

# What Is the State of Compassion Education? A Systematic Review of Compassion Training in Health Care

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## Abstract

### Purpose

To investigate the current state and quality of compassion education interventions offered to health care providers during training or practice, determine how the components of each education intervention map onto the domains of an empirically based clinical model of compassion, and identify the most common approaches to compassion education.

### Method

The MEDLINE, Embase, CINAHL Plus with Full Text, Sociological Abstracts, Web of Science, ERIC, and Education Research Complete databases were searched from inception to March 2020 in this systematic review. Studies that evaluated a compassion education intervention for health care providers or those in training to enhance compassion

toward patients and/or families were included. A narrative synthesis of the included studies was performed. The components of each intervention were mapped onto the domains of compassion described in the Patient Compassion Model.

### Results

One hundred eight peer-reviewed publications describing 103 interventions were included. Modalities ranged from establishing curricula and interventions in clinical settings to programs that used humanities-based reflective practices, clinical simulation, role modeling, and contemplative practices, with many education interventions adopting a multimodal approach. Most interventions mapped to the virtuous response domain of the Patient Compassion Model; very few

mapped to the other domains of this model.

### Conclusions

Most interventions were limited as they focused on a single domain of compassion; did not adequately define compassion; were assessed exclusively by self-report; were devoid of a comparator/control group; and did not evaluate retention, sustainability, and translation to clinical practice over time. The authors suggest that compassion education interventions be grounded in an empirically based definition of compassion; use a competency-based approach; employ multimodal teaching methods that address the requisite attitudes, skills, behaviors, and knowledge within the multiple domains of compassion; evaluate learning over time; and incorporate patient, preceptor, and peer evaluations.

Compassion has been identified by patients as “a virtuous and intentional response to know a person, to discern their needs and ameliorate their suffering through relational understanding and

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action.”<sup>1</sup> Additionally, compassion is now recognized by medical professionals and health care providers as an essential feature of quality health care and a cornerstone of medical codes of ethics<sup>2–4</sup> and is arguably the greatest indicator of quality health care according to patients and family members.<sup>5–10</sup> The impact of compassion extends beyond patients’ perceptions, affecting symptom burden,<sup>10–12</sup> quality of life,<sup>11</sup> satisfaction with care,<sup>9,10,13–15</sup> health care provider–patient relationships,<sup>16,17</sup> patient disclosure and management of health issues,<sup>16,18</sup> and health care costs.<sup>9,19</sup> Further, among health care providers, compassion is associated with enhanced workplace well-being, job satisfaction, and retention.<sup>10,18,20,21</sup>

Traditionally, contemporary health care provider training has undervalued the need to develop human aspects of medicine and care, such as compassion, empathy, respect, and interpersonal skills.<sup>22,23</sup> Since the Flexner Report in

1910, teaching, training, and practice within clinical medicine and nursing have been heavily grounded in a biomedical model, which explains and focuses on disease in scientific, pathologic, and physiologic terms.<sup>24</sup> More recently, due to the results and recommendations of system-wide health care reviews and surveys,<sup>17,23,25–30</sup> health care provider education is increasingly expected to embed aspects of compassion into the curriculum.<sup>23,31</sup>

The challenges to developing compassion training programs are many, as compassion is a dynamic, individualized, and complex construct.<sup>1,32,33</sup> Further, compassion is mediated by the intrinsic qualities that learners possess before their health care training, which are cultivated through their family of origin, life experiences, spiritual traditions, personal suffering, and experiences of receiving and offering compassion.<sup>1,31</sup> Accordingly, compassion training programs must enable learners to develop the attitudes,

knowledge, skills, and behaviors associated with compassion, while nurturing and sustaining the qualities of compassion that learners bring with them.

While the limitations of using conventional educational approaches to cultivate and sustain compassion are recognized, there is a lack of consensus on the teaching methods that are most effective for compassion education for health care providers.<sup>22,34,35</sup> As a prerequisite to developing effective compassion training programs for health care providers, the literature describing existing education interventions must be examined—an imperative step that, in spite of the array of reputed compassion training programs, has not been comprehensively conducted. One previous review concluded that curricula aimed at improving physician empathy and/or compassion were effective; however, this review was limited as it did not clearly differentiate between the constructs of empathy and compassion.<sup>36</sup>

Establishing an empirical foundation of the literature will enable an evaluation of the performance of current compassion training programs and an understanding of the weaknesses that must be addressed in future studies and program development. The objectives of the present review were to: (1) perform a systematic review investigating the current state and quality of compassion education interventions (e.g., curricula, programs, workshops, rounds, professional development, lectures, seminars, rotations, training) offered to health care providers during training or practice, (2) determine how the components of each education intervention map onto the domains of an empirically based clinical model of compassion,<sup>32</sup> and (3) identify the most common approaches to compassion education.

## Method

The methodology for this systematic review was based on the Cochrane Handbook for Systematic Reviews of Interventions.<sup>37</sup> The results are reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.<sup>38</sup>

## Search strategy

A review team (S.S., T.F.H., P.J., L.D.), composed of subject matter and methodological experts in the field

(<http://www.drshanesinclair.com>) of compassion, developed a search strategy to identify specific studies that have evaluated compassion education interventions in health care. Two members of the review team (P.J., L.D.) conducted a search of the literature using the electronic databases MEDLINE; Embase; CINAHL Plus with Full Text; Sociological Abstracts; Web of Science; ERIC (Education Resources Information Center); and Education Research Complete from inception to March 18 (Embase), March 19 (MEDLINE), or March 20, 2020 (CINAHL Plus with Full Text, Sociological Abstracts, Web of Science, ERIC, and Education Research Complete). The search strategy combined an extensive list of subject headings and keywords to include the concepts of health care personnel, compassion, and education or professional development. A gray literature search of relevant organizational websites, including Edinburgh Napier University, the Center for Compassion and Altruism Research and Education, and the Schwartz Center for Compassionate Healthcare, was completed on March 15, 2020. Supplemental Digital Appendix 1 (at <http://links.lww.com/ACADMED/B90>) details the search strategies. Reference lists of included articles were reviewed. Searches were restricted to studies in English.

