ORIGINAL RESEARCH

Swiss Cancer League communication skills training programme for oncology nurses: an evaluation

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Abstract

Aim. This paper is a report of an evaluation of the effectiveness of a communication skills training programme for oncology nurses.

Background. Clinical care for patients with cancer is increasingly being divided between nurses and physicians, with nurses being responsible for the continuity of patient care, and oncologists choosing and explaining the basics of anti-cancer therapy. Therefore, oncology nurses will profit from evidence-based communication skills training to allow them to perform in a professional way.

Methods. Between 2003 and 2006 pre- and post-intervention videos of interviews with simulated patients were compared using the Roter Interaction Analysis System. Patient centeredness was assessed by counting segments of appropriate mutual responding to cues and by calculating length of uninterrupted patient speech.

Findings. Appropriate empathic (1·6% vs. 3·2%), reassuring statements (2·3% vs. 3·4%), questions concerning psychosocial information (2·8% vs. 4·0%) increased statistically significantly; utterances containing medical information decreased on the part of nurses (17·8% vs. 13·3%) and patients (8·1% vs. 6·7%); and patients provided more psychosocial information (3·3% vs. 5·7%). The level of congruence and empathic responses to patients' emotional cues increased statistically significantly, as did the length of uninterrupted speech (3·7–4·3 utterances; all $P < 0.05$).

Conclusion. The communication skills training of the Swiss Cancer League could be used as a model to achieve substantial improvements in patient-centred communication. Sequence analysis of utterances from patient-provider interaction should be used to assess the amount of patient-centred talk.

Keywords: communication skills, oncology nurses, Roter Interaction Analysis System, Swiss Cancer League, training programme

Introduction

Oncology nurses often care for patients who are trying to come to terms with the diagnosis of cancer and the consequences of cancer treatment (Kruijver *et al.* 2000). Therefore appropriate communication skills addressing patients' needs and fears are essential in these nurses' everyday practice and should be part of their training (Peteet *et al.* 1989, Razavi & Delvaux 1997, Maguire 1999a).

Background

There is evidence that communication skills training programmes can improve the communication behaviour in nurses to some extent (Maguire *et al.* 1996a, Razavi *et al.* 2002, Delvaux *et al.* 2004). In addition, experts agree on the best practice to promote the disclosure of important information; this includes the use of open directive questions, focusing on and clarifying psychological aspects, using empathic statements, summarizing and making educated guesses (Maguire *et al.* 1996b). Although recent findings from patient surveys have shown that patients first of all prefer a well-informed professional (Parker *et al.* 2001), the difficult task, especially in oncology, remains how to offer truth without destroying hope (Surbone 2006). This balance has to be found anew with every individual patient. Therefore, patient-centred communication – in the general sense of trying to find out where the individual patient actually stands – remains a mainstay of good clinical practice. Clinical practice, however, is often characterized by a lack of patient-centeredness in the communication of bad news (Girgis & Sanson-Fisher 1995, Ford *et al.* 1996, Maguire 1999b). The more that nurses are responsible for patient care in oncology, the more it seems necessary to train them in breaking bad news.

The Swiss Cancer League, therefore, decided to develop a training course for oncology nurses and oncologists. In 1998, a meeting with numerous international experts was held in Ascona (Kiss 1999), after which the design and content of the course was defined. The content was based on well-documented initiatives in Great Britain (Maguire *et al.* 1996a,b, Fallowfield *et al.* 1998) and Belgium (Razavi 1993, Razavi *et al.* 1993a,b,c, Razavi & Delvaux 1997). It included elements from a communication skills training programme for general internists developed in Basle and evaluated in a randomized controlled study (Langewitz *et al.* 1998). Courses have been offered since 2000.

We decided to evaluate the intervention using a well-documented standard procedure, the Roter Interaction Analysis System (RIAS) (Roter 1991, Roter & Larson 2002). We used the sequence of utterances to derive secondary indices of patient-centred communication style, including length of patients' uninterrupted speech, and segments in professional-patient interactions, when the two speakers communicate in a way that we have termed 'reciprocal communication' (van Dulmen *et al.* 2003, Langewitz *et al.* 2003), defined in detail later.

The study

Aim

The aim of the study was to evaluate the effectiveness of a communication skills training programme for oncology nurses.

Design

A non-randomized trial was conducted using videos recorded before and after the communications skills programme. The data were collected between 2003 and 2006.

