

10-17-2017

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Rudaz, Myriam; Twohig, Michael P.; Ong, Clarissa W.; and Levin, Michael E., "Mindfulness and acceptance-based trainings for fostering self-care and reducing stress in mental health professionals: A systematic review" (2017). *Psychology Faculty Publications*. Paper 1606.

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Running Head: SELF-CARE IN MENTAL HEALTH PROFESSIONALS

Mindfulness and acceptance-based trainings for fostering self-care and reducing stress
in mental health professionals: A systematic review

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Acknowledgment

We thank Thomas Ledermann for helpful comments.

Abstract

This review summarizes the effectiveness of Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Mindful Self-Compassion (MSC), and Acceptance and Commitment Therapy (ACT) to foster self-care and reduce stress in mental health professionals. Twenty-four quantitative articles from PsycInfo and PubMed were identified that focused on mindfulness, self-compassion, psychological flexibility, stress, burnout, or psychological well-being. All MBSR and MBCT studies lacked active control conditions, but some of the ACT studies and one MSC study included an active control. Most studies support evidence that all training programs tend to improve mindfulness and some also self-compassion. In addition, psychological flexibility was measured in the ACT studies and tends to improve over time. Further, MBSR, MSC, and ACT tend to reduce stress or burnout. The results were less supportive for psychological well-being. The value of the various training adaptations as well as directions for future research are discussed.

Keywords: Mental health professionals, stress, burnout, mindfulness, acceptance and commitment, self-compassion, systematic review

MINDFULNESS AND ACCEPTANCE-BASED TRAININGS FOR FOSTERING
SELF-CARE AND REDUCING STRESS IN MENTAL HEALTH PROFESSIONALS:
A SYSTEMATIC REVIEW

Introduction

Working as a mental health professional can lead to satisfaction (Stamm, 2010), but there is evidence to suggest that mental health professionals, including trainees, are more vulnerable to increased levels of stress than other occupational groups (e.g., Burrows & McGrath, 2000; Farber & Heifetz, 1982; Lloyd, King, & Chenoweth, 2002; Pakenham & Stafford-Brown, 2012, Sherman, 1996; Smith & Moss, 2009). This may be because mental health professionals face emotional strain over extended periods of time (Moore & Cooper, 1996) and their sensitivity to people (Pines & Kafry, 1978), which increases the risk of burnout. According to Maslach and Jackson (1981), burnout is a syndrome that occurs among individuals who do “people-work” of some kind. A key aspect of burnout is emotional exhaustion, or feeling that one is no longer able to give oneself to clients. Another aspect is the development of negative, cynical attitudes and feelings about one’s clients (depersonalization). A third aspect of the burnout syndrome is the tendency to evaluate oneself negatively with regard to one’s work with clients (low personal accomplishment).

High rates of burnout have been reported for psychologists, psychiatrists, and social workers (e.g., Craig & Sprang, 2010; Cushway, 1992; Kumary & Baker, 2008; Newell & MacNeil, 2011; Rosenberg & Pace, 2006; Rossi et al., 2012; Sprang, Clark, & Whitt-Woosley, 2007; Volpe et al., 2014; Vredenburgh, Carlozzi, & Stein, 1999) and higher rates of suicide were found among psychiatrists than in any other medical

practitioners (Rich & Pitts, 1980; Bourgeois, Peyre, Delile, & Pommereau, 1987).

Stress may also negatively impact patient care because it reduces attention, decision-making skills, and the ability to establish positive relationships with clients (e.g. Klein, 1996; Renjilian, Baum, & Landry, 1998; Skosnik, Chatterton, Swisher, & Park, 2000).

The therapeutic relationship has been shown to correlate more highly with client outcome than specific therapy techniques (e.g., Lambert & Barley, 2001; Priebe, Richardson, Cooney, Adedeji, & McCabe, 2011), further emphasizing the possible negative impact of stress on patient care.

In the light of the serious consequences to both the mental health professionals and their clients, the ability to engage in their own self-care, is recognized as essential for mental health professionals and trainees (e.g., Barnett, Baker, Elman, & Schoener, 2007; Schwartz-Mette, 2009; Wicks, 2008). Self-care, described as self-initiated practices that enhance health and positive well-being (Bickley, 1998), can be drawn from many sources, including mindfulness practices (O'Halloran & Linton, 2000; Wise, Hersh, & Gibson, 2012).

Research has found that higher levels of mindfulness are related to increased work satisfaction among practicing psychotherapists (May & O'Donovan, 2007) as well as lower burnout among psychologists (Di Benedetto & Swadling, 2014; May & O'Donovan, 2007) and counselling interns (Testa & Sangganjanavanich, 2016).

Research with mental health professionals has also found that mindfulness is a significant mediator between self-care and well-being (Richards, Campenni, & Muse-Burke, 2010), further indicating mindfulness is a key target for self-care approaches seeking to improve burnout and well-being. Moreover, higher levels of mindfulness in

clinicians are positively correlated with the therapeutic alliance or therapeutic relationship (Razzaque, Okoro, & Wood, 2013).

Mindfulness can be defined as paying attention in a particular way, on purpose, in the present moment, and non-judgmentally (Kabat-Zinn, 2005). In other words, it can be seen as a process of regulating attention in order to bring a quality of curiosity, openness, and acceptance to current experience (Bishop et al., 2004). Baer, Smith, and Allen (2004) describe four core components of mindfulness: (1) *observing*, noticing, or attending to internal and external experiences (e.g., cognitions, emotions, bodily sensations) and to pay attention to elements (e.g., location, intensity, duration), (2) *describing* the observed experiences by single words such as “sadness” or “thinking” or when repetitive patterns of thoughts are observed by phrases such as “worrying about my job”, (3) *acting with awareness* which means doing one thing at a time with undivided attention as opposed to behaving on “automatic pilot”, and (4) *accepting without judgment* which refers to allowing present-moment experiences to be as they are and to refrain from applying labels such as good/bad, right/wrong, or worthwhile/worthless. Another mindfulness-related construct is self-compassion, defined as the ability to treat yourself with care and concern when considering personal inadequacies, mistakes, failures, and painful situations (Neff, 2003a, 2003b). According to Neff (2003a, 2003b) self-compassion consists of three core components: (1) *mindfulness* as being aware of one’s painful experiences in an equilibrated way (as opposed to over-identification with feelings or thoughts), (2) *common humanity* or recognizing that failure is part of being human (as opposed to feelings of isolation), and (3) *self-kindness* or the ability to be caring and understanding to oneself and to respond to own struggles with warmth (as opposed to being self-judgmental).

