



3-Doors Compassion Project: Examining the longitudinal effects of a nine-month Tibetan mind-body meditation program

M. Gawrysiak^{1,2} · R. T. Pohlig³ · A. Chaoul⁴ · M. Vaughn⁵ · G. Rocco⁵ · C. Clark⁶ · S. Grasseti¹ · D. Petrovitch¹ · T. Wangyal⁵

Accepted: 2 September 2021
© The Author(s) 2021

Abstract

Abundant research supports the benefits of participating in mindfulness meditation training programs including Mindfulness-Based Stress Reduction and Mindfulness-Based Cognitive Therapy. However, these well researched programs include a narrow range of meditation practices and research to date has minimally examined how home practice associates with favorable outcomes. The present study evaluated the 3 Doors Compassion Project (3DCP), a structured 9-months meditation program that teaches Tibetan Mind-Body practices and examined how frequency and duration of home practice associated with favorable outcomes. Twenty-seven medical and mental healthcare professionals completed assessments prior to, during, and following participation in the 3DCP program and recorded daily meditation practices. Study aims were to test general effectiveness of the 3DCP program and to test the hypotheses that frequency and duration of meditation home-practice would associate with improvements on mindfulness, stress, and depression. General linear mixed modeling demonstrated significant improvements throughout the duration of the 3DCP program for mindfulness, depression ($p < .001$) and stress ($p < .05$), with each variable evidencing incremental monthly improvements. Frequency of meditation (i.e., days practiced per month), but not time (i.e., minutes per month) was significantly associated with improvements throughout the 3DCP program. Results provide support for the benefits of the 3DCP while offering clinically useful information that can inform current guidelines for meditation home practice. As predicted, the 3DCP was associated with significant improvements on all outcomes. Favorable outcomes were linked to frequency, but not total time of meditation practice, which suggests that consistent meditation may be more helpful than extended meditation.

Keywords Tibetan · Mind-body · Mindfulness · Meditation

Throughout the last 40 years, there has been exponential growth in the number of research publications focused on mindfulness-based interventions (MBIs; Black, 2018; Van Dam et al., 2018a) that aim to promote wellness through the cultivation of mindfulness, defined as an orientation of intentionally paying

attention to the present moment in a nonjudgmental and accepting manner (Kabat-Zinn, 1994). These MBIs are largely associated with beneficial mental health outcomes (Goldberg et al., 2018; Gotink et al., 2015) and the putative mechanisms by which MBIs and meditation training exert their beneficial effects are through increasing mindfulness, attention monitoring, acceptance and self-compassion, and reducing repetitive negative thinking and cognitive and emotional reactivity (Gu et al., 2015; Lindsay & Creswell, 2017).

The most well researched MBIs include Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 2003) and Mindfulness Based Cognitive Therapy for Depression (MBCT; Segal et al., 2013). These MBIs include a specified curriculum of mindfulness meditations that are taught throughout an 8-weeks program that is delivered in 120–150 min sessions (Santorelli et al., 2017; Segal et al., 2013). Typically, the mindfulness meditations in these programs include breath-focused sitting meditation, mindful movement

✉ M. Gawrysiak
MGawrysiak@wcupa.edu

¹ Department of Psychology, West Chester University of Pennsylvania, 124 West Rosedale Avenue, Wayne Hall, 5th Floor – Room 529, West Chester, PA 19383, USA

² Delaware State University, Dover, DE, USA

³ University of Delaware, Newark, DE, USA

⁴ The Jung Centers Mind Body Spirit Institute, Houston, TX, USA

⁵ Ligmincha Institute, Shipman, VA, USA

⁶ University of Utah School of Medicine, Salt Lake City, UT, USA

(i.e., walking, hatha yoga), the body-scan, and practices that facilitate greater awareness of sensations (e.g., eating), thoughts, and emotions occurring in the moment (Shapero et al., 2018). The intention of these practices is to foster a greater awareness of momentary experiences (i.e., thoughts, emotions, sensations) that is coupled with an attitude of non-judgmental acceptance. Most MBIs prescribe daily meditation home practice ranging from for 45 to 60 min (Santorelli et al., 2017; Segal et al., 2013). To date, a robust literature supports the use of these structured meditation training programs to address a range of concerns, with benefits being observed in reduced depression and stress and improvements in mindfulness (Alsubaie et al., 2017; Goldberg et al., 2021). However, much remains to be learned from the field of inquiry into meditation. Particularly, investigating the nuances of meditation practice (i.e., investment in home practice outside context of formal programming) and expanding the scope to include meditation practices beyond those contextualized in contemporary MBIs will contribute to a better understanding for how training in meditation can benefit those suffering with myriad conflicts (Davidson & Dahl, 2018).

However, what is less well researched is the extent to which engagement in meditation, outside of in-person group meeting sessions, is linked to favorable outcomes. A prior systematic review indicates that the extent of home practice for MBSR and MBCT (i.e., time invested in meditation outside of group MBI sessions) modestly but positively correlates with favorable outcome (Parsons et al., 2017). While this study suggests that total duration of time invested in meditation practice moderately links to favorable change, this review did not assess frequency of home practice engagement. Prior research has reported that days per week of meditation practice, among mindfulness and transcendental meditation practitioners, predicts higher reported mindfulness and lower perceived stress (Schoormans & Nyklíček, 2011). Another investigation on the frequency of meditation practice among a large sample of older-aged adults observed stronger relationships between age and life satisfaction and age and psychological health among those that meditated more frequently relative to those who meditated less frequently (Allen et al., 2017). However, this study did not evaluate total duration of meditation practices, evaluated meditation practice retrospectively, and used a five-point scale with response options ranging from “1 = a lot” to “5 = never”. Regardless, these two studies suggest that beneficial outcomes may be strongly linked to meditation frequency rather than a particular meditation technique.

However, research findings on the benefits of frequency and duration of home practice are generally mixed. In a meditation dose-response study comparing mindfulness meditation and loving-kindness meditation *both* the duration and frequency of meditation practice related to favorable outcomes, such as the experience of more positive emotions

(Fredrickson et al., 2017). These findings are in contrast to a recent investigation (Strohmaier et al., 2021) of a two-weeks mindfulness training program that randomized participants to two variations of assigned homework practice: four times per week of 5-min or 20-min of home practice. Contrary to common assumptions, participants randomized to the shorter meditation assignment (i.e., 5-min home practices) demonstrated a greater increase in mindfulness and reduced stress compared to the 20-min practice participants, with results trending in the same direction for improvements in depression and anxiety.

A more recent systematic review summarized published MBI controlled studies (i.e., MBSR, MBCT) that specifically measured home-practice (Lloyd et al., 2018). Fourteen studies were included in this review, seven examined the relationship between home-practice and clinical outcomes, and only four of these demonstrated that the amount of time predicted improvements (Cash et al., 2015; Crane et al., 2014; Gross et al., 2011; Speca et al., 2000). However, studies examining the link between meditation home practice and clinical outcomes have generally reported inconsistent findings (Lloyd et al., 2018), ranging from increased days per week of practice reduced relapse to depression (Crane et al., 2014) to days of practice not relating to any outcomes (Perich et al., 2013).

As published research on the relationship between meditation home practice and beneficial outcomes have yielded inconsistent results (Lloyd et al., 2018; Vettese et al., 2009), continued efforts must be made to evaluate the degree to which home meditation practice engaged in during enrollment in meditation programming associates with favorable outcomes (Parsons et al., 2020; Segal et al., 2019). Clearer understanding on the threshold of frequency and total duration of meditation practice to promote optimal outcomes can better inform meditation instructors on the guidance they provide to participants pursuing meditation training to achieve desirable outcomes. Considering this topical area, one would expect that greater duration and frequency would both predict greater improvements on outcomes. In addition to examining the relationship between both frequency and duration of home practice on outcomes, further efforts are needed to expand the focus to include additional meditation techniques beyond those outlined in contemporary MBI programs.

The vast majority of published researched outcomes linked to meditation practices focuses on contemporary MBIs, particularly MBSR and MBCT. However, these MBIs, by necessity, provide guided instruction and prescription of home practice for a narrow range of meditation practices. The typical meditation practices included in MBSR and MBCT include mindful movements (i.e., walking and gentle yoga exercises), the body scan (i.e., progressively focusing on different regions of the body with a mindful focus) and seated breath-focused meditation (Kabat-Zinn, 2003; Segal et al., 2013). All practices are guided with the intention of paying attention to one's experience while adopting an attitude of nonjudgmental

acceptance for whatever emerges in one's immediate experience (Stahl & Goldstein, 2019). Generally, the aims of the practices for contemporary MBIs are the development of certain capacities, including sustained present-centered awareness, meta-awareness, dereification (i.e., acknowledging that thoughts are ephemeral and not reality), nonreactivity to experience and adoption of a curious and nonjudging stance toward experience, and dereification of self-concept and reductions in autobiographical narrative thinking (Wielgosz et al., 2019). The meditation techniques and guidance instructions outlined in contemporary MBIs (i.e., MBSR, MBCT) draw heavily from Buddhist traditions aiming to foster mindfulness (Dunne, 2015; Gethin, 2015; Harrington & Dunne, 2015) in order to develop a new interpretation of mindfulness teachings that are largely secularized to reach a broader audience.

