Factors influencing Physicians' Detection of Cancer Patient Distress: Can a Communication Skills Training Program improve Physicians' Detection?

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Running head: Improving Physicians' detection of patients' distress

Abstract

Introduction. No study has yet assessed the impact of skills acquisition after a communication skills training program on physicians' ability to detect cancer patients' distress.

Purpose. First, to assess in a randomized design the impact, on physicians' ability to detect patients' distress, of 1-hour theoretical information course followed by two communication skills training programs: a 2.5-day basic training program and the same training program consolidated by six 3-hour consolidation workshops. Second, to investigate contextual, patient and communication variables or factors associated with physicians' detection of patients' distress.

Methods. Physicians, after attending the basic communication skills training program, were randomly assigned to consolidation workshops or to a waiting list. Interviews with a cancer patient were recorded before training, after consolidation workshops for the consolidation-workshops group and about 5 months after basic training for the basic-training-without-consolidation-workshops group.

Measures. Patients' distress was recorded with the Hospital Anxiety and Depression Scale (HADS) before the interviews. Physicians rated their patients' distress on a visual analogue scale (VAS) after the interviews. Physicians' ability to detect patients' distress was measured through computing differences between physicians' ratings of patients' distress and patients' self-reported distress. Communication skills were analyzed according to the Cancer Research Campaign Workshop Evaluation Manual.

Results. Fifty-eight physicians were evaluable. Repeated measures analysis of variance showed no statistically significant changes over time and between groups in physicians' ability to assess patients' distress. Mixed-effects modeling showed that physicians' detection of patients' distress was negatively associated with patients' educational level ($P = .042$) and with patients' self-reported distress ($P < .000$). Mixed-effects modeling also showed that physicians' detection of patients' distress was positively associated with physicians' breaking bad news ($P = .022$) and with physicians using assessment ($P = .015$) and supportive skills ($P = .045$).

Conclusion. Contrary to what was expected, no change was observed in physicians' detection of patients' distress following the communication skills training programs whether physicians attended the basic training program or the basic training program followed by the consolidation workshops. The results of this study indicate the need to further improve physicians' detection skills through specific training modules including theoretical information about factors interfering with physicians' detection and through role playing exercises focusing on assessment and supportive skills facilitating detection.

Keywords. Cancer, distress, assessment, communication skills, training.

Introduction

Between 10% and 50% of cancer patients experience high levels of distress [1-3]. Emotional distress is a normal response to cancer diagnosis, treatment and prognosis that needs to be recognized and treated when it becomes impairing. Untreated, distress can have long-term detrimental consequences on patients' compliance with treatment [4, 5], chance of survival [6], desire for hastened death [7], and on both patients' and their relatives' quality of life [8, 9]. It is thus important that distress be detected as early as possible in the course of the disease and that patients be referred on for appropriate interventions. Physicians have an important role to play in this regard. Unfortunately, several studies have shown that oncologists often fail to recognize distress in their patients and tend to underestimate the level of distress that they experience [10-14]. Underestimation of distress has been reported as more frequent in older patients [15], in patients with a lower socioeconomic status [11], in patients diagnosed with head and neck cancer and with lung cancer [11] and in patients with a higher performance status score [14].

This could be explained by the fact that physicians lack knowledge about symptoms of distress or rely on superficial signs to assess patients' distress. Patients moreover are sometimes reluctant to spontaneously disclose their psychological concerns and leave the initiative of discussing these topics to their physician [16]. It has been reported that distress in older patients is more difficult to detect because elderly tend to show less overt symptoms of distress and are often more reluctant to explicitly talk about their emotional functioning problems [17].