Various mindfulness-based trainings have been applied to mental health professionals and trainees. For instance, the Mindfulness-Based Stress Reduction program (MBSR; Kabat-Zinn, 1982; Kabat-Zinn, 2005; Kabat-Zinn, Lipworth, & Burney, 1985), initially developed for pain management, is a structured group training usually spread over an 8-week period. It consists of weekly 2 to 2.5-hour sessions plus one silent retreat day (7-8 hours) and daily home assignments (45-60 minutes). The program teaches formal and informal mindfulness practices. The formal practices include: A body scan, hatha yoga, and different forms of meditation such as sitting and walking meditation. The informal practices refer to mindfulness during daily activities such as awareness of breathing, doing the dishes, or taking a shower by focusing one's attention completely on that activity. The home assignments include primarily practicing formal mindfulness by using guided audio CDs.

Following Kabat-Zinn's MBSR approach, an 8-week Mindfulness-Based Cognitive Therapy program (MBCT; Segal, Williams, & Teasdale, 2013) was developed to prevent recurrent episodes of clinical depression. Similar to the MBSR program, MBCT consists of weekly 2 to 2.5-hour group sessions, one silent retreat day (7-8 hours), and daily home assignments (45-60 minutes). It incorporates formal and informal mindfulness practices with elements of cognitive behavioral therapy (CBT; Beck, Rush, Shaw, & Emery, 1979). The CBT component of the program includes psychoeducation about the nature of thoughts as mental events rather than facts in order to prevent the elaboration of ruminative depressogenic thought patterns. Further, participants are trained to recognize early warning signs of depression by emphasizing the links between thinking, bodily sensations, behaviors, and emotions.

In terms of structured programs focused on mindful meditation, there is also an 8-week program called Mindful Self-Compassion (MSC; Germer & Neff, 2013; Neff & Germer, 2013), which was designed to cultivate the skill of self-compassion. The program consists of weekly 2 to 2.5-hour sessions plus one half-day silent retreat (4 hours), and daily home assignments (40 minutes). The program teaches formal and informal self-compassion practices. The formal practices include, for example, a self-compassion meditation, affectionate breathing or a compassionate body scan. The informal practices are taught such as placing one's hands on one's heart in times of stress, or repeating a set of memorized self-compassion phrases (e.g., "May I be kind to myself").

Other mindfulness and acceptance-based approaches that are less structured around contemplative practices have also been applied to mental health professionals. Most notably, Acceptance and Commitment Therapy (ACT; Hayes et al., 1999; Hayes, Strosahl, & Wilson, 2012), a contextual cognitive behavioral therapy focused on enhancing mindfulness, acceptance, and engagement in valued activities. The core target of ACT is psychological flexibility, which may be described as the ability to engage in meaningful patterns of activity while being mindful and accepting of whatever arises in the present moment. Although ACT does use formal meditation exercises at times, it takes a broader and more flexible approach in terms of the methods used to enhance mindfulness as well as connect mindfulness to engagement in valued activities (e.g., interactive and experiential exercises, metaphors, shaping behaviors in the context of the therapeutic relationship/interactions). Another mindfulness and acceptance-based approach is Dialectical Behavior Therapy (DBT; Linehan, 1993).

However, we did not find any studies evaluating the effectiveness of DBT in mental health professionals.

Mindfulness-based interventions in general have been found to have a moderate effect on health professionals stress level (Burton, Burgess, Dean, Koutsopoulou, & Hugh-Jones, 2017). In particular, for MBSR, the health professionals benefited the most relative to other healthy stressed populations (Khoury, Sharma, Rush, & Fournier, 2015). The current study aimed to examine mindfulness as well as acceptance-based interventions in mental health professionals, including trainees, because they constitute a unique group in that they work with emotional stress.

Method

Procedure

A review was conducted on quantitative studies examining the effectiveness of mindfulness and acceptance-based trainings for fostering self-care and reducing stress in mental health professionals. Articles were retrieved through the web database, EBSCOhost (i.e., PsycInfo, PubMed) and included all years up to November 30, 2016. Articles were identified using the keyword terms *mindfulness* or *mindfulness-based* or *MBSR* or *MBCT* or *self-care* or *acceptance and commitment* or *ACT* or *self-compassion* in pairwise combination with (“AND”) *health professional(s)* or *psychologist(s)* or *psychiatrist(s)* or *clinician(s)* or *therapist(s)* or *counselor(s)* or *social worker(s)*, or *clinical psychology trainee(s)* or *student(s)*. The articles had to meet the following criteria to be included in the current review: (a) included a sample of mental health professionals and/or mental health professionals in training (i.e., “psychologists”, “psychiatrists”, “clinicians”, “therapists”, “counselors”, “social workers”, and students

in the corresponding fields), (b) included a mindfulness or acceptance-based training (i.e., “mindfulness”, “Mindfulness-Based Stress Reduction/MBSR”, “Mindfulness-Based Cognitive Therapy/MBCT”, “self-compassion”, “Acceptance and Commitment Therapy/ACT”), and (c) included outcome measures related to mindfulness, self-compassion, psychological flexibility, stress, burnout, or psychological well-being. In order to get a comprehensive overview of the literature, methodologies included single-condition, non-randomized cohort control, and randomized controlled designs.

Reference lists from articles that met these criteria were reviewed for additional eligible studies. Studies were excluded for five reasons. First, studies that included primarily participants other than specified previously (e.g., physicians, occupational therapists, intellectual disability staff, nurses, broad sample of health professionals; Bazarko, Cate, Azocar, & Kreitzer, 2013; Bethay, Wilson, Schnetzer, Nassar, & Bordieri, 2013; Halland et al., 2015; Reid, 2013; Salyers et al., 2011; Shapiro, Astin, Bishop, & Cordova, 2005; Warnecke, Quinn, Ogden, Towle, & Nelson, 2011) were excluded. Second, studies testing associations of variables rather than the effectiveness of the training (e.g., ACT processes and adjustment outcomes; Pakenham, 2015a) were excluded. Third, studies that were not primarily mindfulness or acceptance-based or did not include mindfulness and acceptance-based elements (e.g., Integral Life Practice, solution-focused counselling; Burkhart, 2014; Mache, Bernburg, Baresi, & Groneberg, 2016) were excluded. Fourth, studies that did not include outcome measure as specified above (e.g., understanding of how mind-body practice relates to social work; Raheim & Lu, 2014) were excluded. And finally, if the studies were qualitative in nature (e.g., Christopher et al., 2011; Christopher & Maris, 2010; Dorian & Killebrew, 2014; Felton,

Coates, & Christopher, 2015) were excluded. Overall, the review identified 28 eligible research articles reporting a total of 25 studies.

Results

Study characteristics.

Characteristics of each study are displayed in Table 1. MBSR trainings (11 studies, 11 articles) were the most common, followed by ACT (seven studies, nine articles), MBCT (four studies, five articles), and MSC (two studies, two articles). The average duration of the trainings were 16.3 hours for MBSR, 13.1 hours for ACT (when accounting 6 hours for one training day), 17 hours for MBCT, and 6.4 hours for MSC. In 13 studies (52%), the participants were students or trainees, in 10 studies (40%) professionals, and in 2 studies (8%) they were mixed. Six out of eight ACT studies used a randomized controlled trial (RCT) design. These were the only studies that used randomized group designs, besides one MSC study (Smeets, Neff, Alberts, & Peters, 2014). All MBCT studies used an open trial design, and the MBSR studies an open trial or non-randomized cohort control design.

