Review article

Effective training strategies for teaching communication skills to physicians: An overview of systematic reviews

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ABSTRACT

Objective: Physicians need good communication skills to communicate effectively with patients. The objective of this review was to identify effective training strategies for teaching communication skills to qualified physicians.
Methods: PubMED, PsycINFO, CINAHL, and COCHRANE were searched in October 2008 and in March 2009. Two authors independently selected relevant reviews and assessed their methodological quality with AMSTAR. Summary tables were constructed for data-synthesis, and results were linked to outcome measures. As a result, conclusions about the effectiveness of communication skills training strategies for physicians could be drawn.
Results: Twelve systematic reviews on communication skills training programmes for physicians were identified. Some focused on specific training strategies, whereas others emphasized a more general approach with mixed strategies. Training programmes were effective if they lasted for at least one day, were learner-centred, and focused on practising skills. The best training strategies within the programmes included role-play, feedback, and small group discussions.
Conclusion: Training programmes should include active, practice-oriented strategies. Oral presentations on communication skills, modelling, and written information should only be used as supportive strategies.
Practice implications: To be able to compare the effectiveness of training programmes more easily in the future, general agreement on outcome measures has to be established.

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Contents

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1. Introduction

Adequate and effective communication during medical consultations is essential for the provision of good care [1,2]. It is also complex, because physicians have to gather and process information rapidly, and at the same time they have to reassure patients to make them feel comfortable enough to disclose all the necessary information [2,3]. Many studies have confirmed the inter-relationships between the communication behaviour and efficiency of the physician, and the satisfaction and compliance of patients. For example, it was found that awareness of patient expectations about the physician–patient communication results in more effective communication [4]. Moreover, several studies have shown that the communication styles of physicians influence patient satisfaction and patient compliance. It was also found [5] that patients were most satisfied with interviews in which the physicians were not dominant, because they then felt comfortable enough to talk freely and to ask questions.

Most qualified physicians have had considerable tuition in physician–patient communication, both as medical students and as post-graduates, and communication skills training is integrated in the medical curricula [6]. Communication training is also organised for qualified physicians who work in various medical specialities, but not all specialities. There are even some specialised communication skills training programmes for qualified physicians working in non-curative medicine, such as insurance medicine, occupational medicine, and sickness certification. However, in contrast to the considerable body of research on the effectiveness of communication skills training in curative medicine, hardly any research has focussed on its effectiveness in non-curative medicine. Therefore, to create a framework for an evidence-based training programme specifically aimed at physician–patient communication in non-curative care, we explored the available literature in curative care.

Because medical professionals often lack the time to follow extensive courses, an effective training approach is important. For example, constraints – such as time restrictions or a limited budget – complicate intensive and recurrent training programmes. Consequently, the aim of the present review was to identify from the literature effective approaches for teaching communication skills to qualified physicians. In this review, communication skills training is defined as the entire training programme that physicians attend. Training strategies are defined as the different approaches that are applied in a training programme to teach communication skills to physicians. Examples are oral presentations and role-play.

Even though most medical professionals have received communication skills training in undergraduate as well as postgraduate courses, communication is based on deeply rooted habits and related habitual patterns [7], which makes it difficult and time-consuming to change existing communication behaviour. Our first hypothesis was therefore that longer training programmes (e.g. several days) are more effective than shorter training programmes (e.g. several hours). Our second hypothesis was that active training strategies are more effective than passive training strategies. Active strategies are defined as practising and discussing skills during the training, and passive strategies are defined as strategies that require far less activity from participants, such as listening to a lecture. The effectiveness of modelling – when a certain skill is demonstrated to the participants – was expected to lie in between these two, since it is a passive strategy, but it closely resembles the real-life consultation [3].

2. Methods

2.1. Search strategy

In October 2008 we carried out a systematic search for scientific literature on the effectiveness of communication skills training for physicians (as defined by the included reviews). An update was performed in March 2009. The first two authors [MB and HJvR] checked all references of the included studies for other relevant studies. Because we were aware of the existence of a large number of studies on the effectiveness of communication skills training strategies for medical professionals, we limited our search to systematic reviews and meta-analyses, which could include all types of original studies. We searched the databases of PubMED, PsycINFO, CINAHL, and COCHRANE, not restricted by date. Inclusion criteria for the reviews were: (1) a systematic review or meta-analysis; (2) focusing on qualified physicians; (3) concerning communication with patients; and (4) describing an educational training course for physicians. Keywords for the first criterion included 'meta-analysis', 'quantitative review', 'systematic review', and 'systematic overview'. Keywords for the second criterion included 'professional–patient relations'; physician–patient relations'; 'family practice AND communication'; general practitioner AND relation*'; and 'doctor patient AND relation*'. Keywords for the third criterion included 'communication'; 'empathy'; and 'inter-personal skills'. Keywords for the fourth criterion included 'medical education'; 'professional education'; and 'communication training'. The exact keywords for each database can be requested from the authors. Exclusion criteria were: non-systematic review; training not explicitly directed at communication between physician and patient; physician–patient communication that did not include face-to-face communication; and training programmes for undergraduate medical students. The definition of physicians included experienced as well as inexperienced physicians; physicians training for a specialism; and specialists. Studies including both qualified physicians and other health care professionals or medical students were not excluded, because we had no reasons to assume that in these groups there would be any great difference in the effectiveness of training strategies for communication skills. We also found no evidence in the literature that belonging to one of these other groups might be an effect modifier with regard to the effect of training programmes or training strategies. The training could include both group and individual training or education.