Therefore, physicians need to be able to explicitly investigate those concerns by eliciting patients' disclosure and by clarifying expressed concerns. A study in primary care

involving standardized patients reported in fact that physicians who recognized depression in their patients asked twice as many questions about feelings and affects compared with those who did not [17, 18]. Another study on general practitioners in primary care found moreover that physicians who failed to recognize their patients' distress somehow inhibited their patients' expression of verbal and vocal cues of distress [15]. Assessment skills are thus important in order to detect patients' distress. Unfortunately, due to fear of not being able to handle patients' distress adequately or fear of a detrimental effect for the patient, physicians are often as reluctant to discuss emotional functioning as patients [19].

A recent study showed the interest of providing physicians with theoretical information about distress in order to improve their identification of cues of distress. This study found that oncologists, following a one-hour brief didactic training on depressive disorders in cancer patients, were better able to identify depressive symptoms in cancer patients on videotaped interviews [20]. In this study physicians were not trained on how to elicit patients' concerns and on how to assess emotional functioning. A randomized controlled study in primary care found that a training program for physicians coupling 1.5-hour of theoretical information about psychosocial problems with a communication skills training course increased the number of patients identified accurately as showing signs of distress [21]. This emphasizes the usefulness of communication skills training programs in order to improve physicians' detection of patients' distress. An increased body of evidence exists in cancer care showing that communication skills of physicians can be improved following well-designed skill-focused, practice-oriented and learner-centered communication skills training programs [22-24]. No study, however, has yet assessed in cancer care the impact of skills acquisition following a communication skills training program on physicians' detection of cancer patients' distress.

The results of the here above studies show that to improve their detection of patients' distress, physicians need to be able to use assessment skills. Due to the fear of not being able to handle patients' distress adequately, physicians need probably also to use supportive skills to respond adequately to patient's distress once expressed. The use of both assessment and supportive skills could help physicians to detect and handle patients' distress. These skills may be acquired through communication skills training programs.

Please insert Figure 1

Therefore, our study aimed to assess, in a randomized design, the impact on physicians' ability to detect patients' distress of 1-hour theoretical information course followed by two communication skills training programs: a 2.5-day basic training program and the same training program consolidated by six 3-hour consolidation workshops. The second aim of this study was to investigate contextual, patient and communication variables or factors associated positively or negatively with physicians' detection of patients' distress. Previously reported results of this study [23] showed that, following both training programs, physicians used more assessment skills (elicited and clarified patients' concerns more often). Results showed moreover that physicians who had attended consolidation workshops following the basic training program used more supportive skills (that is, used more empathy and more educated guesses). Figure 1 shows the relationship between phase of training and relevant development of knowledge and skills. The basic training program was designed to increase physicians' knowledge about symptoms and prevalence of distress in cancer care and to initiate improvements in physicians' assessment skills. The consolidation workshops were designed to improve physicians' supportive skills which are needed to handle patients'

distress and to pursue the assessment of perceived cues of distress in order to allow detection of distress. We thus hypothesized that consolidation workshops would be required in order to reach the level of improvement in physicians' assessment and supportive skills needed to allow detection of distress.

Methods

Subjects

To be included in the study, physicians had to be specialists and to be working with cancer patients (part time or full time). First, all Belgian French-speaking physicians were invited by mail to take part in the study and all institutions specialized in cancer care were asked to deliver an internal letter of invitation. Second, heads of medical units working in cancer care were informed about the study (by mail or by phone). They were invited to take part and asked to allow us to contact specialist physicians working in their units in order to invite them to take part in the study. As a result individual and group information sessions were organized.

Study design and assessment procedure

The efficacy of the consolidation workshops was assessed in a study allocating physicians randomly, after a basic training program, to consolidation workshops or to a waiting list (Fig 2). The study was approved by the local ethics committee. The basic training program was spread over a 1-month period. The consolidation workshops started 2 months later for participants who were immediately assigned to the workshops. The bimonthly workshops were spread over a 3-month period. Subjects assigned to the waiting list were invited to take part in the consolidation workshops 6 months after the end of the basic training program.