Participants

The course was advertized through mailings to oncology services throughout Switzerland. Interested nurses could apply for the course.

Intervention and data collection

The communication skills training started with an initial 2·5-day seminar. As well as giving of background information about communication in oncology in general (Maguire *et al.* 1996b, Holland 1998), specific communication skills were trained using role-play among participants and a video that each participant had produced at the beginning of the seminar with a simulated patient (preintervention video). Specific techniques taught included approaches for nurses to help patients express their feelings, attitudes and expectations; use of appropriate pauses; summarizing; and responding to emotions and patient concerns (Back *et al.* 2007). After the initial seminar, participants were offered the opportunity to telephone their trainers five times for up to 30 minutes to talk about their experiences after trying out their newly-acquired communication skills. Participants used this opportunity at least four times. Six months after the initial seminar, a 1·5-day booster seminar was conducted, the aim of which was to address participants' experiences since the initial training and to improve their communication skills further. At the beginning of the booster seminar, another video with a

simulated patient was recorded and this formed the basis for analysis of post-intervention behaviour (post-intervention video).

Interviews with simulated patients were standardized. Nurses were requested to focus either on (1) helping the patient cope with side effects of chemotherapy or (2) encouraging the patient to regain the motivation necessary to complete the entire chemotherapy cycle. The patient role was played by a female actress in 26 cases and by a male actor in 96 cases.

As the training was planned as a Switzerland-wide initiative, the German course manual was translated into French and Italian. The workshop leaders had different professional backgrounds (four physicians, four nurses and two clinical psychologists).

Inter-rater reliability

Data were analysed by three raters, one Italian-speaking, one French- and German-speaking, and one (LS) speaking all three languages. Rater training comprised 1·5 days, with example videos that were not part of the study and regular meetings three times per year among all raters to check for baseline shifts using another set of training videos. The reliability of rater 3 (LS) had been assessed previously in another data set concerning premedication visits in anaesthesia (Kindler *et al.* 2005). Her judgment was, therefore, taken as the default standard when the other raters were not sure about single videos. Her ratings were double-checked by HW and WL at regular intervals. All raters met at regular intervals to rate training videos together to control for baseline shifts. Raters were blind to time of the video (pre- vs. postassessment).

Ethical considerations

In Switzerland, when real patients are not involved in a study, formal approval of an ethics committee was not required. All participants gave written informed consent to participate in the investigation, including the analysis of videotapes from consultations with simulated patients.

Data analysis

Roter Interaction Analysis System

Interviews were rated online using the RIAS (Roter 1991). In RIAS, the basic unit of analysis is a single utterance of professional or patient to which a distinct meaning can be assigned. Such an utterance can consist of hmm-hmm (so-called back-channel response) or a lengthy sentence,

provided that only one piece of information is conveyed. Each utterance is assigned to one of 42 mutually-exclusive categories (see Table 1).

The RIAS categories are listed in Table 1 (for details, see http://www.rias.org/manual). The German version of the RIAS manual contains an exact description of single categories and prototypical examples and can be obtained from the first author.

The following RIAS items are considered to indicate patient-centeredness in professionals: *empathy/legitimization, concern, reassurance/optimism, partnership, back-channel responses, checking, orientation, asking open-ended questions, addressing medical topics and therapy, lifestyle, psychosocial and other questions*, and as *asking for opinions and permission, reassurance and understanding* and finally *bidding for repetition*. This list is based on commonly-accepted principles of patient-centred communication (Mead & Bower 2000, Stewart *et al.* 2003, de Haes 2006) that have been proposed as a counterpart to physician- (or in general: professional-) centred communication. Main elements are the following: attention to patients' psychosocial as well as physical needs; disclosure of patients' concerns; conveying a sense of partnership; and active facilitation of patient involvement in decision-making (de Haes 2006).

Length of uninterrupted speech

When patients are encouraged to engage in a narrative (Charon 2004), they are allowed a certain number of utterances without being interrupted by the professional. However, two types of bias have to be taken into account when calculating this figure:

- Professional facilitators such as *Hmm-Hmm* (back-channel responses, BC) or *Yes, that's true* (Agree) maintain the patients' flow of talking and do not indicate an attempt to take over the floor. Therefore this type of professional behaviour was not counted as an interruption.
- Calculating the number of patient actions following *each* professional utterance yields zero values when the professional action is followed by another professional action. We therefore analysed the number of patient utterances following the *last* professional action, that is, at the moment when a turn from professional to patient had occurred.

