

Can Self-Compassion Promote Healthcare Provider Well-Being and Compassionate Care to Others? Results of a Systematic Review

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Abstract

Background: This meta-narrative review, conducted according to the RAMESES (Realist And Meta-narrative Evidence Syntheses: Evolving Standards) standards, critically examines the construct of self-compassion to determine if it is an accurate target variable to mitigate work-related stress and promote compassionate caregiving in healthcare providers. **Methods:** PubMed, Medline, CINAHL, PsycINFO, and Web of Science databases were searched. Studies were coded as referring to: (1) conceptualisation of self-compassion; (2) measures of self-compassion; (3) self-compassion and affect; and (4) self-compassion interventions. A narrative approach was used to evaluate self-compassion as a paradigm. **Results:** Sixty-nine studies were included. The construct of self-compassion in healthcare has significant limitations. Self-compassion has been related to the definition of compassion, but includes limited facets of compassion and adds elements of uncompassionate behavior. Empirical studies use the Self-Compassion Scale, which is criticised for its psychometric and theoretical validity. Therapeutic interventions purported to cultivate self-compassion may have a broader effect on general affective states. An alleged outcome of self-compassion is compassionate care; however, we found no studies that included patient reports on this primary outcome. **Conclusion:** We critically examine and delineate self-compassion in healthcare providers as a composite of common facets of self-care, healthy self-attitude, and self-awareness rather than a construct in and of itself.

Keywords: compassion, healthcare, meta-narrative, self-compassion

1. Introduction

Self-compassion is a key construct within the field of self-care that has been defined as relating to oneself with compassion by actively encouraging the expression of warmth, concern and caring toward the self (Neff, 2003a, b). Self-compassion is thought to be enhanced by contemplative practices, such as mindfulness-based programs, which are gaining popularity as interventions for sustaining or enhancing the psychological well-being of healthcare providers (Boellinghaus, Jones, & Hutton, 2014). The concept of self-compassion extends compassion, which has been defined as “a virtuous response that seeks to address the suffering and needs of a person through relational understanding and action” (Sinclair et al., 2016a, p195), to an intrapersonal level (Neff, 2003a). In doing so, it is argued that interpersonal compassion is optimized in individuals who are able to first show compassion to themselves (intrapersonal) by accepting their own suffering in a kind and caring manner (Neff, 2003b; Barnard & Curry, 2011; Hofmann, Grossman, & Hinton, 2011).

The importance and necessity of receiving compassionate healthcare has received increased attention from the healthcare literature, healthcare policy, and professional organizations over the last decade (Sinclair et al., 2016b; American Medical Association [AMA], 2001; Eva, Rosenfeld, Reiter, & Norman, 2004; Institute of Medicine, 2004; Department of Health, 2008; Paterson, 2011; Francis, 2013; Maclean, 2014). Patients and family members who perceive a lack of compassion in their healthcare encounters experience more adverse medical events, poor symptom management, and are more likely to lodge complaints and sue for malpractice.

While healthcare providers desire and are expected to respond to calls for enhancing compassionate care, factors such as burnout and occupational stress adversely affect their ability

to do so (Van Bogaert, Kowalski, Weeks, van Heusden, & Clarke, 2013; Sinclair, Raffin-Bouchal, Venturato, Mijovic-Kondejewski, Smith-MacDonald, 2017; McCloskey & Taggart, 2010; Boyle, 2011; Cuneo et al., 2011 Francis, 2013; Van Bogaert et al., 2013; MacLean, 2014; Willis, 2015). As a result, there is a renewed focus on the need to improve healthcare provider wellbeing as a catalyst for providing compassionate care to others (Raab, 2014; Olson & Kemper, 2014; Boellinghaus et al., 2014).

As more effort and resources are being invested in self-care initiatives that increase self-compassion in healthcare providers, a synthesis and critical review of the construct of self-compassion in the healthcare literature is essential to determine its appropriateness and validity as a target variable to mitigate healthcare provider work-related stress and improve compassionate healthcare. Therefore, the objective of this study was to perform a meta-narrative review encompassing the conceptualization, measurement and correlates of self-compassion in healthcare providers.

2. Methods

This meta-narrative review was conducted according to the RAMESES (Realist And Meta-narrative Evidence Syntheses: Evolving Standards) standards (www.ramesesproject.org); the gold standard criteria for meta-narrative reviews (Wong, Greenhalgh, Westhorp, Buckingham, & Pawson, 2013). A meta-narrative review is recommended when the field or construct of interest is complex, ill-defined, evolving and there is insufficient evidence to meet the criteria for a formal systematic review (Wong et al., 2013). Data are synthesized, and an over-arching narrative is utilized to evaluate the data to determine gaps, future research directions and subsequent systematic reviews. The relevance of self-compassion to healthcare

providers' self-care is relatively new; therefore, this meta-narrative review included an overview of the field of self-compassion research as well as a focus on self-compassion in healthcare providers. The phases of the meta-narrative review were conducted according to Greenhalgh et al. (2004a, 2004b, 2005). These phases included 1) a planning phase, in which a review team (SS, JK, KK-S, SR-B, PS) of research and content experts was assembled; 2) a search phase, where initial informal cursory searches were used to identify the domains that encompass self-compassion, electronic searches and citation tracking were used to identify seminal articles on self-compassion, and snowballing, electronic databases and additional searches were used to identify other theoretical and empirical articles on self-compassion, with particular emphasis on self-compassion in healthcare providers; 3) a mapping phase, where the key elements of self-compassion were established using findings from the search phase; 4) an appraisal phase, where eligible articles were assessed to determine their validity and relevance to our review; 5) a synthesis phase, where included articles were used as the basis of a narrative account that provided an overview of self-compassion and critically examined the concept of self-compassion in healthcare providers; and 6) a recommendations phase, where the critical review was summarized and recommendations for practice, policy, education and research in self-compassion in healthcare providers were made.

2.1 Search and mapping phases

An initial pragmatic and iterative search phase was used to develop the guiding principles for the meta-narrative review. During this phase, the diverse domains that encompass the self-compassion literature and research into self-compassion and healthcare providers were identified as 1) conceptualization of self-compassion; 2) measures of self-compassion; 3) self-compassion and affect in healthcare providers; and 4) self-compassion interventions in healthcare providers.

Seminal articles that made a core contribution to the literature on self-compassion were identified using a strategy adapted from Greenhalgh et al. (2004a, 2004b, 2005) and Contandriopoulos et al. (2010). These authors define seminal articles as those that contribute to a recognized research tradition, those that are original and scholarly, and according to citation frequency. To identify seminal articles in self-compassion, the overall size of the peer-reviewed literature on self-compassion was estimated. The PubMed, Medline, CINAHL and PsycINFO databases (1980-2016) were searched using the term ‘self-compassion’ in the title/abstract field, and ISI Web of Science Citation Index was used to identify all articles cited 5 times or more. Resulting articles were assessed according to Greenhalgh et al. (2004a, 2004b, 2005) and Contandriopoulos et al. (2010).

Seminal articles were mapped to the previously identified domains of self-compassion. Searches for other relevant articles included identifying articles that cited the seminal articles (prospective snowballing) and searching the bibliographies of articles that cited the seminal articles (retrospective snowballing).