## Inclusion and exclusion criteria

All studies that developed, conducted, and evaluated a compassion education intervention (e.g., curricula, programs, workshops, rounds, professional development, lectures, seminars, rotations, training) for health care providers or those in training (e.g., medical students, nursing students) with an objective and/or outcome directed at enhancing compassion toward patients and/or families were included. Exclusion criteria were: (1) studies that lacked outcomes showing the impact of a compassion education intervention on health care providers, patients, and/or families and (2) studies, editorials, or commentaries that discussed needs, made recommendations, or described program development in compassion but did not conduct research on the topic.

## Study selection and data extraction

Search results were compiled using Covidence systematic review software.<sup>39</sup> Duplicates were automatically identified

using Covidence. Additional duplicates identified during screening were removed. Data from eligible studies were extracted to a Microsoft Excel (2007, Microsoft, Inc., Redmond, Washington) datasheet.

Two review authors (S.S., J.K.) examined titles and abstracts to select eligible studies. The full text of potentially relevant studies was retrieved and examined by the same 2 authors to determine which studies met the inclusion criteria. The same authors (S.S., J.K.) then extracted data from included studies, including information on study populations, interventions, and outcomes. Disagreements about study selection and data extraction were resolved by discussion with other members of the review team (T.F.H., P.J., A.L.R.d.O.) until consensus was reached.

## Assessment of risk of bias in included studies

The Cochrane Collaboration's domain-based evaluation (selection, performance, detection, attrition, reporting, and other biases) was used to investigate the risk of bias of the included studies. A risk of bias table was generated for each included study (see Supplemental Digital Appendix 2 at <http://links.lww.com/ACADMED/B90>).<sup>37</sup>

## Analysis

A narrative synthesis, which involves a systematic review and synthesis of findings to summarize and discuss research within emerging and complex fields of study, of the included studies was performed. Information was collated in a tabular form, including first author's last name, year of publication, study objective, setting, learner type, intervention, outcomes evaluated, findings, and comments. Education interventions were categorized according to education setting (e.g., classroom, clinically based) or teaching method (e.g., clinical simulation, role modeling, contemplative practices). The components of each intervention were mapped onto the multiple domains of compassion described in the Patient Compassion Model (see below),<sup>32</sup> an evidence-based, clinically relevant model of compassion that has been validated in various patient and health care provider populations.<sup>1,33,40</sup>

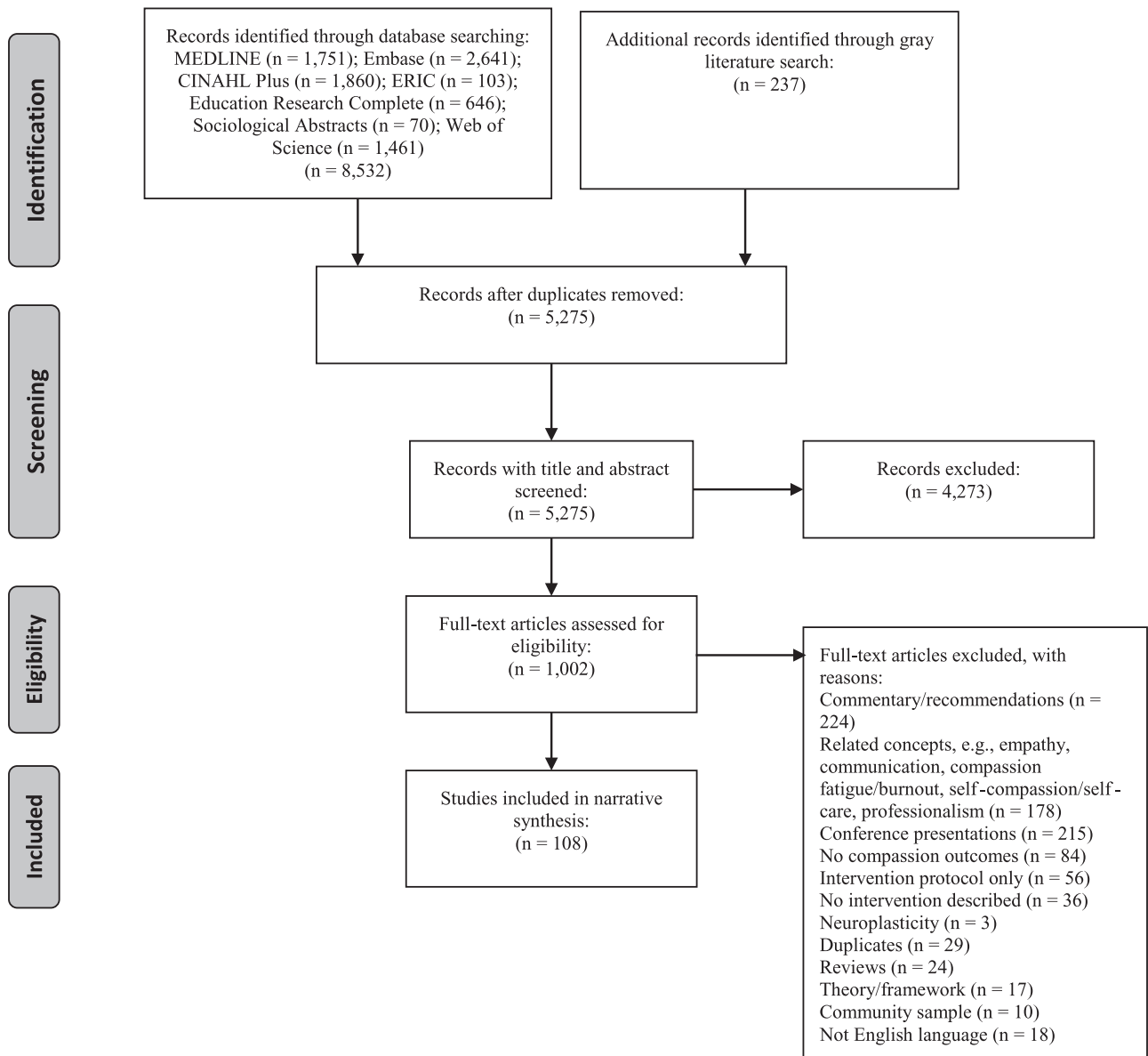
## Results

### Search flow

The electronic database search strategy identified 8,532 records, and the gray literature search identified 237 records (Figure 1). After duplicates were removed, the titles and abstracts of 5,275 records were screened using the inclusion criteria, and 1,002 full-text articles of potential relevance were retrieved. Of these, 838 articles were excluded and 164 were retained, including 108 peer-reviewed publications,<sup>41-148</sup> describing 103 education interventions (Table 1 and Supplemental Digital Appendix 3 at

<http://links.lww.com/ACADMED/B91>), and 56 abstracts reported as conference proceedings (see Supplemental Digital Appendix 4 at <http://links.lww.com/ACADMED/B91>). This systematic review focused on the education interventions described in the 108 peer-reviewed publications.<sup>41-148</sup> The abstracts reported as conference proceedings were included only to ensure the review provided a comprehensive representation of the current state of compassion education interventions in health care, but these were not critically appraised due to their preliminary and abridged nature.

