review

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Efficacy of communication skills training courses in oncology: a systematic review and meta-analysis

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Objective: Group training in communication skills [communication skills training (CST)] has become partly mandatory for oncology staff. However, so far, a comprehensive meta-analysis on the efficacy is lacking.
Design: Included studies either compare the efficacy of a specific training with a control group or look at the additional effect of booster sessions on communication behaviour, attitudes or patient outcomes.
Methods: Four electronic databases were searched up to July 2008 without language restriction, and reference lists of earlier reviews were screened. Effect sizes (ESs) were extracted and pooled in random effects meta-analyses.
Results: We included 13 trials (three non-randomised), 10 with no specific intervention in the control group. Meta-analysis showed a moderate effect of CST on communication behaviour ES = 0.54. Three trials compared basic training courses with more extensive training courses and showed a small additional effect on communication skills ES = 0.37. Trials investigating participants' attitudes ES = 0.35 and patient outcomes ES = 0.13 (trend) confirmed this effect.
Conclusions: Training health professionals by CST is a promising approach to change communication behaviour and attitudes. Patients might also benefit from specifically trained health professionals but strong studies are lacking. However, feasibility and economic aspects have to be kept in mind when considering providing a training of optimal length.
Key words: communication, medical education, meta-analysis, oncology, training

introduction

Suffering from cancer is an extraordinary experience in the lives of affected patients and their family members. From the very beginning, it is essential to communicate adequately about diagnostic information, prognosis, mental distress, and treatment options [1]. Beyond high-quality clinical information on the somatic status and treatment options [2], patients especially acknowledge supportive communication according to their psychosocial needs [3, 4]. Good communication skills of health professionals have been found to increase treatment adherence, as well as psychological functioning of cancer patients [5].

Based on the assumption that communication behaviour of health professionals can be trained, strengthening communication skills has become an important part of the basic training curriculum of medical staff and also after graduation through specific workshops. Such workshops address common issues in therapeutic conversations like improving the assessment of anamnestic information, use of non-verbal communication or incorporating the patient's perspective [1, 6]. The main purpose of communication skills training (CST) courses in oncology is to increase empathy and clarity when conversing with patients and family members as well as to practise strategies on how to deal with difficult situations during consultations. In this model, communication is conceptualised as a basic set of clinical skills that can be changed during training. This approach has to be distinguished from a more case-orientated supervision in which individual patient history is more relevant [7].

Earlier reviews on the efficacy of CST in oncology either found limited evidence for the efficacy of CST or avoided drawing overall conclusions. The first systematic review published in the Cochrane Library [8] was based on only three high-quality studies published before 2001, and the authors concluded that there is some evidence for the efficacy of CST. According to other reviews, numerous studies on this topic were published in recent years [9, 10]. These reviews support the assumption that CST is effective. However, these reviews did not integrate the scientific evidence via a meta-analysis and conclusions are rather vague. An updated systematic review and meta-analysis may arrive at a clearer conclusion. Therefore, we integrated all available evidence on the efficacy of CST for health professionals stemming from controlled studies. The

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studies either used a non-intervention control group or a control group with a less intense training. Relevant outcome measures were communication behaviour, attitudes, and patient outcomes that had to be analysed separately.

methods

inclusion and exclusion criteria

Included were controlled studies on CST in oncology, which consisted of training sessions on breaking bad news, dealing with emotional concerns of patients and transition to palliative care. Training courses were required to include active practice parts such as role play and to last for a minimum of 6 h. Training courses specifically dealing with recruitment of patients into clinical trials, shared decision making, and genetic counselling were excluded. Participants had to be health professionals (i.e. physicians, nurses, social workers, psychologists) working with cancer patients. Relevant outcomes such as the communication behaviour or attitudes of the health professional or patient outcomes had to be reported. We did not publish these criteria earlier in a protocol.

data sources

Four methods of identifying relevant publications were applied in order to achieve a comprehensive detection of literature: (i) We developed different search strategies for four scientific databases (see Appendix S1, available at *Annals of Oncology* online, for search terms): Central, PsycInfo, Medline (all accessed during the last week of June 2008), and EMBASE (accessed during the first week of July 2008). This search identified 1194 references after deletion of duplicates. (ii) In addition, we identified 70 references through the reference lists of three already published reviews on the topic of communications skills training [8–10]. (iii) Furthermore, we carried out a search for papers that quoted key papers [9–16] using Web of Science (leading to 241 references). (iv) Finally, we contacted leading international experts in order to assist us in identifying potential additional studies. They named only ongoing studies that were not included in our analysis due to lack of sufficient data (see Figure 1).

study selection

We carried out the study selection according to the inclusion criteria in three stages. Firstly, we assessed potential inclusion by titles and abstracts. All abstracts were rated by both raters independently and discrepancies were solved by discussion and consensus. Secondly, a total of 156 references were identified and retrieved for full-text screening. Finally, we included those studies with sufficient information in the paper into the meta-analysis.

data extraction

The design of the study was coded according to whether a randomised allocation of participants was used. Descriptive information was extracted on sample and intervention characteristics. Concerning the participants in the training, we extracted data on their sex and age, their working experience, and whether they had been trained as a physician or nurse. As relevant information for the intervention, the total duration, the content, and pedagogic tools (e.g. lectures, case discussion) were extracted. Concerning the duration of the training, the coding was done in hours and, if only days were reported, 1 day was considered as an 8-h training. Methodological aspects of the use of randomisation and the type of outcome assessment (simulated or real patients; audio or video recordings) were also extracted.