Despite the widespread dissemination and benefit of mainstream MBIs, there are numerous meditation techniques espoused within the broader canon of the Buddhist literature, particularly in traditional Tibetan mind-body (TMB) practices, that have received very little attention in terms of objective evaluation. These mind-body techniques offer unique training practices and philosophies that aim to promote mindful awareness, well-being, compassion for self and others, equanimity, dereification of self and other desirable outcomes. However, relative to what have become mainstream in the West (e.g., MBSR), there is a dearth of empirical research on the vast TMB approaches. As the practices outlined in contemporary MBIs reflects a small proportion of meditation practices, expanding investigative focus to include other TMB meditation techniques and programs has great potential for understanding the extent to which such practices promote psychological well-being. A small but growing body of research has demonstrated the benefit of TMB practices. Tibetan contemplative meditation practices, translated from the Mother Tantra (Ma rgyud; Samlek, 1971) and the Oral Transmission of Zhang Zhunng (Zhang zhung snyan rgyudd; Chandra & Namdak, 1968; Sonam et al., 1974), have been practiced for thousands of years with the aim of reducing suffering and facilitating optimal well-being. There are a vast and myriad range of meditation techniques documented in traditional TMB traditions. While a comprehensive review of TMB meditations is outside the scope of this paper, suffice to say that these meditation practices include intentional regulation of breathing and breath-holding, physical movements, and chanting Tibetan syllables (Wangyal, 2006, 2011a, 2011b, 2015). In contrast to contemporary MBIs, traditional TMB approaches have received far less scientific scrutiny and have only recently been the subject of empirical study. Prior research on TMB practices implemented within medical facilities has demonstrated beneficial outcomes for cancer patients (Chaoul et al., 2014). Although the methodological strength (i.e., pilot study versus randomized trial), format for TMB intervention (i.e., single-session versus seven-session), and cancer type (i.e., lung, lymphoma, breast) varies,

implementation of these practices has evidenced improvements of cancer patients' well-being, quality of life, sleep quality, cancer-related distress, depression, anxiety, fatigue, and spiritual well-being (Chaoul et al., 2018; Cohen et al., 2004; Lopez et al., 2018; Milbury et al., 2013, 2015, 2018). These interventions included mindful breathing meditation, breathings (9 breathings of purification), and Tibetan yogic movements from the *Tsa Lung* channels-breath exercises from the Mother Tantra and the *Trul Khor* magical movements from the Oral Transmission of *Zhang Zhung* (Wangyal, 2006, 2011a, 2011b, 2015). These initial studies demonstrate feasibility and effectiveness of TMB practices for improving quality of life more generally and support further investigation into novel, less-well researched, meditation practices as a means to promote health and wellness. However, further research is necessary to demonstrate a foundation for effectiveness of TMB practices in terms of beneficial outcomes.

Hypotheses Development

The uniqueness, relative to contemporary MBIs, and utility of TMB practices in promoting mental health and mindfulness warrants further investigation. The present study assessed benefits associated with participation in a 9-months long TMB meditation program, the *3-Doors Compassion Project* (3DCP). Similar to contemporary MBIs, the 3DCP program aims to facilitate mindful awareness and to promote stress management and mental health, while employing modernized language to describe ancient TMB meditation practices for a Western audience (Wangyal, 2006, 2011a, 2011b, 2015). Using a longitudinal design, participants completed a self-report assessment battery prior to, during, and following their 3DCP enrollment and completed daily meditation journal entries (where they recorded the frequency and duration of home practice) throughout the 9-months program. Although the 3DCP program and meditation practices are distinct from contemporary MBIs, measures of depression, stress, and mindfulness were selected as primary outcome variables based on a robust literature demonstrating associations between MBIs and meditation practice and improvement in these areas of mental health. The aims of this study were to test the hypotheses 1) that mindfulness, stress, and depression would improve throughout the program and 2) that frequency and duration of home practice would associate with improvements.

Methods

Participants

Participants were recruited through online advertisements and word-of-mouth communication about a meditation program developed for individuals in medical and mental health care

fields seeking a meditation program focused on occupation related distress and difficulty working with clients/patients. Enrollment criterion required potential participants to identify as working within a medical or mental health-care profession and to commit to attending all 3DCP scheduled events. Scheduled program activities included 9 day-long Tibetan mind-body training sessions and one silent meditation retreat. Other than a registration fee (\$100.00), enrollment into the meditation program was provided free of charge. Due to space restrictions within the meditation facility, enrollment was restricted to 29 participants. Prior to group start-date, two participants withdrew from the program due to unanticipated scheduling conflicts preventing them from attending all nine group sessions. Twenty-seven participants enrolled in the meditation program (see Table 1 for demographic data), and with the exception for two participants each missing one of the nine groups, all participants attended all day-long meditation sessions across the 9 months.

Participants ($N = 27$) varied in age ($M = 57.11$, $SD = 12.22$, Range = 29–81) and years of prior meditation experience ($M = 9.56$, $SD = 5.16$, Range: 1–20). The majority of participants were women ($N = 23$, 85%), with advanced education (Years Education, $M = 18.85$, $SD = 2.85$), and who comprised of a relatively homogenous racial demographic (white = 22, 81%; Black/African American = 3, 11%; Hispanic/Latino = 1, 4%; Asian/Asian American = 1, 4%). Prior to participation, all participants completed institutionally approved informed consent procedures consistent with the Declaration of Helsinki.

Procedures

Participants were mailed a battery of self-report questionnaires with instructions for completing and return-mailing the packet at two time points leading up to the start of the meditation program: 1-month and 1-day prior (i.e., Baseline -1 and Baseline 0). Each assessment battery was identical across timepoints and included ten well-validated questionnaires, of which three are the focus of the present study. Subsequent assessment batteries were distributed to participants at the conclusion of each day-long group meditation session along with a meditation journal, on which participants recorded the frequency and duration of their home practice (see measures below). Participants were instructed to complete their assessment battery immediately prior to the start of the next day-long mind-body practice session and to record their practices daily. At the conclusion of the last day-long retreat, participants were informed that they would receive follow-up assessments in the mail along with self-addressed and stamped return envelopes. Participants were instructed to complete and return these packets within 5-days of receiving them. Completion rates for assessment measures was

high throughout the 9-months program (range: 93–100%) and for the follow-up period (range: 89–96%).

Philosophy of Meditation Practices

A central philosophy of The 3 Doors, and Bon Dzogchen more generally, is the view that individuals are fundamentally pure and perfected at their core and that one's true nature is

Table 1 n = sample size; % = percentage of sample

Participant demographics	($n=27$)
Sex	
Male (n , %)	4 (15%)
Female (n , %)	23 (85%)
Age, Mean (SD)	57.11 (12.22) Range: 29–81
Ethnicity, n (%)	
Non-Hispanic White	22 (81%)
Black or African Am.	3 (11%)
Hispanic or Latino	1 (4%)
Asian or Asian Am.	1 (4%)
Income ($n=26$), n (%)	
\$0–\$30,000	2 (8%)
\$31,000–\$60,000	7 (27%)
\$61,000–\$90,000	3 (11%)
\$91,000–\$120,000	7 (27%)
\$121,000–\$150,000	1 (4%)
\$150,000 or more	6 (23%)
Relational Status, n (%)	
Married	12 (4%)
Divorced	6 (22%)
Widowed	1 (4%)
Separated	1 (4%)
Never Been Married	5 (19%)
Member of Unmarried	2 (7%)
Years Education, Mean (SD)	18.85 (2.85) Range: 9–24
Educational Degree, n (%)	
Bachelor's Degree	2 (7.4%)
Master's Degree	15 (55.6%)
Doctoral Degree (i.e., PsyD or PhD)	7 (25.9%)
Medical Degree (MD)	3 (11.1%)
Occupation, n (%)	
Therapy	17 (63%)
Medicine	4 (14.8%)
Meditation/Yoga Instructor	4 (14.8%)
Academia	2 (7.4%)
Years in Practice ($n=25$), Mean (SD)	9.56 (5.16) Range: 1–20

characterized by an “awakened” state of openness and clarity (Wangyal, 2011a, 2011b). This view holds that one’s true nature is an awakened state that is pure, serves as the underlying principle of being and the foundation for all of existence, and is characterized by emptiness, non-duality or non-dual awareness (Snellgrove, 1987; van Schaik, 2004; Wangyal, 2015). This state of nondual awareness, referred to in the 3 Doors program as “inner refuge” is understood to be psychologically and spiritually nourishing and to facilitate the expression of positive qualities such as the four immeasurables of love, joy, compassion, and equanimity (Wangyal, 2011a, 2011b, 2015).

Gaining familiarity with this state of “inner refuge” (i.e., nondual awareness) is a primary intention of the practices and teachings outlined in the Bön Dzogchen tradition. However, recognition of this state is understood to be habitually obscured through discursive thought, and ruminative identification with self-conflicts, emotions, and perceptions (Namgyal & Lhalungpa, 2006; Wangyal, 2011a, 2011b, 2015). The 3 Doors programmatic teachings are organized around engagement of contemplative and meditative mind-body practices that release the mental obscurations that obstruct one’s direct experience of “inner refuge.” The 3 Doors teachings and meditation practices incrementally train practitioners to gain familiarity with inner refuge by shifting attention away from the *perception* of a problem to the *awareness of being* itself. This is achieved through meditative practices organized around the focus on body, speech, and mind. Thus, the three doors represent a medium by which the practitioner can develop mindful awareness for how conflicts (i.e., attachments, aversions, ruminations) manifest in ones’ present experience. After developing familiarity and mindful acceptance and awareness of such conflicts, the practitioner engages in a series of breath, sound, and movement exercises to release these conflicts, which in turn enables one to experience the state of inner refuge. This process of developing mindful nonjudgmental awareness, releasing, and resting in the natural mind is cumulative in nature, occurs systematically over the course of the 9-months program, and entails gaining procedural and conceptual familiarity with the practices outlined in The 3 Doors program.