The search identified a broad range of education interventions that have been used to nurture and sustain compassion in health care providers, with many education interventions adopting a multimodal approach. The narrative synthesis summarizes these education interventions within the overarching categories of education settings and teaching methods and maps the components of these education interventions onto the 5 interconnected domains of the Patient Compassion Model<sup>32</sup> (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>): (1) virtuous response,



**Figure 1** Preferred Reporting Items for Systematic Reviews and Meta-Analyses<sup>38</sup> flowchart showing the study selection of the appraised full-text articles (i.e., the 56 abstracts reported as conference proceedings mentioned in the main text are included in the flowchart as excluded full-text articles) in a 2020 systematic review of the literature on compassion education interventions for health care providers (both in training and practice). Abbreviations: CINAHL Plus, CINAHL Plus with Full Text; ERIC, Education Resources Information Center.

**Table 1**  
**Summary of the Major Characteristics of the Included Studies (n = 108)<sup>a</sup>**

Study characteristic	No. (%) of studies	References
<b>Geographic location</b>		
United States	50 (46.3)	41, 42, 43, 45, 46, 47, 48, 49, 52, 53, 54, 55, 56, 57, 61, 66, 68, 69, 77, 80, 81, 82, 90, 93, 94, 96, 97, 101, 103, 104, 107, 108, 109, 110, 112, 115, 118, 121, 122, 123, 125, 126, 127, 129, 131, 134, 137, 140, 141, 143
United Kingdom (including Scotland and Ireland)	26 (24.1)	70, 71, 72, 73, 74, 75, 76, 78, 85, 87, 88, 89, 91, 95, 98, 99, 105, 106, 111, 113, 117, 119, 120, 124, 146, 148
Canada	4 (3.7)	50, 83, 84, 86
The Netherlands	2 (1.9)	138, 139
Singapore	2 (1.9)	130, 135
Taiwan	2 (1.9)	44, 142
Australia	1 (0.9)	114
Botswana	1 (0.9)	58
Colombia	1 (0.9)	64
France	1 (0.9)	59
Germany	1 (0.9)	132
Israel	1 (0.9)	67
Jamaica	1 (0.9)	65
Mexico	1 (0.9)	144
Nepal	1 (0.9)	60
New Zealand	1 (0.9)	147
Nicaragua	1 (0.9)	63
Turkey	1 (0.9)	51
United Arab Emirates	1 (0.9)	100
Multiple/not provided	9 (8.3)	62, 79, 92, 102, 116, 128, 133, 136, 145
<b>Intervention</b>		
Curricula-based education	13 (12.0)	41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53
Service learning	16 (14.8)	54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69
Leadership programs	7 (6.5)	70, 71, 72, 73, 74, 75, 76
End-of-life care	2 (1.9)	77, 78
Specific patient population programs	3 (2.8)	79, 80, 81
Studentships	2 (1.9)	82, 83
Humanities-based reflective practices	23 (21.3)	84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106
Clinical simulation	8 (7.4)	107, 108, 109, 110, 111, 112, 113, 114
Role modeling	1 (0.9)	115
Contemplative practices	24 (22.2)	116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139
Other <sup>b</sup>	9 (8.3)	140, 141, 142, 143, 144, 145, 146, 147, 148
<b>Learner type</b>		
Medical students	26 (24.1)	41, 44, 47, 48, 49, 50, 55, 60, 61, 63, 82, 83, 90, 96, 97, 103, 106, 112, 118, 121, 123, 125, 140, 141, 142, 147
Nursing students	24 (22.2)	42, 51, 54, 56, 57, 58, 59, 62, 64, 65, 67, 69, 79, 88, 89, 91, 95, 107, 108, 109, 114, 125, 145, 146
Residents	12 (11.1)	45, 53, 86, 93, 96, 102, 103, 115, 125, 127, 137, 139
Trainee psychologists	6 (5.6)	100, 113, 116, 119, 128, 135
Mental health nursing students	1 (0.9)	98
Midwifery students	2 (1.9)	59, 87
Dental students	1 (0.9)	66
Clinical nutrition students	1 (0.9)	83
Dietician students	1 (0.9)	125

(Table continues)

Table 1

(Continued)

Study characteristic	No. (%) of studies	References
Osteopathic students	1 (0.9)	94
Pharmacy students	1 (0.9)	58
Physical therapy students	1 (0.9)	68
Social work students	1 (0.9)	125
Nurses	21 (19.4)	46, 65, 70, 71, 72, 74, 76, 77, 78, 80, 81, 84, 85, 91, 110, 124, 129, 133, 136, 137, 148
Nursing professors	2 (1.9)	64, 92
Cancer nurses	1 (0.9)	99
Critical care nurses	1 (0.9)	43
Midwives	1 (0.9)	76
Physicians	8 (7.4)	45, 102, 104, 122, 129, 131, 137, 138
Palliative physicians	2 (1.9)	101, 132
Oncologists	1 (0.9)	83
Mental health providers	5 (4.6)	105, 113, 117, 120, 130
Social workers	1 (0.9)	129
Mixed <sup>c</sup>	10 (9.3)	52, 73, 75, 78, 111, 126, 134, 143, 144, 147
<b>Study design</b>		
Single group, during intervention and/or post-test	58 (53.7)	41, 42, 46, 49, 50, 54, 55, 58, 59, 60, 61, 62, 63, 64, 65, 66, 68, 69, 70, 71, 73, 74, 75, 78, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 101, 102, 103, 104, 105, 106, 108, 114, 116, 117, 120, 128, 133, 140, 141, 143, 146
Single group, pre- and post-test	35 (32.4)	43, 44, 57, 67, 72, 76, 77, 79, 80, 81, 82, 100, 107, 110, 111, 112, 113, 115, 119, 121, 122, 123, 124, 126, 129, 130, 132, 134, 136, 137, 139, 142, 144, 145, 148
Nonrandomized trial	14 (13.0)	45, 47, 48, 51, 52, 53, 56, 109, 118, 125, 127, 135, 138, 147
Randomized controlled trial	1 (0.9)	131
<b>Evaluation</b>		
Self-report	86 (79.6)	42, 43, 44, 45, 46, 47, 49, 50, 51, 52, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 66, 67, 68, 69, 76, 77, 79, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 113, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 147
External assessment	2 (1.9)	80, 81
Self-report and external assessment	20 (18.5)	41, 48, 53, 54, 65, 70, 71, 72, 73, 74, 75, 78, 96, 97, 112, 114, 115, 131, 146, 148