Articles reporting on self-compassion in healthcare providers were identified by manually screening the total population of the peer-reviewed literature on self-compassion and the results of perspective and retrospective snowballing, and from additional searches (Canadian Nurses Association; American Nurses Association; www.self-compassion.org).

2.2 Appraisal phase

Titles and abstracts of eligible articles were assessed to determine their validity and relevance to the domains of self-compassion and self-compassion in healthcare providers identified in this review. In accordance with RAMESES standards for evaluating meta-narratives, which intend to map versus appraise the quality of evidence, the appraisal phase did

not include a strength-of evidence grading tool (Contandriopoulos et al, 2010; Wong et al., 2013). The research team decided to adopt this approach as much of the self-compassion research is theoretical or represents a nascent empirical research field, requiring synthesis and a narrative review to advance the state of the science before a systematic review to appraise the quality of evidence is warranted. Therefore, inclusion criteria were 1) empirical or theoretical studies that focused on the concept of self-compassion or 2) articles on self-compassion relevant to healthcare providers. Exclusion criteria were: 1) articles that focused solely on related concepts such as mindfulness, empathy, sympathy, pity, compassion fatigue, fear of compassion and compassion satisfaction; 2) articles pertaining to neurological and neuroplasticity research; and 3) letters, commentaries, editorials, and conference abstracts.

Data from included articles were collated in a tabular form, including first author's last name, year of publication, study objective, study design, setting, participants, context, methods, results and notes.

2.3 Synthesis and recommendations phase

Text and tables were used to summarize the findings from the included articles. An overarching narrative detailing and critiquing the historical, conceptual and practical aspects of the construct of self-compassion and specifically the application of self-compassion to healthcare providers was developed. Information on the conceptualization of self-compassion was compiled from a concept analysis of self-compassion in the healthcare literature and qualitative studies on healthcare providers' perception of self-compassion. Information on the measurement of self-compassion was compiled from seminal articles on the development of the Self Compassion Scale (SCS) and studies validating the measure. Information on self-compassion and affect in healthcare providers and self-compassion interventions in healthcare providers was compiled

from qualitative and empirical studies across a variety of healthcare providers and settings. The goal was to synthesize and assess the integrity of the research investigating the construct of self-compassion and self-compassion in healthcare providers, to provide critical insights into the existing evidence base, and make recommendations for practice, policy and future research in self-compassion in healthcare providers (Greenhalgh et al., 2004a, 2004b, 2005; Wong et al., 2013).

3. Results

The searches identified 1,033 unique records (**Figure 1**). Articles were screened using titles and abstracts, and 127 full text articles were assessed. Among these, 60 provided an overview of self-compassion, and 67 reported on self-compassion in healthcare providers. Of the articles that provided an overview of self-compassion, consensus was used to select 33 for inclusion. Of the articles reporting on self-compassion in healthcare providers, 31 were excluded as they were dissertations (n=6), not relevant to clinical care (n=4), focused on a related concept (n=18) or were editorials (n=3). 33 articles that provided an overview of self-compassion and 36 articles reporting on self-compassion in healthcare providers were included in the final meta-narrative review.

Among the articles that provided an overview of self-compassion, 16 were relevant to the conceptualization of self-compassion, 12 were relevant to the measurement of self-compassion, 10 were relevant to self-compassion and affect, and 4 were relevant to self-compassion interventions. Among the articles reporting on self-compassion in healthcare providers, 3 were relevant to the conceptualization of self-compassion; 14 were relevant to self-compassion and affect, and 22 were relevant to self-compassion interventions (**Figure 1**). Studies on self-

compassion in healthcare providers were conducted in the United States, Canada, Brazil, Portugal, Scandinavia, Spain, Turkey, United Kingdom, and Australia. Types of healthcare providers investigated were nurses (n=811), healthcare students (n=441), residents (n=87), general practitioners (n=184), psychologists (n=398), and unspecified (n=262).

3.1 Conceptualization of self-compassion in healthcare

Information on the conceptualization of self-compassion and its relevance to healthcare providers was provided by 19 studies. Self-compassion was first proposed as a conceptualization of healthy self-attitude in 2003 in two seminal articles published by Neff (2003a, b), igniting and establishing the foundation for a burgeoning field of research into self-compassion theory and practice (Neff, 2003a, b). In her landmark papers, Neff noted that the '*definition of self-compassion is related to the more general definition of compassion*' (Neff 2003a), conceptualizing self-compassion as three inter-related elements: 1) self-kindness versus judgment; 2) common humanity versus isolation; and 3) mindfulness versus over-identification. Neff proposed that these elements combine and mutually interact during times of failure and pain for effective self-compassionate behavior. The element of self-kindness versus self-judgment involves being kind and understanding toward oneself rather than being self-critical, self-condemning, blaming and ruminating. The element of common humanity versus isolation involves seeing one's failures as part of the larger human condition rather than as isolated personal experience. The element of mindfulness versus over-identification involves holding one's negative thoughts and feelings in mindful awareness rather than over-identifying with them or avoiding them (Neff, 2003b). Research expanding on Neff's concept identified self-compassion as a unique construct within a family of related self-constructs (**Table 1**), important

for the promotion of mental well-being, life satisfaction, optimism, happiness and connections with others, and directly linked to resilience against depression and anxiety.

Others have proposed that a combination of attachment theory, interpersonal theories, psychoanalytic traditions, and social mentalities underlie self-compassion (Hermanto & Zuroff, 2016). Self-compassion has been theorized as an evolved capacity arising from behavior involving attachment and affiliation (Mikulincer & Shaver, 2007; Neff & Dahm, 2015), which is activated in response to care-giving and care-seeking mentalities relating to self (Hermanto & Zuroff, 2016). Thus, it is postulated that individuals raised in supportive and validating relationships have a greater capacity for self-soothing and are more likely to relate to themselves in a caring and compassionate manner (Pepping, Davis, O'Donovan, & Pal, 2015). Conversely, individuals raised in stressful, insecure and/or threatening environments, or who sought compassion from others but received a negative response, may have impaired 'self-soothing' strategies, emotional dysregulation, self-criticism, worthlessness, shame, guilt and greater susceptibility to stress (Blatt, 1974; Gilbert & Procter, 2006; Shapira & Mongrain, 2010; Vetesse, Dyer, Li, & Wekerle, 2011; Pepping et al., 2015). In short, individuals that have received care and compassion from others are thought to have greater capacity to be compassionate to themselves.

Information on the conceptualization of self-compassion within healthcare specifically was provided by 3 studies. In 2012, Reyes published the only known concept analysis of self-compassion in the context of healthcare. Reyes (2012) explored the implications of self-compassion for nursing practice and research, expanding Neff's definition of self-compassion to *'a state of being consisting of self-kindness, mindfulness, wisdom, and commonality that transforms suffering and results in actions that improve the individual's health and well-being as*

well as the health and well-being of others' (Reyes, 2012, p4). In Reyes' conceptual model, the antecedent of self-compassion is suffering experienced by the nurse, defined as diminished self-care capacity, decreased relatedness, diminished autonomy and decreased worth (e.g., guilt, self-hatred, shame). The nurse's suffering persists until the occurrence of a trigger event, such as a visit to the doctor or a supporting response from family, friends or colleagues, which causes the nurse to realize that her life has worth and to desire well-being and a productive life. The nurse then views her suffering with compassion towards self, which results in a positive emotional response, learning from failure and motivation to try again, and leads to greater self-compassion, autonomy, self-care capacity and compassion for others (Reyes, 2012).