-Table 1 about here-

Outcomes.

The outcomes for each mindfulness and acceptance-based training approach, with a main focus on mindfulness, self-compassion, psychological flexibility, stress, burnout, and psychological well-being, will be described in the following sections.

Mindfulness-Based Stress Reduction Trainings.

Raab, Sogge, Parker, and Flament (2015) examined a standard 8-week MBSR program, consisting of weekly 2.5 hour sessions and one day of silence, in female mental health professionals at a mental health centre ($n = 22$). Data were collected before and after the training. The MBSR training significantly improved overall self-compassion (Self-Compassion Scale/SCS). Also, the three negative aspects of self-compassion, namely, self-judgment, isolation, and over-identification significantly decreased and one out of three positive aspects, common humanity, increased. However, no significant effect was found for overall burnout and aspects of burnout, as measured with the Maslach Burnout Inventory (MBI). The MBI assesses three aspects of burnout syndrome: emotional exhaustion, depersonalization, and lack of personal accomplishment. A total score can be comprised by combining two of the three subscale, emotional exhaustion and depersonalization. Also, no effect was found for quality of life (Quality of Life Inventory/QOLI; an aspect of psychological well-being).

Several studies have investigated variations of the standard MBSR program, which might be indicated given the challenges in engaging practitioners/trainees in a time intensive self-care program, particularly for those who are experiencing high stress. One approach has been to evaluate MBSR as a program integrated within trainees' courses. This might be a particularly feasible implementation method that also increases participants' engagement. Shapiro, Brown, and Biegel (2007) integrated an 8-week MBSR program, consisting of weekly 2-hour sessions, into a Stress and Stress Management course of master's level counseling psychology students ($n = 22$). Students of two other courses from the same program served as a non-randomized cohort control group ($n = 32$). Data were collected before and after the training. Student's perceived stress (Perceived Stress Scale/PSS-14) significantly decreased in the MBSR relative to

the control group and mindful attention and awareness (Mindful Attention Awareness Scale/MAAS) and self-compassion (SCS) significantly increased. Also, students in the MBSR group showed significant increases in positive affect and significant declines in negative affect (Positive and Negative Affect Schedule/PANAS), both aspects of psychological well-being, relative to the control group. Furthermore, students in the MBSR group showed significant decreases in anxiety (State Trait Anxiety Inventory/STAI) and rumination (Reflection Rumination Questionnaire/RRQ) relative to the control.

Napoli and Bonifas (2011) examined a rigorous 16-week course of mindfulness and self-care practice strategies in graduate social work students ($n = 31$). The training consisted of weekly 3-hour sessions and was offered as part of the Quality of Life Curriculum. Classroom activities focused on different aspects of self-care such as nutrition, exercise, creating healthy relationships and environments, exploring passions and intentionally exploring vision. Awareness of breathing was taught in every session. Students also completed a weekly journal describing their use of mindful practice at home, school, and field internship or work and were encouraged to practice one hour mindfulness twice a week using a CD, and completing mindfulness exercises in workbooks. At the end of the semester students participated in a mindfulness silent meal, where each student contributed food in a buffet style. Data were collected before, after, and six months following the completion of the training. The Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004) was administered. The inventory consists of a total score and four subscales: Observing, Describing, Acting with awareness, and Accepting without Judgement. Students made significant gains from pre to post in three mindfulness domains, namely Observing, Acting with awareness, and

Accepting without judgment. Response rates at follow-up were insufficient (percentage not indicated) and thus not included in the analyses.

Another modification to enhance implementation has been to reduce the amount of MBSR training time. Aggs and Bambling (2010) examined a slightly shorter 8-week mindful therapy training program, consisting of weekly 1.5-hour sessions, in mental health professionals (mixed group of psychologists, social workers, clinical nurses, counsellors, occupational therapists, and psychiatrists with the largest group being psychologists; $n = 47$). Data were collected before and after the training. The mental health professionals reported significantly lower levels of stress (Stress and tension ratings) after the training and a significantly higher capacity to invoke a mindful state of consciousness (Five-Minute Mindfulness Scale). Moreover, the mental health professionals' confidence to integrate mindfulness into therapeutic work as well as their perception of the relevance of mindfulness in relation to therapeutic work increased, but no effect was found for the intention to integrate mindfulness into therapeutic work (Mindful Therapy Questionnaire/MT-Q). In addition, the mental health professionals reported significantly greater in session-mindfulness (Mindful Therapy Scale/MT-S).

Cohen and Miller (2009) examined a 6-week interpersonal mindfulness training, consisting of weekly 1.5-hour sessions, in graduate counselling and clinical psychology students ($n = 21$). The interpersonal mindfulness training program is modelled after the manualized MBSR program, with an added emphasis placed on relational awareness and not only personal experiences. For instance, dyads performed a "mindful mirror" exercise in which partners take turns leading and following the spontaneous movements of the other. The training was offered as one way to fulfil course requirements. Data were collected before and after the training. Student's perceived stress (PSS-14)

significantly reduced and mindful attention and awareness (MAAS) significantly increased after the training. Also, a trend for increased satisfaction with life (Satisfaction With Life Scale/SWLS), an aspect of psychological well-being, was found. Moreover, effects were found for increased social connectedness (Social Connectedness Scale-Revised/SCS-R) and emotional intelligence (Self-Report of Emotional Intelligence/SREIT) as well as reduced anxiety (Beck Anxiety Inventory/BAI).

Brady, O'Connor, Burgermeister, and Hanson (2012) investigated a 4-week MBSR training, consisting of weekly 1-hour sessions, in mental health professionals at an outpatient behavioral health unit (mixed sample of psychiatric nurses, social workers, mental health technologists, psychiatrists, and recreational therapists with the largest group being psychiatric nurses; $n = 16$). The participants were paid for classes as a portion of work time. Data were collected before and after the training. Work-related stress (Mental Health Professionals Stress Scale/MHPSS) significantly decreased and mindfulness (Toronto Mindfulness Scale/TMS) increased after MBSR. However, there were no effects for overall burnout (MBI) as well as aspects of burnout, suggesting a more "mixed" pattern of outcomes. Furthermore, the study found that intrapersonal presence (Sense of Self Scale/SOSS) increased.

Botta, Cadet, and Maramaldi (2015) examined a single 3-hour long mindfulness intervention in master of social work students ($n = 34$). Data were collected before and after the training and showed that student's acquired knowledge, self-efficacy, and beliefs related to using mindfulness as a form of self-care increased (Survey developed by the authors).