Outcomes were grouped into categories, namely communication behaviour, attitude towards (terminally) ill patients, and patient outcomes. Adequate communication behaviour included open questions and empathy and the avoidance of leading questions, blocking behaviour, and interruptions (the first mentioned aspects were prioritised as outcomes). If a total score for adequate communication behaviour was given, this was used as integrative measure. When several time points were assessed, the outcomes from the first post-intervention assessment were extracted.

For all these outcomes, the relevant results were transformed into between-group effect sizes (ESs) (standardised mean differences), using the Wilson ES calculator [17]. For four studies, we carried out additional transformations before computing ESs [12, 14, 18, 19].

data analysis

ES measures were used and standard errors for all outcomes were calculated based on the sample size of each treatment condition, standardised mean differences (SMD). For physician outcomes (behaviour and attitude), the number of physicians was used. For patient outcomes, the number of patients in each treatment condition was used. ESs greater than zero indicate a beneficial effect of CST on the specific outcome. An ES of ≥0.20 to 0.50 indicates a low effect, ≥0.50 to 0.80 indicates a moderate effect, while ≥0.80 indicates a large effect [20]. Data were analysed using the software STATA 9, using the command 'metan'. We calculated random effects models (DerSimonian–Laird method) since we expected the studies to be heterogeneous [21]. Precision of pooled ESs is shown by the 95% confidence intervals. Heterogeneity between the studies was assessed by examining funnel plots of trials, by calculating a chi-square heterogeneity test and through I^2 statistics. The chi-square value tests for statistically significant heterogeneity between trials indicate heterogeneity if statistical significance is found. In addition, higher I^2 values indicate greater variability between trials than would be expected due to chance alone (range 0%–100%) [22]. Higgins et al. propose the limits of I^2 values as heterogeneity indicators to be 25% for low heterogeneity, 50% for moderate heterogeneity, and 75% for high heterogeneity. To explore publication bias, we carried out funnel plot by plotting ESs against the inverse of their standard errors. In addition, we used the Egger test in the metabias procedure in STATA.

results

descriptive information

We identified 13 controlled studies reported in 21 publications (marked in the reference list). Four studies were reported in several publications. They are labelled in this manuscript and in the figures as 'Fallowfield 2002' [14, 23], 'Razavi 1988' [24, 25], 'Razavi 2002' [15, 26] and 'Razavi 2003' [10, 16, 27–31]. Results were included only once since the results refer to the same sample and intervention.

study design

Most of the identified studies were randomised controlled trials, with the exception of three studies, which were controlled studies without random allocation [32–34]. Eight studies [11–13, 18, 32, 34–36] investigated the efficacy of basic CST in comparison with a non-active control group: one looked at whether a consolidation workshop adds to the efficacy of CST [37], two compared different durations of training courses with regard to the efficacy on communication skills [33, 38], and one looked at whether supervision after the training improved efficacy [19]. One study clustered the study groups in two different ways, leading to four different conditions: participation/non-participation in a CST and the provision/non-provision of written feedback on individual communication skills [39].

