through training. Rather like physical training regimes, the training progresses developmentally and sequentially throughout the program.

The integrity and fidelity of each MBP is maintained by ensuring that all the curriculum elements for the particular program are included as intended (adherence) and that curriculum elements are not added which do not belong to the particular program form (differentiation) (Crane et al., 2013). It is critical that the curriculum employed and the particular MBP title match each other. If there is divergence from an established curriculum, teaching structure or process then a new title for the adaptation should be employed, and research should clearly identify the adapted curriculum guide used and if any checks on fidelity and adherence were employed.

Adherence to program form is supported by protocols for each MBP (e.g. see Blacker, Meleo-Meyer, Kabat-Zinn, Koerbel, & Santorelli, 2015; Stahl & Goldstein, 2010, for MBSR curriculum guides, and Segal et al., 2013, for the MBCT curriculum guide). Other MBPs have published guides which specify their particular curriculum adaptations. MBP curriculums vary in terms of number and duration of sessions and time commitments for home practice. For example, MBSR is scheduled over eight weekly sessions lasting 2.5hours with 45 minutes of guided mindfulness meditation home practice per day. MBCT is the same but with 2 hour

long sessions. There is not scope to fully list the curriculum elements and therapeutic techniques which, if included, would be regarded as outside the model for a particular first generation MBP (the differentiation aspect of program integrity). However, examples include: thought challenging and collecting evidence for and against the truth for thoughts (which is part of cognitive therapy); an orientation of problem solving or fixing; different sorts of meditation practices (e.g. mantra meditation); talking about the detailed history of participants; and an emphasis on relaxation training.

MBPs typically include mindfulness training via three formal mindfulness meditation practices – the body scan, mindful movement and sitting meditation. Practices are assigned as daily home practice with the support of recorded guidance. Throughout the program participants are also encouraged to generalize through informal practice by bringing awareness in particular ways to everyday activities.

MBPs include learning experiences built around the formal mindfulness meditation training. These include engaging in an individual and collective investigative *inquiry* to develop skills in recognizing direct experiences (i.e. thoughts, emotions and sensations), patterns of relating to experience, and the wider implications of the understandings that emerge. This externalized teacher-led interactional process in class becomes a representation of the work that the MBP participants begin to engage in within themselves, whereby the investigative process becomes ‘internalized’. Foci for inquiry include participants’ direct experience of meditation practices, and exploration of pleasant and unpleasant experiences which has implications for recognizing established patterns of reactivity and the possibility of responding differently. The focus will depend on the context/population, but MBPs particularly investigate the territory of difficult, unwanted experiences – stress, depression, physical pain, etc. Participants are invited to explore ‘How am I experiencing and relating to these difficulties physically, emotionally and psychologically? What possibilities are there for stepping out of habitual aversive reactive patterns into responding with greater awareness and agency?’ Each MBP employs particular exercises to facilitate these investigations.

### ***The Teacher***

#### **1. Has particular competencies which enable the effective delivery of the MBP**

MBP teachers have particular ‘explicit’ or ‘visible’ teaching competencies. These competencies are described and can be assessed using the Mindfulness-Based Interventions: Teaching Assessment Criteria (MBI:TAC), which has shown promising evidence as a reliable and valid tool (Crane et al., 2012; Crane et al.,

2013; Crane, Soulsby, Kuyken, Williams, & Eames, 2016). The six teaching competence domains within the MBI:TAC are coverage, pacing and organization of the session curriculum; specific interpersonal relational skills; skilful guiding of formal mindfulness meditation practices; specific methodologies for conveying the course themes through interactive inquiry, group dialogue and didactic teaching; and effective holding of the group teaching/learning environment. These require particular tailored training experiences to develop (Crane, Kuyken, Hastings, Rothwell, & Williams, 2010).