General Description of the Meditations

Similar to other Buddhist lineages, the Bön dzogchen tradition assumes that conflicts and challenges stem from the relationship that one adopts towards experience. Namely, the extent to which one is attached or averse to experience reifies a sense of self-identify, which in turn associates with a greater degree of suffering and mental conflict (Grabovac et al., 2011). The 3-Doors program aims to cultivate mindful awareness of conflicts, develop skills for open-monitoring, and to gain familiarity with NDA. In this tradition, the aim is to first recognize and become

mindfully aware of how conflicts manifest in one’s direct experience. The manifestation of these conflicts is understood to emerge through three doors – the body, voice, and mind. After recognition of conflicts as habitual patterns manifesting through the three doors, practitioners engage in a series of meditation practices intended to release these conflicts and habit patterns through activities that guide the breath and physical movements. The meditation methods outlined in The 3 Doors facilitate the release of various conflicts around attachment and aversion with the intended result being the experience of inner refuge (i.e., NDA). The 3 Doors program is organized around a series of didactic lectures and conceptual education as well as experiential training and guidance in a series of meditation practices designed to raise ones’ awareness of personal conflicts and habitual patterns, to develop the ability for open-awareness, and to gain familiarity with nondual awareness. Throughout the duration of the 9-months program, the practitioner receives extensive training and experiential guidance in resting or abiding in inner refuge as well as three meditation practices to clear obstacles derived from Tibetan Bon Dzogchen tradition: *Nine-Breathings of Purification*, *Tsa Lung*, and *Tibetan Sound Healing* (see Milbury et al., 2013; Wangyal, 2006, 2015).

Specific Meditation Practices

Sacred Anatomy or Subtle Body Initially, there is relatively complex conceptual framework that the practitioner must learn as they engage the practices. The 3 Doors support practices refer to this inner structure as *sacred anatomy*, sometimes also called subtle body, as being foundational to meditation. This includes imagining three channels of light within the body to support the focus of attention and awareness and the eventual release of underlying conflicts and habitual patterns held in body, breath, and mind. These channels of light, which serve as the architecture of this sacred anatomy, include a central channel located in the center of the body, and a right and left channel connecting to the base of the central channel extending upwards and exiting through the nostrils. The channels serve to anchor attention internally in order to observe how conflicts are experienced in a somatosensory way. This felt experience of conflicts, within these channels, is referred to in the 3 Doors as *winds*. These *winds* represent the internal, somatosensory, experience of conflicts held in the body. Through recognition of the winds and systematic engagement in meditation practice of bringing the focus of mind and breath together and moving the focus through the imagined channels, releasing those winds that hold the conflict through this method, the practices enable participants to release the felt sense of the conflict and to rest in open awareness, the inner refuge. The 3 Doors program also focuses on *chakras* or energetic centers within the central channel used in meditation practice to anchor attention to somatosensory experiences of conflict and to release such conflicts through meditation practices of

breath and movement and also sound meditations. Each of the three support meditation practices taught in the 3 Doors program relies heavily on the visualization and somatosensory experience of the channels in order to facilitate mindfulness of body, breath, and thoughts, open awareness and NDA.

Nine-Breathings of Purification The first practice in the 3-Doors program aims to mitigate unpleasant emotions (e.g., anger) through a series of procedural breathing patterns and visualizations. For this practice, the individual is instructed visualize the three channels of light within the body through which the breath moves upon inhalation and exhalation. The practice begins by the calling to mind an experience of aversion or unpleasantness and to allow related emotions, thoughts, and bodily sensations to be felt and known. The practitioner then closes their right nostril with the ring finger of their right hand and deeply inhales through their left nostril, visualizing and experiencing the breath as passing into the body through the left channel. The breath is held momentarily, then the left nostril is closed, and the breath is exhaled while visualizing the exhalation is released through the right channel. During this exhalation, the practitioner is instructed to allow any emotions, thoughts, and bodily sensations experienced in response to the unpleasant experience to be released with the exhalation. Three iterations of breath are practiced for this portion of the meditation. Next, the practitioner calls to mind an experience of attachment and to mindfully allow related emotions, thoughts, and bodily sensations to emerge. Three iterations of breath practice are continued by inhaling through the right nostril and exhaling through the left while visualizing the passage of breath through the side channel. The instruction guides the practitioner to release emotions, thoughts, and bodily sensations associated with attachment with each exhalation. Finally, three iterations of inhalation-exhalation are practiced while focusing on the central channel. In this third set of breaths, the practitioner is instructed to call in a sense of disconnection, self-doubt or lack of confidence and to connect with and allow experiences to emerge. The instruction continues by inhaling through the nostrils down each side channel, holding the breath momentarily, and then exhaling up through the central channel to allow the breath to be released through the crown of the head. Instruction guides the practitioner to imagine as though, as the breath is exhaled, all obstacles and unpleasant content is released. Each set of breaths is practiced three times and at the conclusion of the nine breaths the practitioner is instructed to connect with and rest within a state of open awareness.

Tsa Lung Practice The Tsa Lung meditation emerges from the Tibetan text, the Bön Mother Tantra (Samlek, 1971), as presented in English in *Awakening the Sacred Body* (Wangyal, 2011a) and entails a series of five physical movements, visualizations, and breathing procedures which are engaged in to

facilitate the awareness and release of mental and emotional conflicts and the patterns held in the body with the intention of resting in NDA. These meditations entail the visualization of and somatosensory connection to *chakras* located in the central channel of the body. Here chakras are defined as energy centers that enable an opportunity to raise awareness for how the body and mind hold onto aversion and attachment and lack of clarity that can be released through meditation. Importantly, instructions on this practice clarify the chakras represent symbolic locations for energy centers in the body that represent varying aspects of conflicts (i.e., emphasizing that the practice does not require the belief that physical chakras literally reside within the body). Each of these five movements entails the following: calling to mind a conflict or concern, mindfully noting how the conflicts manifests in the body, speech, and/or mind, focusing attention on a particular chakra, taking two successive inhalations, engaging in a series of seated movements while holding breath and attention in that area of the body, and then releasing the breath through a deep and forceful exhalation. The practitioner is instructed that, with the release of the deep exhalation, they are to allow any conflicts or mental obscurations to exit the mind and body. Following each movement and breath practice, the practitioner is instructed to become aware of a state of open awareness. Following completion of all five breath-movement practices, the practitioner is instructed to rest in the inner refuge (i.e., sit silently in nondual awareness) for whatever duration of time is supportive of their overall wellbeing.

Warrior Syllable Practice The third meditation practice entails verbal recitation of five Tibetan *seed syllables* that are sung while simultaneously focusing attention on the vibration created from the sound generated. The practitioner is instructed to visualize and focus attention in a specific location of the body, in a chakra located in the core of the central channel at that location, and sing a specific syllable while imagining a specific color of light emanating from that location. During the singing, the practitioner is instructed to focus on the sound vibration as a means to meet and release painful emotions, ruminative thought, physical maladies or other obstacles, while imagining light supports the awareness of opening and openness. The sequence proceeds through each of the five charkas, from the crown of the head to the base of the body, with each chakra entailing a specific syllable recitation and color of light. The ultimate intention is to arrive at an increasingly clear, open, and radiant state of mind where the practitioner is able to reside in a NDA, referred to as the *essential nature of mind* (Wangyal, 2011b).

3 Doors Monthly Curriculum

At the initial meeting, participants were provided instruction on and engaged in guided meditation practices for the

meditations outlined above. Discussion focused on procedural understanding for engagement of the practices and emphasized the importance of *inner refuge*. An educational component also focused on the conceptual understanding of the three doors of body speech, and mind accessed through bringing attention to stillness of the body, silence of speech, and spaciousness of mind during the initial meeting. All subsequent meetings focused on strengthening the conceptual and experiential understanding of the practices, addressing difficulties with the practices through group discussions, and emphasized the principle of gaining familiarity with one's lived experience of conflict (i.e., attachment, aversion), and how this manifests through the three doors of experience, and provided guidance on deeper connection with *inner refuge*. Teachings for The 3 Doors program are cumulative in nature and occur across the 9-months duration of the program. Initial meetings focused on the conceptual and experiential understanding of the practices (i.e., sessions 1–3) while all subsequent meetings focused on incrementally increasing the focus of conflicts experienced to include struggles with self, family, friends, co-workers, and society at large.

Meditation Program Instructors

The 9-Months 3-Doors meditation program was developed by (blinded for review), in collaboration with senior 3 Doors meditation teachers, based on the teachings and meditation instruction outlined in the Mother Tantra. In the present study, the 3 Doors program was co-facilitated by two senior teachers within the 3 Doors organization (blinded for review). Each facilitator had a history of 40 plus years of personal meditation experience, had studied with (blinded for review) for over 20 years, had graduate degrees in contemplative psychotherapy, and were experienced in meditation teaching in both for secularized and non-secularized formats (i.e., senior teachers within 3 Doors organization and MBSR program providers within university medical systems).