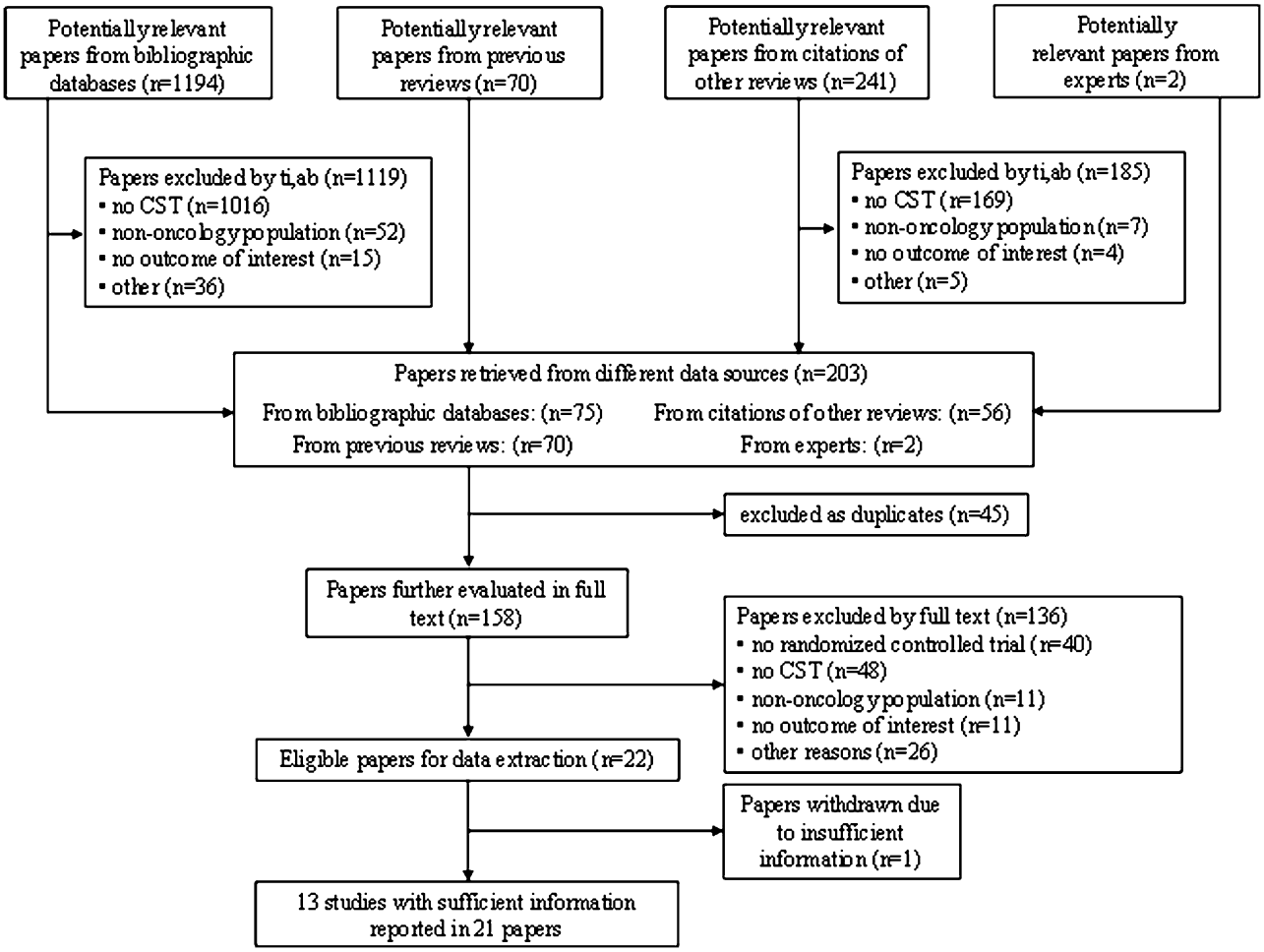

Figure 1. Flowchart of trial selection.

setting and formal characteristics of CST

Six studies offered training sessions over consecutive days [11, 13, 32, 36, 38, 39], whereas three studies broke down their courses into several sessions over a period of time [12, 34, 35]. In three studies, a non-continuous training (e.g. supervision, consolidation workshops) was part of the concept of the CST [18, 19, 37]. One study provided no clear information on that [33]. Concerning the intensity of the training in the specific intervention group, five CST courses lasted <24 h [18, 32, 34, 35, 38]. Five CST courses had a minimum duration of 24 h [11–13, 33, 39] and three lasted ≥36 h [19, 36, 37].

pedagogic tools and content of training courses

As required by the inclusion criteria, all studies used either peer or actor role plays in their training. Most of them used systematic facilitator or peer feedback on these role plays as an additional tool [11–13, 33, 37–39]. Further techniques used in the training courses were lectures [12, 13, 18, 32–37] or key readings [11, 39], audio–visual materials [18, 32, 35, 38], case discussions [32, 34, 36, 37], and identification of stressful communication situations [33], as well as barriers to communication [38].

Most training courses focused on generic communication skills [11–13, 18, 32, 33, 36, 39], whereas some focused on specific aspects like breaking bad news in particular [37] or improving communication with family members [32, 35, 37]. One study specifically looked at the training of communication with patients at the end of their lives [35]. A number of training courses taught skills such as how to respond to emotions [18] and the improved understanding and identification of patients' psychosocial issues and concerns [13, 33, 36, 37]. Two studies focused on the application of trained skills in practice [19, 37].

participants

Three studies included oncologists only [11, 18, 39]. Physicians were included in CST independent of their earlier training in four studies [32, 33, 37, 38]. Five studies included nurses working with cancer patients [12, 13, 19, 36] or with patients at the end of their lives [35]. One study included participants from a variety of disciplines (nurses, social workers, physicians, psychologists, physical therapists and non-professional volunteers) [24].

outcome assessment

Whether the training courses had an impact on the health care professionals' communication behaviour was mostly assessed using video [11, 12, 14, 18] or audio recordings [19, 32, 33,

36–38]. In so-called 'patient' interviews, either real [11, 13, 19, 39] or simulated [12, 18, 32, 33, 38] patients were used. Two studies reported on the outcomes of both types of interviews: they provided results from interviews with real and simulated patients within one study [36, 37].

Attitudes towards death and dying [11, 12, 34–36] were assessed by self-rating questionnaires filled in by the health care workers. Four studies assessed patient outcomes by having patients fill in questionnaires [13, 37–39] on their distress or satisfaction with physicians' communication.

efficacy of CST courses

Overall, CST was able to improve communication skills in studies where no specific intervention was given in the control group. Results showed a moderate ES of 0.54 (0.27–0.81). However, the heterogeneity between the studies was large ($I^2 = 66.7$). The funnel plot (see Appendix S1, available at *Annals of Oncology* online) showed two unexpected outliers [13, 36] with very large effects. But the Egger test did not reach the level of statistical significance ($P = 0.185$). Trials investigating the efficacy of an additional training course after basic training were provided in both groups (intervention and control group) showed beneficial effects of this additional training with an ES of 0.37 (0.10–0.64) (see Figure 2). These trial effects were homogeneous ($I^2 = 0$).

The attitudes of the participants differ significantly between trained and untrained health professionals (see Figure 3). The pooled ES of 0.35 was small (confidence interval 0.16–0.55) and is based on homogeneous individual study results ($I^2 = 0$). The funnel plot in the Appendix S1 (available at *Annals of Oncology* online) does not indicate publication bias (Egger test $P = 0.465$). None of the studies that used a basic training control group investigated attitudes.