2. *Has the capacity to embody the qualities and attitudes of mindfulness within the process of the teaching*

MBP teachers have in common a sustained commitment to cultivating mindfulness through regular daily formal and informal mindfulness practices in everyday life. The way in which mindfulness practice manifests in the life of the teacher and is tangibly sensed in the MBP classroom is termed 'embodiment'. The theoretical model hypothesising how MBP training has its effects includes embodiment as a critical factor in enabling participants to move towards experiential (rather than conceptual) knowing of mindfulness (Teasdale et al., 2002). Embodiment is a natural outcome of the teacher's intention to mindfully inhabit their experience in everyday life and in the MBP classroom, to whatever degree possible in any given moment. It is neither a striving for a particular state, nor a contrivance to artificially fabricate a particular persona, mask or appearance. Through their own personal mindfulness practice, teachers naturally come to inhabit the qualities associated with mindfulness (i.e. non-striving, non-judging, allowing), and the understandings and ethics underpinning the practices. The embodied practice element of ethics within MBPs are thus emergent and cultivated through the practice rather than being mandated. The practice of mindfulness enables the participant to try out the possibility of eliciting kindness, openness, and patience toward immediate experience, whether the experience is perceived as pleasant, unpleasant, or neutral (Grossman, 2015). MBP teacher training aims to cultivate the capacity in teachers to communicate mindfulness through the process as much as through the content of the teaching, by integrating training in formal and informal mindfulness practices into the other aspects of the teacher education and training curriculum.

3. *Has engaged in appropriate training and commits to on-going good practice*

MBP teachers have by necessity engaged in appropriate education and training to build and deepen their teaching competence (Crane et al., 2010; Crane et al., 2012; Kabat-Zinn et al., 2011; Marx, Strauss, & Williamson, 2015). Training involves foundational experiential engagement with mindfulness practice and with the particular MBP curriculum the teacher training is embedded within, preliminary teacher training to build core skills, knowledge and attitudes, and then further training to enable the practitioner to reach the threshold of competence. Within some training programmes, the training journey culminates in an assessment of teaching competence using the MBI:TAC (Crane et al., 2016), conducted by trainers who have been trained to reliably use the tool.

Teachers then commit to on-going good professional practice in line with consensually agreed good practice standards and guidelines (Evans et al., 2014; Santorelli, 2014; UK Network for Mindfulness-Based Teacher Training Organisations, 2012). Two key elements of good practice are supervision (Evans et al., 2014), and ongoing engagement with a personal mindfulness practice including periodic periods of intensive mindfulness practice in a residential setting. As the work of first generation MBPs is becoming more established in the mainstream, more opportunities are opening up for residential mindfulness intensives within a thoroughly mainstream context (e.g. Mindfulness Network CIC, 2016).

In the UK there is a national listing of MBP teachers who have undertaken training to minimum good practice level, and are adhering to ongoing good practice (UK Network for Mindfulness-Based Teacher Training Organisations, 2016). In the USA there is an MBSR Registry for certified teachers (Centre for Mindfulness in Medicine Health Care and Society, 2016). The organisation of governance within this emerging field to support the general public to access well prepared and qualified MBP teachers is underway.

MBP teachers operate within professional ethical codes anchored within their root profession (i.e. medicine, clinical psychology, teaching etc) (Baer, 2015), and appropriate to the ethos and ethics of the mainstream public institution within which they are implementing (Crane, 2016).

#### *4. Is part of a participatory learning process with their students, clients or patients*

Delivery of MBPs is usually in a group context which supports perspective taking and the transition from personal story into investigation of common pathways which lead to distress. MBP teachers embed themselves within this investigation. They are in a particular form of relationship with their participants which

is underpinned by recognition of our ‘common humanity’ (shared human experience) (Neff, 2011), and thus the mutual nature of the learning process (Santorelli, 2000).

### **Integration of Tailored Elements into Adapted Mindfulness-Meditation Based Programs**

As the field has developed, new MBPs have woven in a weft that aims to make the mindfulness framework and practices more accessible and useful for particular populations and in varying contexts. However it remains an empirical question for each new adaptation whether it improves the accessibility and usefulness of MBPs, and each adaptation needs to commit to building its own evidence base.

Adaptations are typically of three kinds:

1. Adaptations informed by *theoretical frameworks or models* that are particular to a new population or setting. For example, MBCT for recurrent depression is oriented around a cognitive model of depressive relapse and how mindfulness can free the mind from engrained patterns of depressive rumination (Teasdale & Chaskalson, 2011).
2. Adaptations to the *program* that make it more accessible, acceptable and potent for a population. For example, Mindfulness-Based Eating Awareness Training employs mindful eating practices (Kristeller et al., 2012); mindful parenting programs use parenting activities and examples (Bogels, Lehtonen, & Restifo, 2010).
3. Adaptations to the program that embed MBPs in a *particular context or setting*. For example, MBSR is an outpatient program that can be offered in hospital outpatient settings; mindfulness in schools programs (Kuyken et al., 2013) are adapted for delivery within school curricula; and mindfulness in organizations (Chaskalson, 2011) are adapted so as to be accessible to and within businesses.