Meditation Program Structure and Schedule

The program outlined for the present study was developed in coordination with The 3 Doors, an international nonprofit organization, founded by Geshe Tenzin Wangyal Rinpoche, with the aim of transforming lives through meditation. The 3 Doors presents Tibetan mind-body practices through secular meditation programs in an effort to disseminate traditional Tibetan Bon-Buddhist methods for reducing suffering. These come from the teachings of Dzogchen, translated as “great completion,” and which refers to the perspective that every individual is inherently complete as they are, and that becoming aware of this completeness liberates suffering. This Tibetan lineage presents meditation practices of body, speech, and mind (that are the three doors) as opportunities or

doorways through which an individual can become aware of and ameliorate their suffering and optimize their well-being.

The structure for the present 3 Doors program included nine 1 day in-person group mind-body retreats (once per month) and 18 (twice per month) small group virtual meeting sessions. Each day-long mind-body meditation retreat was scheduled the first Monday of the month throughout the 9-months program, lasted approximately 7 h (with a 90-min lunch break) and included guided practices, educational didactics, and discussions facilitated by two senior instructors. Each small-group discussion lasted approximately 90-mins, was scheduled via phone or Zoom conference call, and was comprised of approximately ten participants. Attendance to the day-long retreat was a requirement while participation in the small-group meetings was recommended for participants seeking additional support for meditation instruction. Participants were instructed to meditate every day and personal practice was supported through participant access to audio, and audio-video guided recordings of all mind-body practices and through guided recommended readings (i.e., Wangyal, 2011a, 2011b, 2015). Participants also met for a 2 day-long silent mind-body retreat at a meditation center during the seventh month of the program. During this retreat, participants met to engage in all mind-body practices in a silent-retreat format with opportunities to express their observations and experiences during the retreat.

Throughout the duration of the 9-months program, participants received extensive training and experiential guidance in a main practice and three support mind-body practices derived from Tibetan Bon Dzogchen tradition. Briefly, the intention of these practices is to cultivate mindfulness, nonjudgmental acceptance, the capacity for open monitoring (i.e., clear reflexive awareness and non-reactivemoment-to-moment monitoring of experience; Lutz et al., 2008), and to facilitate greater experiential familiarity with and access to non-dual awareness (i.e., non-conceptual experience of non-duality, dissolution of distinctions between subject and object; Krägeloh, 2019). Ultimately, these aims are engendered in tandem with, or as a result of, mindfully recognizing central conflicts in one's life, then using a series of breath, body, and sound meditative practices to allow such conflicts to be released, and then resting in open nonjudgmental awareness. The doors, referenced in the 3 Doors reflect aspects of body, speech, and mind, and serve as the medium by which participants focus their attention in order to understand and resolve their central conflicts.

Measures

FFMQ The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) is a 39-item self-report scale that assesses mindfulness through five sub-facets (i.e., observing and describing experiences, acting with awareness, nonjudgement of experience, and nonreactivity to experience), which can be

sum-totaled for an overall mindfulness score. Item responses are completed using a 5-point scale of frequency (1 = *almost never*; 5 = *almost always*) with higher scores reflecting higher mindfulness for the total mindfulness and each sub-scale. This measure is among the most widely used scale to assess mindfulness and has strong internal consistency with Cronbach α 's ranging from 0.75 to 0.91 (Baer et al., 2008). Internal consistency was good in the present sample for the FFMQ total score (Cronbach α = 0.94) and each subscale: Observe (α = .71), Describe (α = .93), Act with Awareness (α = .94), Nonjudge (α = .94), Nonreact (α = .89) across each timepoint.

PHQ-9 The 9-item Patient Health Questionnaire (PHQ-9; Nezu et al., 2000) is a brief self-report scale that assesses depression severity. Item responses are completed using a 4-point scale of frequency for symptom endorsement across the prior 2 weeks (0 = *not at all*; 3 = *nearly every day*) with higher scores reflecting greater severity of depression. This measure is among the most widely used for self-report assessments of depression and has strong internal consistency (Cronbach α = .89; Kroenke et al., 2001). Internal consistency was good in the present sample across each timepoint (Cronbach α = 0.87).

PSS The Perceived Stress Scale (PSS; Cohen et al., 1983) is a 10-item self-report questionnaire, that assesses the perception of life stress during the preceding month and the degree to which one considers situations as unpredictable, uncontrollable, and overwhelming. Item responses are completed using a 5-point scale of frequency (0 = *never*; 4 = *very often*) with higher scores indicating higher perceived stress. The PSS is a widely used scale to assess perceived stress and has strong internal consistency with Cronbach α 's ranging from 0.84 to 0.86 (Cohen et al., 1983). Internal consistency was good in the present sample across each timepoint (Cronbach α = 0.89).

Meditation Journal Home meditation practice was recorded via a self-report calendar that participants completed every day throughout the duration of the 9-months program. Participants turned in their meditation calendars each month and received a new calendar for each subsequent month. Each calendar contained all the days of the particular month and prompted participants to complete each question by answering whether they meditated that day (i.e., *Yes*, *No*) and the approximate length they meditated for in minutes.

Data Analyses

General linear mixed models (GLMM) were used to test study hypotheses. Fixed effects in the mixed models included time in months, years of previous experience with meditation, number of days meditated the previous month, cumulative minutes meditated the previous month. The primary outcomes

were FFMQ, PHQ, and PSS. As the FFMQ was significant, a secondary analysis of the five FFMQ subscales (observe, describe, awareness, non-judgement, non-reaction) was performed. Additionally, an analysis was done using three, six, and 9-months follow up data using a piecewise Mixed Model with unequal spacing among time points. The piecewise approach allows for an estimation of slopes during different phases of a study, as well as if that change is significant. Two phases were identified, the first during the meditation program, which was assessed monthly and then a follow-up period, after the meditation programming concluded when evaluations were completed every 3 months. Unfortunately, the covariates in the primary analysis were not collected during the post-study period and therefore not included in these models.

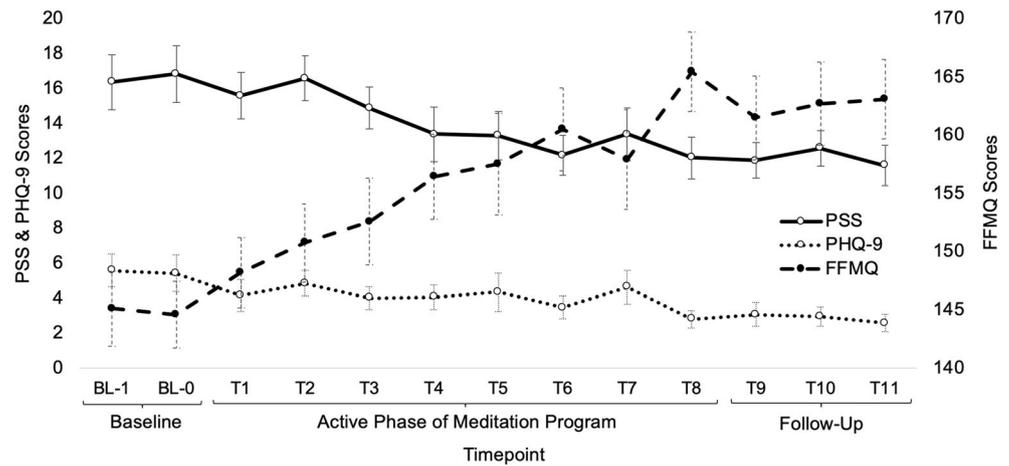
The covariance structure of the residuals was chosen through comparing model fit indices, considered were compound symmetry, compound symmetry heterogeneous variance, auto-regressive, auto-regressive heterogeneous variance, and unstructured. The structure that produced the best fit (lowest information criteria) was chosen using Akaike's Information Criterion, Hurvich and Tsai's Criterion, Bozdogan's Criterion, and Schwarz's Bayesian Criterion. Normality was tested using Shapiro-Wilk's test and outliers were screened for using Box-Plots of model residuals. All model assumptions were tested and remedied. PHQ was positively skewed but after a square root transformation was applied, model assumptions were met. There was one individual who was an outlier for FFMQ and was removed for that analysis. For the secondary outcomes, there was an additional instance of an outlier for FFMQ in the non-reactivity subscale and this value was removed for analyses.

Results

Change over Time

Results from the GLMM demonstrated significant improvements across the duration of the 9-months meditation program for all three primary outcomes- mindfulness, depression, and perceived stress (See Fig. 1 for summary description of change throughout program and follow-up). Piecewise models identified two distinct phases, the first was during the 3DCP program. FFMQ scores increased by 1.79 points per month ($t(192.60) = 4.22, p < .001$), PSS scores decreased by .42 points per month ($t(142.89) = -2.16, p < .05$) and PHQ-9 scores reduced by .21 points per month ($t(113.50) = -4.18, p < .001$). Following the program's completion, during the follow-up assessment phase, FFMQ scores significantly changed, now decreasing by 2.00 points per month ($t(309.17) = -3.09, p = .002$), PSS scores did not significantly change, and PHQ-9 scores increased by .18 points per month ($t(142.17) = 2.29, p < .05$; See Fig. 1).