This unbiased length of uninterrupted talk was used as the main outcome variable to describe whether professionals were helping patients to adopt a narrative style of talking.

Calculation of reciprocities

Two assumptions underlie the definition of reciprocities (Langewitz *et al.* 2003). If professionals pay close attention

Table 1 Selected Roter Interaction Analysis System Categories

Category *(labelling)*	Description
Personal *(personal)*	Personal remarks, social conversation or return of friendly gestures and greetings
Laughs *(laughs)*	Friendly jokes, trying to amuse or entertain
Approve *(approve)*	Compliments, gratitude, appreciation or any expression of approval directed to the other person present
Compliment *(compliment)*	Compliments or any expression of approval to another person not present
Disapprove *(disapprove)*	Indication of direct disapproval, criticism, complaint or disbelief to the other person present
Criticism *(criticize)*	Indication of general criticism toward another person not present
Empathy/legitimize *(empathy/legitimize)*	Statements that paraphrase, interpret, name, recognize or normalize the emotional state of the other person
Concern *(concern)*	Statement or non-verbal expression with a strong and immediate emotional or psychosocial component, indicating that a condition or event is serious, worrisome or distressing
Reassurance/optimism *(R/O)*	Statements indicating reassurance, encouragement, optimism or relief of worry
Partnership *(partnership)*	Statements that convey the physician's alliance with the patient in terms of help and support or decision-making
Self-disclosure *(self-disclosure)*	Statements that describe the physician's personal experiences in areas that have medical or emotional relevance for the patient
Gives-medical/therapeutic information *(Gives-med/thera)*	Giving information relating to the medical condition, symptoms, diagnosis, prognosis, past test and treatments, family, medical histories or information regarding the ongoing or future therapeutic treatment plan incl. medication
Gives-prognosis *(Gives-onco/prognosis)*	Giving oncology specific information about the prognosis of the disease and therapy
Gives-psychosocial information *(Gives-ps)*	Giving information relating to the psychosocial state (e.g. general concerns, problems, state of mind, values and beliefs)
Gives-lifestyle information *(Gives-ls)*	Giving information relating to lifestyle (e.g. smoking, sleep, alcohol, exercise habits), family and home situations, work or employment and health habits
Gives-other information *(Gives-other)*	Other information, which does not fall into one of the above sub-categories
Agree *(agree)*	Signs of agreement, understanding or social amenities
Back-channel response *(BC)*	Indicators of sustained interest, attentive listening or encouragement for not holding the speaking floor (e.g. Mmm-huh, yeah, right)
Check *(check)*	Re-statements, paraphrases or summarization for the purpose of clarifying or checking for accuracy of information or for confirming a shared understanding of the facts being discussed
Orientation *(orientation)*	Giving orientation about what is about to happen during the interview or instruction statements relating to the clinical examination
Closed-ended medical/therapeutic question *([?]med/thera)*	Direct question about medical conditions (e.g. medical history, symptoms, physical condition) or therapeutic regimen (e.g. ongoing and future medication or treatment practices) that ask for specific information and can be answered usually with a 'yes' or 'no'
Closed-ended psychosocial question *([?]ps)*	Direct question pertaining to the psychological or emotional state, including feelings of worry, concern or distress that ask for specific information and can be answered usually with a 'yes' or 'no'
Closed-ended lifestyle question *([?]ls)*	Direct question about lifestyle (e.g. smoking, sleep, alcohol, exercise habits), family and home situations and work or employment that ask for specific information and can be answered usually with a 'yes' or 'no'
Closed-ended other question *([?]other)*	Direct question which does not fall into one of the above sub-categories and that ask for specific information and can be answered usually with a 'yes' or 'no'
Open-ended medical/therapeutic question *(?med/thera)*	Non-specific question with the probing intent to receive more information about medical or therapeutic facts
Open-ended psychosocial question *(?ps)*	Non-specific question with the probing intent to receive more information about the emotional state
Open-ended lifestyle question *(?ls)*	Non-specific question with the probing intent to receive more information about lifestyle conditions
Open-ended other question *(?other)*	Non-specific question with the probing intent to receive more information about facts which not fall into one of the above sub-categories

Table 1 (*Continued*)