Only a minority of studies looked at patient outcomes such as mental distress (see Figure 4). For these studies, an effect was found when comparing CST with no specific intervention (ES = 0.13; $I^2 = 28.1$, trend), whereas the 'one study with a more intense workshop' versus basic training showed no additional effect (ES = 0.20; $I^2 = 0$). The question of whether a publication bias might be present cannot be answered due to the low number of trials.

subgroup analyses on improvement of communication behaviour

The studies using a controlled design only [32–34] showed comparable results to the other studies. We were not able to perform a quantitative comparative analysis due to the low number of studies. But we carried out additional subgroup analyses to investigate which variables might have had an impact on the treatment effect in trials comparing CST with no specific intervention. The trials were aggregated according to the duration of the training (≤24 h versus a minimum of 24 h), the type of assessment of communication behaviour after the training (simulated patients versus real patients), and the profession of the participants (physician versus nurses or other health care professionals).

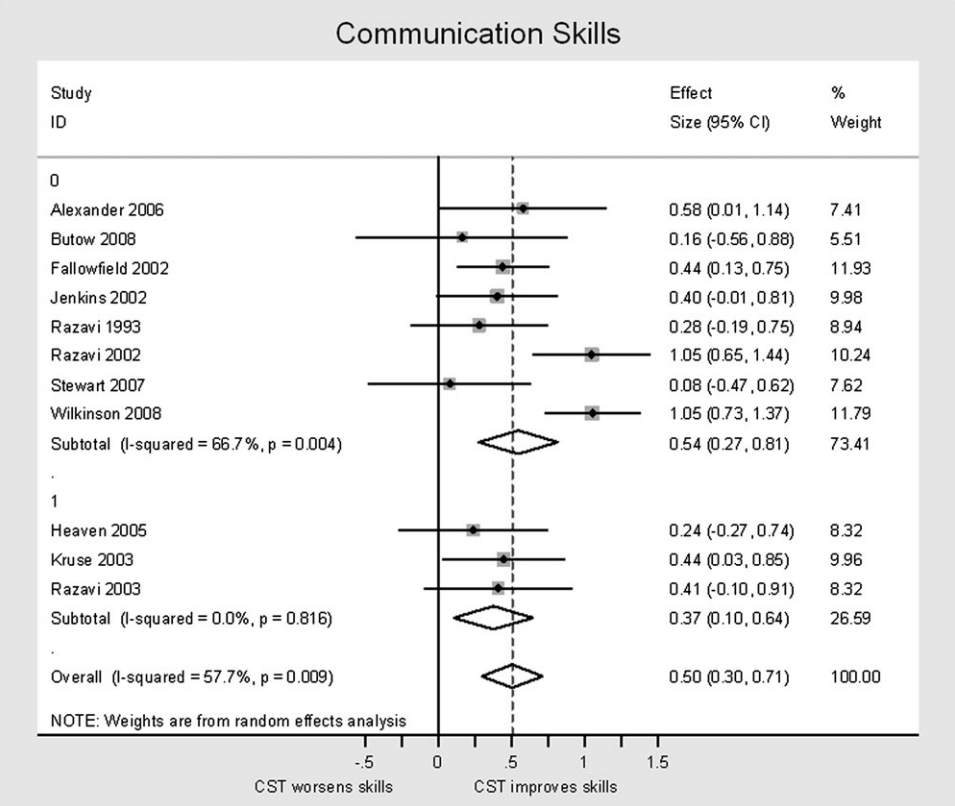

Figure 2. Efficacy of communication skills training on communication skills. Upper part of the figure list studies with no intervention control group. Lower part of the figure shows studies locking at the efficacy of additional supervision or consolidation workshops.

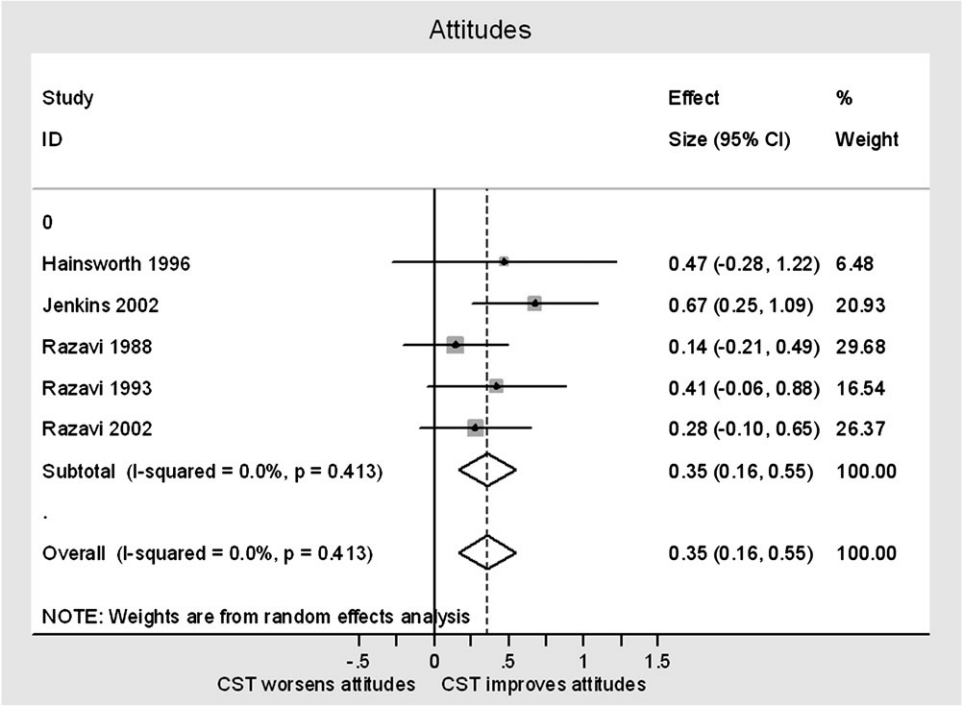

Figure 3. Efficacy of communication skills training towards attitudes against death and dying.

