

Table S4. Intervention characteristics of N = 22 interventions

Name of the Intervention	Publication (country)	Setting	1. Aim; 2. Content and learning activities; 3. Addressed PC/EoL issue(s)
An Illness-Trajectory Communication Curriculum	Cannone et al., 2019 (USA)	8-module workshop over 8 weeks (weekly 2-hour sessions)	1. Improving communication skills with regard to BBN; 2. Sessions on 8 different pertinent communication challenges each consisting of a didactic lecture and small group role-play sessions with SP plus face-to-face sessions to discuss the learned content (BBN based on SPIKES protocol); 3. BBN, interacting with relatives, communicating in the palliative care setting
Avatar-mediated training in a virtual world	Andrade et al., 2010 (USA)	10-minute video and one encounter with avatar SP (individual training)	1. Educating medical trainees on delivering bad news in a virtual world; 2. Computer-based tutorial on SPIKES protocol and interaction with a SP avatar in a virtual room; 3. BBN
Belgian Interuniversity Curriculum – communication skills training (BIC-CST)	Liénard et al., 2010 (Belgium)	40-h training program spread over an 8-month period bimonthly in small group sessions	1. Improving residents' BBN skills with regard to communication contents and the BBN process; 2. Theoretical information, role plays with some sessions focusing on two-person and some sessions focusing on three-person consultations; 3. BBN
Brief Breaking Bad News (BBN) communication skills training module	Gorniewicz et al., 2017 (USA)	60-minute training module viewed on a CD-ROM or website	1. Improving communication skills in BBN; 2. Video clips of actual patients describing communication situations involving BBN, quiz questions on how to respond to a challenging communication situation, videos of simulated doctor-patient encounters with annotations; 3. BBN
Communication skills training (CST)	Butow et al., 2008 (Australia)	1.5-day workshop with 3-6 participants and four 1.5 h monthly video-conferences	1. Increasing oncologists' skills in eliciting and responding to emotional cues; 2. Previously handed out booklet, presentation of principles, a DVD modelling ideal behavior, monthly video-conferences incorporating role-play of doctor-generated scenarios with SP; 3. Dealing with emotions

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Communication Skills Training	Baile et al., 1999, (USA)	Two 5-hour-workshops (participants attended only one of them)	<ol style="list-style-type: none"> 1. Improving communication skills and patient management skills of oncologists; 2. Two workshops: one on breaking bad news (based on SPIKES-protocol) and one on managing difficult patient situations (focus on managing stressful patient and family encounters) - each consisting of a didactic lecture, discussions and role-plays in small groups; 3. BBN, managing patient reactions to illness
Communication Skills Training - adapted version of the workshop on BBN	Fujimori, et al., 2003 (Japan)	5-hour workshop imbedded into a 2 or 3-day workshop on palliative care	<ol style="list-style-type: none"> 1. Increasing confidence in communicating with cancer patients; 2. One workshop from Baile et al. consisting of a didactic lecture and role plays on BBN (based on SPIKES protocol); 3. BBN
Communication skills training (CST) based on patients preferences	Fujimori et al., 2014 (Japan)	2-day workshop	<ol style="list-style-type: none"> 1. Improving empathic communication and effective behaviors of oncologists and their confidence in their ability to communicate with patients; 2. Computer-aided didactic lecture with text and video, role plays with SP, discussion on role playing (all based on self-developed SHARE framework on BBN); 3. BBN
Communication Skills Training (CST) workshop	Yamada et al., 2018; (Japan)	2-day workshop	<ol style="list-style-type: none"> 1. Increasing intrapersonal empathy; 2. One-hour computer-aided didactic lecture with text and video (BBN based on the SHARE framework with focus on reassurance and emotional support), 8 hours of role plays with SP, discussions; 3. Empathy/dealing with emotions, BBN
Communication training in oncology	Lenzi et al., 2011 (USA)	3-day course	<ol style="list-style-type: none"> 1. Positively affecting oncologists' attitudes, self-efficacy and knowledge in communication; 2. Formal lectures, small group work, role plays, interviews with SP, reflective exercises; 3. BBN, dealing with denial
COM-ON-p	Goelz et al., 2011 (Germany)	11-hour (1.5 day) workshop in groups of 8-9 participants plus an individual coaching 2 weeks later (half hour)	<ol style="list-style-type: none"> 1. Improving oncologists' communication behavior toward the patient and significant other skills in consultations focusing on the transition to palliative care; 2. Role plays with SP and significant others focusing on individually defined learning goals, coaching sessions to discuss how to transfer individual learning goals into routine consultations with a facilitator;