Please insert Figure 2

Assessments were scheduled before basic training program (T1), just after this program, and after consolidation workshops for the consolidation-workshop group and approximately 5 months after the end of basic training for the basic-training-without-consolidation-workshops group (T2). The assessment procedure included, at each assessment time, 2 simulated and 2 interviews with a cancer patient (one including the presence of a relative and the other not doing so), and a set of questionnaires. This paper will report results concerning interviews with a cancer patient at T1 and T2. Results on the impact of consolidation workshops attendance on the use of communication skills by physicians have been published elsewhere [23].

Basic training program

The 19-hour basic training program consisted of two 8-hour day sessions and one 3-hour evening session. The program included a 2-hour plenary session focusing on theoretical information in the form of two lectures and 17 hours of small group role-playing sessions. The first lecture covered the aims, functions and specificity of physician-patient communication in cancer care. The second lecture focused on how to handle cancer patients' distress. Additionally, two handbooks discussing these topics were offered to each participant [25, 26]. Physicians were then split into small training groups (limited to six participants) to practice the communication tasks discussed in the lectures through pre-defined role plays, with immediate feedback offered by experienced facilitators. The next sessions focused on role plays based on the clinical problems brought up by the participants. The role plays led

also to case discussions. The topics discussed were breaking bad news, coping with patients' uncertainties and distress, and detecting psychopathologic reactions to diagnosis and prognosis. Sessions also focused on how to interact when patients' relatives are present. The basic training program ended with a plenary session inviting participants to give feedback on the training.

Consolidation workshops

Each of the 6 consolidation workshops consisted of a 3-hour evening training workshop (limited to six participants). Each workshop was led by an experienced facilitator and was based on role plays, with systematic feedback based on the clinical problems brought up by the participants. Workshops were spread over a 3-month period to allow physicians to further practice the communication skills they learned during the basic training program. These workshops were also aimed at evaluating the difficulties of transferring newly acquired skills to the workplace and at stimulating the use of those skills.

Interviews with a cancer patient

An interview with a cancer patient was audiotaped at each assessment time. Patients were chosen by physicians. Inclusion criteria for patients included breaking news (bad, neutral, or good), age older than 18 years, ability to speak French, absence of cognitive dysfunction, and written informed consent. Patients were different at T1 and T2.

Interview rating system

All audiotapes were transcribed. Transcripts were assessed for their quality and then rated by trained psychologists. Rating was based on the French translation and adaptation of the Cancer Research Campaign Workshop Evaluation Manual [27]. Raters were blind to the training condition of subjects and to assessment time. The Cancer Research Campaign Workshop Evaluation Manual was used to assess the function and emotional level of each utterance.

Interviews were rated by 14 intensively trained psychologists. Training included reading the manual, doing rating exercises, and being supervised by the rater coordinator. Before beginning to rate, raters had to reach at least the following concordance rate with a validating test: 67% for the functions and 71% for the emotional level. Moreover, to ensure a quality control and to avoid rating conflicts, raters were systematically supervised by the rater coordinator on a week-to-week basis to check the accuracy of their ratings. Finally, all ratings were checked throughout the process potential rating for inconsistencies by means of a computer program.

Questionnaires

Before the interviews, each patient completed a sociodemographic questionnaire, the Hospital Anxiety and Depression Scale [28, 29], and the Ways of Coping Checklist [30, 31]. Each physician completed a sociodemographic and socioprofessional questionnaire. After the interviews, each physician assessed his or her patient's distress on a visual analogue scale.

Physicians also had to report cancer-related information about patients and information about context characteristics.

Patients' sociodemographic questionnaire. Each patient provided demographic information including age, gender, marital and family status, occupational status and educational level.

Hospital Anxiety and Depression Scale (HADS) [28]. The HADS is a four-point 14-item self-report instrument assessing anxiety and depression in physically ill subjects. This scale was translated into French, and validated in a sample of cancer in-patients [29]. The use of the total score is recommended to assess psychological distress [29].