2.2. Selection and quality assessment

Relevant publications were selected by two authors [MB and HJvR], independently. They both assessed the articles according to the above-mentioned criteria, based on title and abstract. We screened the full text of articles for which it was not clear whether they should be included or not based on title and abstract, or for which no abstract was available. Disagreements were resolved in a consensus meeting. If no consensus could be reached, then the third author [AJMS] made the final decision. We traced all included reviews and meta-analyses in full text and systematically assessed their methodological quality with a measurement tool to assess reviews (AMSTAR) [8]. This checklist has been recommended for the appraisal of systematic reviews by Oxman et al. [9]. We added one item to the checklist: whether or not the outcome measures in the reviews were clearly described and integrated in the results. Two authors [MB and HJvR] independently completed the checklist for all the included reviews. Before final consensus, Cohen's kappa for overall inter-reviewer agreement was calculated, as well as one kappa for each item of the AMSTAR checklist [10].

2.3. Data extraction and synthesis

Data were extracted from the reviews by the first author [MB], and checked and completed by the second author [HJvR], and the reviews were scored from high to low methodological quality (as assessed with AMSTAR [8]). We classified the reviews as follows: high methodological quality (9–12 times a score of 'yes'), medium methodological quality (5–8 times a score of 'yes'), or low methodological quality (0–4 times a score of 'yes'). For the data-synthesis we constructed two summary tables. The first summary table presents characteristics of the studies which were included in the reviews and meta-analyses. These characteristics were: study quality, study type, target population, patient groups, control groups, type of outcome, theoretical background, and overall conclusions. The second summary table presents the overall conclusions from each review concerning evidence for the effectiveness of training programmes, as well as the conclusions for each individual training strategy. Possible review outcomes with regard to the effects of the strategies were: evidence that the strategy is effective, no evidence that the strategy is effective, evidence that the strategy might be effective, or no information or unclear information was provided with regard to individual strategies. The conclusions with regard to these strategies were drawn by adding up the strategy conclusions from all reviews, taking the methodological quality into account (i.e. results from low quality reviews were considered to be less decisive). To this end, we first discarded results from the reviews that provided no information or unclear information about the effectiveness of specific strategies. Secondly, we counted the number of reviews that found evidence for effectiveness, no evidence for effectiveness, and evidence for possible effectiveness per level of methodological quality (i.e. high, medium, low). Thirdly, we defined 'evidence for an effect of a strategy' as the same results in at least one high quality review, in at least two medium quality reviews, or in at least one medium quality and two low quality reviews. We also recorded whether evidence for effectiveness was found if the strategy was combined with another strategy. In addition to these conclusions, the second summary table also presents the number of studies that assessed each specific strategy. The two summary tables were combined, and linked to the outcome measurements used in the reviews. We then discussed the results and conclusions about the effectiveness of the communication skills training programmes for physicians, with especial focus on the training strategies that were applied. The results and conclusions with regard to effectiveness are presented separately for the training strategies, with no evidence for effectiveness, evidence for possible effectiveness, and evidence for effectiveness.

3. Results

3.1. Number and quality of the reviews

We searched four databases: PubMED (65 reviews), PsycINFO (6 reviews), CINAHL (10 reviews), and COCHRANE (6 reviews), and exported all the identified reviews to Reference Manager 10.0. After duplicates were removed, the result was 79 potentially relevant reviews. We excluded 45 reviews because they did not meet the inclusion criteria. Of the 34 remaining reviews, and 7 other reviews identified in the reference lists, 29 were excluded after screening the full text. Details of the studies that were excluded are available on request from the authors. Finally, 12 reviews [11–22] that met our criteria were included (Fig. 1). The rating of the quality of these 12 reviews with AMSTAR [8] resulted in a Cohen's kappa for all items of 0.88 before the consensus meeting. This value is comparable to that found by the developers of the checklist in a sample of 42 reviews (overall kappa = 0.84) [10]. The kappa value for each item, ranging from fair agreement (kappa = 0.31) to perfect agreement (kappa = 1.00), is presented in Table 1. The consensus results of the quality ratings are presented in Table 2. According to the quality scores, three of the reviews were of high quality [11,14,15], five were of medium quality [16–18,21,22], and four were of low quality [12,13,19,20].

