

Supplemental Digital Appendix 5

Relevance of Compassion Education Interventions to the Domains of Compassion Delineated by the Patient Compassion Model³²

Reference	Learner type	Teaching modality (i.e., details of the program)	Intended patient population	Domains of compassion				
				Virtuous response ^a	Seeking to understand ^b	Attending to needs ^c	Relational communication ^d	Relational space ^e
Education setting								
Formal curriculum based education								
Ellman MS 2016 ⁴¹	Medical students (N = 50-200)	Curriculum in End of Life care using experiential, skill-building activities with special attention to student self-reflection (4-years).	Palliative and EOL care	✓	—	✓	—	—
Costello M 2017 ⁴²	Nursing students	Care at the End of Life using Watson's publications, videos, lectures, guest speakers, discussion, assignments and projects.	Palliative and EOL care	✓	—	—	—	—
Brown JS 2015 ⁴³	Critical care nurses (N = 30)	An HIV/AIDS palliative care course delivered in a traditional conference/ Classroom.	HIV/AIDS palliative care	✓	—	—	—	—
Shih CY 2013 ⁴⁴	Preclinical medical students (N = 251)	Palliative care training course.	Palliative and EOL care	✓	—	—	—	—
Anandarajah G 2016 ⁴⁵	Residents/physicians (N = 26)	Spiritual care curriculum.	Family medicine	✓	—	—	—	—
Anderson JG 2016 ⁴⁶	Registered nurses (N = 24)	Healing Touch.	Acute care patients	✓	—	—	—	—
Aggarwal AK 2013 ⁴⁷	Medical students (N = 250)	A student led curriculum entitled "Mental Illness Among Us" involving panels presentations and discussions.	Individuals with mental illness	✓	—	—	—	—
Camp CL, 2010 ⁴⁸	First year medical students enrolled	Delivering feedback.	Not provided	✓	—	—	—	—

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	in gross anatomy (N = 49)								
Frazier M 2015 ⁴⁹	First year medical students UCLA (N = 166)	Students shadowed chaplains at a hospital.	Hospitalized patients	✓	—	—	—	—	—
Konkin J 2011 ⁵⁰	Medical students (N = 25)	Integrated Community Clerkship with guiding principles of continuity of care, preceptor and learning environment.	Family medicine	✓	—	—	—	—	—
Teskereci G 2020 ⁵¹	First year nursing students (N = 73)	Caring Behavior Nursing course	Not provided	✓	—	—	—	—	—
Chambliss C, 1990 ⁵²	AIDS / HIV Staff (N = 6-18)	Interactive training program	HIV/AIDS	✓	—	—	—	—	—
Krajewski A 2013 ³³	Postgraduate year 1 general surgery categorical and preliminary residents (N = 108)	Intern boot camp curriculum	Surgical patients	✓	—	—	—	—	—
Clinically based education interventions									
Service learning									
Brown KM 2017 ⁵⁴	Nursing students (N = 45)	Service-learning nursing course focused on older adults.	Older adults with cognitive and/or physical limitations	✓	—	—	—	—	—
Nagle BJ 2018 ⁵⁵	Medical students (N = 12)	In-home visits with geriatric patients.	Elderly patients	✓	—	—	—	—	—
Pate JD 2013 ⁵⁶	Nursing students (N = 65)	Elder care practicum involving increased intergenerational exposure (3 extended visits).	Elderly patients	✓	—	—	—	—	—