Fig. 1 This figure depicts means with standard error bars across each timepoint of measurement for the Perceived Stress Scale (PSS), Patient Health Questionnaire (PHQ-9) and Five Facet Mindfulness Questionnaire total score (FFMQ), including measurements taken at baseline (BL) and during the meditation programming and follow-up timepoints (T)



Similarly, piecewise models identified two phases for the FFMQ subscales. During the program significant improvement was seen for Observe, Act with Awareness, Nonjudgment, and Nonreactivity while Describe was not significant (See Table 2 and Fig. 1 for summary description of change throughout the program and follow-up). Throughout the 3DCP program FFMQ-Observe scores increased by .45 points per month ($t(89.35) = 3.32, p = .001$), FFMQ-Awareness scores increased by .52 points per month ($t(166.14) = 6.46, p < .001$), FFMQ-Nonjudge scores increased by .35 points per month ($t(163.72) = 2.02, p = .045$), and FFMQ-Nonreact scores increased by .48 points per month ($t(113.75) = 3.78, p < .001$). Following the program, during the follow-up phase, significant differences in the change over time (in slopes) were found for FFMQ-Awareness and FFMQ-Nonreactivity, both of which now decreased monthly ($b = -.593, t(308.98) = -5.32, p < .001$; and $b = -.368, t(278.18) = -2.09, p = .038$, respectively). While the other subscales were not significant, the same pattern was found, FFMQ-Observe ($b = -.328, t(332.63) = -1.90, p = .059$), FFMQ-Describe ($b = -.229, t(332.95) = -1.19, p = .237$), and FFMQ-Nonjudge ($b = -.409, t(316.26) = -1.78, p = .077$) Fig. 2.

Impact of Meditation Time (Minutes) Versus Frequency (Days) on Outcomes

During the 3DCP program, the number of days meditated per month was significantly positively related with FFMQ scores. For every additional day of meditation FFMQ increased by .27, ($F(1, 169.30) = 3.88, p = .050, b = 0.27$). 3DCP associated with significantly increased FFMQ scores, for every additional month FFMQ increased by 1.93, ($F(1, 166.10) = 53.70, p < .001, b = 1.93$). Years of experience with meditation and cumulative minutes meditated a month were not significant (all $p > 0.05$). The number of days meditated per month was significantly negatively related with PHQ scores, where every additional day of meditation PHQ was reduced

by .094, ($F(1, 175.49) = 4.94, p = .028, b = -0.094$). Years of experience with meditation, cumulative minutes meditated a month, and time were not significant (all $p > 0.05$). Similar results were found for the transformed value, the number of days meditated a month was significantly negatively related with PHQ scores ($F(1, 174.49) = 4.99, p = .027, b = -0.02$). Years of experience with meditation, cumulative minutes meditated a month, and time were not significant (all $p > 0.05$). The number of days meditated per month was significantly negatively related with PSS scores, for every additional day meditation was performed PSS was reduced by .13, ($F(1, 156.30) = 4.11, p = .044, b = -0.127$). For all outcomes, years of experience with meditation, cumulative minutes meditated a month, and time were not significant (all $p > 0.05$).

Discussion

The first aim of this study evaluated hypothesized benefits associated with participation in a TMB meditation program by measuring changes in self-reported mindfulness, depression, and stress throughout the 9-months duration of the program and during a 9-months follow-up period. Consistent with prior research examining specific TMB meditation practices (Chaoul et al., 2014, 2018; Cohen et al., 2004; Milbury et al., 2013, 2018) and MBIs more generally (Burton et al., 2017), results indicated improvements across each variable throughout the duration of the 9-months program, with effects waning during the post-program follow-up evaluation. Results from this preliminary study suggest that participation in structured TMB meditation training through the 3DCP program may be beneficial.

While a large and expanding body of research indicates the benefits of meditation training on a broad range of outcomes (Black, 2018) it has been argued that the field of contemplative science had adopted a narrow focus on mindfulness to the exclusion of other forms of contemplative practice (Davidson

Table 2 Descriptive of outcome measures at the thirteen points-in-time for the 3DCP participants

Timepoint	Baseline Period (2 months preceding 3DCP)		Active Phase of Meditation Program								Follow-Up Period (3, 6, and 9-months post 3DCP completion)		
	BL-1'	BL0	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11
PSS	<i>N</i> = 27	<i>N</i> = 26	<i>N</i> = 27	<i>N</i> = 27	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 25	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 24	<i>N</i> = 25
<i>M</i>	16.37	16.84	15.60	16.59	14.88	13.39	13.30	12.19	13.39	12.03	11.88	12.58	11.60
<i>SD</i>	8.20	8.31	6.86	6.68	6.19	7.91	6.87	5.89	7.71	6.07	5.27	4.97	5.83
<i>SE</i>	1.57	1.63	1.32	1.28	1.21	1.55	1.37	1.15	1.51	1.19	1.03	1.01	1.16
PHQ-9	<i>N</i> = 27	<i>N</i> = 27	<i>N</i> = 27	<i>N</i> = 27	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 25	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 24	<i>N</i> = 25
<i>M</i>	5.59	5.44	4.18	4.85	4.00	4.07	4.36	3.48	4.65	2.82	3.07	2.95	2.60
<i>SD</i>	4.79	5.40	4.78	3.83	3.26	3.57	5.54	3.26	4.92	2.51	3.45	2.67	2.56
<i>SE</i>	.922	1.03	.921	.739	.639	.701	1.10	.641	.965	.493	.676	.546	.513
FFMQ													
Total (<i>N</i>)	<i>N</i> = 27	<i>N</i> = 27	<i>N</i> = 27	<i>N</i> = 27	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 25	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 26	<i>N</i> = 24	<i>N</i> = 25
<i>M</i>	145.12	144.60	148.18	150.75	152.60	156.42	157.52	160.53	157.92	165.46	161.50	162.73	163.08
<i>SD</i>	16.61	14.95	15.63	17.63	19.01	18.57	21.68	18.22	21.88	17.30	18.43	17.49	17.16
<i>SE</i>	3.19	2.87	3.00	3.39	3.72	3.64	4.33	3.57	4.29	3.39	3.61	3.57	3.43
Obsv.	30.52	30.30	30.40	31.22	31.87	32.53	32.76	33.50	32.88	34.11	33.34	33.58	33.44
	5.43	4.66	4.51	4.89	5.38	5.33	5.71	4.70	5.44	4.95	4.81	4.89	4.40
	1.04	.897	.869	.941	1.05	1.04	1.14	.921	1.06	.972	.944	.999	.881
Descr.	32.70	32.37	32.77	33.29	33.36	33.57	33.92	34.26	34.65	35.50	34.42	34.91	34.72
	5.01	4.63	4.79	4.42	5.03	4.79	5.65	4.89	5.13	5.28	4.58	5.08	5.22
	.964	.891	.923	.852	.987	.940	1.13	.960	1.00	1.03	.899	1.03	1.04
Aware	27.88	28.18	28.48	29.01	30.03	30.30	31.40	31.88	31.11	32.76	32.30	32.04	32.12
	5.69	5.14	5.34	5.56	4.72	5.51	6.05	4.77	5.94	5.02	4.78	5.45	5.06
	1.09	.990	1.02	1.07	.925	1.09	1.21	.936	1.16	.984	.939	1.11	1.01
NonJg	30.62	31.33	32.88	33.22	33.48	34.69	34.42	34.76	33.30	35.84	34.88	35.73	35.88
	6.61	7.12	5.40	5.71	5.80	5.33	5.38	5.17	6.14	4.60	5.65	4.77	4.22
NonRc	1.27	1.37	1.03	1.09	1.13	1.04	1.07	1.01	1.20	.902	1.10	.974	.845
	23.37	22.40	23.62	24.00	23.84	25.30	25.00	26.11	25.96	27.23	26.53	26.45	26.90
	4.52	4.11	3.90	3.59	4.22	4.19	3.80	3.61	3.51	2.95	3.66	3.12	3.77
	.870	.792	.751	.691	.827	.822	.760	.708	.689	.579	.719	.636	.754

BL Baseline, *T* Timepoint, *M* Mean, *SD* Standard Deviation, *SE* Standard Error, *PSS* Perceived Stress Scale, *PHQ-9* Patient Health Questionnaire, *FFMQ* Five Facet Mindfulness Questionnaire, *Obsv* Observe FFMQ subscale, *Descr* Describe FFMQ subscale, *Aware* Act with Awareness FFMQ subscale, *NonJg* Nonjudge FFMQ subscale, *NonRc* Nonreact FFMQ subscale

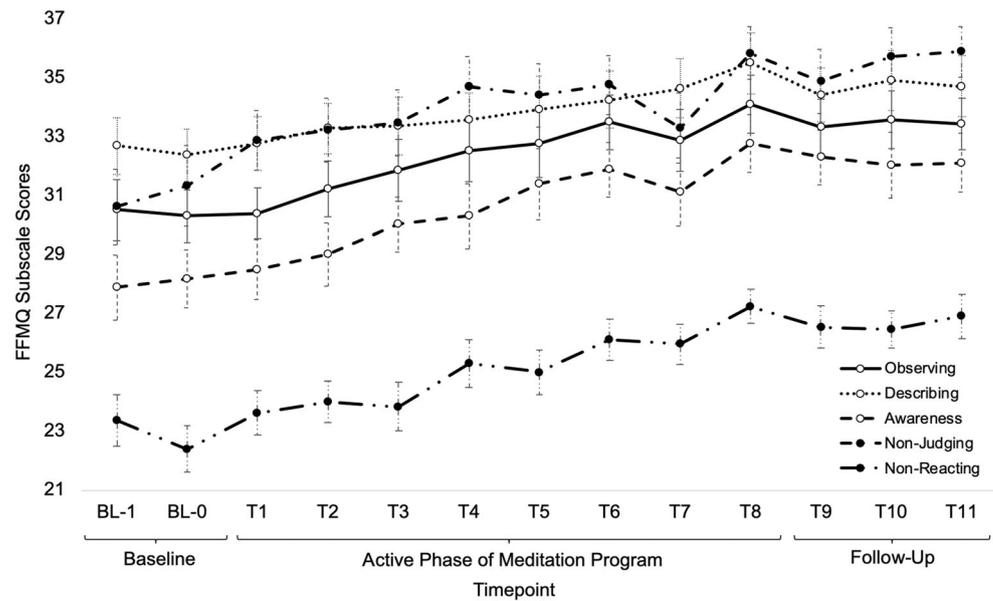
& Dahl, 2018). The present study presents preliminary findings suggesting benefit of participation in a structured meditation training program emerging out of the Tibetan Bon Dzogchen tradition. Findings suggest continued expansion of research into the beneficial effects of unique meditation exercises (i.e., *Tsa Lung*) on mental health outcomes. In the present study, incremental benefit was observed among participants as they developed familiarity with meditation practices focused on mindfulness, open-monitoring, and nondual awareness (i.e., resting in *inner refuge*).