Further, several studies investigated the effect of a small dose of mindfulness per session over the course of several weeks. Dobie, Tucker, Ferrari, and Rogers (2016) examined an 8-week MBSR program in mental health professionals from a non-acute inpatient mental health unit (mixed group of psychiatric nurses, social workers, occupational therapists, and psychologists; $n = 9$). The MBSR program was reduced to daily 15 minutes guided experiential mindfulness practice at the commencement of the morning shift plus three 30 minute education sessions to increase participant's understanding of the core components of mindfulness. Data were collected before and after the training. Participant's reported significant reductions on stress (Depression Anxiety Stress Scale/DASS). However, no effect was found for improving mindfulness (KIMS).

Gockel, Burton, James, and Bryer (2013) integrated 10 minutes of mindfulness into 28 clinical interviewing skills classes over the course of 10 weeks. First year graduate social work students were assigned by the registrar to clinical interviewing classes either including a mindfulness training ($n = 38$) or not including a mindfulness training ($n = 94$). The latter served as a non-randomized cohort control group. Data were collected before, after, and three months following the completion of the training. Students showed significant improvements on overall mindfulness (Freiburg Mindfulness Inventory/FMI) at follow-up in the mindfulness relative to the control group. However, there were no group differences on mindful attention and awareness (MAAS) nor for self-compassion (Self-Compassion Scale-Short Form/SCS-SF). Furthermore, students in the mindfulness group showed significant increases in counselling self-efficacy at post and follow-up relative to the control group. However,

there were no significant between-group differences for state anxiety (STAI), rumination (RRQ), and empathy (Interpersonal Reactivity Index/IRI).

Likewise, Moore (2008) investigated the effect of 10 minutes of mindfulness in 14 sessions over the course of 4 weeks as a lunchtime activity in clinical psychologists in training ($n = 10$). Data were collected before and after the training, but the study was very underpowered for analysing statistical pre to post effects (Wilcoxon signed rank tests). No effect was found for perceived stress (PSS-14) after the training, but significant increases in overall mindfulness skills (KIMS) and the Observing facet of mindfulness. Also, no effect was found for overall self-compassion (SCS), but one positive aspect of self-compassion, Self-Kindness, significantly increased.

And finally the effect of a mindfulness retreat was investigated. Although this is quite time intensive, it may support implementation by providing a clear set of days that the training will be completed and can be integrated into one's schedule. Razzaque and Wood (2016) offered a 2-day mindfulness retreat to psychiatrists or psychiatrists in training ($n = 26$). Data were collected before, after, and one week following the completion of the training. Overall mindfulness (FMI) significantly increased following the retreat and was maintained at follow-up. Also, overall burnout (MBI) significantly reduced from pre to follow-up. However, no effect was found for self-compassion (Santa-Clara Self-Compassion Scale). Furthermore, the therapeutic alliance (Working Alliance Inventory-Short Form/WAI-SF) significantly increased from pre to follow-up.

In sum, all MBSR studies used either an open trial (nine studies) or a non-randomized cohort controlled design (two studies). Five out of six MBSR studies found support for a decrease in stress from pre to post (Aggs & Bambling, 2010; Brady et al., 2012; Cohen & Miller, 2009; Dobie et al., 2016; Shapiro et al., 2007) with one relative

to a control (Shapiro et al., 2007). The study by Moore (2008) found no difference, which may be due to the small sample size. However, only one out of three open trial MBSR studies found a significant decrease in burnout (Razzaque & Wood, 2016). In addition, one out of three MBSR studies found that psychological well-being improved relative to a control (Shapiro et al., 2007). Looking at the mechanisms of change, eight out of ten MBSR studies found an increase in mindfulness after the training (Aggs & Bambling, 2010; Botta et al., 2015; Brady et al., 2012; Cohen & Miller, 2009; Moore, 2008; Napoli & Bonifas, 2011; Razzaque & Wood, 2016; Shapiro et al., 2007) with one relative to a control (Shapiro et al. 2007). In addition, one study found mixed effects (Gockel et al., 2013). Further, two out of five MBSR studies found support for an increase in self-compassion (Raab et al., 2015; Shapiro et al., 2007) with one relative to a control (Shapiro et al., 2007). An additional finding relevant for patient care is that one study found that the therapeutic alliance increased after the training (Razzaque & Wood, 2016).

Overall, this pattern suggests some positive initial support for MBSR on stress as well as mindfulness as a mechanism, but effects were mixed and less supportive for burnout, self-compassion, and psychological well-being. Also, looking at the components of mindfulness, no clear pattern emerged. No general conclusions can be made for the long-term effects with only one study including a follow-up assessment.

Mindfulness-Based Cognitive Trainings.

Four studies investigated variations of the standard MBCT program. Hopkins and Proeve (2013) offered an 8-week MBCT program, consisting of weekly 2-hour sessions, to students enrolled in postgraduate-training in clinical psychology ($n = 11$). The program differed from the manualised MBCT program as it did not include a silent

retreat day. Data were collected before, after, and two months following the completion of the training. No significant changes in stress (PSS-14) were found at post and follow-up. Mindfulness was measured with the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The FFMQ consists of five subscales: Observing, Describing, Acting with awareness, Non-judging of inner experience, and Non-reactivity to inner experience. MBCT led to significant increases on Observing, Non-judging of inner experience, and Non-reactivity to inner experience from pre to post and follow-up. Furthermore, one component of empathy (IRI), namely fantasy, significantly decreased, suggesting that students decreased the tendency to imagine the experiences of other persons following the training. According to the authors, this finding is consistent with the emphasis in mindfulness training on attending to one's direct experience.

Collard, Avny, and Boniwell (2008) used the same 8-week MBCT format of weekly 2-hour sessions and offered it, as a continuation of a Cognitive Behavioral Therapy course, to students of the counseling program ($n = 15$). Data were collected before and after the training. Student's level of mindfulness (FMI) significantly increased after MBCT. Further, the students showed a trend for an increase in satisfaction with life (SWLS) and their level of negative affect (PANAS) significantly decreased (both aspects of psychological well-being). However, no effect was found for positive affect (PANAS).

Ruths et al. (2013) offered a slightly elaborated 8-week MBCT program, consisting of weekly 2-hour sessions plus two follow-up sessions at weeks 14 and 20, to mental health professionals (mixed sample of clinical psychologists, research psychologists, social workers, and psychiatrists with the largest group being clinical

psychologists; $n = 27$). Data were collected before, after, and three months following the completion of the training. The mental health professionals showed significant improvements in mindful attention and awareness (MAAS) from pre to post and follow-up as well as for measures of psychological well-being at post (General Health Questionnaire/GHQ-12) and at follow-up (Brief Symptom Inventory/BSI; GHQ-12 at a trend level, which means that the finding is not statistically significant). However, no effect was found for satisfaction with life (SWLS). The effects on mindfulness were found to persist up to 18 months following the intervention (De Zoysa, Ruths, Walsh, & Hutton, 2014). Moreover, at the 18-month follow-up decreases were found for worry (Penn State Worry Questionnaire/ PSWQ) and trait anxiety (STAI).