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Comskil Training Curriculum	Bylund et al., 2010 (USA)	Five 3-h modules (participants were free to choose the frequency and amount of modules taking part in)	3. Transition to palliative care 1. Improving communication skills; 2. Five modules on 5 different PC/EoL topics consisting of a didactic presentation, videos to demonstrate the skills and role-plays with SP in small groups; 3. BBN; shared decision making, responding to patient anger; discussing prognosis; discussing transition to palliative care
Comskil Training Curriculum – adapted version (module about discussing prognosis)	Brown et al., 2010 (USA)	2.5 to 3-hour workshop	1. Teaching five strategies to discuss prognosis in a manner that is a) tailored to the patient's needs, b) honest and realistic and c) provides hope and reassurance; 2. Written material, didactic lecture, presentation of exemplary videos, role plays with SP; 3. Discussing prognosis
Goals-of-Care (GoC) communication skills and coaching intervention (INT)	Annadurai et al., 2021 (USA); Bickell et al., 2020 (USA)	2-hour group communication skills training and 4 coaching visits spread over half a year	1. Teaching oncologists to elicit patient values; 2. All participants: didactic lecture on importance of GoC discussions; additional for intervention group (IG): small group role play session, coaching in practice (joint visit with patient; all based on SPIKES and NURSE protocols); 3. Goals of care discussions
Interact-Cancer (computer-assisted instruction program)	Hulsman et al., 2002 (Netherlands)	4 modules of computer assisted individual training each lasting 1 hour (program can be interrupted and completed anytime)	1. Improving communication behavior; 2. Computer assisted instruction-course with 4 modules: basic communication skills, breaking bad news, providing information effectively, dealing with patients' emotions – each course consisting of video examples of poor and adequate communication, written instructions and multiple-choice practice questions; 3. BBN, dealing with emotions
ISM (integrating simulation model) with art-based teaching strategies	Yakhforosha et al., 2018 (Iran)	1-day workshop	1. Teaching empathic communication regarding BBN by integrating simulation with art-based teaching strategies; 2. Interactive lectures based on SPIKES-model, presentation of different artworks expressing patient scenarios (e.g. films, music, painting, poetry) with following discussion, role plays with SP, expression of learning activities in a BBN-checklist and a reflective essay; 3. BBN

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Oncotalk	Back et al., 2007 (USA)	4-day residential workshop in groups of 20	<ol style="list-style-type: none"> 1. Teaching specific communication tasks linked to the patient's trajectory of illness; 2. Theoretic overviews, reflective discussions, teaching of cognitive road maps for specific communication tasks and role plays with SP; 3. BBN, discussing transitions to palliative care
Patient-Centered Communication Intervention (VOICE-trial)	Epstein et al., 2017 (USA)	Physicians: Two sessions of 105-minute in-office training; patients and caregivers: 1-hour coaching session plus up to 3 follow-up phone calls	<ol style="list-style-type: none"> 1. Promoting patient-centered communication about disease course, prognosis, treatment decisions and end-of-life-care; 2. Physicians' intervention: brief video and feedback from standardized patients including critique on audiotaped patient visits; patients' intervention: coaching session incorporating a question prompt list helping them bring their concerns to oncologist; 3. Dealing with emotions, discussing prognosis, treatment decisions and end-of-life-care
Posttraining Consolidation Workshops after a basic training program	Delvaux et al., 2005 (Belgium); Razavi et al., 2003 (Belgium)	2.5-day basic group-training program and six 3-hour consolidation workshops spread over a 3-months period	<ol style="list-style-type: none"> 1. Improving physicians' communication skills in cancer care (basic program) and maintaining the newly acquired skills, ensure further improvements, and promote the transfer of skills to the clinical practice (consolidation workshops); 2. Basic program: didactic lecture, small-group role play sessions, written material; consolidation workshops: role plays with systematic feedback based on clinical problems brought up by participants; 3. BBN, dealing with emotions, detecting psychopathologic reactions to diagnosis and prognosis, interacting with relatives
SCOPE CD-ROM	Tulsky et al., 2011 (USA)	1-hour communication lecture plus a CD-ROM training program (approx. 1 hour)	<ol style="list-style-type: none"> 1. Improving oncologists' responses to patients' emotional concerns; 2. Didactic lecture on communication skills and a tailored CD-ROM training program with exemplars of their own audio-recorded clinic visits; 3. Dealing with emotions
TEAMS (training Oncologists and Empowering Patients in Effective Communication During Medical Consultations in Singapore)	Malhotra et al., 2019 (Singapore)	Online training program for physicians (completed individually, length not stated) and handing out a prompt sheet to patients	<ol style="list-style-type: none"> 1. Improving oncologists' empathic responses, discussions of prognosis and goals of care and promoting patient/caregiver-questions; 2. Physicians intervention: training on 4 different communication topics (see goals of the intervention) each addressed with a review of the concept, a video on how it could be applied and a review of segments from own audiotaped conversations including feedback; patients' intervention: prompt sheet with possible questions about diagnosis and prognosis; 3. Discussing prognosis, discussing goals of care, responding to emotions

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Training on Shared Decision-Making About Palliative Chemotherapy	Henselmans et al., 2019 (Netherlands)	Two 3.5-hour group sessions in groups of 3-6 with approx. 2 weeks in-between and a booster session (1.5 hours) 6 weeks later	1. Training oncologists on shared decision making (SDM) focused on palliative cancer treatment; 2. Instruction, modelling (i.e. videos illustrating SDM) and practice (role plays with SP) plus a follow up session to receive feedback on a video-recorded encounter from actual practice; 3. Shared decision making

BBN = breaking bad news, SP = simulated patients