3.2. General results of the 12 included reviews

The characteristics of the reviews are presented in Table 3, and the training strategies per review are presented in Table 4. A total
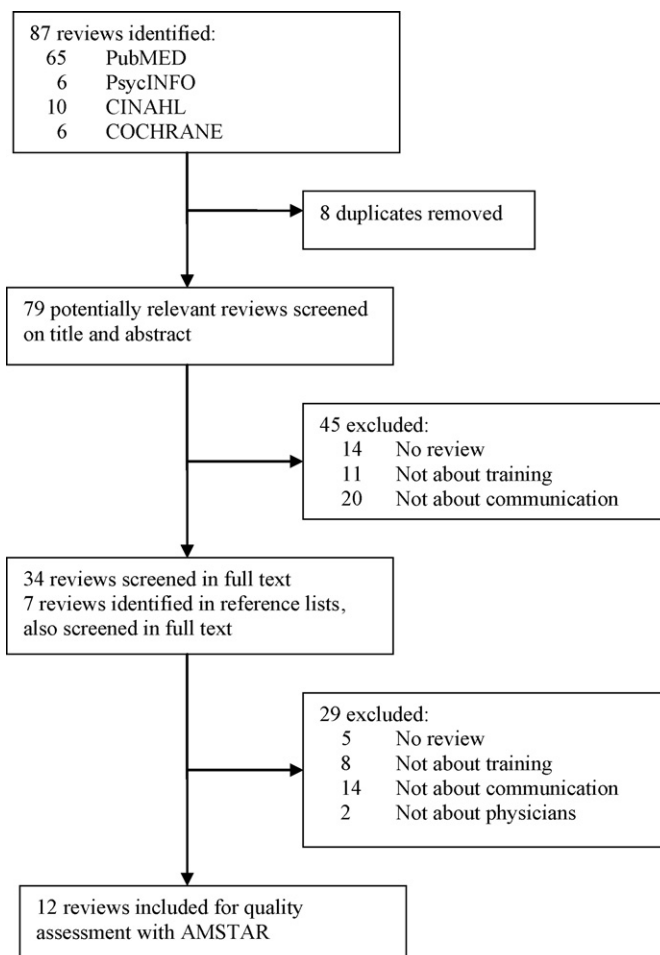

Fig. 1. Flow chart of identified, excluded and included reviews.

Table 1
Items of the AMSTAR methodological quality checklist [10] and the inter-rater reliability (Cohen's kappa).

Nr.	Item	Kappa (95% CI)
1	Was an 'a priori' design provided?	1.00
2	Was there duplicate study selection and data extraction?	1.00
3	Was a comprehensive literature search performed?	0.31 (0.07; 0.58)
4	Was the status of publication (i.e. grey literature) used as an inclusion criterion?	0.83 (0.68; 0.99)
5	Was a list of studies (included and excluded) provided?	1.00
6	Were the characteristics of the included studies provided?	0.63 (0.30; 0.96)
7	Was the scientific quality of the included studies assessed and documented?	1.00
8	Was the scientific quality of the included studies used appropriately in formulating conclusions?	0.82 (0.66; 0.99)
9	Were the methods used to combine the findings of the studies appropriate?	1.00
10	Was the likelihood of publication bias assessed?	0.80 (0.61; 0.99)
11	Was the conflict of interest stated?	0.83 (0.68; 0.99)
12	Were the outcome measures properly defined and integrated with the results?	0.83 (0.68; 0.99)
Overall score		0.88 (0.84; 0.92)

Table 2
Scores of the methodological quality of the included reviews and meta-analyses based on AMSTAR [8].

Authors	Items AMSTAR[a]												Total			
	1	2	3	4	5	6	7	8	9	10	11	12	Y	N	C	A
Fellowes et al. [15]	Y	Y	Y	Y	Y	Y	Y	Y	A	N	Y	Y	10	1	0	1
Cheraghi-Sohi and Bower [14]	Y	Y	Y	N	N	Y	Y	Y	A	Y	Y	Y	9	2	0	1
Anderson and Sharpe [11]	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N	Y	9	3	0	0
Gysels et al. [17]	Y	C	C	Y	Y	Y	Y	Y	A	N	Y	Y	8	1	2	1
Gysels et al. [16]	Y	C	C	Y	N	Y	Y	Y	Y	N	Y	N	7	3	2	0
Hulsman et al. [18]	Y	C	Y	Y	N	Y	N	Y	A	N	Y	Y	7	3	1	1
Merckaert et al. [21]	Y	C	Y	Y	N	Y	N	N	A	N	N	Y	5	5	1	1
Rao et al. [22]	Y	Y	Y	N	N	Y	N	N	A	Y	N	N	5	6	0	1
Cegala and Broz Lenzmeier [13]	Y	C	N	Y	N	Y	N	N	A	N	Y	N	4	6	1	1
Aspegren [12]	N	C	Y	N	N	Y	Y	N	A	Y	N	N	4	6	1	1
Lane and Rollnick [19]	Y	C	Y	N	N	N	N	Y	A	N	N	N	3	7	1	1
Libert et al. [20]	N	C	Y	N	N	N	N	N	A	N	N	N	1	9	1	1

[a] Y, Yes; N, No; C, cannot answer; A, not applicable; Studies are sorted from high (top) to low (bottom) quality scores.

of 222 individual studies were included in the reviews, and most of the studies were included in only one review. One study was included in 6 of the 12 reviews [24], 3 studies were included in 5 reviews [25–27], and 4 studies were included in 4 reviews [28–31].

As shown in Table 3, 2 reviews focused on specific communication skills training strategies, and 10 focused on communication skills training in general (i.e. a combination of strategies). All the reviews included studies in which the participants were trained individually as well as in a group, and in which improving face-to-face communication with the patient was the primary aim. We will first discuss the reviews focusing on (unknown) combinations of training strategies, and then we will discuss each of the most important specific training strategies and their effectiveness.