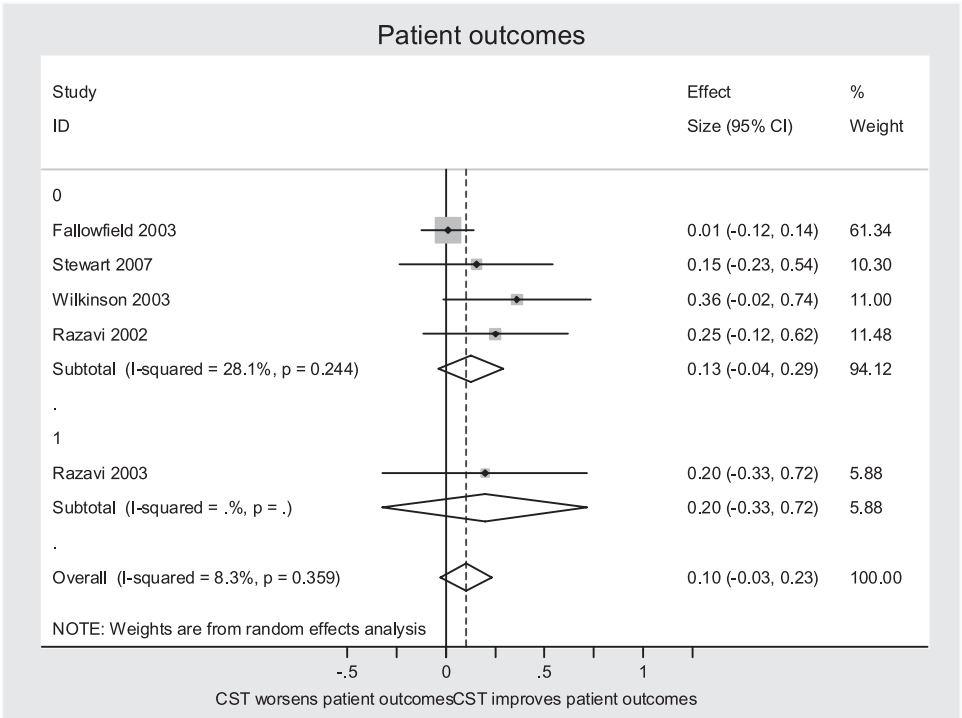

Figure 4. Efficacy of communication skills training concerning patient outcomes. Upper part of the figure list studies with no intervention control group. Lower part of the figure shows a study locking at the efficacy of additional consolidation workshops.

Duration of training was found to be a potential moderator of training efficacy. Shorter training courses [18, 32, 38] were less successful than longer ones [11–13, 36, 39] [SMD 0.283 (−0.062 to 0.624) versus SMD 0.655 (0.327–0.982); trend $P = 0.25$]. In particular, the homogeneous results of studies with shorter training courses ($I^2 = 0$) with a very low ES can be seen as suggesting the inefficacy of very time-limited training courses.

The type of assessment of training effects varied between the studies, but we did not find a clear difference according to

whether simulated or real patient interviews were used ($P < 0.90$). Trials with simulated patients [12, 18, 32, 36, 38] showed an ES of 0.461 (0.068–0.855), whereas studies with real patient interviews showed an effect of 0.638 (0.213–1.063) [11, 13, 39]. Two trials used both types of outcome assessment with somewhat contradictory results: one trial showed a large difference between the two types of assessment. Interviews with simulated patients yielded results indicating efficacy of the training (SMD 1.04), whereas real patient interviews showed no difference, compared with the control group (SMD −0.04) [36]. In a second study of the same working group that looked at the efficacy of consolidation workshops [37], no difference was found between the performance of adequate communication skills in simulated or real patient interviews (SMD 0.41 versus 0.28).

The profession of the participants moderates the efficacy of the training, leading to larger effects for nurses [12, 13, 36] than for physicians [11, 18, 32, 38, 39] [SMD 0.814 (0.359–1.270) versus SMD 0.376 (0.174–0.578); $P < 0.10$]. However, the conclusion that nurses generally benefit more from CST should not be drawn since the three included studies showed large heterogeneity ($I^2 = 75\%$).

discussion

We found 13 controlled studies on CST, and the overall efficacy of CST on clinical skills was confirmed by our meta-analytic results. The results expand on previous reviews due to the inclusion of newer studies and a more comprehensive pooling of the results. However, the effects of the training courses in terms of improving communication skills are moderate and we found a large variability between the studies. We also found an additional benefit of consolidation workshops or supervision after a basic training in communication skills. The three studies contributing to this result consistently show small to moderate ESs. This is an indication that it might be worth adding such components to the basic training in order to reinforce effects, although additional improvements might be expected to be somewhat lower than initial effects of a basic training with novices. In terms of duration, no clear cut-off for efficacious training courses can be determined so far, and the trade-off between feasibility and efficacy has to be borne in mind. However, it became clear that interventions lasting <3 days showed consistently small effects.