We next identify the program and teacher characteristics that characterize the weft of MBPs, namely the ways they are adapted (see Table 1).

### ***Adapted MBP program considerations***

1. *The core essential curriculum elements are integrated with adapted curriculum elements, and tailored to specific contexts and populations*

It is important that there is explicit clarity regarding the core intentions of the MBP for the specific context and targeted participants. MBP developers should base the development in a clearly articulated aim and intention regarding the benefit and relevance of the program for a particular context and/or population (Dobkin, Hickman, & Monshat, 2013; Teasdale, Segal, & Williams, 2003). The adaptation needs to be grounded in a theoretically informed analysis of the specific mechanisms influencing distress or life themes in the target population and an analysis of the contextual issues involved in offering an MBP in a particular setting (e.g., schools, business, the military). This analysis is based on an understanding that general vulnerability (characteristics of the human condition that predispose us to distress), and specific vulnerabilities (particular patterns, traits or tendencies) co-exist (Williams, 2008). Adapted MBPs are tailored towards recognition of a specific vulnerability or life circumstance that characterizes a particular population (e.g. the easily triggered negative thinking of people vulnerable to recurrent depression). How do these issues present themselves? What are their characteristics? How are they triggered and maintained? The MBP program developers then need to develop and seamlessly integrate the adapted ‘weft’ elements into the program to ensure that the curriculum skillfully maps onto these processes. They need to pose the question: ‘What are the particular teaching processes and specific curriculum elements that may be required to support the mindfulness-based learning experience in this specific population/context?’ Program development should include recognition of and a skillful response to any tensions or challenges that need to be considered in a particular context/population (for example, participants who may become suicidal (Williams, Fennell, Barnhofer, Crane, & Silverton, 2015)), so that there is an assurance that there is clearly an added value of the adaptation over existing MBPs. Dimidjian and Segal (2015) caution that the rapid proliferation of new potential contexts and populations risks neglecting the importance of foundational specification of clear intervention targets and mediating processes of change on which subsequent research can build.

2. *Variations in program structure, length and delivery are formatted to fit the population and context*

The program form may also be changed to enable accessibility and tailoring for particular populations (e.g. shorter, but more sessions for chronic fatigue; half-day sessions, at fortnightly intervals to enable working people travelling from a distance to attend; individual delivery to those who cannot attend a group), and contexts (e.g., short sessions at lunch time for workplace mindfulness courses). There is increasing interest in digital delivery methods such as smart-phone apps (Brewer et al., 2013), and some early evidence that these

and other forms of lower intensity and self-help programs may be beneficial. However, more research is needed (Cavanagh, Strauss, Forder, & Jones, 2014).

Critically, it is important that new adaptations making use of new formats are given appropriate titles to clearly distinguish them from established programs. Such careful description and delineation is key to maintain the health and vitality of the emerging MBP field. Without it, the scientific literature will inevitably conflate studies of programs that may not be characteristic of the core structure, form, dose and delivery method of a particular MBP but represent themselves as such, and thus confound our ability to interpret the emerging scientific exploration of MBPs. It is also key to ensuring the public are given clear information on what program they are attending, what training their MBP teacher has had, and what they are (and are not) trained to teach.

### ***Teacher considerations for adapted programs***

In addition to all the ‘warp’ elements of training and on-going adherence to good practice, teachers who are teaching particular curriculums, populations, or in particular contexts need congruent particular trainings. For example, if the teacher is delivering an MBP in a specific clinical setting, particular clinical training and experience in that specific domain is required. Teachers also need explicit training in the theoretical principles that underpin the adaptation so that they can effectively convey this essential element in their teaching.

### **Conclusions**

This editorial sets out a framework to define the essential (warp) and variant (weft) ingredients of MBPs. Clarity and precision are needed both to maintain the integrity of the original programs and to support ongoing research into new programs, innovations, and developments. The current dialogue between modern science and ancient contemplative wisdom traditions represents an extraordinary confluence of two epistemologies, interacting, learning from and informing one another. This confluence is proving extraordinarily creative - there is an upsurge of mindfulness-informed and mindfulness-based programs and approaches across medicine, psychology, and psychotherapy, and beyond, into business and education. There are also inherent tensions to navigate in the process of integrating paradigmatically different disciplines (Crane, 2016; Harrington & Dunne, 2015).