Further insight into the concept of self-compassion in healthcare is provided by two qualitative studies. In a narrative study, Patsiopoulos & Buchamam (2011) reported that practicing self-compassion (which they defined as the use of breath, mindfulness, prayer, an attitude of openness, trust in the 'flow of energy and information', self-forgiveness, accountability) enhanced psychologists' effectiveness in the workplace and their therapeutic relationships with their clients. In this context, self-compassion enabled psychologists to find balance and develop the ability to attune to their clients (Patsiopoulos & Buchamam, 2011). In another qualitative study of clinical nursing educators' written and oral reflections on self-compassion as a source to compassionate care, Gustin & Wagner (2012) suggest healthcare providers must confront their own vulnerability and be sensitive, nonjudgmental and respectful towards themselves in order to provide compassionate caregiving to others.

Based on these studies and over a decade of research, self-compassion has become globally accepted as a valid construct that remains largely unchallenged; however, we suggest that the construct rests on an expansive, yet precarious empirical foundation. Specifically, the

construct validity of self-compassion is limited, including its relationship to the construct of compassion, which is predicated on action aimed at the amelioration of the suffering of another (Vivino, Thompson, Hill, & Ladany, 2009; Way & Tracy, 2012; Crawford, Gilbert, Gilbert, Gale, & Harvey, 2013; Horsburgh & Ross, 2013; Bray, O'Brien, Kirton, Zubairu, & Christiansen, 2014; Sinclair et al, 2016 a,b). Neff's original conceptualization of self-compassion as a direct derivative of the root construct of compassion has been unequivocally adopted in the literature and is not based on a valid and multifaceted model of compassion (Neff, 2003a). In healthcare, studies have confirmed that compassion is largely a selfless response that impels a respondent to actively address the suffering of another person through relational understanding and action (Schantz, 2007; Vivino et al., 2009; Way & Tracy, 2012; Crawford et al., 2013; Horsburgh & Ross, 2013; Bray et al., 2014; Sinclair et al., 2016 a,b). Further, while suffering is an antecedent to both self-compassion and compassion in healthcare (Reyes, 2012; Sinclair et al., 2016b), self-compassion shares only a few of the key facets of its reputed root construct, while adding elements of uncompassionate behavior, such as self-judgment, isolation, and over-identification. Most notably, the quintessential features of compassion, such as action, altruism, a virtuous response, and the use of self in the alleviation of the suffering of another, are lacking. As a result, these conceptual issues have limited the significance of existing studies and impacted the validity of measurements of self-compassion and the subsequent research that rests on this ambiguous conceptual foundation (MacBeth & Gumley, 2012).

In summary, the development of self-compassion in healthcare providers is thought to guide healthcare providers' actions to meet patients' needs and improve patient outcomes by increasing healthcare providers' understanding of suffering and common humanity (Reyes, 2012). However, the construct validity of self-compassion, specifically as it relates to the

construct of compassion, is tenuous. The conceptual model of self-compassion does not stipulate essential elements of the selfless nature of compassion (Sinclair et al., 2016b) and therefore, is severely limited.

3.2 Measurement of self-compassion

Information on the measurement of self-compassion was provided by 12 articles, which indicate that the SCS is currently the only known measure of self-compassion. The SCS was developed by Neff (2003b) to provide a valid and reliable scale to assess levels of self-compassion. The scale consists of three subscales (self-kindness versus self-judgment, common humanity versus isolation, mindfulness versus over-identification), to reflect the three main components of self-compassion depicted in Neff's theoretical model. Subscale scores are summed to create a total score that measures an individual's overall level of self-compassion as a single over-arching construct (Neff, 2003b).

The SCS was developed by generating (n=68 students who met in small focus groups of 3-5 persons) and testing (n=71 additional students) potential scale items among undergraduate educational psychology students at a large southwestern university in the United States. 26-items were selected for the final version of the SCS, which was then administered to a larger group of students (n=391). Participants indicated how often they acted in the manner stated in each of the items on a 5-point scale, ranging from 1 (almost never) to 5 (almost always) (Neff, 2003b).

Content validity of the SCS was assessed by asking students whether or not they tended to be kinder to themselves or others. Those high in self-compassion indicated they were equally kind to self and others, while those low in self-compassion indicated that they were kinder to others than to themselves (Neff, 2003b). Confirmatory factor analysis revealed that the three main components of self-compassion loaded on six separate but correlated factors (Neff, 2003b).

These findings suggest that the subscales can be used separately or as total combined score. Construct validity was assessed with the Marlowe-Crowne Social Desirability scale (Strahan & Gerbasi, 1972), which indicated that that responses to the scale were not due to participants presenting themselves in a socially advantageous manner (Neff, 2003b). Internal consistency of the SCS was evaluated with Cronbach's α (Neff, 2003b), with high internal consistency being reported in studies utilizing a variety of populations (e.g., Allen, Goldwasser, & Leary, 2012; Neff & Beretvas, 2012a; Neff & Pommier, 2012b; Werner et al., 2012).

In a second study involving 232 undergraduate educational-psychology students at the same university in the United States, the SCS demonstrated good test-retest reliability. Convergent validity of the SCS was confirmed using Pearson's correlation coefficients between the SCS and scales measuring related constructs, and other studies suggest that the SCS measures proxy ratings of self-compassion (Neff 2003b; Neff, Rude, & Kirkpatrick, 2007; Neff & Beretvas, 2012a; Neff & Pommier, 2012b; Sbarra, Smith, & Mehl, 2012). Based on these findings, Neff (2003b) reported the SCS is a '*psychometrically sound and theoretically valid measure of self-compassion*' (p.244).

In our opinion, the measurement of self-compassion is limited. As the SCS is the only measure of self-compassion, the relevance of quantitative self-compassion research is/may be diminished (Neff, 2003b). The SCS has been primarily developed, refined, and validated on students; therefore, its transferability to other populations, particularly healthcare providers experiencing suffering, requires validation. Many of the correlations between the SCS and variables of interest are statistically significant; however, the associated correlation coefficients are quite small—typically indicative of not being clinically meaningful. Further, recent validation studies of the SCS across various settings have criticized its psychometric validity and

theoretical consistency, noting that the intercorrelation among the six subscales and a single higher-order latent variable (self-compassion) is lacking (Petrochhi, Ottaviani, & Couyoumdjian, 2013; Williams, Dalgleish, Karl, & Kuyken, 2014; Costa, Marôco, Pinto-Gouveia, Ferreira, & Castilho, 2015). In response to these findings, Neff (2016) justified the use of a total SCS score using a bi-factor model as an alternative psychometric approach to the higher order model that was originally proposed (Neff, 2003b). In addition, the inclusion of uncompassionate behavior variables in the SCS has been critiqued as exaggerating the negative association between self-compassion and psychopathology (Muris, 2015), resulting in a two-factor model that includes self-compassion and self-criticism being proposed (Costa et al., 2015; López et al., 2015). Neff (2016) contests that the single SCS summary score should be used to assess the balance between these two factors and that conceptualizing the SCS as bi-dimensional limits its ability to explore the contribution that the various components of self-compassion make on well-being. Neff (2016) persists that the SCS is a valid and reliable tool for researchers trying to improve individuals' well-being through an understanding of personal suffering.