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Redfield CS 2016 ⁵⁷	Nursing students (N = 63)	Meetings with high-functioning older adults to provide brief health promotion activities.	Elderly patients	✓	—	—	—	—
Davis LI 2015 ⁵⁸	Pharmacy and nursing students (N = 16)	Clinical practice in community clinics and hospital units.	Underserved communities	✓	—	—	—	—
Baldacchino DR 2010 ⁵⁹	BSc (Hons) nursing/midwifery students (N = 31)	Theory and pilgrimage.	Pilgrims in Lourdes	✓	—	—	—	—
Dhital R 2015 ⁶⁰	Third year medical students in Nepal (N = 55)	Postings in rural Primary Health Care Centers.	Underserved communities	✓	—	—	—	—
Clark DL 2003 ⁶¹	Medical Students (N = 221)	A service learning program 1) social hour 2) clinic and 3) reflection.	Homeless	✓	—	—	—	—
Levine MA 2009 ⁶²	Nursing students (N = 10)	Hands-on nursing care in a host community.	Community	✓	—	—	—	—
Smith JK 2006 ⁶³	Pre-clinical medical students (N = 66)	Lectures, workshops, and international practicum.	Underserved communities	✓	—	—	—	—
Schneider AR 2018 ⁶⁴	Nursing professors and students (N = 19)	A service-learning partnership between a university nursing program and an isolated community of internally-displaced persons.	Internally-displaced persons	✓	—	—	—	—
Whelan M 2018 ⁶⁵	Nurse practitioner and doctor of nursing practice students	Short term international health mission from USA to Jamaica.	Underserved communities	✓	—	—	—	—
Rubin RW 2004 ⁶⁶	Dental students (N = 61)	Non-dental community service.	Community	✓	—	—	—	—
Romem P 2008 ⁶⁷	Nursing students (N = 136)	A psychiatric clinical clerkship.	Individuals with mental illness	✓	—	—	—	—

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Crandell CE 2013 ⁶⁸	Doctor of physical therapy students (N = 8)	Service-learning clinics including student provision of faculty supervised pro bono services.	Physical therapy	✓	—	—	—	—
Hayward KS 2003 ⁶⁹	Nursing students (N = 8-10)	Case management, support services, police ride-alongs, shelter admission and intervention and research development.	Victims of domestic violence	✓	—	—	—	—
Leadership programs								
Bridges J 2015; 2017;2018 ⁷⁰⁻⁷²	Nurses (248 nurses, 639 patients, 188 visitors)	Leadership and team work practices.	Acute hospital settings	✓	—	—	✓	—
Dewar B 2010, 2014, 2017 ⁷³⁻⁷⁵	Nurses; nursing staff (N = 86); care home staff and residents (N = 48)	Appreciative action research.	Acute hospital setting/residents and families of residents in care homes	✓	—	—	✓	—
Saab MM 2019 ⁷⁶	Nursing and midwifery leaders (N = 79-168)	Leaders for Compassionate Care Programme.	Not provided	✓	—	—	—	—
End of life care								
Chan B 2018 ⁷⁷	Registered nurses (N = 51)	Workshop on the CARE Program.	Palliative and EOL care	✓	—	—	—	—
Moore KJ 2017 ⁷⁸	Nursing home and external health care professionals (N = 10-19)	Staff training by an interdisciplinary care leader.	Residents and families of residents with dementia in nursing homes	✓	—	✓	—	—
Other patient populations								
Carson NE 2017 ⁷⁹	Caregivers (n = 51) and students (n = 170)	Caregivers Are Heroes, caregiver interviews.	Chronic illness	✓	—	—	—	—
Baran Stecker M	Nurses (N = 25)	Didactic lectures and case-base scenarios.	Patients with epilepsy	✓	—	✓	✓	—

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2011;
Stecker M
2012^{80,81}

Studentships								
Jeste DV 2018 ⁸²	First year medical students participating in a multi-site program MSTAR or single site M-STREAM (N = 178)	Summer research training program combined mentored research, didactics, and some clinical exposure.	Elderly patients	✓	—	—	—	—
Lefresne S 2011 ⁸³	Clinical nutrition students, medical students and supervising oncologists	Summer Studentship in Palliative and Supportive Care in Oncology.	Patients with cancer	✓	—	—	—	—
Teaching approaches								
Self-reflection								
Hawthornthwaite L 2018 ⁸⁴	Registered nurses (N = 542)	A 2-part workshop with patients and supporting patient and family storytellers	Family medicine	✓	—	—	—	—
Adamson E 2015 ⁸⁵	Student nurses	Stories gathered within clinical practice used to stimulate reflective learning.	Acute care	✓	—	—	—	—
Clandinin DJ 2008 ⁸⁶	Family medicine residents (N = 4)	Writing, sharing and inquiring into parallel charts.	Primary care	✓	—	—	—	—
Scamell M 2017 ⁸⁷	First year undergraduate midwifery (N = 111)	Online storytelling.	Maternal and neonatal	✓	—	—	—	—
Waugh A 2016 ⁸⁸	Nursing students (N = 13)	Digital narratives of compassionate care.	Not provided	✓	—	—	—	—
Begley AM 2011 ⁸⁹	Post-graduate nursing students (N = 24)	Tolstoy's "Death of Ivan Ilych" used as a stimulus for discussion.	Palliative and EOL care	✓	—	—	—	—