The present results also support the effectiveness of engagement in meditative practices not typically taught in contemporary MBIs. The nine-breathings of purification, *Tsa Lung*, and Warrior Syllables are relatively complex meditative

exercises that require an initial conceptual understanding. As in the previous Tibetan Yoga and Tibetan Sound studies cited, the present study demonstrates preliminary program feasibility and effectiveness as participants consistently engaged in such practices and evidenced favorable outcomes. Future research would benefit by further clarifying participants' conceptual and experiential understanding of these practices and the extent to which one practice is more beneficial over another in terms of various psychological variables.

The second aim of this study sought to determine the relationship between home practice and beneficial outcomes by testing the hypotheses that both time (i.e., minutes per month) and frequency (i.e., days per month) of meditation practice would associate with favorable outcomes. Results indicated

Fig. 2 This figure depicts means with standard error bars across each timepoint of measurement for the Five Facet Mindfulness Questionnaire (FFMQ) subscales, including measurements taken at baseline (BL) and during the meditation programming and follow-up timepoints (T)



that the *frequency* of meditation practice, but not *duration*, associated with improved outcomes. Longer duration practices may be less effective for several reasons. One reason is that it may be more difficult to sustain attention for these longer practices. Although mindfulness meditation aims to increase attention, some scholars suggest that, on average, adults' attention span significantly wanes after about 10–15 min (Bunce et al., 2010; Hartley & Davies, 1978; Johnstone & Percival, 1976). Thus, meditators may become discouraged if they experience difficulty sustaining attention during longer practice periods. Instead of increasing the length of practice, it may be more helpful for participants to commit to a regular frequency of practice, even if practice cannot be for the fully recommended duration. Distributed practice, compared to “massing” practice (e.g., cramming), has been found to enhance learning across learning tasks (for a review, see Wiseheart et al., 2019). Thus, it may be that that the repetition of a regular home practice is more beneficial to positive outcomes than is long, but sporadic home practices. While other structured meditation programs (i.e., MBSR, MBCT) recommend up to 45-min of daily meditation, this significant time commitment may not be feasible for all participants and may constitute a barrier to participants fully engaging in such programs. Prior reviews have indicated that MBSR and MBCT participants complete an average of 64% of home-practice assignments or about 30 min per day (Lloyd et al., 2018; Parsons et al., 2017). When faced with a limited amount of time to commit to home practice, some participants may opt for shorter daily practices while others may consider longer practices on fewer days of the week.

Clarifying the nuanced relationships between meditation duration and frequency and outcomes is a scant area of research needing further study to optimize and clarify dose-

response curves (Davidson & Dahl, 2018; Van Dam et al., 2018b). Further empirical study on this topic is needed to better clarify the minimal needed meditation home-practice (e.g., better to practice for some duration, even if not 45 min, every day). Such information would potentially enable meditation instructors and MBI facilitators to offer guidance to participants, based on empirical data, that encourages continued home practice and engagement in structured meditation programming. As meditation is likely a dose-dependent practice, further research is needed to elucidate the minimum threshold of frequency and duration, for both formal and informal practices, to determine the influence on expected outcomes. Additionally, further empirical work is required to determine how person-specific characteristics (e.g., psychiatric condition) and meditation techniques practiced interacts with the effects of frequency and duration of meditation related outcomes.

Limitations and Future Research

This preliminary investigation into the benefits of participating in a 9-months structured Bon Dzogchen meditation program has several limitations that may inform future lines of research. First, is the noteworthy absence of a comparison control group, which restricts the extent to which causal inference can be made regarding favorable outcomes observed from 3DCP participation. Second, several aspects of the study must be considered with regard to the limitations of study generalizability. All study participants were well-educated and financially and occupationally situated to take one-day off of work, per month, to attend and participate in the 3DCP program. Thus, findings may not generalize to individuals with greater occupational or financial constraints. The

study sample was comprised of individuals with some degree of familiarity with, interest in, or at minimum a receptivity to Tibetan Buddhism. As such, an inherent recruitment bias may further restrict generalizability, especially among those unfamiliar with or generally opposed to Buddhist practices. Lastly, the study sample was comprised of individuals with a significant degree of variability with meditation practice prior to beginning the 3DCP program (i.e., range of meditation practice: 1–20 years). The small sample size restricted the ability to determine the extent to which prior meditation practice influenced engagement with 3DCP or study outcomes. Future research is needed to replicate the present findings, ideally with a large sample of participants with varying degrees of meditation experience to account for the potential influence of individual differences on study outcomes (i.e., novice meditators vs experienced meditators).

Third, numerous methodological concerns were present related to assessment of change. Assessment measures presented here are quantitative and may either reflect indirect benefits experienced from program participation or may be insufficient to assess improvements experienced as a result of program participation. Although the intention of the 3DCP program was to facilitate familiarity with nondual awareness of being in the *Inner Refuge*, this outcome was not assessed. In this preliminary investigation of outcomes related to programmatic TMB meditation training through the 3DCP, measures of depression, stress, and mindfulness are reported. These variables were selected as they are among the most frequently assessed to evaluate outcomes among meditation training and MBIs more generally. Although a direct comparison between contemporary MBIs is neither possible nor appropriate in the present study, findings from these measures contextualize the potential benefit of the Dzogchen-based 3DCP in the larger literature of MBIs. Future studies on the 3DCP will replicate the present findings with other measures that were administered but not evaluated. Future studies examining TMB practices may benefit through the use of assessments measuring ‘non-ordinary states’ experienced in meditation practice as salient outcomes themselves or mechanisms of change. For example, examining the four immeasurable qualities (i.e., loving-kindness, compassion, joy, and equanimity; Kraus & Sears, 2009) and nondual awareness (Hanley et al., 2018) may yield insights regarding the benefits specific to the meditation practices included in the 3DCP program. As this is a preliminary investigation on outcomes related to the 3DCP, measures of depression, stress, and mindfulness are reported. Fourth, all measurements of meditation recordings were completed by participants using pencil-paper format and submitted to researchers on a monthly basis. It is possible that this method of assessing meditation home practice is an unreliable method for accurately recording participant meditation practice. Future studies may consider using automated real-time response to more accurately and reliably

(Crane et al., 2014) record meditation practice (i.e., daily text-message notifications prompting participants to record their meditation practice). As the field continues to evolve the methodology for recording meditation home practice (Parsons et al., 2017), continued efforts are needed to adequately assess this variable as it relates to outcomes. Lastly, this study did not include assessment of meditation-related adverse effects. Given the intensity of the 3DCP program and variability of participants’ prior meditation experiences, consistent evaluation of adverse effects in future studies is warranted (Britton et al., 2021; Van Dam et al., 2018a). Despite methodological concerns, results from the present study substantiate further investigation into TMB practices and continued investigation into feasibility and benefits of structured implementation of programs espousing traditional Tibetan meditation practices.

The present study was not set up to draw comparisons between the 3DCP and contemporary MBIs. While both traditional TMB practices and contemporary MBIs aim to foster mental health through meditation, there are fundamental distinctions between these programmatic approaches. The 3DCP program is unique, relative to current formulations of MBIs (i.e., MBSR, MBCT), in the meditation instruction that focuses on TMB practices (*Tsa Lung* vs body-scan), length of meetings (7 h vs 2.5 h), frequency and scheduling of meetings (nine monthly meetings vs 8 weekly meetings) and the incorporation of meditation retreats (2-days vs 1 day). Therefore, a direct comparison between the 9-months 3DCP program and contemporary eight-weeks MBIs is not appropriate. However, findings from the present study demonstrating improvements in mindfulness, stress and depression help to contextualize the favorable changes observed through the 3DCP program within the broader context of MBI research. Efforts are currently underway to develop an 8-weeks version of the 3DCP to compare to MBSR through a randomized controlled trial. By equating the 3DCP to MBSR in terms of group meeting length and program duration, direct comparisons of between these approaches will be possible. Future work will be able to better determine 3DCP feasibility, program engagement, and effectiveness relative to more commonly used MBIs.