In summary, the SCS is the only known measure of self-compassion that has been utilized in empirical studies of self-compassion. The psychometric validity and theoretical consistency of this measure is not without criticism.

3.3 Self-Compassion and Affect in Healthcare Providers

Self-compassion is theorized as a facilitator of psychological well-being and resilience in healthcare providers, accelerating research investigating a role for self-compassion as a moderator of self-management skills, occupational stress and compassionate care in healthcare providers.

Most published studies have investigated the impact of self-compassion in students or individuals in the community. In these settings, lower levels of self-compassion were reported to be a reliable predictor of depression, anxiety, and stress (Neff et al., 2007; MacBeth & Gumley, 2012), with higher levels being positively associated with well-being (Leary et al., 2007; Neff et al., 2007; Neff & Vonk, 2009; Barnard & Curry, 2011), emotional intelligence, coping strategies (Neff, Hsieh, & Dejitterat, 2005), motivation, achievement (Neff et al., 2005; Neff et al., 2007), agreeableness, and social connectedness (Neff et al., 2007; Crocker & Canevello, 2008; Barnard & Curry, 2011; Neff & Beretvas, 2012a; Neff & Pommier, 2012b). The current search identified 23 articles on self-compassion and affect and its relevance to healthcare providers.

Eleven empirical studies (Heffernan, Griffin, McNulty, & Fitzpatrick, 2010; Crarey, 2013; Senyuva, Kaya, Isik, & Bodur, 2014; Olson & Kemper, 2014; Olson, Kemper, & Mahan, 2015; Finlay-Jones, Rees, & Kane, 2015; Kemper, Mo, & Khayat, 2015; Beaumont, Durkin, Hollis Martin, & Carson, 2016a; Duarte, Pinto-Gouveia, & Cruz, 2016a; Durkin, Beaumont, Hollins Martin, & Carson, 2016; Montero-Martin et al., 2016) reported on self-compassion utilizing a healthcare provider sample (**Table 2**). Among these, eight studies investigated the role of self-compassion on work-related stress among healthcare providers (Crarey, 2013; Finlay-Jones et al., 2015; Kemper et al., 2015; Olson et al., 2015; Beaumont et al., 2016a; Duarte et al., 2016a; Durkin et al., 2016; Montero-Martin et al., 2016), and three studies reported on the positive impact of mindfulness and self-compassion on healthcare provider resilience (Olson & Kemper, 2014; Olson et al., 2015; Kemper et al., 2015). Resilience, the process of coping with or overcoming exposure to adversity (Egeland, Carlson, & Sroufe, 1993), is considered a salient mitigator of burnout in healthcare providers (Weidlich & Ugarriza, 2015). All studies reported that self-compassion and well-being were negatively associated with burnout, compassion

fatigue and/or stress symptoms in healthcare trainees, midwives, medical and nursing students, psychologists, pediatric residents, clinicians or primary healthcare providers. Resilience was found to be positively correlated with clinician mental health (Olson & Kemper, 2014), while sleep disturbances were significantly correlated with perceived stress, poorer health and less mindfulness and self-compassion (Kemper et al., 2015). Based on these findings, self-compassion was recommended as a training target in healthcare provider education programs. However, these studies were not without significant limitations as they were primarily correlational, relied on self-report, and many had a substantial trainee/student cohort, with none establishing causality (Barnard & Curry, 2011; Boellinghaus et al., 2014; Olson & Kemper, 2014; Finlay-Jones et al., 2015; Lamothe Rondeau, Malboeuf-Hurtubise, Duval, & Sultan, 2015; Beaumont et al., 2016a). Furthermore, two of the identified studies found that self-compassion did not directly impact work-related stress in healthcare providers (Finlay-Jones et al., 2015; Duarte et al., 2016); rather, self-compassion mediated an association between empathetic concern and work-related stress (Duarte et al., 2016) and reduced emotional regulation difficulties, thereby improving the ability to cope with stressful situations (Finlay-Jones et al., 2015).

Some research suggests that self-compassion improves interpersonal functioning in healthcare providers and is a mediator of compassionate care. Olson & Kemper (2014) found mindfulness and self-compassion in medical students, residents and faculty were positively associated with their confidence in their ability to provide calm, focused compassionate care to patients – with self-compassion being positively correlated with clinician global mental health and resilience. Heffernan et al. (2010) reported a positive correlation between emotional intelligence and self-compassion in nurses. Emotional intelligence, defined as ‘the ability to

monitor one's own and others' feelings, to discriminate among these feelings, and to use this information to guide one's thinking and action' (Salovey, 1995), is considered to play a crucial role in therapeutic relationships. In light of this, Heffernan et al. (2010) recommends the use of screening tools to identify nurses with low self-compassion and to provide a training intervention. Senyuva et al. (2014) reported similar findings in a study in nursing students in Turkey and concluded that nursing education programs should include the development of self-compassion and/or emotional intelligence as a fundamental aspect of nursing care. Despite these suggestions, an association between self-compassion in healthcare providers and the ability to provide core attributes of care such as empathy and compassion has not been demonstrated (Boellinghaus et al., 2014; Raab, 2014; Lamothe et al., 2015).

In summary, increasingly, self-compassion is being considered a target variable in healthcare provider education programs to improve work-related stress and interpersonal functioning. However, the evidence base is limited, as no studies have established causality between increased self-compassion and work-related stress or healthcare providers' caregiving actions. One alleged outcome of self-compassion is compassionate care; however, we found no studies on self-compassion and affect in healthcare providers that included the perspectives of patients and their families, who are the recipients of compassionate care.

3.5 Self-compassion Interventions

There is increasing interest in the use of self-compassion, emotional intelligence, and mindfulness training as strategies to improve medical students' and healthcare providers' well-being and ability to provide compassionate care (Boellinghaus et al., 2014; Raab, 2014). The current search revealed 22 articles reporting on interventions purported to increase self

compassion in healthcare providers, 16 of which were empirical studies (Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Brown & Biegel, 2007; Moore, 2008; Rimes & Wingrove, 2010; Newsome, Waldo, & Gruszka, 2012; Bazarko, Cate, Azocar, & Kreitzer, 2013; Bond et al., 2013; Erogul, Singer, McIntyre, & Stefanov, 2014; Marx, Strauss, & Williamson, 2014; Gauthier, Meyer, Grefe, & Gold, 2015; Raab, Sogge, Parker, & Flament, 2015; Beaumont, Irons, Rayner, & Dagnall, 2016b; Finlay Jones, Kane, & Rees, 2016; Dos Santos et al., 2016; Duarte & Pinto-Gouveia, 2016b; Rao & Kemper, 2016), with mindfulness-based stress reduction (MBSR) interventions being the most common educational technique (Kabat-Zinn, 2003) (**Table 3**).