The MBP field is at an early stage of development. The evidence supporting their efficacy in the treatment of physical and psychological health challenges in some areas is strong and building (e.g. see recent meta-analyses and reviews (Carlson, 2012; Khoury et al., 2013; Kuyken et al., 2016)). However, in many areas, the landscape can be best characterized as promising or as yet unexplored. For the field to realise its potential to maximally impact individual and societal health and well-being, there is a continued need for high quality innovation and research to investigate mechanisms, effectiveness, and implementation. Clarity regarding fidelity to program form and substance is an essential underpinning to ongoing research and practice development within this nascent and highly promising field.

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**Table 1: The essential (warp) and flexible (weft) ingredients of MBPs**

WARP	MBP PROGRAM	WEFT
<ol style="list-style-type: none"> <li>1. Is informed by theories and practices that draw from a confluence of contemplative traditions, science, and the major disciplines of medicine, psychology and education</li> <li>2. Is underpinned by a model of human experience which addresses the causes of human distress and the pathways to relieving it</li> <li>3. Develops a new relationship with experience characterized by present moment focus, decentering and an approach orientation</li> <li>4. Supports the development of greater attentional, emotional and behavioral self-regulation, as well as positive qualities such as compassion, wisdom, equanimity.</li> <li>5. Engages the participant in a sustained intensive training in mindfulness meditation practice, in an experiential inquiry-based learning process and in exercises to develop insight and understanding.</li> </ol>		<ol style="list-style-type: none"> <li>1. The core essential curriculum elements are integrated with adapted curriculum elements, and tailored to specific contexts and populations</li> <li>2. Variations in program structure, length and delivery are formatted to fit the population and context</li> </ol>
MBP TEACHER		
<ol style="list-style-type: none"> <li>1. Has particular competencies which enable the effective delivery of the MBP</li> <li>2. Has the capacity to embody the qualities and attitudes of mindfulness within the process of the teaching</li> <li>3. Has engaged in appropriate training and commits to on-going good practice</li> <li>4. Is part of a participatory learning process with their students, clients or patients</li> </ol>		<ol style="list-style-type: none"> <li>1. Has knowledge, experience and professional training related to the specialist populations that the mindfulness-based course will be delivered to</li> <li>2. Has knowledge of relevant underlying theoretical processes which underpin the teaching for particular contexts or populations</li> </ol>

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Ms Lynet Smith  
Psychological Medicine Editorial Office

November 1st, 2016

Dear Ms Smith,

Thank you for the invitation to resubmit this paper. We have taken the opportunity to deepen the analysis of the issues presented in the paper, whilst also aiming to maintain the paper's aim of offering a high level consideration of the fidelity of mindfulness-based programs. We are grateful for the leeway in extending the word count beyond the usual 3500 for an editorial to enable greater depth. The word count of the article now stands at 5109.

Below we lay out response to the reviewers' recommendations. Reviewers' recommendations are in *italics*, the narrative explaining our response is in plain text, with page/line references as appropriate and quotes from new sections within the paper are in Arial font.

Reviewer 1:

We are grateful to this reviewer for the encouraging response to the paper. Responses to specific recommendations are laid out below:

1. *Specify the theories and practices that MBIs need to be informed by. Which hypotheses about the human mind-body are the MBIs underpinned by? In which developments in theory, cognitive neuroscience, translational research and evidence-based practice is the development of MBIs grounded?*

*Specify the model of distress that explains how human distress is created and how it could be relieved.*

*What kind of shift in their relationship to their thoughts, feelings, body sensations and outer circumstances do MBIs enable participants to make?*

In each of these areas we have expanded the text to explain in more detail (see points 1, 2 & 3, on ps.5, 6 & 7) and added further key references that provide further detail about underpinning theory and practice. We did this with an awareness that it is not feasible to do justice to these complex and nuanced issues within the space available. The paper offers a high level analysis of a broad swathe of themes and issues. We have made the limits of the scope of the analysis within this paper more explicit, and also acknowledged that the field is in development and many of these theoretical issues are matters for future development and research.