Conclusions

The present study supports the preliminary effectiveness of a novel TMB meditation program for healthy adults employed within the medical and mental healthcare field and suggest the relevance of frequency, rather than total time, of home meditation practice, as being particularly beneficial. The present study adds to the literature by expanding the investigative focus to ancient meditation practices not commonly studied. The favorable results encourage continued investigation into traditional TMB Buddhist meditation techniques and further consideration for

how such practices might be incorporated or modified into other meditation training programs. Additionally, this study adds to the small, but growing, literature on the relationship between meditation home practice and favorable outcomes. There are important practical implications that suggest strong consideration for further research into meditation instructors and MBI facilitators recommending more frequent and shorter home-meditation practices as opposed to prescription of longer practices (i.e., 45 min), which participants may find overly burdensome. Although this is a preliminary study, findings encourage continued investigation into the benefits of TMB practices in general as well as the 3DCP specifically.

Funding This work was funded in part by the NIH-Funded Delaware Center for Neuroscience Research (P20-GM103653), a mechanism which supported the lead author's time required for data collection during his employment at Delaware State University. Funding support additionally came through an anonymous donor that contributed funds to the 3-Doors, which enabled implementation of the 3 Doors program and supported enrollment of all participants into the program, free of charge.

Data Availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

All procedures performed in studies involving human participants were in accordance with the ethical standards of the Institutional Review Board (IRB) at West Chester University of Pennsylvania and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Allen, T. D., Henderson, T. G., Mancini, V. S., & French, K. A. (2017). Mindfulness and meditation practice as moderators of the relationship between age and subjective wellbeing among working adults. *Mindfulness*, 8(4), 1055–1063. <https://doi.org/10.1007/s12671-017-0681-6>
- Alsubaie, M., Abbott, R., Dunn, B., Dickens, C., Keil, T. F., Henley, W., & Kuyken, W. (2017). Mechanisms of action in mindfulness-based cognitive therapy (MBCT) and mindfulness-based stress reduction (MBSR) in people with physical and/or psychological conditions: A systematic review. *Clinical Psychology Review*, 55, 74–91. <https://doi.org/10.1016/j.cpr.2017.04.008>
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27–45. <https://doi.org/10.1177/1073191105283504>
- Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., ... & Williams, J. M. G. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and nonmeditating samples. *Assessment*, 15(3), 329–342. <https://doi.org/10.1177/1073191107313003>
- Black, D. S. (2018). Mindfulness journal publications by year, 1980–2018. Retrieved from: <https://goamra.org/resources/>
- Britton, W. B., Lindahl, J. R., Cooper, D. J., Canby, N. K., & Palitsky, R. (2021). Defining and measuring meditation-related adverse effects in mindfulness-based programs. *Clinical Psychological Science*. <https://doi.org/10.1177/2167702621996340>
- Bunce, D. M., Flens, E. A., & Neiles, K. Y. (2010). How long can students pay attention in class? A study of student attention decline using clickers. *Journal of Chemical Education*, 87(12), 1438–1443. <https://doi.org/10.1021/ed100409p>
- Burton, A., Burgess, C., Dean, S., Koutsopoulou, G. Z., & Hugh-Jones, S. (2017). How effective are mindfulness-based interventions for reducing stress among healthcare professionals? A systematic review and meta-analysis. *Stress and Health*, 33(1), 3–13. <https://doi.org/10.1002/smi.2673>
- Cash, E., Salmon, P., Weissbecker, I., Rebholz, W. N., Bayley-Veloso, R., Zimmaro, L. A., Floyd, A., Dedert, E., & Sепhton, S. E. (2015). Mindfulness meditation alleviates fibromyalgia symptoms in women: Results of a randomized clinical trial. *Annals of Behavioral Medicine*, 49(3), 319–330. <https://doi.org/10.1007/s12160-014-9665-0>
- Chandra L, Namdak T, editors. (1968). The magical wheel oral wisdom quintessential instructions from the Great Perfection Oral Transmission of Zhang Zhung (reproduced from an original XI century manuscript). In: Chandra L, Mandak T, editors. *History and doctrines of Bonpo Yoga* (Satapitaka series, volume 73) [in Tibetan]. New Dehli: International Academy of Indian Culture (pp. 631–643).
- Chaoul, A., Milbury, K., Sood, A. K., Prinsloo, S., & Cohen, L. (2014). Mind-body practices in cancer care. *Current Oncology Reports*, 16(12), 417. <https://doi.org/10.1007/s11912-014-0417-x>
- Chaoul, A., Milbury, K., Spelman, A., Basen-Engquist, K., Hall, M. H., Wei, Q., ... & Babiera, G. V. (2018). Randomized trial of Tibetan yoga in patients with breast cancer undergoing chemotherapy. *Cancer*, 124(1), 36–45. <https://doi.org/10.1002/ncr.30938>
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385–396. <https://doi.org/10.2307/2136404>
- Cohen, L., Warneke, C., Fouladi, R. T., Rodriguez, M. A., & Chaoul-Reich, A. (2004). Psychological adjustment and sleep quality in a randomized trial of the effects of a Tibetan yoga intervention in patients with lymphoma. *Cancer: Interdisciplinary International Journal of the American Cancer Society*, 100(10), 2253–2260. <https://doi.org/10.1002/ncr.20236>
- Crane, C., Crane, R. S., Eames, C., Fennell, M. J., Silverton, S., Williams, J. M. G., & Barnhofer, T. (2014). The effects of amount of home meditation practice in mindfulness based cognitive therapy on hazard of relapse to depression in the staying well after depression trial.

- Behaviour Research and Therapy*, 63, 17–24. <https://doi.org/10.1016/j.brat.2014.08.015>
- Davidson, R. J., & Dahl, C. J. (2018). Outstanding challenges in scientific research on mindfulness and meditation. *Perspectives on Psychological Science*, 13(1), 62–65. <https://doi.org/10.1177/1745691617718358>
- Dunne, J. D. (2015). Buddhist styles of mindfulness: A heuristic approach. In B. D. Ostafin, M. D. Robinson, & B. P. Meier (Eds.), *Handbook of mindfulness and self-regulation* (pp. 251–270). Springer.
- Fredrickson, B. L., Boulton, A. J., Firestone, A. M., Van Cappellen, P., Algoe, S. B., Brantley, M. M., et al. (2017). Positive emotion correlates of meditation practice: A comparison of mindfulness meditation and loving-kindness meditation. *Mindfulness*, 8(6), 1623–1633. <https://doi.org/10.1007/s12671-017-0735-9>
- Gethin, R. (2015). Buddhist conceptualizations of mindfulness. In K. W. Brown, J. D. Creswell, & R. M. Ryan (Eds.), *Handbook of mindfulness: Theory, research, and practice* (pp. 9–41). Guilford Press.
- Goldberg, S. B., Tucker, R. P., Greene, P. A., Davidson, R. J., Wampold, B. E., Kearney, D. J., & Simpson, T. L. (2018). Mindfulness-based interventions for psychiatric disorders: A systematic review and meta-analysis. *Clinical Psychology Review*, 59, 52–60. <https://doi.org/10.1016/j.cpr.2017.10.011>
- Goldberg, S. B., Riordan, K. M., Sun, S., & Davidson, R. J. (2021). The empirical status of mindfulness-based interventions: A systematic review of 44 meta-analyses of randomized controlled trials. *Perspectives on Psychological Science*. <https://doi.org/10.1177/1745691620968771>
- Gotink, R. A., Chu, P., Busschbach, J. J., Benson, H., Fricchione, G. L., & Hunink, M. M. (2015). Standardised mindfulness-based interventions in healthcare: An overview of systematic reviews and meta-analyses of RCTs. *PLoS One*, 10(4), e0124344. <https://doi.org/10.1371/journal.pone.0124344>
- Grabovac, A. D., Lau, M. A., & Willett, B. R. (2011). Mechanisms of mindfulness: A Buddhist psychological model. *Mindfulness*, 2(3), 154–166. <https://doi.org/10.1007/s12671-011-0054-5>
- Gross, C. R., Kreitzer, M. J., Reilly-Spong, M., Wall, M., Winbush, N. Y., Patterson, R., Mahowald, M., & Cramer-Bornemann, M. (2011). Mindfulness-based stress reduction versus pharmacotherapy for chronic primary insomnia: A randomized controlled clinical trial. *Explore*, 7(2), 76–87. <https://doi.org/10.1016/j.explore.2010.12.003>
- Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of mediation studies. *Clinical Psychology Review*, 37, 1–12. <https://doi.org/10.1016/j.cpr.2015.01.006>
- Hanley, A. W., Nakamura, Y., & Garland, E. L. (2018). The nondual awareness dimensional assessment (NADA): New tools to assess nondual traits and states of consciousness occurring within and beyond the context of meditation. *Psychological Assessment*, 30(12), 1625–1639. <https://doi.org/10.1037/pas0000615>
- Harrington, A., & Dunne, J. D. (2015). When mindfulness is therapy: Ethical qualms, historical perspectives. *American Psychologist*, 70(7), 621–631. <https://doi.org/10.1037/a0039460>
- Hartley, J., & Davies, I. K. (1978). Note-taking: A critical review. *Programmed Learning and Educational Technology*, 15(3), 207–224. <https://doi.org/10.1080/0033039780150305>
- Johnstone, A. H., & Percival, F. (1976). Attention breaks in lectures. *Education in Chemistry*, 13(2), 49–50.
- Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. Hyperion.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10(2), 144–156. <https://doi.org/10.1093/clipsy.bpg016>
- Krätzeloh, C. U. (2019). Phenomenological research fails to capture the experience of nondual awareness. *Mindfulness*, 10(1), 15–25. <https://doi.org/10.1007/s12671-018-0995-z>
- Kraus, S., & Sears, S. (2009). Measuring the immeasurables: Development and initial validation of the self-other four Immeasurables (SOFI) scale based on Buddhist teachings on loving kindness, compassion, joy, and equanimity. *Social Indicators Research*, 92(1), 169–181. <https://doi.org/10.1007/s11205-008-9300-1>
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Lindsay, E. K., & Creswell, J. D. (2017). Mechanisms of mindfulness training: Monitor and acceptance theory (MAT). *Clinical Psychology Review*, 51, 48–59. <https://doi.org/10.1016/j.cpr.2016.10.011>
- Lloyd, A., White, R., Eames, C., & Crane, R. (2018). The utility of home-practice in mindfulness-based group interventions: A systematic review. *Mindfulness*, 9(3), 673–692. <https://doi.org/10.1007/s12671-017-0813-z>
- Lopez, G., Chaoul, A., Powers-James, C., Spelman, A., Wei, Q., Engle, R., Hashmi, Y., Bruera, E., & Cohen, L. (2018). A pragmatic evaluation of symptom distress after group meditation for cancer patients and caregivers: A preliminary report. *Journal of Pain and Symptom Management*, 55(5), 1321–1326. <https://doi.org/10.1016/j.jpainsymman.2018.01.018>
- Lutz, A., Slagter, H. A., Dunne, J. D., & Davidson, R. J. (2008). Attention regulation and monitoring in meditation. *Trends in Cognitive Sciences*, 12(4), 163–169. <https://doi.org/10.1016/j.tics.2008.01.005>
- Milbury, K., Chaoul, A., Biegler, K., Wangyal, T., Spelman, A., Meyers, C. A., Arun, B., Palmer, J. L., Taylor, J., & Cohen, L. (2013). Tibetan sound meditation for cognitive dysfunction: Results of a randomized controlled pilot trial. *Psycho-Oncology*, 22(10), 2354–2363. <https://doi.org/10.1002/pon.3296>
- Milbury, K., Chaoul, A., Engle, R., Liao, Z., Yang, C., Carmack, C., ... & Cohen, L. (2015). Couple-based Tibetan yoga program for lung cancer patients and their caregivers. *Psycho-Oncology*, 24(1), 117. <https://doi.org/10.1002/pon.3588>
- Milbury, K., Engle, R., Tsao, A., Liao, Z., Owens, A., Chaoul, A., Bruera, E., & Cohen, L. (2018). Pilot testing of a brief couple-based mind-body intervention for patients with metastatic non-small cell lung cancer and their partners. *Journal of Pain and Symptom Management*, 55(3), 953–961. <https://doi.org/10.1016/j.jpainsymman.2017.11.027>
- Namgyal, D. T., & Lhalungpa, L. P. (2006). *Mahamudra: The moonlight–quintessence of mind and meditation*. Simon and Schuster.
- Nezu, A. M., Ronan, G. F., Meadows, E. A., & McClure, K. S. (Eds.). (2000). *Practitioner's guide to empirically-based measures of depression*. Springer Science & Business Media.
- Parsons, C. E., Crane, C., Parsons, L. J., Fjorback, L. O., & Kuyken, W. (2017). Home practice in mindfulness-based cognitive therapy and mindfulness-based stress reduction: A systematic review and meta-analysis of participants' mindfulness practice and its association with outcomes. *Behaviour Research and Therapy*, 95, 29–41. <https://doi.org/10.1016/j.brat.2017.05.004>
- Parsons, C. E., Madsen, M. A., Jensen, K. L., Kæseler, S., Fjorback, L. O., Piet, J., Roepstorff, A., & Linehan, C. (2020). Smartphone monitoring of participants' engagement with home practice during mindfulness-based stress reduction: Observational study. *JMIR Mental Health*, 7(1), e14467. <https://doi.org/10.2196/14467>
- Perich, T., Manicavasagar, V., Mitchell, P. B., & Ball, J. R. (2013). The association between meditation practice and treatment outcome in mindfulness-based cognitive therapy for bipolar disorder. *Behaviour*