Category (labelling)	Description
Asking for opinion (*?opinion*)	Question that ask for the patient's opinion or point of view, invite the patient's judgement or ask for the patient's preferences or expectations relating to aetiology, diagnosis, treatment or prognosis
Asking for permission (*?permission*)	Seeking approval or authorization of an action (e.g. to examine the patient)
Asking for reassurance (*?reassure*)	Question of concern that convey the need or desire to be reassured or encouraged
Asking for understanding (*?understand*)	Checking with the other to see if the information just said has been followed or understood
Bid for repetition (*?bid*)	Requesting repetition of the other's previous statement when words or statements have not been clearly heard due to perceptual difficulties
Medical/therapeutic counselling (*C-med/thera*)	Statements regarding the medical problem, medication or future therapeutic plan and which suggest or imply some resolution or action to be taken by the patient with the intent to influence, direct or change the other's behaviour.
Psychosocial/lifestyle counselling (*C-ps/ls*)	Statements relating to lifestyle, family, activities of daily living or emotional problems, and which suggest or imply some resolution or action to be taken by the patient with the intent to influence, direct or change the other's behaviour
Asking for service (*?service*)	Patient-initiated requests for services, treatment, test or referral appealed directly to the physician's authority
Unintelligible utterance (*unintelligible*)	Unintelligible or inaudible statements/sequences due to bad videotape quality

to what a patient says, they should respond with an appropriate utterance; in that case, the patient provides a 'cue utterance' or prompt to which the professional should react in a certain way. However, we were interested in the professional's willingness to provide space for the patient to speak. If the nurse, for example, offered medical information, the patient should have been given the chance to respond by asking a question or simply by demonstrating agreement; in that case, the professional was providing the prompt (see Table 2). SPSS 14.1 (SPSS Inc., Chicago, IL, USA) was programmed to search for these 'cue utterances' and to count the frequency of subsequent appropriate responses.

Table 2 lists the definition of reciprocities that was applied to this data set; previous analyses with other data sets of professional-patient interactions have shown that this approach is feasible (van Dulmen *et al.* 2003, Langewitz *et al.* 2003).

To calculate reciprocity indices (professional reactions to patient prompts), two 'normalization' procedures were used:

- Professionals' reactions to patient cues were calculated as the proportion of desired responses and not as absolute numbers.
- In order to exclude cases when a patient did not offer a pause for the professional to respond – or when professionals communicated in such a patient-centred manner that patients talked in long uninterrupted stretches (e.g. by a sequence of *patient-concern… patient-gives Psychosocial info (P/S) … patient-gives P/S .. .doctor Reassurance/Optimism,* see Table 1) – we decided to base the analysis of

professionals' appropriate reactions on the last 'cue utterance' in a row, that is, on a turn from patient to professional.

Statistical analysis

Two different data sets were used: One set contained all data on the basis of utterances ($n = 26,135$), and the other contained the interview-based data ($n = 122$). Analysis of variance (ANOVA) was used to analyse between-subject variables such as gender or professional experience. A multivariate repeated-measures analysis of variance was performed to evaluate differences between preintervention and post-intervention interviews by entering the 16 items hypothesized *a priori* to be affected by the intervention. This procedure gave an overall effect for preintervention to post-intervention change (i.e. time) and was employed to reduce the likelihood of Type I errors that could be caused by the large number of multiple comparisons and the fact that dependent variables were related to each other (all being percentages of time spent in one activity or another). If a main effect was found for time, paired *t*-tests were used to assess differences for individual variables between preintervention and post-intervention interviews. As some variables were not normally distributed, we also checked the differences between pre- and post-intervention scores with non-parametric statistics. Results from the Wilcoxon test yielded the same significant differences between scores as parametric testing. Pearson's *r* correlation was used to calculate the inter-rater reliability of the scoring procedure.

Table 2 Definition of reciprocities

1. The patient reacts to the provision of information from the physician.

   Definition: The patient reacts to counselling or information from the professional. She can only do so, if the professional has opened a gap; if a professional is giving information in long chains of utterances with no pause in between, the patient has little chance to contribute.

   1a: The patient reacts with providing or asking for medical or psychosocial information himself – he reacts on *a task oriented level*.

   1b: The patient reacts on a social-emotional level by using approval, agree, disapproving, concern, checking her understanding, or with utterances which are meant to keep the flow of physician information going.

2. The patient gets the chance to bring in his or her own opinion.

   Definition: After professional behaviour of the kind: summarizing, orientation, asking for the patient's opinion, asking for the patient's understanding or permission, the patient is offered the chance to respond. This index should help to identify professionals who use for example orientation statements in a proper way: they wait for the patient to respond. The following patient reactions were examined separately.