2. *Guidance about the minimum number of sessions, duration, time commitments for homework exercises.*

Thank you for seeking greater clarity on this important issue. On page 8 & 9, point 5 the issues of adherence and differentiation are now addressed in more detail. This specific text has been added (p.8-9) on the issue of minimum number of sessions, duration, time commitments for homework exercises:

'MBP curriculums vary in terms of number and duration of sessions and time commitments for home practice. For example, MBSR is scheduled over eight weekly sessions lasting 2.5hours with 45minutes mindfulness meditation home practice per day. MBCT is the same but with 2 hour long sessions.'

*What kind of curriculum elements should be regarded as unnecessary (examples?), as opposed to adaptations tailored to particular contexts and populations?*

We have added this text within this expanded section on this theme of differentiation:

There is not scope to fully list the curriculum elements and therapeutic techniques which, if included, would be regarded as outside the model for a particular first generation MBP (the differentiation aspect of program integrity). However, examples include: thought challenging and collecting evidence for and against the truth for thoughts (which is part of cognitive therapy); an orientation of problem solving or fixing; different sorts of meditation practices (e.g. mantra meditation); talking about the detailed history of participants; and an emphasis on relaxation training.

3. *Which interpersonal relational skills are required? Which methodologies for conveying course themes and effective holding of the group teaching/learning environment? Which particular tailored training experiences do these require?*

Thank you for seeking greater level of detail on these important issues. We have rearranged the text in this section (p.9-10, point 1) to make it clear that the areas the reviewer seeks specific clarification on are named domains within the Mindfulness-Based Interventions: Teaching Assessment Criteria (Crane et al., 2016). This competence tool is referenced and freely available online. It details the skills required of the teacher within each of these domains with further references within this to practice-based literature such as the MBCT manual (Segal et al., 2013) and MBSR core texts (e.g. Kabat-Zinn, 2013; Santorelli, 2000). Training processes are detailed in (Crane, Kuyken, Hastings, Rothwell, & Williams, 2010).

4. *Which are the ethics underpinning the practices?*

We are grateful for the opportunity to give some more detail on this issue. We have inserted two pieces on this. Firstly within the embodiment section on point 2 on p.10 the following text has been added:

Through their own personal mindfulness practice, teachers naturally come to inhabit the qualities associated with mindfulness (i.e. non-striving, non-judging, allowing), and the understandings and ethics underpinning the practices. The embodied practice element of ethics within MBPs are thus emergent and cultivated through the practice rather than being mandated. The practice of mindfulness enables the participant to try out the possibility of eliciting kindness, openness, and patience toward immediate experience, whether the experience is perceived as pleasant, unpleasant, or neutral (Grossman, 2015). MBP teacher training aims to cultivate the capacity in teachers to communicate mindfulness through the process as much as through the content of the teaching, by integrating training in formal and informal mindfulness practices into the other aspects of the teacher education and training curriculum.

And in point 3, p.11:

MBP teachers operate within professional ethical codes anchored within their root profession (i.e. medicine, clinical psychology, teaching etc) (Baer, 2015), and appropriate to the ethos and ethics of the mainstream public institution within which they are implementing (Crane, 2016).

5. *What does appropriate training consist of? Summarize main characteristics.*

We are grateful for the question. Whilst being aware that we do not have scope to fully detail the training process we have added in a high level summary and some further references for those who wish to seek greater detail (Point 3, p.11)

MBP teachers have by necessity engaged in appropriate education and training to build and deepen their teaching competence (Crane et al., 2010; Crane et al., 2012; Kabat-Zinn et al., 2011; Marx, Strauss, & Williamson, 2015). Training

involves foundational experiential engagement with mindfulness practice and with the particular MBP curriculum the teacher training is embedded within, preliminary teacher training to build core skills, knowledge and attitudes, and then further training to enable the practitioner to reach the threshold of competence. Within some training programmes, the training journey culminates in an assessment of teaching competence using the MBI:TAC (Crane et al., 2016), conducted by trainers who have been trained to reliably use the tool.