The reported studies look at the effects from a short-term perspective, making assumptions about the long-term impact of CST somewhat difficult. Four studies provided information on a 3-month follow-up [11, 13, 19, 36], and one study reported results after 3 and 5 months [37]. Two studies also assessed the long-term impact of CST after 12 months [18, 34]. Midterm follow-up results supported the short-term effect in the relevant studies, whereas long-term effect studies found no support for the efficacy of CST. The latter result can also be caused by the included trials, as they found only limited effects in the short term as well. Summarising these results, it becomes evident that short-term benefit from the training is quite stable if the training itself was successful.

Most studies reported on the training's effect on health care staff's communication behaviour, some on their attitudes, and only a small number of studies reported on the effects of CST on patient outcome itself. This is in line with a recent review on interventions for breaking bad news to cancer patients, which showed that only ∼10% of the studies assessed patient outcome [40]. However, an important goal in training in communication skills is the application of the new communication skills in daily practice to improve the patient's health status and satisfaction with the treatment [41]. Our results somewhat support the assumption that the transfer of communication skills into real patient consultation is possible since CST had effects in simulated and real patient interviews. An urgent need for more patient-orientated research must be stated nevertheless.

implications for research

We found low to moderate ESs for all outcomes. Low effects of medical training have been previously reported [42] and are therefore in line with our results. One may argue that personal interaction styles are rather invariable and a one-time workshop does not have enough impact to change such deep-rooted behaviour. However, one could also explain this result by a ceiling effect. The effect of the training might be low due to a priori high levels of communication competencies in the participants in the CST (see Table 1 for working experiences). Primary studies should be encouraged to report on this aspect and to provide results for novices and experienced professionals separately, to enable secondary analyses on this aspect.

The quality of the assessment of communication skills following the training courses is critical when looking at the results. However, no clear definition exists as to which specific communication competencies should be addressed during CST [43]. It would be most informative if results presented both an overall communication competency score and some key dimensions of communication behaviour (e.g. empathy). Some authors reported single items or a lot of dimensions without providing information on subscores for specific domains. Such a procedure inflates measurement error and interpretation is problematic since the results are most often not consistent [44]. In recent years, more elaborate rating systems like the Medical Interaction Process System (MIPS) have been developed that are able to produce more solid and detailed ratings. However, when other authors analysed their results according to the subscales of the MIPS, not all subscales showed a difference between trained and non-trained physicians (e.g. patient orientation, leading questions), which seems to be illustrative of the complexity of the assessment of communication skills following training [45].

The ultimate indicator of whether CST is useful in improving communication and patient interaction is the impact on the patient him- or herself. However, very few studies have investigated the effect on patient outcomes. This appears to be an important objective for future studies, as other reviews also report on a potential gap between training and clinical impact [46]. While we agree that many other variables influence the patient's experience and may interfere with this outcome, it is important to take into account that CST is designed not solely to improve skills but also to improve health care services and patient satisfaction and patient distress. Studies in clinical practice are therefore urgently required.

Table 1. Descriptive information on the included studies in alphabetical order

Study reference (first author[a], last author, year), main study aim	Study design, sample size, type of control group	Participants' profession, experience, gender, and age	Setting, format, duration, and pedagogic tools of the specific intervention	Taught skills
Alexander, Tulsky, 2006: intensive palliative care educational retreat at the Duke University Hospital for residence to improve communication with patients at the end of life	**Design:** controlled study; evaluations pre- and post-intervention **Sample size:** 56 participants (IG 37, CG 19) **Control group:** non-attenders of the course	**Profession/experience:** medical residents **Gender:** IG male, 48.6%; female, 51.4%; CG male, 57.9%; female, 42.1% **Age:** unclear	**Setting, format:** 2-day workshop **Duration:** 16 h **Pedagogic tools:** lecture, discussion, audio-visual materials, role play, case discussion from own experience	Communication skills, understanding of the experience of patients and families, enhancement of personal awareness, ethical issues (and pain management not reported)
Butow, Tattersall, 2008: training for oncologists to elicit and respond to patients' emotional cues	**Design:** RCT, evaluations pre-intervention and 6 and 12 months post-intervention **Sample size:** 30 participants (IG 16, CG 14) **Control group:** waiting list control group	**Profession:** oncology physicians **Experience:** IG, mean = 14; CG, mean = 16 **Gender** IG: male, 56%; female, 44%; CG: male, 43%; female, 57% **Age:** IG, mean = 44; CG, mean 41	**Setting, format:** workshop plus four monthly video conference **Duration:** 1.5 days plus four times 1.5 h **Pedagogic tools:** lecture, DVD modelling ideal behaviour, role play practice	Establishing rapport, establish a collaborative framework, reduce blocking behaviours, active listening, basic empathy, closing the consultation, behaviours responding to distress, responding to anger, responding to anxiety, responding to depression
'Fallowfield 2002': evaluation of efficacy of CST in oncology and evaluation of the role of feedback	**Design:** RCT with four groups (A: written feedback followed by course, B: course alone, C: written feedback alone, D: control); assessment pre-, post-, and 12-month follow-up **Sample size:** 160 participants (39–41 in each condition) **Control group:** either waiting list control group (Group D) or feedback only (Group C).	**Profession:** oncologists **Experience:** **Gender:** Group A: 67% male; 33% female Group B: 73% male; 27% female Group C: 73% male; 27% female Group D: 74% male; 26% female **Age:** majority between 50 and 70. 22% older than 70 years	**Setting, format:** workshop at a hotel **Duration:** 3 days **Pedagogic tools:** work in small groups with standardised patients (trained actors), video review of interviews, group critique, interactive group demonstrations, discussions, selected key readings	Knowledge about and attitudes towards medical interviews and communication skills
Hainsworth, 1996: evaluation of effects of death education on attitudes of hospital nurses towards care of the dying	**Design:** RCT, pre, post **Sample size:** 28 participants (IG 14, CG 14) **Control group:** waiting list control group	**Profession:** nurses involved in end-of-life care **Experience:** minimum of 1 year **Gender:** unclear **Age:** unclear	**Setting, format:** Three times 2 h in one week intervals over three weeks **Duration:** 6 h **Pedagogic tools:** lecture, discussion, videos, music, role play	Personal death awareness, communication with dying patients and their families, care for the caregivers
Heaven, Maguire, 2006: evaluation of the effects of clinical supervision regarding transfer of learnt skills into workplace	**Design:** RCT, 2 groups with or without supervision, assessment, pre-course, post-supervision, 3-month follow-up **Sample size:** 61 participants (IG 29, CG 32) **Control group:** 3 days workshop only	**Profession:** nurses **Experience:** unclear **Gender:** unclear **Age:** unclear	**Setting, format:** 3-day workshop and 12 h of supervision of a 4-week period **Duration:** 3 days workshop and 12-h supervision **Pedagogic tools:** supervision	Application of learnt skills in clinical practice