The reviews included six main training strategies: feedback on communication skills and performance, role-play with other participants or actors, modelling by the trainers or other participants, discussing the communication skills with other participants, written information about communication skills, and oral presentations on communication skills. Studies in which feedback and role-play were applied were included in all reviews, and studies reporting on modelling and oral presentations were included in all reviews except one [24]. In two reviews [11,14] there were no studies which included written information, and in three reviews [11,14,22] there were no studies which included discussion. Some studies applied other training strategies, such as narrative case summaries, a remedial programme, or rotation in a psychiatry setting [13]. The reviews differed greatly in the number of included studies that applied each of the training strategies. This is shown in Table 4, as well as the overall methodological quality of the reviews, and an overall conclusion about the effectiveness of the training strategies.

3.3. Quality of the reviews and the outcome measures

When comparing the outcome measures in the reviews, it should first be noted that outcome measures were poorly specified or integrated in 6 of the 12 reviews [12,13,16,19,20,22]. Examples of patient-based outcomes mentioned in several reviews were satisfaction with the consultation [11,13,20] and affect ratings of trust or emotional stress [13,16,17,21]. Examples of physician-based outcomes were self-confidence [13,16] and the recognition of psychosocial problems and emotional distress in patients [13]. All the reviews which were of low methodological quality had poorly specified outcome measures [12,13,19,20], and two reviews which were of medium methodological quality [16,22] had poorly specified outcomes. Six reviews specified their outcomes more clearly [11,14,15,17,18,21], and three of these reviews were of high methodological quality [11,14,15]. For example, the outcomes in the Cheraghi-Sohi et al. review [14] focused on patient-based assessments of physicians' skills, including patient satisfaction with the care received. The outcome measures included changes in the physician's generic and specific inter-personal skills. The other three reviews that clearly specified the outcomes were of medium methodological quality [17,18,21]. The outcome measures in the Hulsman et al. review [18] were: behavioural observation, physician self-ratings such as ratings concerning attitudes and detecting psychosocial problems in patients, and patient ratings mainly related to the behaviour of the physician.

3.4. Combination of training strategies

Many reviews focused on communication skills training in general [11–13,15–18,20–22], and did not compare specific

Table 3
Included systematic reviews and meta-analyses, characteristics of the strategies reviewed, and the conclusions.

Review	Type (review or meta-analysis)[a]	Number of studies	Quality of studies included	Type of studies included[b]	Target population	Patient groups	Control groups	Type of outcome	Theoretical background	Conclusions
Fellowes et al. [15]	R	3	All studies met the criteria	- RCTs	- Specialists (oncology)	- Real patients	- No training	- Objective assessments of patients' and nurses' behaviour with validated coding strategies	- Lipkin model	- Two programmes were effective, one was unclear
				- CBAs	- Nurses (oncology)	- Simulated patients	- Waiting list		- Unclear	
Cheraghi-Sohi and Bower [14]	R	11	Questionable, only one met all quality criteria	- RCTs	- Physicians	- Real patients	- No training	- Patient-based outcomes (e.g. trust in physician, perception of information exchange, anxiety, health status)	- Unclear (sensitivity for dissatisfaction, biopsychosocial model, reflection on mutual agendas)	- Unclear whether patient feedback is effective
					(both experienced and trainee)		- Alternative training			- Reasonable evidence that brief training is not effective
Anderson and Sharpe [11]	M	29	Quality ratings vary from 0 to 4 on a 5-point scale, with predominantly scores of 2 and 3	- RCTs	- Physicians	- Simulated patients	- No training	- Behavioural observation (e.g. empathy score, interviewing skills)	- Social Cognitive Theory	- Communication skills training might be effective
				- CBA	- Medical students (pre-clinical, clerkship) - Residents	- Real patients	- Alternative training	- Patient-based outcomes (e.g. satisfaction, knowledge)		- Conclusions about the effectiveness of strategies could not be drawn, because outcomes differed too much - Interventions and types of behaviour varied
					- Nurse practitioners					
Gysels et al. [16,17]	R	16	RCTs of good quality, other designs of poorer quality	- RCTs	- Medical students	- Real patients	- No training	- Physician self-rating (e.g. self-confidence)	Not reported	- Training improves basic communication skills
				- CBAs	- Nursing students	- Simulated patients	- Training aimed at other groups than the one of interest (cancer)	- Behavioural assessments		- The best results with longer duration, learner-centred training, and combining didactic component with practical rehearsal and feedback
				- ITSs	- Specialists (oncology)	- Video	- Not reported in some studies	- Patient-based outcomes (e.g. self-efficacy)		- To maintain skills in practice and to handle emotional situations effectively, positive attitudes and beliefs are needed
				- OSs		- Audio				
Hulsman et al. [18]	R	14	Not reported	- P–Ps	- Physicians	- Real patients	- No training	- Physician self-rating (e.g. knowledge, attitudes, skills)	Balance between cognitive learning and experiential learning, either teacher-centred (predetermined) or learner-centred	- Overall limited training effects