6. *Shouldn't the delivery in a group context be part of the description of the program rather than of the teacher?*

We have made it clearer that the group aspect to the program was referenced here to underline the importance of teachers' attributes: e.g. embedding themselves within the collective investigation of human experience (point 4, ps.11 & 12). In fact, we suggest that delivery in a group context is part of the 'weft' (flexible) elements of MBPs but agree that this was not clear in our submission. We have therefore added text into '*Variations in program structure, length and delivery are formatted to fit the population and context*' weft section to make this explicit (see point 2 ps 13 & 14).

7. *As the authors refer in their introduction to Stage 1 of the NIH model (p.2), it might be helpful to include a short summary of this model in the description of the Dimidjian & Segal paper (2015).*

We are grateful for this suggestion. This has been added on page 2.

8. *"Third wave" (p. 3): what is the definition of this?*

Text has been added to make the meaning of this term explicit (p.3)

9. *Is the paper addressing challenges that are related to those of Dimidjian & Segal (2015) (p.3) or part of them (p.2)?*

We have made it clearer on page 2 that the paper aims to address two aspects highlighted by Dimidjian & Segal (2015) – that of the

importance of clarity at stage 0 (in this case clarity about the fidelity of the intervention being researched), and the importance of fidelity issues in Stage V implementation phases of intervention development.

In this editorial we focus on a critical underpinning issue throughout the Stage Model – namely the fidelity/integrity of the intervention itself. Fidelity is central to all stages but has particular salience at Stages I and V. Stage I involves the development of the intervention, which requires great clarity about for whom it is intended, and a theoretical exposition of what mechanisms are being targeted. It also requires careful consideration of what clinician training and supervision is required to deliver the intervention effectively. Stage V addresses implementation, which raises similar issues about what key aspects of fidelity need to be maintained when implementing in real world settings.

#### Reviewer 2:

We thank this reviewer for the encouraging responses.

We have made it more explicit that the focus and coverage for the paper is MBSR/MBCT, and that this reflects the evidence base (p.4). We have anchored the text by acknowledging that the warp elements are derived principally from these two approaches and suggested that these might offer potentially unifying elements for wider MBPs (p.4-5)

1. We have unpacked the term ‘friendliness’ – see p.8

An orientation of mind characterized by curiosity, patience and equanimity supports the development of compassion and wisdom. There is an intention to cultivate an internal climate of friendliness towards experience – whether it be pleasant or unpleasant. This supports a shift away from habitually battling with experience. MBPs also aim to cultivate positive qualities

such as joy, and the ability to recognize and savour nourishing and pleasant experiences.

2. We have addressed the error in the numbering
3. We have deleted the ‘What MBPs are not’ section

Reviewer 3:

We are grateful for the cogent and in depth unpacking of the subtleties and complexities of the multiple issues we aim to address in the paper. The reviewer particularly draws attention to the ‘wide array of philosophies and practices found across the breadth of Buddhist traditions’, and that within this we only refer to one interpretation (i.e. the Teasdale and Chaskalson 2011 papers). As this reviewer points out these are complex and the matter of some controversy.

The themes the reviewer points to are inherent tension within the field (i.e. the adaptation of Buddhist practices and teachings into ‘non-Buddhist’ approaches designed for implementation in contemporary mainstream settings). We now name these tensions explicitly in the conclusion. However, as stated above, the paper aims to offer a high level framework. Each aspect of the framework could be explored in greater depth in future editorials but we argue that this is beyond the scope of this high level editorial.

1. *What is the difference between mindfulness-based and mindfulness-informed treatments?*

Text has been added (p.3) to make explicit that mindfulness-based refers to approaches whose teaching methodology rests primarily on the practice of mindfulness, whereas mindfulness informed refers to approaches which draw on the philosophies of mindfulness, and perhaps include some mindfulness practices but this is not proposed as the main mechanism of change.

- 2. Similarly, please clarify appropriate titles - MBI vs MII vs MBP?*

In the introduction we now define how we are using the acronym MBP. The alternative term ‘mindfulness-based intervention’ (MBI) is also commonly used in other papers. We have chosen MBP for this paper because the word ‘programme’ is more suited to the range of non-clinical contexts that MBPs are now being implemented.

3. *If an essential element of MBIs is their foundation in Buddhist philosophy, what about MBIs that are more Buddhist as in Shonin's (2014) Meditation Awareness Training (MAT) which was deliberately more explicit about its Buddhist dimensions (and thinks MBSR is not Buddhist enough).*

We have added text (p.3/4) which refers to Shonin's work on second generation MBPs and clarifies that this paper focuses on ‘first generation’ MBPs.