<sup>a</sup>In a 2020 systematic review of the literature on compassion education interventions for health care providers (both in training and practice). Percentages in some sections may be less than or more than 100% due to rounding or because some studies were included in multiple categories for some characteristics.

<sup>b</sup>Interventions that did not succinctly fit into any of the other categories.

<sup>c</sup>Unspecified or multiple categories of health care professionals.

which is the activation and enactment of a health care provider's virtues (defined as the good or noble qualities embodied in the character of a health care provider that are the initial motivators of compassion) toward a person in need; (2) relational space, which is the context and content of a compassionate encounter where the person suffering is aware of and engaged by the virtuous response of a health care provider; (3) seeking to understand, which is the extent to which a health care provider attempts to understand the person's needs to tailor their compassionate response; (4) relational communication, which

is the verbal and nonverbal displays of compassion conveyed through a health care provider's demeanor, affect, behavior, and engagement with the person; and (5) attending to needs, which is a health care provider's timely, attuned desire to address the multiple domains of a person's suffering.

#### Study characteristics

The major characteristics of the included studies are summarized in Table 1, and details of the data extracted for each study are described in Supplemental Digital Appendix 3 (at <http://links.lww.com/ACADMED/B91>). The

compassion education interventions identified by this systematic review included curricula offered in formal education settings and interventions presented in clinical settings and used a range of teaching methods, such as humanities-based reflective practices, clinical simulation, role modeling, and contemplative practices. Findings showed that the majority of compassion education interventions were developed for physicians and nurses in training ( $n = 78$ ), with fewer ( $n = 53$ ) aimed at nurturing compassion in health care providers in clinical practice. Almost all studies used self-report to assess



compassion-related outcomes (n = 106), with it serving as the only outcome measure in most studies (n = 86). Some studies used both self-report and external assessments by preceptors, peers, or standardized or actual patients (n = 20). There were some differences in compassion interventions across the domains of medicine and nursing. Physicians or medical students were provided curricula (n = 9 medicine vs n = 4 nursing), humanities-based reflective practices (n = 14 medicine vs n = 9 nursing), and contemplative practices (n = 20 medicine vs n = 4 nursing) more often than nurses, while service learning (n = 6 medicine vs n = 10 nursing) and leadership programs (n = 0 medicine vs n = 3 nursing) were offered to nurses more often. The majority of compassion education interventions mapped to the virtuous response domain (n = 106) of the Patient Compassion Model,<sup>32</sup> with very few mapping to the seeking to understand (n = 1), attending to needs (n = 4), relational communication (n = 11), and relational space (n = 0) domains (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>).

### Compassion education interventions

**Education setting.** Our literature searches identified studies reporting on curricula offered in a formal education setting or education interventions presented in a clinical setting.

**Curricula-based education.** A number of curriculum-based education interventions integrated compassion as a learning outcome. Although no curricula included compassion as a primary focus, some curricula embedded compassion within existing topics, including end-of-life care,<sup>41–44</sup> mind-body therapy,<sup>45,46</sup> or specific patient populations.<sup>47–53</sup> Education across these curricula was multimodular and involved didactic and interactive lectures,<sup>41–44,51,53</sup> observation, practice with standardized patients, clinical experience,<sup>41,44–46,49,50,53</sup> and discussions.<sup>41–44,47,48,51,52</sup> The effectiveness of these curricula as compassion education interventions was assessed from learners' self-report using reflection<sup>41,42,45–47,49,50</sup> or scores on questionnaires or validated scales<sup>41,43,44,47,48,51–53</sup> and external assessment by nursing staff and teaching faculty.<sup>41,48,53</sup> Findings revealed that compassion education interventions within the category of curricula

cultivated learners' attitudes, feelings, or inherent qualities, mapping to the virtuous response domain<sup>41–53</sup> of the Patient Compassion Model,<sup>32</sup> while one also improved learners' competency in clinical skills, mapping to the attending to needs domain<sup>41</sup> (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>).

Curricula that were designed to prepare learners to provide informed and compassionate end-of-life care included a 4-year end-of-life curriculum and a training program for providing palliative care for terminally ill cancer patients and their families, both offered to medical students,<sup>41,44</sup> and a care at the end-of-life course and a human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) palliative care course for nursing students and nurses.<sup>42,43</sup> Learners reported that the curricula strengthened their perceptions of nurturing, dignity, and compassion<sup>43,44</sup>; improved their ability to understand what a patient was going through<sup>41,43</sup>; and enhanced their self-awareness about the impact of their presence within the clinical setting.<sup>41,42</sup> The 4-year end-of-life curriculum increased medical students' palliative care competency, as assessed by an observed structured clinical examination, especially in aspects of care involving symptom management.<sup>41</sup>

Curricula focused on mind-body therapy as a strategy for learners to adopt a compassionate, patient-centered approach included a healing touch curriculum offered to registered nurses<sup>46</sup> and a longitudinal spiritual care curriculum for residents and physicians.<sup>45</sup> Learners reported that the curricula improved their interactions with patients and provided personal benefits, including the establishment of a personal sense of calm<sup>46</sup> and an understanding of the need to be valued as human beings and to have dedicated time to reflect on personal values and beliefs to provide compassion to patients.<sup>45</sup> The longitudinal spiritual care curriculum had an enduring positive effect on learners' self-reported ability to provide compassion 8 years post-intervention.<sup>45</sup>