Physicians' ratings of Patients' Distress. Physicians rated their patient's distress on a 10 cm visual analogue scale (VAS) immediately after the interview. Ratings ranged from 0 (extremely distressed) to 10 (not at all distressed). Scores were inverted to enhance readability. A VAS was used as other authors have used visual analogue scales in previous studies assessing physicians' ability to detect patients' distress [10, 13]. The VAS has moreover been shown to be a valid tool to measure patients' level of distress [32-35].

Physician's sociodemographic and socioprofessional Data. Data were collected about physician's age, gender, marital status, medical specialty, number of years of practice in medicine and in oncology, number of cancer patients seen in the week before the assessment procedure, their type of medical practice and whether or not they had had some previous communication skills training in the last year.

Statistical Analyses

Statistical analyses of the data consisted of a comparative analysis of both groups of physicians at baseline using parametric tests and non parametric tests as appropriate (*t* tests and χ^2 tests). Patients' characteristics at baseline and after the intervention were compared using repeated measures analysis of variance (MANOVA) and χ^2 tests as appropriate. Correlation coefficients were first computed between patients' HADS scores and physicians' ratings of patients' distress (VAS) and the use of assessment and supportive skills for each group of physicians at baseline and after the interventions. Moreover, to assess the impact of the two communication skills training programs on physicians' detection of patients' distress, a new variable was computed measuring physicians' ability to detect patients' distress. Patients' HADS scores and physicians' VAS ratings were brought up to a maximal score of 100. The modified HADS scores were then subtracted from the modified VAS ratings. Time and group-by-time changes in this new variable called physicians' detection of patients' distress were then processed using repeated measures analysis of variance (MANOVA). All tests were two-tailed and the alpha was set at 0.05.

Mixed-effects modeling was employed to investigate factors associated with physicians' detection of patients' distress. An exploratory analysis was used to identify important covariates. Variables tested on an univariate level (using Pearson' correlations and *t* test as appropriate) included: physicians' age, gender, group allocation, assessment time, use of assessment and supportive skills; patient's gender, educational level, self-reported distress, prognosis, number of months since diagnosis; type of news given and type of physician-patient relationship. Factors were entered in the multivariate model only if they satisfied the inclusion criterion (ie, $P < .05$). Group ($P=.53$) and Time ($P=.75$) although not significant on

an univariate level were retained in the model. A Linear Mixed-Effects Model with Fixed Effects was used. The analyses were performed with SPSS Version 11.0 for MAC OS X (SPSS Inc, Chicago, IL).

Role of the funding source

The study sponsor had no role in study design, data collection, data analysis, or data interpretation, or in the writing of the report.

Results

Physician and Patient sociodemographic Data

All Belgian French-speaking specialists physicians were invited by mail to take part in the training program (n = 3,706), and all institutions specialized in cancer care were asked to diffuse an internal letter of invitation (n = 2,741). As displayed in Figure 2, due to the low response rate to the recruitment procedure (only 90 potentially interested subjects responded to the mail) 214 physicians, including the 90 potentially interested, were actively contacted by phone. One hundred and sixty-three of them were met individually. Twenty-one information sessions were also organized in institutions specialized in cancer care. A total of 173 physicians were met during those sessions. Following this process, 113 physicians registered to the training program, and 72 attended the first training day. Barriers to participation were personal and institutional reasons, time limitations, training duration and time-consuming assessment procedures. Four physicians who attended less than 15 hours of basic training (including one subject who dropped out) and 6 who took part to less than 4 workshops were not considered assessable. Sixty-two physicians completed the program. Three subjects were not able to accrue a patient for the interview with a cancer patient. One audiotape recording was lost because of a technical failure. Therefore, 58 physicians who completed the interviews with a cancer patient were assessable. Comparison of included and excluded physicians showed no statistically significant differences for age, gender and number of years of practice. As regards physicians' demographic and socioprofessional characteristics no statistically significant differences were found at baseline between physicians who participated to the consolidation workshops and physicians assigned to the waiting list.