Results from these intervention studies were mixed, with some studies reporting a significant increase in self-compassion (Shapiro et al., 2005, 2007; Rimes & Wingrove, 2010; Newsome et al., 2012; Bazarko et al., 2013; Bond et al., 2013; Erogul et al., 2014; Marx et al., 2014; Raab et al., 2015; Beaumont et al., 2016b; Duarte & Pinto-Gouveia, 2016b; Finlay-Jones et al., 2016; Rao & Kemper, 2016), and others reporting no significant change (Moore, 2008; Gauthier et al., 2015; Dos Santos et al., 2016). While many researchers posit that MBSR and related interventions increase self-compassion and thus reduce work-related stress and improve positive affect in healthcare providers, few have identified the underlying mechanisms. Rimes & Wingrove (2010) found that increases in self-compassion resulting from Mindfulness-Based Cognitive Therapy (MBCT) were not correlated with reductions in stress in trainee clinical psychologists, while Gauthier et al. (2015) showed that an on-the-job mindfulness based intervention (weekly 30 min group session and 10 minute practice at home) significantly increased self-compassion in pediatric ICU nurses; an effect that was negatively correlated with depersonalization and perceived stress and positively correlated with mindfulness and personal

achievement. One qualitative study of physicians (n=11) showed that a Physician Well-being Coaching program based on mindful awareness that explored participants' visions of optimal health and guided them through a process of change towards specific goals, increased resilience via skill and awareness development in boundary setting and prioritization, self-compassion and self-care and self-awareness. Physicians reported behavior changes that they perceived had a positive impact on patient care, including an increased capacity for focused listening and being better able to support and provide nurturing care to their patients (Schneider, Kingsolver, & Rosdahl, 2014).

A major critique of studies investigating interventions that report on self-compassion in healthcare providers as an outcome is that most lacked a control group and they all used the SCS as a self-reported measure of self-compassion. Furthermore, the majority of studies only reported the total SCS score, making it difficult to determine which particular subscale of the SCS was most impacted by the intervention. Due to this limitation, Barnard notes that MBSR interventions may only impact the mindfulness subscale of the SCS rather than influencing self-compassion more generally (Barnard & Curry, 2011). Moore (2008) however, did report a significant increase in the self-kindness component of self-compassion in response to a 4-week MBSR program, but no change in the overall construct, in trainee clinical psychologists, and Raab et al. (2015) reported significant decreases in self-judgment, isolation, and over-identification and a significant increase in common humanity following an 8-week MBSR in female mental healthcare workers. Rao & Kemper (2016) reported significant differences on all subscales of the SCS after an online positive-emotion-generating meditation program in nurses, physicians, dietitians, social workers, psychologists, licensed counselors and others, and Beaumont et al. (2016b) noted a reduction in 'self-critical judgement' calculated using a

composite of item scores of the SCS following compassion-focused training in nurses and midwives, counselors/psychotherapists, and other healthcare providers, although the basis for this calculation was drawn from a single study (Lopez et al., 2015) and thus lacks robust validation.

Further, the clinical relevance of therapeutic interventions that are purported to cultivate self-compassion in healthcare providers is unclear. Mindfulness-based interventions such as MBSR and MBCT use meditation techniques to manage stress and physical and psychological illness in clinical and non-clinical populations (Grossman, Niemann, Schmidt, & Walach, 2004), as well as in healthcare providers (Irving, Dobkin, & Park, 2009; Boellinghaus et al., 2014; Raab, 2014; Smith, 2014; Lamothe et al., 2015). As such, they do not directly teach self-compassion per se, but rather the development of self-awareness, non-judgment and emotional acceptance, which seems to have a positive, but secondary effect on self-compassion as measured by the SCS (Neff & Dahm, 2015), as well as some other latent variables of positive affect (Shapiro et al., 2007) and mental well-being (Bazarko et al., 2013). In these programs, it is suggested that participants learn the principles of self-compassion through leaders who embody kindness in their presence and guidance, which raises the issue of the teachability of self-compassion as it should be a largely inherent, emotional and attitudinal construct (Pence, 1983; Neff, 2003a; Neff & Dahm, 2015). Furthermore, the specific impact of interventions on self-compassion versus their broader effect on affective states in general is difficult to determine, which is also compounded by the paucity of studies investigating which SCS subscales are most impacted by mindfulness-based interventions (Barnard & Curry, 2011; Sinclair et al., 2016c). Finally, while one of the central claims of the self-compassion literature is the improvement of

compassionate care to others, we could find no study that evaluated this primary outcome or included patients' perspectives on the impact that such interventions have on provision of care.

In summary, self-care is essential for healthcare providers' health and wellbeing. Self-compassion, emotional intelligence, and mindfulness training are gaining popularity as self-care strategies to improve compassionate care. However, results from intervention studies are varied, few have investigated underlying mechanisms, all studies used the SCS, the effect of self-compassion interventions on other positive affective states has not been adequately determined and we found no studies that measured the impact of self-compassion on patient care.

4. Discussion

This meta-narrative review of self-compassion in the healthcare literature revealed that the concept of self-compassion evolved largely from the integration of Buddhist constructs into Western psychological approaches in the 1990s in order to better understand healthy self-attitudes (Neff, 2003a). Concurrently, interest in self-compassion in healthcare arose primarily in response to a call for the development of stress management initiatives in healthcare providers (Canadian Nurses Association, 2010) and the identification of the erosion of compassion as a significant factor in recent healthcare inquiries (American Medical Association, 2001; Institute of Medicine, 2004; Francis, 2013; Maclean, 2014; Willis 2015). Subsequent empirical and theoretical studies on self-compassion in healthcare concluded that practicing self-compassion has the potential to reduce stress in healthcare providers (Finlay-Jones et al., 2015; Beaumont et al., 2016a), thereby enhancing therapeutic relationships with patients and family (Heffernan et al., 2010; Patsiopoulos & Buchanan, 2011; Gustin & Wagner, 2012; Olson & Kemper, 2014; Senyuva et al., 2014), although evaluation of the impact of healthcare provider self-compassion

on care delivery has ironically not included patient and family members themselves. Consequently, the literature is replete with suggestions that self-compassion, emotional intelligence, and mindfulness training should be incorporated into medical students' curricula and programs that promote healthcare providers' well-being (Patsiopoulos & Buchanan, 2011; Senyuva et al., 2014; Olson et al., 2015; Kemper et al., 2015; Beaumont et al., 2016a).

While all review authors agree that healthcare provider self-kindness and self-care strategies are essential to sustaining healthcare provider well-being and likely result in enhanced quality patient care, the findings from this meta-narrative review indicate that the construct of self-compassion itself, and therefore reported associations with improved healthcare provider well-being and compassionate caregiving, are not without significant limitations. These include concerns regarding the construct validity of self-compassion, specifically as it relates to the construct of compassion; that most research on self-compassion has been conducted using the SCS, thereby diminishing its clinical relevance and utility; investigation of the mechanisms mediating the associations between self-compassion and stress or the ability to be compassionate in healthcare providers has been inconclusive; and the specific impact of interventions on self-compassion versus their broader effect on affective states in general has not been determined. Finally, there is a dearth of research demonstrating the actual impact that self-compassion has on the recipients of compassionate care, despite this being postulated as a central outcome of self-compassion interventions.