Rimes and Wingrove (2011) offered a modified 8-week MBCT course for stress rather than depression to female trainee clinical psychologists ($n = 20$). The content was based on the manualised MBCT program but according to the authors “parts specific to depression were altered to focus on stress”. Data were collected before and after the training. No effect was found for stress (PSS-14) except for the first year trainees. However, overall mindfulness (FFMQ) and self-compassion (SCS) increased after MBCT. Furthermore, there was a significant decrease in rumination (RRQ). No effects were found for anxiety and depression (Hospital Anxiety and Depression Scale/HADS) and empathy (IRI).

In sum, all four MBCT studies used on open trial design and therefore only preliminary conclusions can be made. Two out of two MBCT studies found no effect for stress after the training (Hopkins & Proeve, 2013; Rimes & Wingrove, 2011) and two out of two MBCT studies found mixed effects for psychological well-being (Collard et al., 2008; Ruths et al., 2013). Concerning the mechanisms of change, all four

MBCT studies found increases in mindfulness after the training and two out of two studies also at follow-up (Hopkins & Proeve, 2013; Ruths et al., 2013 and deZoysa et al., 2014, respectively). Finally, a single study found that self-compassion significantly increased after MBCT (Rimes & Wingrove, 2011).

Overall, MBCT has less of an empirical base with mental health professionals and the findings from the open trials are mixed. This might be due to the low sample size, but overall stress and well-being outcomes did not consistently improve.

Interestingly, mindfulness measures did tend to improve after the training, which raises questions about this as a mechanism, at least in the context of MBCT.

Mindful Self-Compassion Training.

Two studies investigated the effectiveness of self-compassion trainings similar to the standard MSC program. Smeets et al. (2014) examined a 3-week self-compassion intervention, consisting of three 1-hour sessions, in female psychology students. The students were randomly assigned to either the self-compassion group ($n = 27$) or an active control group focused on time management ($n = 25$). Data were collected before and after the training. The self-compassion group showed significant increases in mindfulness in terms of Accept without judgement and Nonreactivity to inner experience (the two subscales that were administered of the KIMS-Extended) as well as increased self-compassion (SCS-SF) relative to the active control group. However, no group differences were found for satisfaction with life (SWLS) and positive and negative affect (PANAS; aspects of psychological well-being). Furthermore, the self-compassion group showed significant increases in optimism (Life Orientation Test-Revised/LOT-R) and significant decreases in rumination (Ruminative Response Scale – NL-Extended/ RRS-NL-EXT) relative to the active control group.

Finlay-Jones, Kane, and Rees (2016) examined a 6-week online self-compassion cultivation program, consisting of approximately 1-2 hour sessions weekly, in psychology trainees ($n = 37$). Data were collected before, after, and 3 months following the completion of the training. Participants reported significant improvements in self-compassion (SCS) and significant reductions in stress (PSS-10 and the stress subscale of the DASS-21) from pre to post. The changes were maintained at 3-month follow-up. Additionally, eudaimonic happiness (Authentic Happiness Inventory/AHI) increased and emotion regulation difficulties (Difficulties in Emotion Regulation Scale/DERS) decreased.

Overall, the two studies found that self-compassion increased after the training with one relative to an active control (Smeets et al., 2014). Also, one out of one study showed that stress reduced over time (Finlay-Jones et al., 2016).

Acceptance and Commitment Trainings.

Several studies examined the effect of a 1- to 2- day ACT workshop trainings. This is a common format for implementing ACT, and one that might fit particularly well with professionals given it provides a clear time commitment and focused set of days to go through the training (mirroring some other continuing education activities).

Hayes et al. (2004) investigated a 1-day ACT workshop for substance abuse counselors. The workshop was offered as a continuing education training and the counselors were randomly assigned to either ACT training ($n = 30$), multicultural training ($n = 34$), or educational training on drugs from a biological perspective ($n = 29$). This study aimed to reduce stigma towards recipients of behavioral health-care services (primarily in addictions) as a mechanism for reducing professional burnout. Data were collected before, after, and three months following the completion of the

training. ACT was significantly better in reducing overall burnout (MBI) relative to the education condition at post and relative to the multicultural training at follow-up.

Looking at stigma, which is related to the depersonalization component of burnout (Verhaeghe & Bracke, 2012), ACT was significantly better in reducing stigmatizing attitudes toward substance abusers (Community Attitudes Toward Substance Abusers/CASA) relative to the educational control at follow-up, but not at post. Also, ACT reduced believability of stigmatizing thoughts at a trend level (Stigmatizing Attitudes-Believability/ SAB) relative to the educational control at post and follow-up.

Clarke, Taylor, Lancaster, and Remington (2015) examined a 2-day ACT-based self-management training in staff caring for clients diagnosed with a personality disorder. The study sought to improve attitudes toward clients (similar to Hayes et al., 2004), staff-patient relations, and staff well-being. The participants were randomized to either the ACT ($n = 77$) or a Psychoeducational Training about personality disorders ($n = 63$). Data were collected before, after, and six months following the completion of the training. Neither significant main effects of time nor significant group differences were found for overall burnout (MBI) and for psychological well-being (GHQ-22). However, significant main effects of time were found for increased quality of therapeutic relationship (Helping Alliance Questionnaire-Therapist Version/HAQ-II), increased valued living (VLQ), reduced stigmatizing attitudes (Attitude to Personality Disorder Questionnaire/APDQ), and reduced social distancing (Social Distancing Scale/SDS).

Although there is some support for delivering ACT in a one-time, workshop format, additional follow-up contacts might help enhance and sustain effects. Along these lines, Luoma and Vildardaga (2013) investigated a 2- or 2.5-day ACT workshop plus six individual phone consultations over the course of three months in therapists and

students in training to be mental health professionals. The workshop was offered as part of a continuing education. The therapists were randomly assigned to either the ACT workshop plus six individual phone consultations ($n = 10$) or the ACT workshop only ($n = 10$). Data were collected before, after, and three month following the completion of the training. Significant main effects of time were found for improved personal accomplishment (a component of burnout; MBI) and at a trend level also for overall burnout (MBI) from pre to follow-up. Further, psychological flexibility (AAQ) improved over time in the workshop plus phone consultation group, but not in the workshop only group.