Curricula that were designed to nurture learners' ethics of caring for specific patient populations included the

Mental Illness Among Us curriculum,<sup>47</sup> a longitudinal integrated community clerkship,<sup>50</sup> a doctoring curriculum,<sup>49</sup> and a gross anatomy course<sup>48</sup> all of which were offered to medical students, as well as a caring behavior in nursing course for nursing students<sup>51</sup>; a participative HIV/AIDS training program offered to health care providers at a large public psychiatric hospital<sup>52</sup>; and an intern curriculum (boot camp) incorporating knowledge-based, experiential, and practical components for postgraduate year 1 general surgery residents.<sup>53</sup> Learners reported that the curricula promoted self-reflection,<sup>48</sup> sensitized them to a holistic model of care while putting less emphasis on a biomedical approach,<sup>47,50</sup> increased their willingness to interact with patients,<sup>47,49,51–53</sup> and decreased stigma associated with conditions such as mental illness and HIV/AIDS.<sup>47,52</sup>

### Clinically based education interventions.

Several compassion education interventions were tailored to students and practicing health care providers in a clinical setting. These interventions included service learning programs, leadership programs, programs focused on end-of-life care and specific patient populations, and studentships. Compassion education interventions within this category cultivated the personal qualities or virtues depicted within the virtuous response domain<sup>54–83</sup> of the Patient Compassion Model<sup>32</sup> (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>), while some also equipped learners with skills within the relational communication<sup>70–75,80,81</sup> and attending to needs<sup>78,80,81</sup> domains.

**Service learning.** Service learning programs developed or evaluated as compassion education interventions used community service-based multidisciplinary teaching and allowed learners to work directly with older adults<sup>54–57</sup> and underserved populations<sup>58–65</sup>, provide community service<sup>66</sup>, and interact with other patient populations such as those with mental illness,<sup>67</sup> physical limitations,<sup>68</sup> and individuals and families experiencing violence.<sup>69</sup> The effectiveness of these service learning programs as compassion education interventions was assessed from learners' self-report using reflection<sup>54,55,58–69</sup> or scores on questionnaires or validated scales,<sup>56–58,67,68</sup> and external assessment by peer evaluation.<sup>54</sup>

Service learning programs designed to enhance learners' competence in caring for older adults included an in-home care component of an internal medicine clerkship for medical students<sup>55</sup> and a practicum in caring for vulnerable elderly patients with dementia, an older adult partnership program, and a course focused on older adults for nursing students.<sup>54,56,57</sup> During these interventions, learners developed relationships with older adults by visiting elderly patients with dementia or physical limitations in continuing-care retirement communities<sup>54</sup> or higher-functioning older adults in a local long-term care facility,<sup>56</sup> their homes,<sup>55</sup> or in a community setting.<sup>57</sup> Some learners reported that these experiences engendered a greater appreciation for elderly persons and enhanced their compassion, especially in the areas of listening, empathy, patience, and spending time with patients.<sup>54-56</sup> Other learners reported no shift in their motivation to help older adults, possibly due to a ceiling effect.<sup>57</sup>

Service learning that provided students with the opportunity to develop compassionate attitudes toward medically underserved populations included programs in which pharmacy students were integrated into rural government-run clinics and a community hospital in Kanye, Botswana<sup>58</sup>; medical students worked with underserved rural patients in Nicaragua<sup>63</sup> or in rural primary health care centers in Nepal<sup>60</sup>; medical students provided health care to the homeless<sup>61</sup>; nursing and midwifery students delivered care to pilgrims in Lourdes, France<sup>59</sup>; nursing students delivered care to refugees in Medellín, Colombia<sup>64</sup>; or nursing students and nurses were involved in international immersion programs in Central America, Jamaica,<sup>65</sup> Southeast Asia, and Eastern Europe.<sup>62</sup> During these programs, learners provided hands-on health care while living with people in the host community. Learners reported that these experiences increased their sense of compassion, empathy, and social awareness and improved their ability to offer spiritual and holistic care through relationship building, active listening, and personal growth.<sup>58,59,61-63</sup> Learners reported being better able to internalize the concept of compassion and developing self-awareness about how patients' suffering impacted them emotionally.<sup>60,64,65</sup>

Community-based service learning that aimed to improve learners' expressions of core values, particularly cultural competence and social responsibility, included programs in which dental students participated in an AIDS task force, a family center Health-A-Rama, and a Hand-in-Hand Festival for mentally and physically challenged children<sup>66</sup>; physical therapy students attended service learning clinics<sup>68</sup>; and nursing students contributed to a psychiatric clinical clerkship<sup>67</sup> and provided comprehensive services to victims of domestic violence.<sup>69</sup> Learners reported that the programs cultivated their virtues of wisdom, righteousness, propriety, and compassion<sup>66-69</sup> and increased their responsiveness to patients' needs.<sup>67</sup>

**Leadership programs.** Leadership programs developed as compassion education interventions provided health care providers with a framework to deliver compassion based on human interactions. These included the Creating Learning Environments for Compassionate Care program designed for hospital ward nursing teams caring for older people,<sup>70-72</sup> the Leadership in Compassionate Care Programme designed for staff in an acute hospital setting caring for older people,<sup>73</sup> a leadership program designed for nursing staff covering 24 inpatient areas in an acute hospital,<sup>74</sup> Caring Conversations designed for staff in a care home,<sup>75</sup> and the Leaders for Compassionate Care Programme designed for nursing and midwifery leaders.<sup>76</sup> Training activities aimed to develop social structures and supportive relationships within the team and between the team and patients and relatives as a foundation for providing compassion. Relational capacity within the team and between the team and patients and relatives was engendered through the development of leadership skills<sup>70-72,76</sup>; shared team goals and expectations<sup>70-75</sup>; team dialogue, reflection, and role modeling<sup>70-75</sup>; peer observations and feedback to the team<sup>70-75</sup>; and understanding patient and relative experiences through conversations between staff, patients, and relatives.<sup>73-75</sup> The effectiveness of these leadership programs as compassion education interventions was evaluated through learners' self-report<sup>70-76</sup> and external assessment by a senior nurse<sup>71</sup> and feedback from peers,<sup>70-75</sup> patients, and relatives.<sup>73-75</sup> Findings indicated that

the leadership programs enabled staff to explore relationships with self, patients and families, teams, and the wider organization and to develop practices that promoted and sustained compassion in the clinical setting.<sup>70-76</sup>