This review does not contest that healthcare providers' experience significant and frequent occupational stress resulting in impaired emotional, social and spiritual health, impacting healthcare providers and their patients. Likewise, it does not diminish the importance of self-care and self-kindness in sustaining healthcare providers and enhancing patient care.

Rather, our aim is to review the construct of self-compassion and the evidence suggesting that increased self-compassion in healthcare providers can reduce occupational stress and optimize their ability to provide compassionate care to others. As a result of the limitations associated with self-compassion as a construct, we suggest that self-compassion be critically re-examined, and its applicability to clinical practice reconsidered. We propose that coupling the concept of self-attitude and self-care with compassion diminishes the inherently relational, prosocial, action-orientated and selfless nature of compassion. The proposed elements of self-compassion, including being kind and understanding toward oneself, perceiving one's failures as a universal human experience, and being aware of one's negative thoughts, seem to be more accurately associated with self-awareness and the development of a healthy self-attitude in general, which undoubtedly have a positive effect on the caregiving outcomes that impact healthcare providers and their patients, including compassion (Rowe 1999; Eckroth-Bucher, 2010; Scheick 2011; Gessler & Ferron, 2012; Palmiere 2012; Rasheed, 2015). As the construct of self-compassion lacks specificity and construct validity, we propose that self-compassion is more accurately construed as a composite of common facets of self-care, healthy self-attitude, and self-awareness rather than a construct in and of itself.

There is a large and evolving literature on self-compassion in healthcare providers. In this review we provide a balanced critique of the concept of self-compassion in healthcare providers after considering a representative set of studies captured by our rigorous methodology. However, our study is limited as strength-of evidence criteria were not applied to the included articles. Self-compassion is a broad and complex topic encompassing theoretical and empirical studies,

many of which cannot be appropriately assessed with strength-of evidence grading. We believe that this review provides the foundation for more systematic studies.

The role of healthcare providers in compassionate care cannot be diminished—they are the primary conduit and pathway of compassion in a healthcare setting. Unfortunately, the growing concern about the state of compassion in healthcare often unfairly implicates these individuals in instances where compassion is lacking. As a result, interventions, of which self-compassion techniques are one, have sought to remedy these deficiencies by first enhancing internal resources within healthcare providers, in order to improve compassionate care to others. While a healthy self is undoubtedly an important factor in compassionate care, the way forward may not require a turn inward, but a turn outward—by allowing and empowering healthcare providers to fulfill their innate desire to address and ameliorate the suffering of someone beyond

themselves (Ledoux, 2015; AMA, 2001)—which in turn may have a corollary effect on self-kindness, job-satisfaction, and a positive self-attitude.

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Table 1: Self-compassion and Other Self Themes: Theoretical and Empirical Distinctions (adapted from Barnard, 2011)

Self Theme	Definition	Self-compassion: Distinctions	Reference
Humanistic psychology			
Unconditional positive regard	An unconditionally caring stance towards self	<ul style="list-style-type: none"> • Self-compassion includes self-acceptance through a sense of shared humanity; self is not separated from others • Self-compassion includes common humanity and mindfulness 	Neff 2003b
B-perception	Personal failings are accepted with a nonjudgmental, loving, forgiving orientation to self		
Unconditional self-acceptance	An individual's their worth not is assumed and weakness is acknowledged and forgiven		
Self-criticism	Self-judgment	<ul style="list-style-type: none"> • Self criticism engenders isolation • Self critics cope using behavioral and mental disengagement 	Dunkley, Suroff, & Blankstein, 2003; Zuroff, Moskowitz, & Cote, 1999
Global self-esteem	A favorable global evaluation of oneself: self-liking and self-competence	<ul style="list-style-type: none"> • The correlation between self-compassion and global self-esteem is not sufficient to imply they are the same construct • Self-compassion and global self-esteem have different correlates • Self-compassion predicts unique variation in psychological variables after controlling for self-esteem • There are cultural differences in average levels of self-compassion and global self-esteem 	Leary, Tate, Adams, Batts Allen, & Hancock, 2007; Neff & Vonk, 2009; Neff, 2003b; Neff, Pisitsungkagarn, & Hsieh, 2008
Self-pity	Being engrossed in one's own suffering to the point of exaggerating it	<ul style="list-style-type: none"> • Self-compassion relates one's own suffering to others and holds pain in mindful awareness 	Neff, 2003b Nolen-Hoeksema, 2000
Self-centeredness	Concerned solely or chiefly with one's own interests	<ul style="list-style-type: none"> • Self-compassion fosters social connectedness and compassion for other 	Neff, 2003b
Self-complacency	Indifference, resignation	<ul style="list-style-type: none"> • Self-compassion encourages growth as self-compassionate individuals desire health and well-being for the self, not stagnation 	Neff, 2003b

Table 2: Self-compassion as a moderating influence on self-management skills and compassionate care in healthcare providers: Empirical and qualitative evidence

Author	Study population	Measures	Results	Conclusion
Duarte et al., 2016a	280 registered nurses	Self-Compassion Scale Professional Quality of Life Scale Interpersonal Reactivity Index	<ul style="list-style-type: none"> • Empathic concern was positively associated with compassion satisfaction ($r = .41$; $p < .01$) and compassion fatigue ($r = .18$; $p < .01$) • Negative components of self-compassion (self-judgment, isolation and over-identification) were significant mediators of the association between empathic concern and compassion fatigue. • Positive components of self-compassion (self-kindness and common humanity) moderated the association between empathic concern and compassion fatigue. 	Self-compassion might be protective for compassion fatigue
Durkin et al., 2016	37 registered community nurses	Self-Compassion Scale Professional Quality of Life Scale Short Warwick Edinburgh Mental Wellbeing Scale Compassion For Others Scale	<ul style="list-style-type: none"> • Self-compassion and wellbeing was negatively correlated with burnout ($r = -.37$; $p < .05$) 	Self-care behaviors should be included in nursing education
Montero-Martin et al., 2016	440 primary healthcare professionals (214 general practitioners, 184 nurses, 42 medical residents)	Burnout Clinical Subtype Questionnaire Maslach Burnout Inventory General Survey Self-Compassion Scale Utrecht Work Engagement Scale Positive and Negative Affect Schedule	<ul style="list-style-type: none"> • Self-judgment explained the frenetic burnout clinical subtype ($\text{Beta} = .36$; $p < .001$). • Isolation explained the underchallenged burnout clinical subtype ($\text{Beta} = .16$; $p = .010$) • Over-identification explained the worn-out burnout clinical subtype ($\text{Beta} = .25$; $p = .001$) 	Negative self-compassion dimensions should be considered when designing interventions for burnout clinical subtypes
Beaumont et al., 2016a	103 student midwives	Self-Compassion Scale Professional Quality of Life Scale Short Warwick and Edinburgh Mental Well-being Scale Compassion For Others Scale	<ul style="list-style-type: none"> • Self-compassion and well-being was negatively associated with burnout ($r = -0.312$, $p < 0.01$; $r = -0.530$, $p < 0.01$) and compassion fatigue ($r = -0.192$, ns; $r = -0.213$, $p < 0.05$) • Self-judgment was negatively associated with self-kindness ($r = -0.570$, $p < 0.01$) and well-being ($r = -0.373$, $p < 0.01$) and compassion for others ($r = -0.216$, $p < 0.05$) 	Compassionate mind training, mindfulness practice and/or stress reduction programs should be incorporated into student midwifery curriculum
Finlay-Jones et al., 2015	198 psychologists, including postgraduate trainees	Self-Compassion Scale-Short Form Demographic questionnaire Difficulties in Emotion Regulation Scale Depression Anxiety Stress Scales	<ul style="list-style-type: none"> • There were significant associations between self-compassion and emotion regulation difficulties (-0.58, $p < 0.001$), and stress, and emotion regulation difficulties (0.51, $p < 0.01$). 	Self-compassion is a reliable predictor of stress