4. *"Mindfulness practices in various forms are found in all meditative wisdom traditions." .... The authors either need to prove that mindfulness can be found in "all meditative wisdom traditions" or remove this claim.*

We have rephrased this thus (p.5-6):

MBPs address some universal features of human experience using mindfulness practices as a vehicle for a systematic training of the mind in the service of developing greater awareness of self and others, and thus, greater understanding. It is therefore not surprising that mindfulness practices can be found in many of the world's contemplative wisdom traditions. MBPs draw on aspects of these traditions whilst leaving behind their religious, esoteric and mystical elements. Crucially they are presented in an invitational way, asking people to use the mindfulness practices in whatever way best supports their aims and aspirations. The practices and frameworks employed within MBPs are thus re-contextualized for implementation within mainstream settings

by ensuring that they are delivered in inclusive and culturally appropriate ways.

5. ... "re-contextualized within mainstream settings by ensuring they are delivered in culturally appropriate ways" The essential element #2, which essentially states that MBIs must be based on the Buddha's Four Noble Truths could undermine this goal.

There are certainly tensions in this translational process. However, the basis of first generation MBPs is to do this work of re-contextualising, so that although they are adapted, at least in part, from Buddhist practices, there are boundaries in the ways in which they are delivered to ensure they are suitable for mainstream delivery in publicly funded institutions. There is much to debate about the benefits and costs of this but there is not scope within the paper for this level of detailed analysis.

6. "The integrity and fidelity of each MBP is maintained by ensuring that all the curriculum elements for the particular program are included as intended (adherence) and that no unnecessary curriculum elements are added (differentiation) (Crane et al. 2013). Protocols for each MBP are available (see Blacker et al. 2015, for the MBSR curriculum guide, and Segal, Williams & Teasdale 2013, for the MBCT curriculum guide)."

The above list of documents seems to suggest that manuals exist for MBSR and MBCT. A session by session manual with handouts and audiofiles have been published for MBCT, does an equivalent manual exists for MBSR?

Thank you for pointing out this omission. We have now added in the reference here to Bob Stahls MBSR workbook which offers a session by session lay out of the MBSR curriculum.

7. Training requirement currently include multiday residential retreats at organizations that teach Insight meditation. The ones listed in the above references are all Buddhist centers. Are there any organizations that are not 501c3 religious organizations that teach

*residential insight meditation retreats? This requirement has also been a sticking point for critics that question if MBIs are wholly secular.*

We agree that the field needs to develop opportunities for engagement with mindfulness practice within secular contexts which support the development of mindfulness practice and embodiment. This is gradually happening. We have added this text to this section (pages 11):

Two key elements of good practice are supervision (Evans et al., 2014), and ongoing engagement with a personal mindfulness practice including periodic periods of intensive mindfulness practice in a residential setting. As the work of first generation MBPs is becoming more established in the mainstream, more opportunities are opening up for residential mindfulness intensives within a thoroughly mainstream context (e.g. Mindfulness Network CIC, 2016).

8. *Page 9: ...by recognition of 'common humanity' (shared human experience).*  
*This sounds like a (Buddhist) value, which undermines the assertion that MBIs are not an ideology*

We respectfully argue that this is found in many psychotherapeutic and indeed psychological analyses. For example humanistic approaches taught this as foundational for theories of personality and person-centered therapy (E.g. Rogers, C. (1980). *A Way of Being*. Boston: Houghton Mifflin).

9. *Length of program can be modified. What about "mindfulness" induction studies? Is there justification of a minimal duration, perhaps based on skill-acquisition paradigms?*

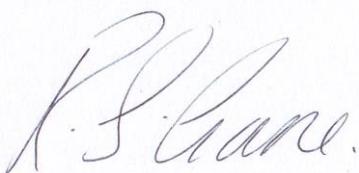
This would not fulfil the paper's 'warp' criteria so would not be classified as a first generation MBP. We have now made length of MBSR and MBCT explicit on p.8-9

*10.page 11: What MBPs are not*

We are grateful for the reviewer's comments on this section – as stated above we have removed this section

Thank you once again for the opportunity to resubmit. We look forward to hearing the journal's responses to the paper now and stand ready to respond to reviewers' comments.

Yours sincerely



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