**End-of-life care.** End-of-life care programs developed or evaluated as compassion education interventions aimed to prepare learners to attend to patients' and families' physical, psychological, emotional, and social needs and deliver compassionate, dignified, personalized care at the end of life in accordance with patient and family wishes. These included the CARE (Compassion and Respect at the End-of-Life) Program, offered to nurses caring for patients at the end of life or living with life-limiting illnesses,<sup>77</sup> and the compassion intervention for end-of-life care for those with advanced dementia, implemented for health care providers in 2 nursing homes.<sup>78</sup> These interventions cultivated a multidisciplinary approach to assessment, treatment, and care<sup>78</sup> and emphasized the need for education, training, and support for formal and informal caregivers.<sup>77,78</sup> The effectiveness of these end-of-life programs as compassion education interventions was assessed from learners' self-report using reflection<sup>78</sup> or scores on questionnaires or validated scales<sup>77</sup> and the translation of their learnings into tangible outcomes.<sup>78</sup> Learners reported increased confidence in engaging in end-of-life conversations and offering resources that promoted comfort, dignity, and respect for patients and families.<sup>77,78</sup> In the 2 nursing homes, learnings were tangibly integrated into protocols and routines in the clinical setting, with end-of-life conversations, modifiable wall-mounted care charts, and advanced care planning templates provided to enhance communication about patients' preferences and help health care providers better manage patients' end-of-life needs.<sup>78</sup> The Pain Assessment in Advanced Dementia Scale was implemented to improve pain management for patients who were unable to communicate verbally.<sup>78</sup>

**Specific patient population programs.** Clinical education programs developed or evaluated as compassion education interventions that targeted specific patient populations aimed to change learners' perceptions of compassion by enhancing their interactions and

communication with patients and their appreciation of patients' individuality. The Caregivers Are Heroes program was designed as an interprofessional educational strategy to allow learners to understand the caregiver experience and required learners to conduct caregiver interviews.<sup>79</sup> The effectiveness of the program as a compassion education intervention was assessed from learners' self-report using validated scales.<sup>79</sup> The program reported changes in learners' attitudes and compassion when interacting with caregivers and patients.<sup>79</sup> An educational program implemented on an epilepsy monitoring unit was designed to improve nursing assessments of patients during a clinical event through didactic learning and case-based scenarios.<sup>80,81</sup> Nurses were evaluated by an epilepsy nurse practitioner and peers who used the investigator-developed Nursing Assessment Rating Scale to quantify nurses' assessments of patients both pre- and post-intervention.<sup>80,81</sup> Learners were reported to be more responsive and better able to meet a patient's physical and basic care needs, provide comfort, and engage in appropriate conversations.<sup>80,81</sup>

**Studentships.** Two studentships were developed or evaluated as compassion education interventions, providing learners with short-term exposure to the main challenges facing patients and their families. These studentships included 2 summer research training programs funded by the National Institutes of Health: one was designed to positively influence medical students' attitudes toward older adults<sup>82</sup> and the other, the Cross Cancer Institute Multidisciplinary Summer Studentship in Palliative and Supportive Care in Oncology, was designed to expose medical students to issues facing patients and their families following a cancer diagnosis.<sup>83</sup> The studentships used mixed teaching methods that included mentored research projects, didactic learning, and clinical exposure.<sup>82,83</sup> The effectiveness of these studentships as compassion education interventions was assessed from learners' self-report using reflection<sup>83</sup> or scores on a validated scale.<sup>82</sup> Learners gained experience in team-based skills and providing compassion and became advocates for patient-centered care. Learners reported increased empathy and/or compassion, appreciating that patient care extends beyond attention to physical symptoms alone, and being

able to see health care from the patient's perspective.<sup>82,83</sup>

**Teaching methods.** Our literature searches identified a range of teaching methods that have been used to foster compassion in health care providers, including humanities-based reflective practices, clinical simulation, and role modeling.

**Humanities-based reflective practices.** Several studies reported on the use of humanities-based reflective practices, including storytelling,<sup>84–90</sup> reflective writing,<sup>91–98</sup> family sculpting,<sup>99</sup> watching movies that conveyed shared humanity,<sup>100</sup> visual analysis of humanistic images,<sup>101,102</sup> listening to music,<sup>103</sup> and multidisciplinary forums in which participants reflected on clinical experiences related to compassion,<sup>104–106</sup> as methods to facilitate learning about compassion. These approaches require learners to critically analyze their knowledge and experience to achieve deeper meaning and understanding, which in turn can guide future behavior. Compassion education interventions using humanities-based reflective practices cultivated learners' deeper awareness of self and their recognition of shared humanity, mapping to the virtuous response domain<sup>84–106</sup> of the Patient Compassion Model<sup>32</sup> (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>).

**Clinical simulation.** Several studies used clinical simulation to cultivate feelings of compassion. Compassion education interventions using clinical simulation engendered a caring attitude and improved learners' interpersonal skills and compassionate interactions, mapping to the virtuous response<sup>107–114</sup> and relational communication<sup>112,114</sup> domains of the Patient Compassion Model<sup>32</sup> (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>).