   2a: Patient reacts with the provision of medical and therapeutic information or corresponding questions – *the task oriented level*.

   2b: Patient reacts with concern, optimism, psychosocial utterances or questions or asking for reassurance – *the emotional level*.

   2c: Patient reacts with agreement, disapproval, criticize, back-channel responses or checking his or her own level of understanding – *the level of congruence*.

3. The physician takes up psychosocial and emotional utterances.

   Definition: If the patient is talking about her concerns or if she delivers psychosocial information, she might expect the professional to show a reaction. The professional's reactions were defined as follows.

   3a: Proper empathic statements, concern, reassurance and remarks showing his optimism, an attempt to build up a partnership or by demonstrating his understanding for the situation of the patient by a self disclosure – he reacts on an *emphatic level*.

   3b: A demonstration of congruence by a statement of agreement, mirroring emotions, summarizing what he understood from the patient, or by orienting the patient about his proposal to come back to this issue later (orientation statement) – *the level of congruence*.

   3c: With responses that keep the floor open to the patient by professional waiting and back-channel responses (e.g. hm-hm, aha).

Results

Demographics

A total of 70 oncology nurses participated in the Communication Skills Training programme between 2002 and 2006. In nine pairs of pre- and postvideo labelling of video-files was dubious; therefore, only 61 pairs of video recordings were

Table 3 Demographics of the intervention sample

Age	Mean (years)	40·6
Professional experience	Mean (years)	13·2
Professional field	Oncology	42
	Radio-oncology	3
	Other	6
	No indication	10
Place of work	University hospital	9
	Other hospital	38
	Private practice	4
	No indication	10
Further education	Yes	13
	No	38
	No indication	10
Type of additional training	Balint	4
	Psycho-oncology	3
	Psychosomatic	1
	Psychotherapy	2
	Psychiatry	2
	Other	4

Some participants listed more than one additional training.

analysed. Fifty-four nurses were female and seven nurses were male. Additional demographic characteristics of the nurses are shown in Table 3.

Inter-rater reliability

To assess inter-rater reliability, eight random tapes were double-coded and Pearson correlation coefficients (r) were calculated for each of the RIAS communication categories. Inter-rater reliability for nurse communication (mean $r = 0.77$, range 0·61–0·92) proved to be high and in the range of previous research using RIAS (van Dulmen *et al.* 2003).

Intervention effects in RIAS categories in nurses

A total of 26,135 utterances were analysed (see Table 4). The Wilks Lambda multivariate test of overall differences from preintervention to post-intervention was statistically significant (Wilks Lambda = 0·4949, $F(16,45) = 2.87$, $P < 0.003$). *Post hoc* paired *t*-tests indicated an almost two-fold increase in appropriate empathic responses (1·6% vs. 3·1%, $P < 0.01$) after training. Professional reassurance and optimistic utterances also increased substantially (2·4% vs. 3·3%, $P < 0.01$). In addition, there was a reduction in the amount of medical or therapeutic information mentioned by nurses (18·4% vs. 13·0%, $P < 0.01$), as well as a decrease in counselling about medical or therapeutic issues (4·5% vs. 2·5%, $P < 0.01$). On the other hand, the attention given to psychosocial issues increased (closed questions: 1·3% vs. 2·2%, $P < 0.01$; open questions: 1·2% vs. 2·0%, $P < 0.05$, respectively).