				- P-only	- (Post-)graduates	- Simulated patients	- Waiting list	- Behavioural observation		- Most training effects found on physicians' self-rating of their knowledge, attitudes and skills - For patient-outcomes training effects on satisfaction and compliance
							- Unclear in some studies	- Patient-based outcomes (e.g. health, satisfaction, compliance, anxiety)		
Merckaert et al. [21]	R	22	Not reported	- RCTs	- Specialists (oncology)	- Standardised patients	- No control	- Physician self-rating (participant-based)	Training programmes should include a cognitive and behavioural component	- Improvements in communication skills
				- CBAs	- Nurses (oncology)	- Peers		- Behavioural assessment/observation		- To be effective, training should be learner-centred, skill-focused, practice-oriented, organised in small groups, and lasting at least three days
				- CSs		- Simulated patients		- Patient-based outcomes (e.g. satisfaction)		
						- Real patients				
Rao et al. [22]	R	21	Not reported	- RCTs	- Physicians	- Real patients	- No intervention	- Physician self-rating	Not reported	- In general, enhanced communication behaviours was found among physicians - Higher global ratings of communication style and more patient-centred with training - Intense efforts are necessary to change communication behaviour
					- Residents	- Simulated patients	- Intervention after the study ended	- Behavioural observation of verbal communication		
							- Placebo (training not focused on communication) - Alternative training (less or the same intensity)	- Patient ratings of physicians' behaviour		
Cegala and Broz Lenzmeier [13]	R	27	Often unclear which skills were addressed in the studies	- RCTs	- Physicians	- Real patients	- No control	- Physician self-report	Differs between studies, often not explicitly reported	- Insufficient information about behaviour taught to participants
				- CBAs	- Residents	- Simulated patients	- No training	- (Video) interview analyses		- Mismatch between stated behaviour and assessment instruments
				- P–Ps	- Post-graduates	- Other participants - Instructor		- Patient-reported (e.g. satisfaction)		
				- P-only						
Aspegren [12]	R	24	All randomised studies of good quality	- RCTs	- Medical students	-Real patients	- Traditional training	- Physician self-rating	Experiential training strategies founded in behavioural psychology. Separate and specific skills trained stepwise	- Communication skills can be taught, but training should be longer than one day and practise is needed to maintain skills
				- OESs	- Physicians	- Simulated patients	- No training	- Behavioural observation		- Training in clerkship might be more effective than training in pre-clinical courses
				- DSs	- Nurses			- Patient-based outcomes (e.g. health)		
				- Rs	- Midwives - Residents					

Table 3 (Continued)

Review	Type (review or meta-analysis)[a]	Number of studies included	Quality of studies included	Type of studies included[b]	Target population	Patient groups	Control groups	Type of outcome	Theoretical background	Conclusions
Lane and Rollnick [19]	R	25	Not reported	- RCTs	- Health care practitioners	- Simulated patients	- No training	- Behavioural observation	Interactive training strategies	- Outcomes were better in programmes that included skills practice than in purely didactic programmes - No significant differences were found between simulated patients and role-play
						- Student colleagues	- Didactic learning strategies	- Patient-based outcomes		
							- Other interactive training strategies			
Libert et al. [20]	R	14	Not reported	- P-Ps	- Physicians	- Real patients	- Not reported	- Physician self-rating (e.g. knowledge, attitudes, satisfaction)	Differs between studies, often not explicitly reported	- Efficacy depends on the degree of active and interactive strategies
				- P-only	- Medical students	- Simulated patients		- Behavioural observation (e.g. Roter Interaction Analysis System)		- It is important to keep practising the skills
				- RCTs	- Residents			- Patient-based outcomes (e.g. satisfaction)		- It is important to pay attention to the application in clinical practice
					- Specialists					

a R, review; M, meta-analysis.
b RCT, randomised controlled trial; CBA, controlled before and after study; ITS, interrupted time series; OS, observational study; P-P, pre-post-test; P-only, post-test only; CS, case study; OES, open effect study; DSs, descriptive studies; R, review.

strategies [14,19]. Moreover, not all reviews gave a clear definition of 'communication skills training'. For instance, in many reviews it was unclear which strategies were used to teach which skills, but there seemed to be a certain amount of common ground between these non-specified training strategies.

Five of the 10 reviews that focused on a combination of training strategies concerned cancer care [15–17,20,21]. Fellowes et al. [15] focused on communication skills training for health care professionals in cancer care, and concluded that the training was effective in improving some skills (but these were not specified). Gysels et al. [16,17] addressed the same target group, and also concluded that the training was likely to improve some communication skills, such as expressing empathy and responding appropriately to patient cues. However, to maintain such skills over time, it is important that physicians continue to practise [16]. The best results were expected from training programmes that lasted for more than one day, that were learner-centred (i.e. practical in nature, thereby increasing the relevance of problems for participants), and that combined a didactic component with practical rehearsal and constructive feedback [17]. Again, aimed at the communication skills of health care professionals working in cancer care, Merckaert et al. [21] gave an overview of current developments. From a comparison of different training strategies, the authors concluded that effective training is learner-centred, skills-focused, practice-oriented, organised in groups with a maximum of six participants, and has a duration of at least three days. Finally, Libert et al. [20] assessed different communication skills training programmes (including oral presentations, discussion, role-play, and feedback) that were designed to improve communication between physicians and cancer patients. They concluded that the efficacy of a training programme depends on the degree of active and interactive strategies. Moreover, they recommended that physicians continue to practise the skills they have learned, and that the application of communication skills in clinical practice is addressed in the training programme.