Table 1. (*Continued*)

Study reference (first author[a], last author, year), main study aim	Study design, sample size, type of control group	Participants' profession, experience, gender, and age	Setting, format, duration, and pedagogic tools of the specific intervention	Taught skills
Jenkins, Fallowfield, 2002: evaluation of the effects of a CST on the psychological attitudes and beliefs of oncology physicians	**Design:** RCT, 2 groups, questionnaire assessment at baseline and 3 months later **Sample size:** 93 participants (IG 48, CG 45) **Control group:** no intervention	**Profession:** oncology physicians **Experience** junior: IG, 48%; CG, 53%; senior: IG, 52%; CG, 47% **Gender** male: IG, 71%; CG, 69%; female: IG, 29%; CG, 31% **Age:**	**Setting, format:** workshop at a hotel **Duration:** 3 days **Pedagogic tools:** work in small groups with standardised patients (trained actors), video review of interviews, group critique, interactive group demonstrations, discussions, selected key readings	Knowledge about and attitudes towards medical interviews and communication skills
Kruse, Tress, 2003: comparison of a 6- and a 24-h psychosocial training on physician–patient interaction, focus on duration of CST	**Design:** controlled study (self-selection of type of intervention), 24-h intervention versus 6-h intervention, pre- and post-assessment **Sample size:** 62 participants (IG 23, CG 39) **Control group:** 6-h workshop	**Profession:** physicians **Experience:** mean = 11.8; SD = 7.0 **Gender:** male, 82.3%; female, 17.7% **Age:** mean = 44.9; SD = 7.1	**Setting, format:** unclear **Duration:** 24 h **Pedagogic tools:** identification of stressful communication situations, standardised role play and individual feedback, information and lecture	Improve sense of competency and self-efficacy, improve communication skills and delivery of information, reflect on psychosocial issues of cancer patients
'Razavi 1988': evaluation of the effect of CST on professional's attitudes	**Design:** controlled study, immediate effects and 1-year follow-up **Sample size:** CG, 43/42[b]; IG, 122/78 **Control group:** no intervention	**Profession:** nurses, social workers, physicians, psychologists, physical therapists, non-professional volunteers (majority nurses) **Gender** IG: male, 15/9 (11.5%); female, 107/69 (88.5%); CG: male: 3/3 (7%); female: 40/39 (93%) **Age** IG: mean = 34, SD = 9.5; CG: mean = 36, SD = 9	**Setting/format:** 12 h over 4–10 sessions **Duration:** 12 h over a maximum for 3 months **Pedagogic tools:** role playing, comparing experiences, discussing cases and theoretical concepts	Develop a psychological understanding of death and dying issues in order to help the health care professionals to develop a positive attitude in their work. Content: coping reactions of terminally ill patients, family members, health care professionals, ethical problems, psychological management of pain.
Razavi, Paesmans, 1993: evaluation of effectiveness of psychological training programme for nurses	**Design:** RCT with waiting list control **Sample size:** IG, 36; CG, 36 **Control group:** waiting list	**Profession:** nurses **Experience:** 82% >10 cancer patients last 2 years **Gender:** IG, 97% female; CG, 89% female **Age** IG: mean = 32.5, SD = 9; CG: mean = 30.5, SD = 7.7; range 21–53	**Setting, format:** 8 times 3 h weekly **Duration:** 24 h **Pedagogic tools:** key readings, discussion, case presentations, role playing with video feedback, theoretical information	Work on attitudes towards death and dying, communication skills, stress reduction at work
'Razavi 2002': psychological training programme for oncology nurses on attitudes, communication skills and occupational stress; evaluation of CST on use of emotionally laden words in nurses	**Design:** RCT, pre-, post-, and 6-month follow-up **Sample size:** IG, 57; CG, 58 **Control group:** 6-month waiting list group	**Profession:** nurses **Experience:** cancer patients during the last 2 years—IG: 1–10 pt. 7%, >10 pt. 93%; CG: 1–10 pt. 12.1%, >10 pt. 87.9% **Gender:** IG, female 89.5%; CG, female 91.4% **Age** IG: median = 34.8, SD = 7.8, range 22–54; CG: median = 34.3, SD = 7.8, range 22–52	**Setting, format:** 5 days a week for three weeks **Duration:** 105 h **Pedagogic tools:** theoretical information, experiential exchange (case presentations) and role play	Improve comfort level in interaction with patients, understanding patient's cancer, understanding of main psychological and psychiatric dimensions related to cancer illness and prognosis, improve communication skills and empathy in particular