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Deloney LA 2003 ⁹⁰	First Year Medical Students (N = 138)	Pre-play lecture on end-of-life care, watching the drama Wit and a post-play discussion with the cast.	Palliative and EOL care	✓	—	—	—	—
Adam D 2014 ⁹¹	Nursing students (N = 30)	A learning module "Understanding self in relation to others in professional practice" using class discussion and formative reflections.	Not provided	✓	—	—	—	—
Wiklund Gustin L 2013 ⁹²	Nursing teachers (N = 4)	Experiential and reflective work to understand self-compassion as a source to compassionate care.	Not provided	✓	—	—	—	—
Reisman AB 2006 ⁹³	Residents (N = 15)	Workshop on writing in medicine.	Not provided	✓	—	—	—	—
Fresa-Dillon KL 2004 ⁹⁴	Osteopathic medical students	Creation of a class vision statement reflective.	Osteopathy	✓	—	—	—	—
Jack K 2015 ⁹⁵	Nursing students (N = 42)	Poetry writing on important practice issues.	Not provided	✓	—	—	—	—
Shapiro J 2003 ⁹⁶	Medical students and residents	Small-group learning experiences and use of creative projects, such as poetry, to reflect on patients and themselves.	Not provided	✓	—	—	—	—
Shapiro J 2006 ⁹⁷	Medical students (N = 11)	Learning from role models and peer; in-class readings; self- and other-observation; self-reflective techniques; case-based problem solving.	Not provided	✓	—	—	—	—
Coleman D 2015 ⁹⁸	Adult and mental health pre- registration student nurses (N = 10)	Students wrote poetry, which was discussed in reflective practice assessments.	Individuals with mental illness	✓	—	—	—	—
De Souza JM 2014 ⁹⁹	Cancer nurses	Family sculpting.	Patients with cancer	✓	—	—	—	—

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Petkari E 2017 ¹⁰⁰	Psychology students (N = 26)	Movie-based education and related discussions.	Individuals with mental illness	✓	—	—	—	—
Arnold BL 2016 ¹⁰¹	Palliative physicians (N = 147)	A qualitative visual analysis of 75 images.	Palliative and EOL care	✓	—	—	—	—
Karkabi K 2014 ¹⁰²	Physicians or physicians-in- training (N = 23)	A workshop aiming to enhance reflective capacity in medical educators by using a combination of abstract paintings and narratives.	Family medicine	✓	—	—	—	—
Newell GC 2003 ¹⁰³	Residents and medical students (15-20 per session)	A "music and medicine" course.	Not provided	✓	—	—	—	—
Penson RT 2010 ¹⁰⁴	Clinicians (>50,000 clinicians at 195 sites in 31 states)	Evidence-based interdisciplinary discussions.	Multidisciplina ry	✓	—	—	—	—
Farr M 2017 ¹⁰⁵	Community and mental health providers (N = 206)	Evidence-based interdisciplinary discussions.	Community and individuals with mental illness	✓	—	—	—	—
Gishen F 2016 ¹⁰⁶	Medical students (N = 677)	Evidence-based interdisciplinary discussions.	Not provided	✓	—	—	—	—
<i>Clinical simulation</i>								
Loomis J 2017 ¹⁰⁷	Nursing students (N = 110)	Poverty simulation.	Underserved communities	✓	—	—	—	—
Johnson KE 2015 ¹⁰⁸	Nursing students	A poverty simulation exercise.	Underserved communities	✓	—	—	—	—
Mal F 2016 ¹⁰⁹	Nursing students (N = 18)	Case study vs. Simulation.	Palliative and EOL care	✓	—	—	—	—
Betcher D 2010 ¹¹⁰	Nurses	Didactic lecture on communication techniques, role-playing, simulation, and discussion.	Palliative and EOL care	✓	—	—	—	—