Five reviews of communication skills training in general were performed in other settings [11–13,18,22]. The earliest review was published in 1991 by Anderson and Sharpe [11]. In their meta-analysis they compared the methodologies, strategies and outcomes of studies focusing on enhancing the communication skills of health care providers. However, because of variation in the interventions, the types of behaviour studied, and the types of outcome, no conclusions about the effectiveness of the strategies could be drawn. Hulsman et al. [18] focused on teaching communication skills to clinically experienced physicians, and concluded that although physicians can be trained in communication skills, the effects of the training on their communication behaviour are limited. The greatest effects of training were found on the self-rated knowledge, attitudes, and skills of the physicians. With regard to patient ratings, the effects of the training were predominantly found on satisfaction and compliance. In 1999, Aspegren [12] reviewed articles on communication skills teaching and learning in the field of medicine. The results showed that communication skills can be taught and are learnt, but that only training programmes that last longer than one day are effective. Skills also have to be practised to be maintained. Cegala and Broz Lenzmeier [13] reviewed theoretical background, objectives, and the type of skills included in physician communication skills training. They concluded that because there is little agreement with regard to the definition of a communication skill, it is unclear which specific communication skills are taught in the various training programmes. Moreover, many studies did not report on which skills were taught. For inferences regarding effectiveness, they referred to Hulsman et al. [18]. Finally, the Rao et al. review [22] presented and compared the findings of studies that evaluated interventions to enhance the communication behaviour of

Table 4

Evidence for the effectiveness of the training strategies: methodological quality of the reviews, number of studies in the reviews, conclusions about training programmes, number of studies in the reviews with a specific training strategy, whether or not there is evidence that those strategies are effective, and overall conclusions about the training strategies.

Authors	Methodological quality[a]	# studies in review	Conclusions about training programmes given in the review	Strategy used in number of studies in the reviews/whether or not there is evidence for the effectiveness of the strategies according to each review[b]					
				Role-play	Feedback	Discussion	Oral presentation	Modelling	Written information
Fellowes et al. [15]	High	3	Effective for some skills	3/*	3/±	2/*	2/*	1/*	3/−
Cheraghi-Sohi and Bower [14]	High	11	Limited evidence of effectiveness; patient feedback perhaps effective, brief training not effective	5/*	4/±	4/*	5/*	3/*	4/*
Anderson and Sharpe [11]	High	29	Communication skills training might be effective but outcome types, interventions and types of behaviour varied	16/*	26/*	0	24/*	13/*	0
Gysels et al. [16,17]	Medium	16	Training does improve basic communication skills; Most effect with longer period of time, learner-centred, didactic component combined with practical rehearsal and feedback	13/+	12/*	10/+	5/±	11/*	7/*
Hulsman et al. [18]	Medium	14	Limited effects on behaviour	9/*	9/*	8/*	10/*	8/*	8/*
Merckaert et al. [21]	Medium	22	Most effective when learner-centred, skill-focused, practice-oriented, organised in small groups, duration of at least three days	18/*	16/*	13/*	6/*	8/*	7/*
Rao et al. [22]	Medium	21	Effective with intensive training programmes, but interventions were not feasible for implementation in everyday practice	17/+	17/*	0	15/*	10/*	8/*
Cegala and Broz Lenzmeier [13]	Low	27	No appropriate assessment instruments to measure effects	24/*	13/*	12/*	10/*	15/*	6/*
Aspegren [12]	Low	24	More effect if longer than one day; continuing practise needed for maintenance of skills	21/+	22/+	5/*	5/±	4/±	2/−
Lane and Rollnick [19]	Low	25	More effect when skills are practised than with purely didactic programs	22/+	6/±	1/*	7/±	4/±	2/−
Libert et al. [20]	Low	14	Efficacy depends on the degree of active and interactive strategies	10/+	9/+	5/+	10/±	7/*	4/±
			Overall conclusions about individual training strategies	Role-play is effective as a single strategy	Feedback might be effective as a single strategy[c]	Small group discussion might be effective as a single strategy	Presentation might be effective as a single strategy[d]	Too little evidence to draw conclusions for modelling as a single strategy	Written information is not effective as a single strategy

[a] High: quality score of 9–12 times 'yes'; medium: quality score of 5–8 times 'yes'; low: quality score of 0–4 times 'yes' on AMSTAR [8] items.

[b] +: review provides evidence that strategy is effective, −: review provides no evidence that strategy is effective; ±: review provides evidence that the strategy might be effective; *: review provides no information or unclear evidence for the effectiveness of individual strategies (review findings only focused on combinations of multiple strategies).

[c] Evidence is stronger for the effectiveness of feedback in combination with practical rehearsal.

[d] Evidence shows that presentation might be more effective in combination with practical rehearsal.

physicians, most of which included multiple training strategies in the training programmes (e.g. written information, feedback, modelling, and role-play). They concluded that most of the interventions resulted in significant improvements in communication behaviour: physicians in the intervention groups received higher global ratings for their communication style and were more patient-centred than physicians in the control groups. However, to be effective, the training had to be intensive, and had to include multiple training strategies.