Several studies have examined the effect of an ACT training over the course of several weeks or months, rather than in a workshop format. Stafford-Brown and Pakenham (2012) investigated the effect of a 4-week ACT stress management training, consisting of weekly 3-hour sessions, in postgraduate clinical psychology trainees. Participation was voluntary. The trainees of two universities were allocated to the ACT training ($n = 28$) and the trainees of two other universities to the waitlist control group ($n = 28$). Data were collected before and after the training in both groups and ten weeks following the completion of the training in the ACT group only. The ACT stress management led to greater improvements in overall mindfulness (FFMQ), and psychological flexibility (AAQ) as well as reduced professional self-doubt (subscale of the MHPSS) relative to the control. There was no group difference for overall self-compassion (SCS), but one negative aspect of self-compassion, over-identification, significantly reduced in the ACT group relative to the control. Further, the trainees of the ACT intervention reported significant increases in psychological well-being (GHQ-28) relative to the control, but no effect was found for another component of

psychological well-being, namely satisfaction with life (SWLS). In addition, the trainees of the ACT condition showed improvements on counselling self-efficacy (Counselor Activity Self-Efficacy Scales-Helping Skills Scale), valued living (Valued Living Questionnaire/ VLQ) and one aspect of therapeutic alliance (Bond; WAI-SF) as well as a reduction on thought suppression (White Bear Suppression Inventory/WBSI) relative to the control condition. All effects were maintained in the ACT group at the 10-week follow-up.

Luoma et al. (2007) investigated an 8-week group consultation based on Relapse and Prevention and ACT in therapists and trainees providing addiction-treatment services (mixed sample of counsellors, marriage and family therapists, and social workers). The group consultation consisted of weekly 1.5 hour sessions. The therapists were randomly assigned to either a 1-day Group Drug Counseling workshop plus the Relapse and Prevention and ACT ($n = 16$) or the Group Drug Counseling workshop only ($n = 14$). All participants received credits for continuing education hours and discounts for future training workshops upon completion of the follow-up assessments. One aim of the study was to examine whether the ACT consultation improves Group Drug Counseling and the other one whether it has an impact on burnout. Data were collected before, after, and two and four months following the completion of the training. No group difference was found for overall burnout (MBI) at post and follow-up. However, the therapists in the ACT condition showed greater improvement on personal accomplishment (MBI), an indicator for low burnout, relative to the workshop only group at four month follow-up. Also, significant higher levels of self-reported adoption of the trained methods were found for the ACT condition relative to the workshop only group at both follow-ups.

Brinkborg, Michanek, Hesser, and Berglund (2011) examined a voluntary 8-week ACT stress management training, consisting of four 3-hour sessions every other week, in social workers. The social workers were randomized to the intervention and waitlist control group with a 2:1 ratio ($n = 70$ and $n = 36$, respectively). Data were collected before and after the training. ACT was effective in reducing stress (PSS-14), overall burnout (MBI), as well as the individual components emotional exhaustion and depersonalization, and increasing personal accomplishment (MBI) and psychological well-being (GHQ-12) relative to the control. However, no effect was found for psychological flexibility (AAQ).

Pakenham (2015b) investigated an intensive 12-week ACT training course with a focus on self-care skills, consisting of weekly 2-hour sessions, in first year postgraduate clinical psychology trainees ($n = 32$). The course was part of the curriculum. Data were collected before and after the training. Overall mindfulness (FFMQ) significantly improved as well as the facets Observing, Describing, Non-judging of inner experience, and Non-reactivity to inner experience (no effect was found for Acting with awareness). Also, psychological flexibility (AAQ) significantly improved. Overall self-compassion (SCS) did not improve, but one positive aspect of self-compassion, self-kindness, significantly increased after the training. There were no significant changes on work-related stress (MHPSS) and psychological well-being (GHQ-28). Furthermore, the study found significant increases in counselling self-efficacy (Counselor Activity Self-Efficacy Scales-Helping Skills Scale), therapeutic alliance (WAI-SF), and valued living (VLQ) as well as significant decreases in thought suppression (WBSI). Pakenham (2015c) investigated a subgroup of the same sample to

which self-care was introduced formally during the training ($n = 22$) and found that self-care self-efficacy significantly increased (Survey developed by the authors).

In sum, the ACT studies used either an open trial (one study), a non-randomized cohort controlled design (one study) or a RCT (five studies). Two out of three ACT studies found reduced stress after the training with both relative to a waitlist control (Brinkborg et al., 2011; Stafford-Brown & Pakenham, 2012). Further, two out of five RCTs found that overall burnout decreased after ACT relative to controls (Brinkborg et al., 2011; Hayes et al., 2004) and three out of four studies found improvements on personal accomplishment (Brinkborg et al., 2011; Luoma et al., 2007; Luoma & Vilardaga, 2013) with two relative to controls (Brinkborg et al., 2011; Luoma et al., 2007). One out of four ACT studies found an effect for psychological well-being relative to a waitlist control (Brinkborg et al., 2011) and an additional one found mixed effects (Stafford-Brown & Pakenham, 2012). Regarding mechanisms of change, two out of two studies found that mindfulness increased after ACT (Pakenham 2015b; Stafford-Brown & Pakenham, 2012) with one relative to a waitlist control (Stafford-Brown & Pakenham, 2012). The two studies that examined self-compassion found no effect (Pakenham, 2015b; Stafford-Brown & Pakenham, 2012). However, three out of four studies found an increase in psychological flexibility after ACT (Luoma & Vilardaga, 2013; Pakenham, 2015b; Stafford-Brown & Pakenham, 2012) with one relative to a waitlist control (Stafford-Brown & Pakenham, 2012). An additional finding related to patient care is that one study found that the therapeutic alliance increased after the training (Pakenham, 2015b) and another study found that the aspect therapeutic bond increased (Stafford-Brown & Pakenham, 2012).

Overall, the findings suggest that ACT tends to improve psychological flexibility and mindfulness relative to controls. Also, ACT seems to reduce stress and stigmatizing attitudes, whereas the latter can be seen as part of the burnout aspect depersonalization. However, with these stronger designs for ACT, the results for burnout, self-compassion, and psychological well-being seem not to be consistent, which raises questions about psychological flexibility and mindfulness as a key mechanism for improving burnout, and well-being in mental health professionals.

Discussion

Evidence for the benefits of cultivating mindfulness and acceptance in diverse populations (e.g., Chiesa & Serretti, 2009; Gotink et al., 2015; Öst, 2014; Powers, Zum Vörde Sive Vörding, & Emmelkamp, 2009; Rudaz, Ledermann, & Witt, 2017), combined with a growing call for self-care in mental health professionals and trainees (e.g., Barnett et al., 2007; Schwartz-Mette, 2009; Wicks, 2008), has stimulated initial research in this field. Hence, this review aimed to summarize the effectiveness of mindfulness and acceptance-based trainings to foster self-care and reduce stress in mental health professionals such as psychologists, psychiatrists, and social workers.