	undertaking clinical work	Neuroticism subscale of the Big Five Inventory		
Olson et al., 2015	45 first-year pediatric and medicine-pediatric residents	Self-Compassion Scale Five Facet Mindfulness Questionnaire Jefferson Scale of Physician Empathy Emotional Social Competency Inventory	<ul style="list-style-type: none"> Mindfulness and self-compassion were negatively associated with burnout and positively correlated with resilience ($r = 0.59, p < 0.05$; $r = 0.89, p < 0.05$) 	Mindfulness and self-compassion may be targets for training pediatric residents
Kemper et al., 2015	213 clinicians and trainees	Self-Compassion Scale Cognitive and Affective Mindfulness Scale, Revised PROMIS Sleep scale Brief Resilience Scale PROMIS Global Health measures Perceived Stress Scale	<ul style="list-style-type: none"> Sleep disturbances were associated with perceived stress, poorer health, less mindfulness and less self-compassion. Resilience was associated with less stress and better mental health, more mindfulness, and more self-compassion 	Mindfulness and self-compassion training may improve clinicians' sleep and resilience
Senyuva et al., 2014	571 nursing students	Self-Compassion Scale Trait Emotional Intelligence Assessment Scale	<ul style="list-style-type: none"> Self-compassion was positively associated with emotional intelligence ($r = 0.400, p > 0.01$). 	Nursing education programs should include the development of self-compassion and/or emotional intelligence as basic elements of nursing care
Crarey, 2013	153 nursing students	Self-Compassion Scale Perceived Stress Scale 10 Brief COPE Positive Affect and Negative Affect Scale (PANAS) PRIME-MD Learning Climate Questionnaire Perceived Competence Scale Self-Regulation Questionnaire	<ul style="list-style-type: none"> Perceived stress overall was inversely correlated with self-compassion ($r = -.59; p < .001$) Perceived stress related to nursing school was inversely correlated with self-compassion ($r = -.46; p < .001$) Self-compassion was positively correlated with positive mood ($r = .38; p < 0.001$) and inversely correlated with negative mood ($r = -.48; p < .001$) and physical symptoms ($r = -.35; p < .001$) Supportiveness of educator in theory was positively correlated with self-compassion ($r = .29; p < .01$) 	Self-care behaviors should be included in nursing education
Olson & Kemper, 2014	12 medical students, residents, and 1 faculty member	Self-Compassion Scale Freiburg Mindfulness Inventory PROMIS sleep scale Diener's Short Flourishing Scale PROMIS global health scales Smith's Brief Resilience Inventory Cohen's 10-item Perceived Stress Scale Calm Compassionate Care Scale	<ul style="list-style-type: none"> Mindfulness and self-compassion were positively associated with confidence in providing calm, compassionate care ($r = 0.81, p < 0.01$; $r = 0.91, p < 0.01$), and clinician resilience ($r = 0.59, p < 0.05$; $r = 0.89, p < 0.05$), which was correlated with clinician mental health ($r = 0.83, p < 0.01$) Perceived stress was negatively correlated with all measures (calm care $r = -0.92, p < 0.01$; self-compassion $r = -0.79, p < 0.01$; flourishing $r = -0.62, p < 0.05$, mental health $r = -0.78, p < 0.01$; mindfulness $r = -0.69, p < 0.05$; resilience $r = -0.88, p < 0.01$) 	Clinician mindfulness and self-compassion are important for clinician well-being and confidence in providing calm, compassionate care.

Heffernan et al., 2010	135 nurses	Self-Compassion Scale Trait Emotional Intelligence Questionnaire Short Form	<ul style="list-style-type: none"> • Self-compassion was positively associated with and emotional intelligence ($r= 0.55$, p value not given) 	Screening tools could be used as a systematic approach to identify nurses with low self-compassion and offer intervention training
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Table 3: Empirical Intervention Studies Reporting on Self-compassion in Healthcare Providers as an Outcome

Reference	Study	Population	Intervention	Findings	Conclusions
Beaumont et al., 2016b	Pre-post intervention study (no control) to determine whether compassion-focused therapy can improve self-compassion and reduce self-criticism and self-persecution in healthcare educators and providers	Nurses and midwives, counselors/psychotherapists, and other health care providers (n=28)	3-day introductory workshop on compassion-focused therapy	<ul style="list-style-type: none"> • Increase in self compassion (p=.001) • No reduction in self-criticism or self-persecution 	<ul style="list-style-type: none"> • Compassion-based exercises may change levels of self-compassion and self-critical judgment, and aid in the development of more compassionate care among healthcare providers
Dos Santos et al., 2016	Pre-post intervention study (no control) to determine whether mindfulness meditation can mitigate stress in nursing professionals in Brazil	Nurses, technicians, and nursing assistants in Brazil (n=13)	6-week mindfulness and loving kindness meditation	<ul style="list-style-type: none"> • Decrease in perceived stress (p=.001) • Decrease in burnout (p=.020) • Decrease in depression (p=.007) • Decrease in trait anxiety (p=.049) • Increase in physical (p=.002) and physiological (p=.007) domains of the WHOQOL-BREF • No change in self compassion • No change in satisfaction with life 	<ul style="list-style-type: none"> • A Stress Reduction Program may be effective for stress, burnout, depression, and quality of life in a Brazilian hospital setting.
Duarte et al., 2016b	A nonrandomized, wait-list comparison design investigating the effectiveness of a mindfulness-based intervention for nurses	Oncology nurses (n=94: intervention, 45; control, 48) (Complete data was only obtained for 48 of the participants)	6-week mindfulness-based group intervention	<ul style="list-style-type: none"> • Decrease in compassion fatigue (p<.001) • Decrease in burnout (p=.002) • Decrease in stress(p=.008) • Decrease in experiential avoidance (p=.001) • Increase in satisfaction with life (p=.026) • Increase in mindfulness (p=.026) • Increase in self compassion (p=.02) 	<ul style="list-style-type: none"> • Mindfulness-based interventions may reduce burnout, compassion fatigue and stress levels and increase their overall well-being in oncology nurses
Finlay-Jones et al., 2016	Pre-post intervention study (no control) to determine whether self-guided online self-compassion training can reduce psychological distress and increasing self-compassion and happiness among psychology trainees	Australian psychology trainees (n = 37)	6-week online self-compassion cultivation program	<ul style="list-style-type: none"> • Increase in self-compassion (p<.001) • Increase in happiness (p=.001) • Decrease in depression (p=.002) • Decrease in stress (p=.002) • Decrease in emotion regulation difficulties (p=.001) 	<ul style="list-style-type: none"> • Online self-compassion training may reduce distress and promote self-compassion and happiness among trainee psychologists