- Research and Therapy*, 51(7), 338–343. <https://doi.org/10.1016/j.brat.2013.03.006>
- Samlek M. The three basic mother Tantras with commentaries (reproduced from the original XI century manuscript belonging to the monastery of Samling, Dolpo, Nepal) [in Tibetan]. (1971).
- Santorelli SF, Kabat-Zinn J, Blacker M, Meleo-Meyer F, Koerbel L (2017) Mindfulness-based stress reduction (MBSR) authorized curriculum guide. *Center for Mindfulness in Medicine, Health Care, and Society (CFM)*. University of Massachusetts Medical School.
- Schoormans, D., & Nyklíček, I. (2011). Mindfulness and psychologic well-being: Are they related to type of meditation technique practiced? *The Journal of Alternative and Complementary Medicine*, 17(7), 629–634. <https://doi.org/10.1089/acm.2010.0332>
- Segal, Z. V., Williams, J. M., & Teasdale, J. (2013). *Mindfulness-based cognitive therapy for depression* (2nd ed.). Guilford Press.
- Segal, Z., Dimidjian, S., Vanderkruik, R., & Levy, J. (2019). A maturing mindfulness-based cognitive therapy reflects on two critical issues. *Current Opinion in Psychology*, 28, 218–222. <https://doi.org/10.1016/j.copsyc.2019.01.015>
- Shapiro, B. G., Greenberg, J., Pedrelli, P., de Jong, M., & Desbordes, G. (2018). Mindfulness-based interventions in psychiatry. *Focus*, 16(1), 32–39. <https://doi.org/10.1176/appi.focus.20170039>
- Snellgrove, D. L. (1987). *Indo-Tibetan Buddhism, Indian Buddhists and their Tibetan successors*. Serinda Publications.
- Sonam N, Gyaltzen PL, Gyatso K, editors. (1974). The Magical Wheel, channels and vitalbreath of the Oral Transmission of Zhang Zhung. (Commentary on: The Magical Wheel oral wisdom quintessential instructions from the Great Perfection Oral Transmission of Zhang Zhung) [in Tibetan]. In: Sonam N, Gyaltzen PL, Gyatso K (eds.), *The vast treasury of profound space*. New Thobgyal: Tibetan Bonpo Monastic Centre (pp. 321–346).
- Specia, M., Carlson, L. E., Goodey, E., & Angen, M. (2000). A randomized, wait-list controlled clinical trial: The effect of a mindfulness meditation-based stress reduction program on mood and symptoms of stress in cancer outpatients. *Psychosomatic Medicine*, 62(5), 613–622. <https://doi.org/10.1097/00006842-200009000-00004>
- Stahl, B., & Goldstein, E. (2019). *A mindfulness-based stress reduction workbook*. New Harbinger Publications.
- Strohmaier, S., Jones, F. W., & Cane, J. E. (2021). Effects of length of mindfulness practice on mindfulness, depression, anxiety, and stress: A randomized controlled experiment. *Mindfulness*, 12(1), 198–214. <https://doi.org/10.1007/s12671-020-01512-5>
- Van Dam, N. T., van Vugt, M. K., Vago, D. R., Schmalzl, L., Saron, C. D., Olendzki, A., et al. (2018a). Mind the hype: A critical evaluation and prescriptive agenda for research on mindfulness and meditation. *Perspectives on Psychological Science*, 13(1), 36–61. <https://doi.org/10.1177/1745691617709589>
- Van Dam, N. T., van Vugt, M. K., Vago, D. R., Schmalzl, L., Saron, C. D., Olendzki, A., et al. (2018b). Reiterated concerns and further challenges for mindfulness and meditation research: A reply to Davidson and Dahl. *Perspectives on Psychological Science*, 13(1), 66–69. <https://doi.org/10.1177/1745691617727529>
- Van Schaik, S. (2004). The early days of the great perfection. *Journal of the International Association of Buddhist Studies*, 27(1), 165–206.
- Vettese, L. C., Toneatto, T., Stea, J. N., Nguyen, L., & Wang, J. J. (2009). Do mindfulness meditation participants do their homework? And does it make a difference? A review of the empirical evidence. *Journal of Cognitive Psychotherapy*, 23(3), 198–225. <https://doi.org/10.1891/0889-8391.23.3.198>
- Wangyal, T. (2006). *Tibetan sound healing*. Sounds True.
- Wangyal, T. (2011a). *Awakening the sacred body: Tibetan Yogas of breath and movement*. Hay House, Inc.
- Wangyal, T. (2011b). *Tibetan yogas of body, speech, and mind*. Shambhala Publications.
- Wangyal, T. (2015). *Awakening the luminous mind: Tibetan meditation for inner peace and joy*. Hay House Inc..
- Wielgosz, J., Goldberg, S. B., Kral, T. R., Dunne, J. D., & Davidson, R. J. (2019). Mindfulness meditation and psychopathology. *Annual Review of Clinical Psychology*, 15, 285–316. <https://doi.org/10.1146/annurev-clinpsy-021815-093423>
- Wiseheart, M., Küpper-Tetzl, C. E., Weston, T., Kim, A. S. N., Kapler, I. V., & Foot-Seymour, V. (2019). Enhancing the quality of student learning using distributed practice. In J. Dunlosky & K. A. Rawson (Eds.), *The Cambridge handbook of cognition and education* (pp. 550–583). Cambridge University Press.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.