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Ross AJ 2013 ¹¹¹	Health care professionals	2-day simulation training program.	Elderly patients	✓	—	—	—	—
Kalish R 2011 ¹¹²	Medical students (N = 11)	Reflection of annotated videotapes of clinical encounters.	Rheumatology	✓	—	—	✓	—
Riches S 2019 ¹¹³	Trainees or qualified clinical psychologists (N = 15-25)	Auditory hallucinations simulation.	Individuals with mental illness	✓	—	—	—	—
Hayes C 2018 ¹¹⁴	Second-year undergraduate nursing students (N = 528)	Role-play simulation.	Not provided	✓	—	—	✓	—
Role modeling								
Blanco MA 2013 ¹¹⁵	Medical residents (N = 41)	Resident-as-teacher role-model program.	Rheumatology	✓	—	—	—	—
Contemplative practices								
Bell T 2017 ¹¹⁶	Trainee cognitive-behavioral therapists (N = 8)	Development of a 'compassionate internal supervisor.'	Individuals with mental illness	✓	—	—	—	—
Gale C 2017 ¹¹⁷	Mental therapists (N = 10)	Compassion focused therapy.	Individuals with mental illness	✓	—	—	—	—
Mascaro JS 2016 ¹¹⁸	Second year medical students (N = 32)	Cognitively-based compassion training.	Not provided	✓	—	—	—	—
Beaumont E 2017 ¹¹⁹	Post graduate students in Cognitive Behavioural Psychotherapy (N = 21)	Compassionate mind training.	Psychotherapy	—	—	—	—	—
McEwan K, 2020 ¹²⁰	Mental health professionals (N = 17-28)	Compassionate mind training.	Individuals with mental illness	✓	—	—	—	—
Weingartner LA 2019 ¹²¹	Preclinical second-year and	Compassion cultivation training.	Not provided	✓	—	—	—	—

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fourth-year medical students (N = 45)									
Fortney L 2013 ¹²²	Primary-care physicians (N = 30)	Abbreviated mindfulness training course.	Primary care	—	—	—	—	—	—
Kemper KJ 2015 ¹²³	Medical students (N = 6)	Mindfulness -based stress reduction course.	Not provided	✓	—	—	—	—	—
Mahon MA 2017 ¹²⁴	Registered nurses (N = 90)	Mindfulness meditation.	Hospitalized patients	✓	—	—	—	—	—
Kemper KJ 2015 ¹²⁵	Medical, nursing, social work students and dieticians and residents (N = 60)	Mind body skills training.	Multidisciplinary	✓	—	—	—	—	—
Kemper KJ 2017 ¹²⁶	Health professionals and trainees (N = 149)	Online mind-body skills training.	Multidisciplinary	✓	—	—	—	—	—
Nguyen MC 2020 ¹²⁷	Residents and faculty volunteers from emergency medicine, internal medicine and surgery (N = 66)	Mind-body skills training.	Multidisciplinary	✓	—	—	—	—	—
Boellinghaus I 2013 ¹²⁸	Trainee psychological therapists (N = 12)	Loving kindness meditation	Individuals with mental illness	✓	—	—	—	—	—
Rao N 2017 ¹²⁹	Nurses, physicians and social workers (N = 177)	3 types of positive emotion-generating meditation.	Multidisciplinary	✓	—	—	—	—	—
Suyi Y 2017 ¹³⁰	Mental health professionals (N = 37)	Mindfulness program.	Individuals with mental illness	✓	—	—	—	—	—