Learners' awareness of patients' and their families' needs was cultivated through poverty simulations offered to nursing students<sup>107,108</sup>; end-of-life care simulations offered to nursing students and nurses<sup>109,110</sup>; simulations focused on elderly patients for health care assistants, staff nurses, senior nurses, doctors, and allied health professionals<sup>111</sup>; simulations focused on rheumatology outpatients offered to medical students<sup>112</sup>; auditory

hallucinations simulation for trainees and qualified clinical psychologists<sup>113</sup>; and a simulation experience that immersed undergraduate nursing students in the clinical setting.<sup>114</sup> The effectiveness of these clinical simulations as compassion education interventions was assessed through learners' self-report using reflection<sup>107,108,110,111,113,114</sup> or scores on questionnaires or validated scales<sup>109–113</sup> and preceptor, peer, and/or patient feedback.<sup>112,114</sup> Learners reported increased confidence in their ability to portray a caring attitude and develop a caring relationship with patients by spending time getting to know their patients<sup>110</sup> and through effective and compassionate communication.<sup>109,110,112</sup> Learners reported an increased respect for patients' views, questions, opinions, and feelings<sup>107,108,112–114</sup> and an enhanced understanding of patients' needs.<sup>107,108,112–114</sup> The peers and patients of learners participating in a few of the studies described improvements in learners' interpersonal skills and compassionate interactions, ability to establish a comfortable rapport, professionalism, and respect for the patient's physical comfort.<sup>112,114</sup>

**Role modeling.** One study used role modeling, defined as the process in which preceptors demonstrate skills, apply and articulate thought processes, and demonstrate positive professional attitudes, as a way of teaching compassion.<sup>115</sup> Role modeling cultivated learners' commitment to providing compassion, mapping to the virtuous response domain<sup>115</sup> of the Patient Compassion Model<sup>32</sup> (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>). A resident-as-teacher program developed at Tufts University School of Medicine was used to train residents to teach compassion through role modeling. The effectiveness of this exercise as a compassion education intervention was assessed through residents' self-report using reflection and scores on a validated scale and external assessments by a standardized patient and those who attended the residents' presentations. Residents' self-report showed an increase in self-perceived knowledge of the importance of mindfulness, active presence, and slowing down for patients. Standardized patient scores did not increase after the program, but attendees at the presentations intended to apply what they learned into their clinical practice.<sup>115</sup>



**Contemplative practices.** Our literature searches identified a number of studies reporting on contemplative practices as compassion education interventions, including compassion-focused therapy<sup>116–118</sup>; Compassionate Mind Training<sup>119,120</sup>; Compassion Cultivation Training<sup>121</sup>; mindfulness-based stress reduction<sup>122–124</sup>; Mind-Body Skills Training for Resilience, Effectiveness, and Mindfulness<sup>125–127</sup>; loving-kindness meditation<sup>128</sup>; positive-emotion-generating meditation<sup>129</sup>; and various unspecified mindfulness techniques.<sup>130–139</sup> These interventions were used to foster individuals' prosocial motivation, compassionate feelings, and mental tenacity to engage in compassionate thinking toward self and others. They aimed to generate awareness and develop virtues of loving kindness, unconditional acceptance, genuine care, and understanding, mapping to the virtuous response domain<sup>116–118,120,121,123–139</sup> of the Patient Compassion Model<sup>32</sup> (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>).

**Other compassion education interventions.** Several other programs identified as compassion education interventions in our literature searches did not succinctly fit into any of the above categories. These interventions enabled learners to connect with each other, their own humanity, and their vocational purpose, mapping to the virtuous response domain<sup>140–148</sup> of the Patient Compassion Model<sup>32</sup> (see Supplemental Digital Appendix 5 at <http://links.lww.com/ACADMED/B92>).

Medical students in anatomy courses who interacted with the families of donors reported greater empathy, respect, and compassion for the donor as a person,<sup>140,141</sup> whereas there was no change in self-reported compassion among third-year medical students who participated in an initiation ceremony where they openly introduced and commemorated donors' conduct and deeds.<sup>142</sup> Staff in a residential care home who received training in and used Compassionate Touch, a program that teaches learners how to provide skilled human touch using compassionate presence, for care home residents with dementia reported a better connection and interactions with the residents.<sup>143</sup> A continuing medical education initiative that used an evidence-based medicine (EBM)–value-based medicine (VBM) binomial to strengthen knowledge of

the pathophysiology of disease and therapeutic alternatives (EBM) and knowledge and awareness of values and ethical dilemmas (VBM) improved health care providers' self-reported communication skills and relationships with patients in terms of beneficence, respect, and compassion.<sup>144</sup> An online compassion module designed to educate nursing students about the importance of compassion in health care; compassion toward patients, colleagues, and self; and the barriers and facilitators to providing compassion improved learners' perceptions of how compassion is understood and practiced.<sup>145</sup> Learners indicated that the insights gained from studying the compassion module would influence their practice as newly registered nurses.<sup>145</sup> An innovation where nursing students wrote pledges as a way to enhance patient care inspired most participants to make pledges related to compassion.<sup>146</sup> A 2-minute compassion condition slideshow consisting of images of humans or animals in various situations depicting helplessness, vulnerability, and physical and emotional pain induced clinical engagement and compassion in qualified health professionals.<sup>147</sup> Evaluation methods for these programs were varied (see Table 1 and Supplemental Digital Appendix 3 at <http://links.lww.com/ACADMED/B91> for more information).

One program identified as a compassion education intervention in our literature searches mapped to the seeking to understand and relational communication domains as well as the virtuous response domain<sup>148</sup> of the Patient Compassion Model.<sup>32</sup> This program applied motivational interviewing techniques to promote person-centered care through active listening, validating patients' views, and motivating patients to act as agents of change as opposed to providing advice to or persuading patients. The program positively influenced nursing staff and patients in both closed and open inpatient rehabilitation wards. Nurses attended motivational interview training sessions; completed questionnaires, external pre-post training evaluations, and diaries; and were evaluated by patients through focus groups. Nurses reported an improved ability to engage and communicate with patients, speak more respectfully, and be more collaborative (i.e., allowing patients to make choices or decisions). Patients

reported that motivational interviewing techniques helped them feel more accepted by and to develop partnerships with their nurses.<sup>148</sup>

## Discussion

This systematic review identified a diverse array of education interventions that have been designed and applied with the goal of enhancing and maintaining health care providers' skills in providing compassion. Most compassion education interventions have been developed for physicians and nurses in training, with fewer aimed at health care providers in clinical practice. Modalities ranged from establishing curricula and education interventions in the workplace to programs based on humanities-based reflective practices, clinical simulation, role modeling, and contemplative practices, among other initiatives, with many education interventions adopting a multimodal approach. The use of the Patient Compassion Model<sup>32</sup> as a framework for categorizing how the components of the interventions align with compassion domains demonstrated that the majority of compassion education interventions in our literature searches mapped to the virtuous response domain, with very few mapping to the relational communication, seeking to understand, and attending to needs domains, and none mapping to the relational space domain.