The current review of 24 identified studies led to the following conclusions: There is some preliminary support for MBSR on stress and mindfulness, but effects were mixed and less supportive for burnout, self-compassion, and psychological well-being. There is also initial support for MBCT on mindfulness, but stress and overall well-being did not consistently improve. ACT used more rigorous testing with RCTs and found support for stress, mindfulness, and psychological flexibility. However, the results for burnout, self-compassion, and psychological well-being were not consistent.

Also, one out of two MSC studies used a RCT and there is some initial support for mindfulness and self-compassion, but the effects for stress were not consistent. In sum, all training programs tend to improve mindfulness, whereas psychological well-being seems not to change consistently independent of the training program.

The majority of the MBSR and ACT studies found that mindfulness improved and stress was reduced. However, there were also studies from diverse trainings that showed that the mechanisms of change (i.e., mindfulness, self-compassion or psychological flexibility) improved but not the outcomes (i.e., stress, burnout or psychological well-being; Luoma & Vilardaga, 2013; Moore, 2008; Pakenham, 2015b; Raab et al., 2015; Rimes & Wingrove, 2011). This raises questions about other important factors that may be relevant to stress and burnout among mental health professionals such as increased workloads, understaffing, job insecurity, and lack of support in the work environment (Burrows & McGrath, 2000).

In our review, two studies looked at whether movement on mechanisms of change predicted changes on the outcomes. Specifically, they showed that an increase in mindfulness and self-compassion from pre to post predicted a drop in perceived stress and an increase in life satisfaction, respectively (Shapiro et al., 2007; Smeets et al., 2014). However, gains in self-compassion did not predict changes in positive and negative affect (Smeets et al., 2014). In addition, some studies investigated whether changes in mechanisms correlated with changes in outcomes. For instance, changes in mindfulness were found to correlate significantly with changes in psychological well-being at 18-months follow-up (DeZoysa et al., 2014) and changes in psychological flexibility positively correlated with reduced stress, burnout, and increased psychological well-being at post (Brinkborg et al., 2011).

Although overall mindfulness seems to play an important role to improve self-care in mental health professionals, it remains unclear what components of mindfulness are crucial. Therefore, further research is needed in order to find out what components of mindfulness could guide further training programs. Also, the implementation of mindfulness and acceptance-based self-care trainings generates challenges because professionals and trainees are busy, may not see the benefits of the practice per se (i.e., they are not clients seeking therapy), and the programs tend to be fairly intensive with mindfulness. This might be part of why we see mixed effects which might be due to variation in participant adherence and how the program was adapted and implemented. Some promising methods that we found included offering CEUs, integrating the training into existing courses, offering it on site (e.g., mental health center), and during work time.

Moreover, several studies highlight further benefits and applications of mindfulness and acceptance-based trainings besides self-care in mental health professionals and trainees. Results show that they might enhance counseling self-efficacy (Gockel et al., 2013; Stafford-Brown & Pakenham, 2012; Pakenham, 2015b), therapeutic alliance (Pakenham, 2015b; Razzaque & Wood, 2016), and improve adoption of evidence-based methods (Luoma et al., 2007). These results support the idea that mindfulness and acceptance-based trainings may be helpful in addressing therapeutic quality and may show an alternative way to bring these programs into student training and clinical work settings. Moreover, positive effects were found for reduced rumination (Shapiro et al., 2007; Smeets et al., 2014; Rimes & Wingrove, 2011).

It should be noted, that outcomes must be interpreted with caution due to the small number of studies, lack of replication, and methodological limitations (e.g., all MBSR and MBCT studies lacked active control conditions). Moreover, many studies included small sample sizes. More rigorous RCTs with active control groups are needed to truly estimate the efficacy above and beyond a more usual care program. Further, many of the study designs did not include follow-up assessments and thus leave the question open whether long term gains can be expected, especially for MBSR and MBCT.

In conclusion, the current review demonstrates some preliminary benefits for MBSR, MBCT, MSC, and ACT to improve mindfulness in mental health professionals and trainees. In addition, ACT tends to improve psychological flexibility. Further research with well-powered randomized active control groups, with long term follow-up and mechanisms of change analyses, are needed. In particular, there is potential for further investigation of the relatively young MSC program.

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Table 1

Characteristics of studies

Study	Population	N	Intervention	Control condition(s)	Measurement points	Variables
MBSR trainings						
Aggs and Bambling (2010)	Mental health professionals	47	8-week mindful therapy training program (weekly 1.5 hours)	Open trial	Pre-post	Stress and tension ratings, Five-Minute Mindfulness Scale, MT-Q, MT-S
Botta et al. (2015)	Master of social work students	34	3-hour mindfulness intervention	Open trial	Pre-post	Survey about knowledge, self-efficacy, and beliefs related to mindfulness
Brady et al. (2012)	Mental health professionals	16	4-week MBSR (weekly 1 hour)	Open trial	Pre-post	MHPSS, MBI, TMS, SOSS
Cohen and Miller (2009)	Graduate counselling and clinical psychology students	21	6-week Interpersonal mindfulness training (weekly 1.5 hours)	Open trial	Pre-post	PSS-14, MAAS, SWLS, MLQ, SCS-R, SREIT, BAI, CESD
Dobie et al. (2016)	Mental health professionals	9	8-week MBSR (daily 15 minutes plus three 30 minutes education sessions)	Open trial	Pre-post	DASS, KIMS
Gockel et al. (2013)	First year graduate social work students in	132	Integrating MBSR (10 minutes per session) into a class (28 classes over 10-weeks)	NRCT including a single-blind condition:	Pre-post, 3-months follow-up	FMI, MAAS, SCS-SF, state subscale of the STAI, rumination subscale of the

	a psychotherapy training program		-Two classes included mindfulness training ($n = 38$)	-Five classes served as a cohort control group ($n = 94$)		RRQ, IRI, Counseling Self-Efficacy
Moore (2008)	Clinical psychologists in training	10	14 sessions of 10 minutes mindfulness over 4 weeks	Open trial	Pre-post	PSS-14, KIMS, SCS
Napoli and Bonifas (2011)	Graduate social work students	31	16-week course of mindfulness strategies (weekly 3 hours)	Open trial	Pre-post, 6-month follow-up	KIMS
Raab et al. (2015)	Female mental health professionals	22	8-week MBSR (weekly 2.5 hours plus one day of silence)	Open trial	Pre-post	MBI, SCS, QOLI
Razzaque and Wood (2016)	Psychiatrists and trainees	26	2-day Mindfulness-Based Professional Development retreat	Open trial	Pre-post, 1-week follow-up	MBI, FMI, Santa-Clara Self-Compassion Scale, WAI-SF
Shapiro et al. (2007)	Master's level counselling psychology students in a therapist training program	54	8-week MBSR as part of the Stress and Stress Management Course (weekly 2 hours; $n = 22$)	NRCT: -two control courses ($n = 32$)	Pre-post	PSS-14, MAAS, SCS, PANAS, STAI, rumination subscale of the RRQ
MBCT trainings						
Collard et al. (2008)	Counseling students	15	8-week MBCT (after 10 hours Cognitive Behavioral Therapy)	Open trial	Pre-post	FMI, SWLS, PANAS
Hopkins and Proeve (2013)	Trainee psychologists	11	8-week MBCT (weekly 2 hours)	Open trial	Pre-post, 2-month follow-up	PSS-14, FFMQ, IRI