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Schroeder DA 2018 ¹³¹	Physicians (N = 33)	Brief mindfulness-based intervention.	Primary care	✓	—	—	—	—
Orellana-Rios CL 2017 ¹³²	Interdisciplinary palliative care teams (N = 28)	Mindfulness- and meditation-based intervention, including loving-kindness and Tong-len meditation training.	Palliative and EOL care	✓	—	—	—	—
Richards TA 2006 ¹³³	Registered nurses (N = 24)	Spiritually based self-management.	Not provided	✓	—	—	—	—
Kemper KJ 2017 ¹³⁴	Faculty, staff, or in training at Ohio State University's Center for Integrative Health and Wellness (N = 24)	Guided imagery, acupuncture and Reiki.	Multidisciplinary	✓	—	—	—	—
Keng S-J 2017 ¹³⁵	Therapist trainees (N = 25)	Functional analytic psychotherapy therapist training.	Psychotherapy	✓	—	—	—	—
Brathovde A 2017 ¹³⁶	Registered nurses (N = 24)	Reiki energy therapy.	Not provided	✓	—	—	—	—
Moffatt-Bruce SD 2019 ¹³⁷	Residents and faculty of cardiovascular ICU (N = 66)	A "flipped" classroom mindfulness training.	ICU	✓	—	—	—	—
Verweij H 2016 ¹³⁸	General practitioners (N = 50)	Mindfulness	Primary care	✓	—	—	—	—
Verweij H 2018 ¹³⁹	Residents (N = 148)	Mindfulness	Not provided	✓	—	—	—	—
Other interventions								
Crow SM 2012 ¹⁴⁰	Medical students (N = 157)	Donor Luncheon before a dissection class.	Not provided	✓	—	—	—	—
Talarico EF 2013 ¹⁴¹	Medical students	Students interact with the families of the deceased persons whom they are dissecting.	Not provided	✓	—	—	—	—
Chiou RJ 2017 ¹⁴²	Medical students (N = 158)	Initiation ceremony to commemorate a donor and	Not provided	✓	—	—	—	—

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		lay a wreath before a dissection class.						
Han A 2017 ¹⁴³	Staff in care facility for people with dementia (N = 24)	Compassionate touch training.	Individuals with dementia	✓	—	—	—	—
Altamirano- Bustamante MM 2013 ¹⁴⁴	Health care personnel (N = 2,891)	Clinical ethics course.	Multidisciplina ry	✓	—	—	—	—
Hofmeyer A 2018 ¹⁴⁵	Nursing students	Online compassion module.	Not provided	✓	—	—	—	—
Turnbull P 2013 ¹⁴⁶	Nursing students (N = 284)	Student nurse pledge.	Not provided	✓	—	—	—	—
Reynolds LM 2019 ¹⁴⁷	Medical students and qualified health care professionals (N = 327)	2-min compassion condition slideshow	Not provided	✓	—	—	—	—
Bunyan M 2017 ¹⁴⁸	Nurses working in mental health inpatient rehabilitation wards (N = 19)	Motivational interviewing.	Individuals with mental illness	✓	✓	—	✓	—

Abbreviations: CARE, Compassion and Respect at the End-of-life; CME, continuing medical education; EOL, end-of-life; HIV/AIDS, human immunodeficiency virus /acquired immunodeficiency syndrome; USA, United States of America.

^aVirtuous response (the activation and enactment of a virtue, defined as a good or noble quality embodied in the character of the caregiver, toward a person in need): knowing the person; person as a priority, and beneficence.

^bSeeking to understand (the extent to which caregivers attempt to understand the sufferer as a person and to understand the person's unique needs in order to optimize the effect of compassion).

^cAttending to needs (the timely, attuned desire to actively engage in and address a person's multifactorial suffering): timely action, attending and providing compassion related needs (family centered, inviting patients to share their needs, knowledgeable and comforting, etc.).

^dRelational communication (verbal and nonverbal displays of compassion conveyed through caregiver demeanor, affect, behavior, and engagement with the person in suffering).

^eRelational space (the context and content of a compassionate encounter where the person in suffering is aware and is engaged by the virtuous response of the caregiver).

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