Our ability to draw conclusions about the potential for most of the education interventions in this review to nurture and sustain the various domains of compassion among health care providers is severely limited by the study design and outcome evaluation measures used. Only one study was a randomized controlled trial.<sup>131</sup> The majority of the studies included a small number of learners, had no comparator/control groups, used only self-reported outcome measures, and had little or no long-term follow-up, which is reflected by the high or unclear risk of bias of the studies reviewed (see Supplemental Digital Appendix 2 at <http://links.lww.com/ACADMED/B90>).

A limited number of studies in this systematic review included a comparator/control group in the assessment of the impact of the compassion education intervention.<sup>45,47,48,51–53,56,109,118,125,127,135,138,147</sup> The majority of studies identified used

only a single group post-test design to evaluate the intervention, with the lack of a comparator/control group hindering our ability to determine whether a given intervention increased, decreased, or did not change learners' compassion as compared with what they possessed at baseline.

The majority of studies used self-report to assess compassion-related outcomes, with most using this as the only outcome measure. Some studies were more rigorous and included external assessments by preceptors, peers, or standardized or actual patients. The majority of the compassion education interventions were not evaluated by patients, despite improved compassion toward patients being the quintessential indicator and target outcome of effective compassion training programs. The current lack of a standardized validated measure of compassion that can be used across health care settings to measure the outcomes of compassion education interventions limits the ability to accurately interpret the effectiveness of any existing or future compassion education interventions. As evaluations of most of the compassion education interventions identified in this review relied on learner self-report, their components predominantly mapped to the virtuous response domain of the Patient Compassion Model<sup>32</sup> and evaluated the affective aspects of compassion. While virtues have been identified as antecedents to compassion, compassionate encounters are co-created through relationships and require action. It is possible that many of the compassion education interventions described in this narrative synthesis also mapped to the domains of the Patient Compassion Model<sup>32</sup> that encompass health care providers' specific behaviors and actions related to compassion; however, our assessment of this was constrained by the lack of external assessments by patients. Likewise, only a small number of studies<sup>45,62,72,78,113,122,130,135,139,142</sup> assessed the impact of longitudinal training to evaluate retention, sustainability, and translation to clinical practice.

Compassion education interventions varied across the domains of medicine and nursing. Physicians or medical students were provided curricula, humanities-based reflective practices, and contemplative practices more often,

while service learning and leadership programs were offered to nurses more often. Further research is required to fully understand the significance of these findings in terms of which teaching methods for compassion training work best for whom, how, why, to what extent, and over what duration.

Although all of the included studies aimed to design and/or evaluate a compassion education intervention for future or current health care providers, very few of the identified studies defined compassion or delineated the interpersonal qualities, skills, and actions that characterize a compassionate health care provider. One study defined compassion as an attitude toward others that is focused on caring, concern, and tenderness and as an orientation toward supporting, helping, and understanding others.<sup>131</sup> In some studies, compassion was conflated with relationship- or patient-centered care,<sup>73-75</sup> and in a couple other studies, compassion was used synonymously with the term respect.<sup>80,81</sup> The greatest limitation of the compassion education interventions identified in this review was poor construct validity, an inherent and persistent limitation within compassion research, including poor fidelity of compassion measures,<sup>149</sup> and a lack of clarity around the concepts of self-compassion<sup>150</sup> and compassion fatigue.<sup>151</sup> Considering the diverse nature of health care, a standardized definition and empirical model of compassion could be applied to each individual learner, recognizing that compassion competencies and learning styles will vary between individual health care providers, practice settings, and patient populations. Therefore, while it is unlikely that a one-size-fits-all approach to compassion education for health care providers will be effective, a curriculum based on a clear definition and comprehensive model of compassion would allow alignment between curricula and the underlying construct of compassion.<sup>1,32,152</sup> Additionally, some studies showed no postintervention shift in learners' compassion, suggesting there may be a ceiling effect, particularly among participants who have high baseline levels of compassion.<sup>57,119,122,131</sup> Multimodal educational methods tailored to the contextualized needs of individual learners and sensitive measures of compassion will therefore be important to inform the development of compassion

training programs that achieve their intended outcomes.

This systematic review has several limitations. First, despite a robust search strategy developed by experts in the field of compassion, relevant studies could have been missed. Second, the search was restricted to publications in English, which may have limited the generalizability of this review. Most of the included studies in this review were conducted in the United States, Canada, and the United Kingdom, although several service learning interventions were conducted in other countries, including Botswana,<sup>58</sup> Nicaragua,<sup>63</sup> Nepal,<sup>60</sup> Colombia,<sup>64</sup> and Central America, Jamaica,<sup>65</sup> Southeast Asia, and Eastern Europe.<sup>62</sup> Third, studies that focused on related but distinct concepts, such as sympathy, empathy, pity, compassion fatigue, compassion satisfaction, and burnout, were excluded from this review as these concepts differ from compassion.<sup>152</sup> Interventions that mitigate compassion fatigue or burnout and enhance compassion satisfaction may sustain health care providers and have an impact on patient care; however, a previous review found no direct association between these factors.<sup>151</sup> Finally, studies in this review were primarily exploratory in nature and all included some risk of bias, as identified by the Cochrane Collaboration's risk of bias tool.<sup>37</sup> Thus, while the clinical implications of implementing these compassion education interventions can be inferred, the feasibility of doing so requires further research.

In conclusion, this systematic review has identified a wide variety of education interventions developed to nurture and sustain compassion in future and current health care providers. Unfortunately, based on our review, quantity did not translate to quality, with the vast majority of compassion education interventions focusing on a single domain of compassion without adequately defining compassion and relying on self-reported outcome measures, with no comparator/control group or evaluation of retention, sustainability, or translation to clinical practice over time. Therefore, conclusions cannot be drawn as to the true potential of these education interventions to improve compassion to patients. Based on this review, we recommend that educators developing compassion education

interventions consider the following principles: grounding the intervention in an empirically based definition of compassion; adopting a competency-based approach; employing multimodal teaching methods that address the requisite attitudes, skills, behaviors, and knowledge within the multiple domains of compassion; evaluating learning over time; and including patient, preceptor, and peer evaluations as outcome measures.

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