Please insert Table 1

Physicians in the consolidation-workshops group were a mean of 41 years old (SD=6.1 years), 46% were female and 11% lived alone. They had a mean of 16 years (SD=6.0 years) of medical practice and 13 years (SD=6.1 years) of practice in oncology. Thirty-nine percent of the physicians worked in oncology and radiotherapy. Ten percent of the physicians worked with outpatients only. The mean number of cancer patients seen during the week before the assessment procedure was 29 (SD=25 patients). None had attended communication skills training workshops in the last year. Physicians in the basic-training-without-consolidation-workshops group were a mean of 44 years old (SD=8.0 years), 43% were female and 18% lived alone. They had a mean of 18 years (SD=7.6 years) of medical practice and 15.5 years (SD=8.2 years) of practice in oncology. Forty-seven percent of the physicians worked in oncology and radiotherapy. Thirteen percent of the physicians worked with outpatients only. The mean number of cancer patients seen during the week before the assessment procedure was 27 (SD=19 patients). Seven percent of the physicians had attended a communication skills training program in the last year. As displayed in Table 1, no statistically significant differences were found in patients, disease, and interview characteristics over time and between the consolidation-workshop and the basic-training-without-consolidation-workshops group when comparison was possible.

Influence of attendance to the Basic Training Program and to the Consolidation Workshops on intercorrelations between physicians' VAS ratings, patients' HADS scores and physicians' communication skills

As shown in Table 2, no significant correlations were observed at baseline between physicians' VAS ratings, patients' HADS scores and physicians' assessment (that is utterances eliciting and clarifying psychological information) and supportive skills (that is making educated guesses, empathy, alerting to reality or confronting) both in the consolidation-workshop and the basic-training-without-consolidation-workshops group.

Please insert Table 2

Six months later, physicians' VAS ratings of patients' distress became significantly correlated with patients' HADS scores both in the basic-training-without-consolidation-workshops group (r=.49, P≤.01) and in the consolidation-workshop group (r=.64, P≤.001). Six months later, physicians' VAS ratings of patients' distress became also significantly correlated with physicians' assessment and supportive skills. In the basic-training-without-consolidation-workshops group, five months after basic training, physicians' VAS ratings of patients' distress became significantly associated positively with physicians' use of assessment skills (that is with utterances eliciting and clarifying psychological information; r=.56, P≤.001). Their use of supportive skills became also correlated with their use of assessment skills (r=.43, P≤.01). The use of assessment and supportive skills by those physicians did not however become correlated with patients' HADS scores.

After consolidation workshops attendance, physicians' VAS ratings of patients' distress became significantly associated positively with physicians' use of assessment skills (r=.53, P≤.01) and supportive skills (r=.65, P≤.001). Moreover, physicians' use of assessment skills (that is utterances eliciting and clarifying psychological information) became significantly correlated positively with patients' HADS scores (r=.64, P≤.001).

Influence of attendance to the Basic Training Program and to the Consolidation Workshops on physicians' detection of patients' distress

As shown in Table 3, repeated measures analysis of variance (MANOVA) showed no significant changes over time and between groups in physicians' VAS ratings of patients' distress and in patients' HADS scores. Before training, 25/58 (43,1%) patients scored above the threshold score of 13 on the HADS indicating probable adjustment disorder or major depressive disorder (respectively 12 in the basic-training-without-consolidation-workshops group and 13 in the consolidation-workshops group). Six months later, 27/58 (46,6%) patients scored above threshold on the HADS (respectively 16 in the basic-training-without-consolidation-workshops group and 11 in the consolidation-workshops group). No significant MANOVA time and group-by-time changes were noted in physicians' ability to detect patients' distress computed through differences between physicians' VAS ratings of patients' distress and patients' HADS scores.

Please insert Table 3

Factors associated with physicians' detection of patients' distress

Group (P=.38) and Time (P=.94) although not significant were retained in the model. Patient's educational level (P=.003), the type of news given (P=.015), patient's self-reported distress (P<.000) and physicians' use of assessment (P=.044) and supportive skills (P=.002) were identified as possible predictors and were also retained in the multivariate model. Physicians' age, gender, patient's gender, prognosis, number of months since diagnosis and the type of physician-patient relationship did not satisfy the inclusion criterion (ie, $P < .05$).