3.5. Specific training strategies

Two of the 12 included reviews compared specific training strategies. Cheraghi-Sohi and Bower [14] assessed whether improvements in the inter-personal communication skills of primary care physicians could be established through feedback of patient assessments, through brief training (not specified), or through a combination of those two strategies. Lane and Rollnick [19] conducted a review on the use of simulated patients and role-play in communication skills training programmes. Even though not all of the reviews specified 'communication skills training', they did provide some evidence for the effectiveness of specific training strategies (see Table 4). With regard to oral presentations, modelling, and written information, no evidence was found for the effectiveness of the strategy alone (see Section 3.5.1). Evidence was found for the possible effectiveness of feedback and discussion (see Section 3.5.2), and also for the effectiveness of role-play (see Section 3.5.3).

3.5.1. Strategies with no evidence for effectiveness

The strategy of giving oral presentations, for example, lectures, was included in 11 reviews. None of the reviews explicitly compared oral presentations with other training strategies, but four reviews did draw some conclusions. There was no clear evidence that this strategy is effective in itself. However, if oral presentation is combined with practical rehearsal, it might be effective [12,17,19,20]. These results should be interpreted with care, because one review providing evidence for the possible effectiveness of oral presentations was of medium quality and the other three were of low quality.

The strategy of modelling was included in 11 reviews. Modelling refers to learning by watching and imitating others. Physician–patient contact can be modelled in reality or participants can watch a video. None of the reviews specifically assessed modelling as a training strategy, but some made an overall comparison of a combination of modelling and other training strategies. No evidence was found for the effectiveness of modelling alone. Two reviews did find evidence for the possible effectiveness of combinations of modelling with other strategies, but these were of low methodological quality [12,19].

Written information was included in 10 reviews. Written information is information about communication skills in a manual or in handouts, combined with lectures about the topic. No effects were found for this training strategy in itself [12,15,19,20]. None of the reviews explicitly assessed written information as a training strategy in comparison to other strategies.

In 5 of the 12 reviews, other communication skills training strategies were applied, but none of these strategies were found to be effective [18,19,21–23].

3.5.2. Strategies with evidence for possible effectiveness

Feedback was discussed in all 12 reviews. The aim of feedback is that the physicians learn from their experiences, for example, in role-play, and can adjust their communication behaviour before performing the same task again. Overall, positive effects were found for feedback, but the effects were most pronounced when feedback was given in response to practical rehearsal in, for

example, role-play. The one review that explicitly focused on feedback as a training strategy was of high methodological quality [14]. The patient-reported ratings improved in only one [32] of the three feedback studies Cheraghi-Sohi and Bower [14] reviewed, and in only one [33] of the seven brief training studies. They concluded that there is limited evidence of the possible effectiveness of patient feedback, and that brief training might not be effective. Another high quality review [14] and a low quality review [19] confirmed these results. Two other low quality reviews found evidence for the effectiveness of feedback [12,20].

Discussion was included in nine reviews. Discussion is the exchange of opinions about communication skills between the teacher and the physician, or between two or more physicians. Two reviews concluded that small group discussions are effective [17,20], but no effects were found for discussion in larger groups. This evidence should be interpreted with care, because only two reviews came to this conclusion, and one of these reviews was of low methodological quality [20].

3.5.3. Strategies with evidence for effectiveness

Role-play was included in all 12 reviews. Role-play is a learning process in which participants or actors act out roles to help physicians practise their communication skills. Five reviews found evidence for the effectiveness of role-play [12,17,19,20,22], because of the active way of learning. For example, Lane and Rollnick [19] directly compared role-play to other didactic training strategies. It appeared that programmes with simulated patients or peers as role-play partners for the physicians during the training improved the communication skills more than purely didactic strategies.

3.6. The best training content

Overall, the training programmes that were effective in improving communication skills were learner-centred and included practising the skills [16,17,19,20,22]. A combination of didactic and practical components appeared to improve skill acquisition, especially in programmes that last for at least one whole day [12,16,17] or, according to one review, at least three days in total [21]. Furthermore, training strategies that seemed to be effective were role-play with simulated patients or real patients, feedback (structured, direct, or written), especially when combined with practical components, and small group discussions. The three reviews that were of high quality [11,14,15] as well as four other reviews [12,20–22], included at least one of these training strategies.

A comparison of the three ways of measuring the effectiveness of communication skills training programmes [34] – behavioural observation, physician self-rating, and patient ratings – showed that feedback contributed most to improved patient satisfaction [14,18]. Most physician-rated training effects concerned their own knowledge, attitudes, and skills [18,20]. The remaining reviews showed that the training had the most effect on the outcome of patient satisfaction [13,21].

4. Discussion and conclusion

4.1. Discussion

4.1.1. Main findings

We critically appraised reviews focusing on communication skills training for medical professionals to identify effective communication training strategies for physicians, because many studies have reported heterogeneous results. Our results demonstrated that it is possible to teach physicians communication skills during training programmes lasting for at least one day. Role-play,

feedback, and small group discussions seemed to be effective evidence-based training strategies. To maintain skills over time, it is important that physicians continue to practise. We found no evidence for the effectiveness of modelling, written information, or oral presentations alone, and this is in line with our hypotheses about the duration and content of training strategies. However, due to a lack of evidence for the effectiveness of modelling, no conclusions could be drawn about its effectiveness in relation to more active and passive strategies. Our results also showed that the outcome measures that were used were predominantly patient ratings, which differed between studies, and were often unclear. Moreover, the definitions of 'communication skills' were inconsistent.