Category	Preintervention		Post-intervention	
	Frequency	%	Frequency	%
101 Prof: personal	162	1·20	125	1·00
102 Prof: laughs	55	0·40	69	0·50
103 Prof: approve	49	0·40	58	0·50
104 Prof: compliment	5	0·00	3	0·00
105 Prof: disapprove	22	0·20	18	0·10
106 Prof: criticize	0	0·00	3	0·00
107 Prof: empathy/legitimize**	219	1·60	398	3·10
108 Prof: concern	28	0·20	34	0·30
109 Prof: R/O**	320	2·40	421	3·30
110 Prof: partnership	166	1·20	132	1·00
111 Prof: self-disclosure	38	0·30	43	0·30
112 Prof: GIVES-med/thera**	2462	18·40	1661	13·00
114 Prof: GIVES-ls	201	1·50	131	1·00
115 Prof: GIVES-ps	408	3·10	300	2·30
116 Prof: GIVES-other	43	0·30	53	0·40
117 Prof: GIVES-onco/prognosis	60	0·40	24	0·20
119 Prof: agree	370	2·80	348	2·70
120 Prof: BC	168	1·30	285	2·20
121 Prof: check	337	2·50	359	2·80
123 Prof: orientation	310	2·30	255	2·00
124 Prof: [?]med/thera	216	1·60	206	1·60
126 Prof: [?]ls	103	0·80	81	0·60
127 Prof: [?]ps**	176	1·30	285	2·20
128 Prof: [?]other	14	0·10	23	0·20
129 Prof: ?med/thera	115	0·90	117	0·90
131 Prof: ?ls	47	0·40	42	0·30
132 Prof: ?ps*	164	1·20	256	2·00
133 Prof: ?other	20	0·10	20	0·20
138 Prof: ?opinion	146	1·10	164	1·30
139 Prof: ?permission	0	0·00	2	0·00
140 Prof: ?reassure	3	0·00	4	0·00
141 Prof: ?understand	25	0·20	18	0·10
142 Prof: ?bid	0	0·00	4	0·00
143 Prof: C-med/thera**	598	4·50	321	2·50
144 Prof: C-l/s, p/s	270	2·00	325	2·50
148 Prof: unintelligible	9	0·10	6	0·00
201 Pat: personal	109	0·80	105	0·80
202 Pat: laughs	91	0·70	93	0·70
203 Pat: approve	75	0·60	64	0·50
204 Pat: compliment	8	0·10	7	0·10
205 Pat: disapprove	61	0·50	65	0·50
206 Pat: criticize	157	1·20	109	0·90
207 Pat: empathy/legitimize	3	0·00	4	0·00
208 Pat: concern	324	2·40	458	3·60
209 Pat: R/O	62	0·50	76	0·60
212 Pat: GIVES-med/thera*	999	7·50	784	6·10
214 Pat: GIVES-ls**	456	3·40	746	5·80
215 Pat: GIVES-ps	2291	17·10	2560	20·00
216 Pat: GIVES-other	31	0·20	40	0·30
217 Pat: GIVES-on/pro	14	0·10	10	0·10
219 Pat: agree	624	4·70	615	4·80
220 Pat: BC	78	0·60	43	0·30
221 Pat: check	92	0·70	47	0·40
223 Pat: orient*	7	0·10	28	0·20

Table 4 Roter Interaction Analysis System (RIAS) Categories in nurses' (Prof) and patients' (Pat) communication

Communication skills training programme for nurses

Table 4 (*Continued*)

Category	Preintervention		Post-intervention	
	Frequency	%	Frequency	%
229 Pat: ?med/thera**	356	2·70	161	1·30
231 Pat: ?ls	39	0·30	25	0·20
232 Pat: ?ps	31	0·20	10	0·10
233 Pat: ?other	8	0·10	5	0·00
237 Pat: ?service	10	0·10	10	0·10
240 Pat: ?reassure	58	0·40	69	0·50
241 Pat: ?understand	11	0·10	4	0·00
242 Pat: ?bid	12	0·10	6	0·00
248 Pat: unintelligible	30	0·20	31	0·20
Total	13,366	100·00	12,769	100·00

Categories has been listed separately according to intervention time and whether they were displayed by the professional (Prof) or by the patient (Pat; for abbreviations concerning the RIAS categories please check Table 1); level of statistical significance refers to paired *T*-tests.
*$P < 0.05$; **$P < 0.01$.

These changes were also mirrored by simulated patients' utterances, which exhibited more life-style information content after the training (3·4% vs. 5·8%, $P < 0.01$) and less about medical and therapeutic issues (7·5% vs. 6·1%, $P < 0.05$; for details see Table 4).

Length of uninterrupted speech

We also analysed the length of time simulated patients were allowed to speak when their turn came up, and found a statistically significant increase in the mean duration of patient uninterrupted speech: from preintervention (3·7 ± 4·51 utterances) the length of uninterrupted speech increased to 4·31 ± 4·60 utterances ($P < 0.001$).

Reciprocities

Table 5 lists the total number of utterances that could be assigned to one the predefined reciprocal sequences. Data are displayed separately for pre- and post-intervention interviews.

Changes after training seem consistent with the intervention goals: When simulated patients were asked for their opinions, they gave more information about life-style and psychosocial aspects (point 2b of Table 2). Nurses used a greater number of proper empathic responses (3a) at the expense of simply stating that they agreed with their patients' emotions or concerns (3b). Overall, 62% of simulated patients' empathic cues were responded to appropriately.