As shown in Table 4, mixed-effects modeling showed that physician's detection of patients' distress was negatively associated with being a high school graduate or less versus being a college or university graduate ($P = .042$) and with patients' self-reported distress ($P < .000$). Mixed-effects modeling showed that physician's detection of patients' distress was positively associated with physicians' breaking bad news ($P = .022$), with physicians using assessment skills ($P = .015$) and supportive skills ($P = .045$).

Discussion

At baseline, physicians' ratings of patients' distress were not correlated significantly with patients' self-reported distress. Results at baseline thus confirm findings of previous studies reporting that physicians often fail to detect their patients' distress accurately [10-14]. It is important to underline that the association between physicians' ratings of patients' distress and patients' self-reported distress improved over time. Physicians' ratings of patients' distress became highly correlated with patients' self-reported distress in both groups following training (which means 5 months after the basic training program for the basic-training-without-consolidation-workshops group and immediately after the consolidation workshops for the consolidation-workshops group). However, contrary to what was expected, no change was observed in physicians' detection of patients' distress (measured through subtracting patients' HADS scores brought up to 100 from physicians' VAS ratings of patients' distress brought up to 100) following the communication skills training programs whether physicians attended the basic training program or the basic training program followed by the consolidation workshops.

The absence of significant improvement in physicians' ability to detect patients' distress following both training programs confirms the fact that improving physicians' ability to detect cancer patients' distress is a complex task. It was hypothesized that an improvement in physicians' use of assessment and supportive skills, in parallel with an increased knowledge about distress in cancer patients, would lead to an improvement in physicians' ability to detect patients' distress. This seems not to be the case. The 1-hour theoretical lecture on how to handle patients' distress may not have been sufficient to help physicians identify cues of distress in their patients. The fact that the communication skills training programs tested in this study did not, contrary to what was observed following a shorter training

program conducted in primary care [21], lead to significant changes in physicians' detection of patients' distress could be explained by physicians' multiple competing agendas in cancer care, such as assessing patients' physical functioning, providing information, detecting patients' distress, and so on.

Results also show that before training, physicians did not adjust the use of their assessment and supportive skills to the level of distress they perceived in their patients (assessed in this study with a visual analogue scale, a VAS) and to the level of distress experienced by their patients (assessed in this study with the Hospital Anxiety and Depression Scale, the HADS). After both training programs however, physicians used more assessment skills (that is elicited and clarified their patients' psychological concerns more often) when they perceived their patients as more distressed (assessed with a VAS).

Most importantly for the focus of this study, it appeared that after training, only assessment skills of physicians who attended the consolidation workshops were correlated with patients' level of distress (assessed with the HADS). The more distressed the patients, the more physicians used assessment skills. Moreover, the use of assessment and supportive skills were highly correlated only for these physicians.

After a basic training program, physicians thus start adjusting their communication skills to the distress that they have perceived. Meanwhile, following a basic training program, physicians may not be confident enough in their skills. They may interrupt the assessment of patients' distress or concerns too soon, which leads them to keep an imprecise picture of their patients' level of distress. A basic training program thus initiates the adjustment of physicians' assessment skills to perceived cues of distress. Consolidation workshops probably

allow physicians to further adjust their assessment skills by using supportive skills to pursue their assessment of perceived cues of distress. The hypothesis that physicians' detection of patients' distress may be facilitated by an increased use of supportive skills is confirmed by results of the mixed-effects modeling which show that physicians' detection of patients' distress is facilitated by the use of both assessment and supportive skills.