Rao & Kemper, 2016	Pre-post intervention study (no control) to determine the impact of brief, online training for health professionals	Nurses, physicians, dietitians, social workers, psychologists, or licensed counselors, and others	3 online meditation training modules	<ul style="list-style-type: none"> • Increase in gratitude ($p < .001$) • Increase in well-being ($p < .001$) • Increase in self-compassion ($p < .001$) • Increase in confidence in providing compassionate care ($p < .001$) 	<ul style="list-style-type: none"> • Brief, online training in positive-emotion-generating meditation practices appeals to diverse health professionals
Raab et al., 2015	Pre-post intervention study (no control) to determine the effects of MBSR on self-compassion, burnout, and quality of life in mental health professionals	Female mental healthcare workers ($n=22$)	8 week MBSR educational intervention	<ul style="list-style-type: none"> • Increase in self compassion ($p=.003$) • No change in burnout • No change in quality of life 	<ul style="list-style-type: none"> • MBSR is beneficial for self-compassion in healthcare providers
Gauthier et al., 2015	Pre-post intervention study (no control) to determine whether MBSR can improve nursing stress, burnout, self-compassion, mindfulness, and job satisfaction	PICU Nurses ($n=38$)	30-day program based on MBSR (5-minute daily)	<ul style="list-style-type: none"> • No change in burnout • Decrease in perceived stress from baseline to post-intervention (time 2, $p = .006$) • No change in mindfulness • No change in self-compassion • No change in job satisfaction 	<ul style="list-style-type: none"> • Non-significant increases in mindfulness and self-compassion may be due to the brief nature of the 5-minute/day intervention over the course of 1-month
Marx et al., 2014	Pre-post intervention study (no control) to evaluate the effects of Mindfulness-based Cognitive Therapy (MBCT) in a National Health Service (NHS) mental health Trust	Staff working in an NHS mental health service ($n=42$)	8-week protocol for MBCT	<ul style="list-style-type: none"> • Decrease in perceived stress ($p < .001$) • Increase in self-compassion ($p < .001$) 	<ul style="list-style-type: none"> • An adapted MBCT group offered to healthcare staff is feasible
Erogul et al., 2014	Randomized controlled trial to determine whether MBSR can improve medical student wellness	Medical student ($n=58$: intervention, 28; control, 30)	8-week program based on MBSR	<ul style="list-style-type: none"> • Decrease in perceived stress ($p = .03$) • Increase in self-compassion at end of study ($p = .23$), and 6 months post intervention ($p = .001$) • No change in resilience 	<ul style="list-style-type: none"> • An abridged MBSR intervention improves perceived stress and self-compassion in 1st-year medical students and may be a valuable curricular tool to enhance wellness and professional development
Bond et al., 2013	Pre-post intervention study (no control) to evaluate the effects of an 11-week Embodied Health course of medical students	First- and second-year medical students ($n=27$)	11-week Embodied Health course, which includes yoga Meditation, and neuroscience didactics	<ul style="list-style-type: none"> • Increase in self-regulation ($p=.003$) • Increase in self-compassion ($p=.04$) • No change in empathy • No change in perceived stress 	<ul style="list-style-type: none"> • A mind-body course may increase self-regulation and self-compassion in medical students..

Bazarko et al., 2013	Pre-post intervention study (no control) to determine whether MBSR can improve the health and well-being of nurses	Nurses (n=36 completed)	8-week group telephonic sessions (tMBSR) based on MBSR	<ul style="list-style-type: none"> • Decrease in perceived stress (from time 1 to 2, $p < 0.001$); • Improvement in mental well-being (from time 1 to 2, $p < 0.001$) • No change in physical well-being • Decrease in burnout (from time 1 to 2, $p < 0.001$) • Increase in self-compassion (from time 1 to time 2, $p < 0.001$) • Increase in serenity (from time 1 to time 2, $p < 0.001$) • Increase in empathy (from time 1 to time 2, $p < 0.001$) 	<ul style="list-style-type: none"> • A tMBSR program can be a low cost, feasible, and scalable intervention that shows positive impact on health and well-being, and could allow MBSR to be delivered to employees who are otherwise unable to access traditional, on-site programs.
Newsome et al., 2012	Pre-post intervention study (no control) to examine the effects of MBSR on students intending to enter helping professions*	Students in helping professions (n=31)	8-week program based on MBSR	<ul style="list-style-type: none"> • Decrease in perceived stress ($p < .0001$) • Increase in mindfulness ($p < .001$) • Increase in self-compassion ($p < .0001$) 	<ul style="list-style-type: none"> • Mindfulness groups should be part of the training for students entering helping professions to ensure helpers are equipped with tools to address the stressors inherent in their profession.
Rimes & Wingrove, 2010	Pre-post intervention study (no control) to examine the effects of MBSR on clinical psychologists in training	Trainee clinical psychologists (n=20)	MBCT modified for stress	<ul style="list-style-type: none"> • No change in anxiety and depression • Decrease in rumination ($p < .0005$), • Increase in mindfulness ($p = .0008$) • Increase in self-compassion ($p = .016$). 	<ul style="list-style-type: none"> • MBCT allowed trainees to experience many of the processes they aim to cultivate in clients
Moore, 2008	Pre-post intervention study (no control) to examine the effects of MBSR on clinical psychologists in training	Trainee clinical psychologists (n=10)	4-week program based on MBSR	<ul style="list-style-type: none"> • No change in perceived stress • Increase in mindfulness ($p = .04$) • No change in self-compassion 	<ul style="list-style-type: none"> • Participants became more aware of internal states, the tendency to judge these, and the tendency to act without awareness.
Shapiro et al., 2007	Quasi-experimental study (control) to examine the effects of MBSR on therapists and therapist trainees	Counseling psychology student (n=54: intervention, 22; control, 32)	10-week program including 8-week MBSR Research methods and psychological theory (control)	<ul style="list-style-type: none"> • Increase in mindfulness • No change in negative affect/Increased positive affect • Decrease in perceived stress ($p < 0.001$) • No change in state anxiety ; decreased trait anxiety ($p < 0.001$) • Decrease in rumination ($p < 0.01$) • Increased self-compassion ($p < 0.01$) 	<ul style="list-style-type: none"> • A MBSR program was associated with improvements in graduate counseling psychology students' mental health

Shapiro et al., 2005	RCT to examine the effects of MBSR on healthcare providers	Healthcare providers (n=28: intervention, 10; control, 18)	Standard 8-week MBSR	<ul style="list-style-type: none"> • No change in psychological distress • No change in burnout • Decrease in perceived stress (p =0.04) • No change in satisfaction with life • Increase in self-compassion (p =0.004) 	<ul style="list-style-type: none"> • Healthcare providers who participated in the MBSR intervention reported decreased perceived stress and greater self-compassion when compared with controls
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* Nursing, social work, counseling, psychology, and teaching; MBCT, Mindfulness-based Cognitive Therapy; MBST, Mindfulness-based Stress Reduction ; WHOQOL-BREF World Health Organization Quality of Life