Discussion

Study limitations

There are several limitations to our study. First, we used simulated patients. A though this approach is well-established (Maguire *et al.* 1996a, Langewitz *et al.* 1998, Fallowfield *et al.* 2002, Razavi *et al.* 2002, Gysels *et al.* 2005, Alexander *et al.* 2006), it carries the risk of having a co-expert – the experienced simulated patient – interact with an expert – the professional, thus lacking the element of surprise that occurs

Table 5 Number of sequences and percentage of prompts responded to that refer to one of the definitions of reciprocal communication, displayed by intervention time

Reciprocity item	Preintervention		Post-intervention	
	Number of cases	Percent responded to	Number of cases	Percent responded to
Prof info-task	318	7·9	202	7·2
Prof info-soc-emo	406	10·1	275	9·8
Prof?-task	51	6·3	44	5·5
Prof?-emo***	104	12·8	149	18·7
Prof?-congruence	234	28·7	216	27·2
Pat concern-empathy**	115	14·8	178	17·7
Pat concern-congruence*	266	34·3	301	29·9
Patient concern-open	95	12·2	144	14·3

*$P = 0.06$; **$P < 0.05$; ***$P < 0.001$.

with real patients. Research has shown that it is possible to ask real patients to participate in studies assessing the communication behaviour of oncologists (Delvaux *et al.* 2004), and in our view this should be one of the main goals for research in the field of professional communication behaviour with oncologists and oncology nurses. Such an approach would also allow us to ask for patients' subjective opinions about the professional's ability to communicate.

In addition, only verbal skills were assessed using the RIAS, and there is a clear need also to address non-verbal communication behaviour.

Another limitation is that we did not use a control group. However, it is unlikely that experience alone will improve communication behaviour (Razavi *et al.* 2003, Choudhry *et al.* 2005, Davis *et al.* 2006).

In support of our findings, we assessed communication skills at the beginning of the booster seminar, 6 months after the initial phase of the intervention. Our results strongly suggest that we achieved a sustained improvement in communication skills and more than just an immediate effect of training.

Another concern relates to risks of producing Type I errors by performing a large number of comparisons. Several arguments have been made against the use of statistical corrections, for example, Bonferroni adjustment (Perneger 1998). Nevertheless, multiple comparisons remain a serious issue, particularly when outcome variables are computationally dependent upon each other (i.e. time spent in one aspect of communication precludes time spent in another). Previous communication researchers have not satisfactorily addressed this issue. We applied a multivariate strategy to assess the overall effect of the intervention. This approach is not vulnerable to problems of multiple comparisons, and we found a highly significant overall change. Subsequent *post hoc* analyses indicated that a range of specific effects occurred.

We had no *a priori* hypothesis about the quotient between medical and psychosocial talk, as this was not addressed during the training. However, the increase in psychosocial content at the expense of biomedical issues is interesting, because it has some implications for the design of future training programmes for nurses in oncology. In future courses we shall actively raise a discussion about the roles nurses and physicians are willing to take when they care for oncology patients embedded in a multi-professional team.

Changes in communication after training

In summary, we found some distinct changes in communication behaviour among nurses after the communication skills programme that might be viewed as indicating a more patient-centred communication style. With respect to single RIAS categories, there was a statistically significant increase in appropriate empathic responses, professional reassurance and optimistic utterances. After the training, utterances with a psychosocial content increased at the expense of those related to biomedical topics. This is not inherently good, although it complies with a typical element of patient-centredness, allowing psychosocial issues to be discussed in more detail (de Haes 2006). In a medical setting, patient-centredness cannot mean abstaining from dealing with medical issues while *instead* choosing to 'talk psychosocial or emotional'. In that case, healthcare professionals might do harm to patients by not addressing relevant issues just because patients happen not to mention them. This was nicely illustrated in a paper by Kinmonth *et al.* (1998), who showed that the health of patients with diabetes deteriorated with a more patient-centred communication style. The authors concluded that 'the benefits of patient centred consulting should not lose the focus on disease management' (p. 1202). If we consider the specific situation of nurses working in an oncology setting as part of a therapeutic team that includes oncologists, we might argue that nurses and patients can only engage in more psychosocial talk at the expense of biomedical topics as long as physicians take over responsibility for giving of biomedical information. Provided such an agreement is explicit within the oncology team and accepted by all professionals, it could serve the needs of professionals and patients. However, such an arrangement largely depends on the professional identity of nurses or nurse practitioners: the more they wish to 'integrate' biomedical and psychosocial talk in their interactions with patients, and the more they wish to function independently from physicians, the less they will appreciate this training outcome.