4.1.2. Findings in relation to the results of other studies

That communication skills training should include active learning strategies is supported by the results of studies in other health care professions and among medical students. For example, the Chant et al. overview [35] of education for nurses and other health care professionals demonstrated the positive effects of simulated patients and experiential strategies, such as role-play. The Smith et al. meta-analysis [36] also showed that feedback from teachers on the medical performance of students during patient interviews and small group discussions were the most effective teaching strategies.

In their review of patient-directed – instead of physician-directed – communication interventions, Anderson and Sharpe [11] concluded that more uniform definitions of outcome measures should be described and applied. From the results of our review, almost 20 years later, the same advice still applies. Moreover, the earlier training programmes and strategies were inadequately described, the training programmes varied greatly, the underlying mechanisms were often unclear because there was no theoretical framework, and the relative efficacy of different approaches could not be compared because strategies were often combined [11]. This was also concluded in other reviews (e.g. Griffin et al. [37]), as well as in our own review.

4.1.3. Implications for research

We recommend that future studies explicitly describe the training strategies that were applied, the elements that were included in the training, how the training was implemented, what the outcomes were, and how these were measured. If studies have similar outcome measures, it will be possible to compare or pool the results of several studies with different training strategies in future reviews. This will increase our insight into the effectiveness of individual strategies and combinations of strategies. For example, Smith et al. [36] performed a meta-analysis that was of good methodological quality, to evaluate communication skills training programmes for medical students, in which most of the afore-mentioned criteria were met.

Additional questions arise that should be addressed in future studies. It would be interesting to know whether an intensive course lasting for two or more successive days would be more, less, or equally effective, compared to several shorter training sessions spread out over several weeks. It would also be interesting to compare different combinations of strategies, to find out which combinations are the most effective ones and which combined strategies are minimally required as core activities in a training programme. A research question, for example, could be if a combination of role-play, feedback, small group discussions, and modelling, or a combination of role-play, feedback, small group discussion, and written information is more effective than the combination of just role-play, feedback, and small group discussions. Furthermore, when these issues have been clarified, research should focus on effective training strategies for specific topics, such

as breaking bad news and risk communication, and on how training strategies and the content of communication skills training programmes can best match participants and their learning needs, might further increase insight.

4.1.4. Strengths and limitations of this review

One strength of our review is that it gives an overview of reviews, comparable to the Grol and Grimshaw review of behaviour change by means of clinical guidelines [38]. Our review summarised the most important training strategies, and compared their effectiveness in improving the communication skills of physicians. Our approach revealed the limitations and methodological shortcomings of literature reviews on communication skills training.

However, our review had two important limitations. Firstly, population bias might have occurred. Five out of the 10 non-specific training reviews were performed in a cancer care setting [15–17,20,21], and it is possible that those findings are cancer care-specific. Furthermore, no distinction was made in the reviews between physicians with problems in communicating with their patients and physicians with no such problems. There was also no distinction between physicians who previously attended multiple communication skills training courses, those who had little or inadequate communication skills education, and those who had no prior communication skills education. Moreover, in six reviews [12,16,17,19–21] no distinction was made between health care professionals and medical students. However, we included these reviews because they all included many studies that did focus on qualified physicians. We found no evidence in the literature that indicates important differences between the results of studies concerning medical students, studies concerning other health care professionals, and studies concerning qualified physicians. However, it cannot be ruled out that the results of reviews of mixed study populations might not be representative for experienced medical professionals, and that training programmes might produce different effects in different populations.

Secondly, there are limitations resulting from methodological problems, such as the heterogeneity of the data, poorly defined and non-standardised outcome measures, and low methodological quality. It was often unclear which training strategies were applied in the studies that were reviewed, and many different strategies were reviewed. Therefore, it was not possible to pool the outcomes of the reviews, and we had to limit our review to a critical appraisal. Four reviews [12,13,19,20] were of low methodological quality, but this does not necessarily mean that the original studies were of low quality. Also, from our review it was not possible to make any recommendations about which outcome measures should be used in future studies. A systematic review, focusing on outcome measures, should be performed for this purpose. This could also provide more insight into the most effective strategies for improving observed communication skills as well as patient-rated communication skills. Thus, conclusions should be drawn with care, due to the lack of comparability between the reviews and the low methodological quality of several of the reviews.

4.2. Conclusion

Training programmes are effective if they are learner-centred, practise-oriented, and have a duration of at least one day. Role-play, feedback, and small group discussions are effective training strategies. Therefore, it is important that physicians practise the skills they are taught. Oral presentations, modelling, and written information should only be used as supportive strategies. Although these findings are derived from curative medicine, the consistency of the findings implies that they can be generalised to non-curative medicine.

4.3. Practice implications

When developing a new evidence-based communication skills training programme for physicians working in non-curative care, we recommend the inclusion of active, practice-oriented teaching strategies. The training programme should have a minimal duration of one day, but it should preferably last for several days. Oral presentations, modelling, and written information could be used as an introduction or for illustration. However, the main focus of communication skills training should not be on those strategies, but on practising the skills in practice-oriented role-play, feedback, and discussions in small groups of participants.

Conflict of interest

The authors have no conflict of interest that are directly relevant to the content of this article.

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