Ruths et al. (2013); de Zoysa et al. (2014)	Mental health professionals	27	8-week MBCT (weekly 2 hour sessions plus 2 follow-up sessions)	Open trial	Pre-post, 3- and 18-months follow-up	MAAS, GHQ-12, SWLS, BSI, PSWQ, STAI
Rimes and Wingrove (2011)	Female trainee clinical psychologists	20	8-week MBCT (modified for stress not depression)	Open trial	Pre-post	PSS-14, FFMQ, SCS, HADS, IRI, RRQ
MSC training						
Finlay-Jones et al. (2016)	Psychology trainees	37	6-week self-guided online self-compassion training (weekly 1-2 hours)	Open trial	Pre-post, 3-month follow-up	PSS-10, DASS-21, SCS, AHI, DERS
Smeets et al. (2014)	Female psychology students	52	Self-Compassion Intervention: Three group meetings held over 3 weeks (first two sessions 1.5 hours, last session 45 minutes; $n = 27$)	RCT: -active control group: general time management skills training ($n = 22$)	Pre-post	SCS-SF, Accept Without Judgment and Nonreactivity to Inner Experience subscales of the KIMS-E, SWLS, PANAS, SCS-R, LOT-R, GSE, RRS-NL-EXT, PSWQ
ACT trainings						
Brinkborg et al. (2011)	Social workers	106	Four 3-hour sessions of ACT (every other week; $n = 70$)	RCT after stratification according to initial stress level: -Waitlist control ($n = 36$)	Pre-post	PSS-14, MBI, AAQ, GHQ-12, Pbse-scale, DCSQ
Clarke et al. (2015)	Staff caring for clients with a personality disorder	140	2-day ACT-based self-management training ($n = 77$)	RCT: -2-day Psychoeducation Training ($n = 63$)	Pre-post, 6-month follow-up	MBI, GHQ-22, APDQ, HAQ-II, SDS, VLQ

Hayes et al. (2004)	Substance abuse counselors	93	1-day ACT* workshop ($n = 30$)	RCT: -1-day Multicultural Training ($n = 34$) -1-day Methamphetamine and ecstasy training (Educational control; $n = 29$)	Pre-post, 3-month follow-up	MBI, CASA, SAB
Luoma et al. (2007)	Therapists and trainees providing addiction-treatment services	30	1-day Group Drug Counseling workshop (total 6 hours) plus 8-week group consultation based on Relapse Prevention and ACT (weekly 1.5 hours; $n = 16$)	RCT: -Group Drug Counseling workshop only ($n = 14$)	Pre-post, 2- and 4-month follow-ups	MBI, Self-reported adoption
Luoma and Vilaridaga (2013)	Therapists	20	2- or 2.5-day ACT workshop and additional 6 individual phone consultation sessions (30 minutes each) over the course of 3 months ($n = 10$)	RCT: -ACT workshop only ($n = 10$)	Pre-post, 3-month follow-up	MBI, AAQ, Knowledge of ACT
Pakenham (2015b), Pakenham (2015c)	First year postgraduate clinical psychology trainees	32	12-week ACT with a focus on self-care skills in addition to ACT competencies (weekly 2 hours)	Open trial	Pre-post	Professional self-doubt, workload, client-related difficulties, and home-work conflict subscales of the MHPSS, FFMQ, SCS, AAQ, GHQ-28, Self-Care Self-Efficacy, Counseling Self-

Stafford-Brown and Pakenham (2012)	Postgraduate clinical psychology trainees	56	4-week ACT stress management intervention (weekly 3 hours; $n = 28$)	NRCT: -waitlist control group ($n = 28$)	Pre-post, 10-week follow-up (for ACT group only)	Efficacy, WAI-SF, WBSI, VLQ Professional self-doubt subscale of the MHPSS, FFMQ, SCS, AAQ, GHQ-28, SWLS, Counseling Self-Efficacy, WAI-SF, WBSI, VLQ
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Note. MBSR = Mindfulness-Based Stress Reduction. ACT = Acceptance and Commitment Therapy. ACT* = Acceptance and Commitment Training. MBCT = Mindfulness-Based Cognitive Therapy. MSC = Mindful Self-Compassion. RCT = Randomized controlled trial. NRCT = Non-randomized controlled trial. PSS-10, and PSS-14 = Perceived Stress Scale. GHQ-12, GHQ-22, and GHQ-28 = General Health Questionnaire. MBI = Maslach Burnout Inventory. AAQ = Acceptance and Action Questionnaire. MAAS = Mindful Attention Awareness Scale. SWLS = Satisfaction With Life Scale. FMI = Freiburg Mindfulness Inventory. PANAS = Positive and Negative Affect Schedule. SCS and SCS-SF = Self-Compassion Scale (Short Form). FFMQ = Five Facet Mindfulness Questionnaire. KIMS and KIMS-E = Kentucky Inventory of Mindfulness Skills (Extended version). QOLI = Quality of Life Inventory. MHPSS = Mental Health Professionals Stress Scale. TMS = Toronto Mindfulness Scale. DASS = Depression Anxiety Stress Scale. MT-Q = Mindful Therapy Questionnaire. MT-S = Mindful Therapy Scale. SOSS = Sense of Self Scale. MLQ = Meaning in Life Questionnaire. SCS-R = Social Connectedness Scale-Revised. SREIT = Self-Report of Emotional Intelligence. BAI = Beck Anxiety Inventory. CESD = Center for Epidemiological Studies-Depression. WAI-SF = Working Alliance Inventory-Short Form. STAI = State Trait Anxiety Inventory. RRQ = Reflection Rumination Questionnaire. IRI = Interpersonal Reactivity Index. BSI = Brief Symptom Inventory. PSWQ = Penn State Worry Questionnaire. HADS = Hospital Anxiety and Depression Scale. LOT-R = Life Orientation Test-Revised. GSE = General Self-Efficacy Scale. RRS-NL-EXT = Ruminative Response Scale-NL-Extended. WBSI = White Bear Suppression Inventory. VLQ = Valued Living Questionnaire. Pbse-scale = Performance-based self-esteem scale. DCSQ = Demand-Control-Support Questionnaire. APDQ = Attitude to Personality Disorder Questionnaire. HAQ-II = Helping Alliance Questionnaire-Therapist Version. SDS = Social Distancing Scale. CASA = Community Attitudes Toward Substance Abusers. SAB = Stigmatizing Attitudes-Believability. AHI = Authentic Happiness Inventory. DERS = Difficulties in Emotion Regulation Scale.