Our intervention appeared to produce more substantial changes than found in some previous studies of communication training for oncology nurses (Razavi *et al.* 1993c, 2002, Maguire *et al.* 1996a). A recent randomized trial by Wilkinson *et al.* (2008) also showed substantial improvements in nurses' communication with patients. Their results were based on analysis of two audio-taped interviews with patients prior to the intervention and one audio-taped interview after the intervention, all chosen by participants. However, the results are difficult to interpret because they used a more global rating approach that has been developed and tested by the first author herself. The debate on how to evaluate communication skills is open; see, for example, the editorial by Geoff Norman with the title 'Editorial – checklists vs. ratings, the illusion of objectivity, the demise

What is already known about this topic

- Professional communication with patients with cancer is a prerequisite for good clinical practice.
- Most training programmes to enhance nurses' communication skills in oncology have shown only limited improvement.
- Elements of patient-centred care have not been clearly identified and used in the evaluation of communication skills programs in nurses.

What this paper adds

- Participation in the Swiss Cancer League communication skills training improved nurses' use of patient-centred communication.
- After the training, patients had the opportunity to talk in longer stretches of uninterrupted speech, nurses used more proper empathic statements and were more likely to respond to patient cues.
- Using the Roter Interaction Analysis System, core elements of patient-centred communication can be assessed reliably and used in other investigations aiming at improvements in this field.

Implications for practice and/or policy

- The communication skills training of the Swiss Cancer League could be used as a model to achieve substantial improvements in patient-centred communication.
- Sequence analysis of utterances from patient-provider interaction should be used to assess the amount of patient-centred talk.

of skills, and the debasement of evidence' (Norman 2005). We introduced new measures to assess the efficacy of a communication skills programme that go beyond checklists and global ratings, and therefore the following points are appropriate.

Length of uninterrupted speech

Especially in oncology, information often has an important bearing on patients' health or even lives; therefore, they need time to process this information and to formulate and express their concerns. When professionals behave in a patient-centred way(Delbanco 1992), they allow patients to develop their thoughts without being prematurely interrupted. Increasing the length of uninterrupted

patient speech was not trained explicitly during our intervention. Therefore, in our view, its increase points to a change in the attitude of nurses: their genuine behaviour has changed, encompassing more than just the use of single techniques.

Reciprocity indices

Communication in oncology might be viewed as a mixture of giving information and dealing with emotions. Information has to meet patients' desire for concrete facts and take into account their reduced capacity to process new information. To achieve this, 'closing the loop' (Schillinger *et al.* 2003) is required in order to adapt the information closely to the patient's needs. Patients should have a say after a certain amount of information has been given by the professional. Our analysis of patient reactions to professional information indicated that patients employed more emotional statements when given the opportunity to contribute their perspectives. This occurred at the expense of responses of a medical or therapeutic nature, which may be considered the task-oriented level. We interpret this finding as indicating that patients felt free to switch from task-oriented biomedical issues to a more psychosocial or emotional level. This again would indicate an increase in their freedom to determine the direction in which the interview developed.

There was no increase in the number of nurses' responses to patient cues that indicated concerns or fears, although the percentage of appropriate empathic statements increased among nurses after training, with respect to reciprocity indices. We assume that this is a ceiling effect, since not every emotional cue can be responded to if the flow of an interaction is to be maintained.

Conclusion

Concerning the novel analyses presented in this paper, both reciprocity indices and length of uninterrupted speech showed some promising results: some reciprocity indices showed that the inter-connectedness of professionals and patients improved; furthermore, patients' length of uninterrupted speech increased significantly. If a professional's willingness to give space to a patient is viewed as a mainstay of a patient-centred communication style, these novel outcome variables show that nurses indeed are better listeners after the intervention. Overall, our findings seem genuinely promising and provide evidence that communication behaviour in oncology nurses can be improved substantially by means of a limited intervention.

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Conflict of interest

No conflict of interest has been declared by the authors.

Author contributions

WL & HW were responsible for the study conception and design. MN & HW performed the data collection. MN & PG performed the data analysis. WL & LH were responsible for the drafting of the manuscript. PG made critical revisions to the paper for important intellectual content. MN & PG provided statistical expertize. WL obtained funding. LH & HW provided administrative, technical or material support. LH & HW supervised the study.

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