Table 1. (*Continued*)

Study reference (first author[a], last author, year), main study aim	Study design, sample size, type of control group	Participants' profession, experience, gender, and age	Setting, format, duration, and pedagogic tools of the specific intervention	Taught skills
'Razavi 2003': evaluation of CST on patient and relative; evaluation of differential efficacy of a CST on physicians with internal and external locus of control	**Design:** RCT; basic training versus basic training plus consolidation workshop **Sample size:** initially 72, randomised to consolidation workshop $N = 59$ (IG 29; CG 30) **Control group:** basic training of 19 h only	**Profession:** physicians **Experience:** practice in oncology; IG: mean = 13.5, SD = 6.8; CG: mean = 15, SD = 8.0. **Gender:** IG, 48% female; CG, 42% female **Age** IG: mean = 41, SD = 6.6; CG: mean = 44, SD = 7.7	**Setting/format:** 2 days and one evening plus six 3-h consolidation workshops over 3 weeks **Duration:** 37 h **Pedagogic tools:** Basic training: theoretical information, (plenary session), role playing and facilitator feedback, reading, case discussions Workshop: role playing with systematic feedback	Breaking bad news, coping with patients' uncertainties and distress, detecting psychopathological reactions to diagnosis and prognosis, interaction with patients' relatives, transfer of learnt skills into clinical practice
Stewart, Freeman, 2007: effects of CST on breast cancer patients, 6 versus 2 h (minimal training rated as no intervention)	**Design:** RCT, pre, post; control group with 2 h group discussion **Sample size:** 51 interested physicians and 102 patients **Control group:** 2-h minimal intervention	**Profession:** physicians **Experience:** IG, >20 years 52%; CG, >20 years 46% **Gender:** IG, female 36%; CG, female 30% **Age:** unclear	**Setting, format:** One session **Duration:** 6 h **Pedagogic tools:** readings, discussion about barriers in communication, video viewing, practice with standardised patients and video feedback	General communication skills
Wilkinson, Linsell, 2008: effectiveness of CST on palliative care nurses	**Design:** RCT, pre, post, 12-week follow-up **Sample size:** 172 nurses **Control group:** waiting list for 16 weeks	**Profession:** nurses **Experience:** 1 year experience at minimum; 18 years mean experience **Gender:** IG, 79% female; CG, 84% female **Age:** IG 42.5; CG 43.9	**Setting, format:** multicentre study **Duration:** 3 days **Pedagogic tools:** didactic sessions, audio-taped patient interviews with facilitator feedback, demonstrations, standardised role plays with actors, discussion	Increase awareness of communication skills, elicit patients concerns, deal more effectively with difficult communication situations

IG, intervention group; CG, control group; CST, Communication Skills Training; SD, standard deviation; pt., patient(s); RCT, randomized controlled trial.
[a]In case of multiple publications, only the first author of the initial publication is listed.
[b]These two numbers present the number of persons post-intervention (first number) and the number of persons available at follow-up (second number).

implications for practice

Since CST is effective in improving quality of care and is generally much appreciated by participants, the integration of continuous training curricula can be recommended. This finding should encourage health care centres to offer these training courses to their staff and contribute to improved care for their patients. Furthermore, our study found that adding components such as consolidation workshops or supervision to basic workshops lead to an additional effect on communication skills. As ESs for basic CST have been found to be moderate, it may be valuable to introduce a concept of life-long learning and offer courses to continuously refresh or deepen the skills of health care professionals. However, information on the ultimate efficacy of such a perspective is still lacking. Furthermore, the possibility of a ceiling effect in communication skills must be taken into account, considering that many of the participants may already have basic skills and only a minority is likely to present with a low set of skills where large improvements could be achieved. This raises the question of optimal indication and whether there are health care professionals with certain characteristics that would benefit most from these training courses. Health care professionals often work in situations requiring high commitment in terms of their time and energy. Our review only included studies with a minimum of 6 h of training, but the majority of training courses included in the analyses lasted between 2 and 3 days. For practical considerations regarding feasibility, it might be necessary to provide CST courses during work hours rather than have participants attend a workshop during their time off. To make this feasible in a clinical context, an important next step would be to determine the necessary duration and setup of CST in order to balance maximum effect and workload. Further trials should investigate whether specific parts of the training are effective or not: training courses could then be reduced to essential features to increase feasibility.

conclusions

CST courses are an effective tool to improve clinical skills of health care providers in oncology. Participation in a CST course should become a mandatory requirement during oncologist training. CST can be used apart from supervision since more general aspects are addressed in these training courses. A minimum of 3 days seems to be the least duration for a promising change in communication skills so far. Efforts to improve efficacy and feasibility equally (e.g. shorter duration) should be undertaken to reach clearer conclusions concerning minimal duration requirements.

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disclosure

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