Our finding that the acquisition of assessment and supportive skills did not lead to a significant improvement in physicians' ability to detect their patients' distress could be explained by the fact that physicians may still not be confident enough in their skills and/or may not have the needed theoretical knowledge. The lack of significant improvement in physicians' detection of patients' distress could thus be explained by the fact that physicians' use of assessment and supportive skills is still not sufficient in order to allow them to investigate patients' concerns further. This lack of significant improvement could also be explained by the fact that physicians' theoretical knowledge about distress is not sufficient to allow them to generate the needed hypotheses about patients' distress and concerns and to verify their adequacy (by means of checking and making appropriate educated guesses). Results of the mixed-effects modeling showing the influence of contextual and patient-related variables (such as type of news given by physicians and patient educational level) confirm this hypothesis. Physicians should be aware of those influences when they assess patients' distress in order to improve this assessment. Better detection of patients' distress may thus also require the use of skills such as checking and educated guesses, which may be helpful for getting a more precise picture and a more accurate assessment of patients' level of distress. The fact that for the purpose of this study only one patient was considered for each physician and that the physicians selected the patients could also explain the limited effect observed.

The fact that physicians were voluntarily enrolled and were mainly experienced clinicians could limit the generalizability of our results. It could be argued that the motivation of those physicians was high and that this could have an impact on the changes observed. The fact that the physicians were experienced could also mean that the way they assessed their patients' distress were more rooted in habits and that improvements in this context could be more difficult to achieve.

The results of this study provide important information for designing the methods of future studies dealing with the issue of improving distress detection. This study first shows that physicians greatly differ in their ability to detect their patients' distress (as shown by the important standard deviation). This has implications as regards the sample size needed to offer sufficient power to detect improvements in physicians' ability to detect distress. Future studies should thus involve a larger sample of physicians and include more patients by physicians. Future studies could also consider using simulated patients allowing to reduce the diversities that may derive from the wide range of patients' reactions and of interviews characteristics which could mask an improvement in physicians' ability to detect patients' distress [36].

To our knowledge, this is the first study assessing in a randomized design the impact of two communication skills training programs (a basic training program and a basic training program consolidated by six three-hour workshops) on physicians' detection of cancer patients' distress. Contrary to what was expected, no significant change was observed in physicians' detection of patients' distress following either communication skills training programs. The training programs however allowed physicians to tailor their communication skills to patients' level of distress by adjusting their assessment and supportive skills to their

patients' level of distress. This was mostly observed following attendance to the consolidation workshops. The results of this study indicate the need to further improve physicians' detection skills. Improving physicians' detection of patients' distress may require a specific training module. This specific training module should focus, on the one hand, on knowledge about cues of distress that need to be identified, on knowledge about factors interfering with detection and about knowledge about emotional regulation and dysregulation. It should also focus, on the other hand, on the practice of assessment (that is eliciting, clarifying and checking) and supportive skills (that is making educated guesses, empathy, alerting to reality or confronting). Our results may also emphasize the usefulness of using screening tools not only in order to assess patients' distress [29, 37] but also in order to increase patients' spontaneous disclosure of concerns and distress [38]. The efficacy of such joint or not training and screening efforts should be of course assessed in order to reduce the number of patients whose distress is left unrecognized.

Contributors

Darius Razavi, Nicole Delvaux and Christine Reynaert conceived the study, wrote the protocol, obtained funding, and supervised data collection and analysis. Darius Razavi , Nicole Delvaux and Serge Marchal conducted the training courses. Serge Marchal supervised data collection. Jacques Boniver, Jean Klastersky and Pierre Scalliet participated to the writing of the protocol and obtained funding. Anne-Marie Etienne supervised data collection. Isabelle Merckaert contributed to data collection and to the rating of the interviews, participated in the data analysis, and wrote the first drafts of the report. Yves Libert contributed to data collection, coordinated day-to-day management of the project, participated in preparation of data analysis, and contributed to the writing of the first drafts of the report. Jean-Louis Slachmuylder designed the database and contributed to data collection and final analysis. All the investigators contributed to the writing of the final report.

Conflict of interest statement

None declared.

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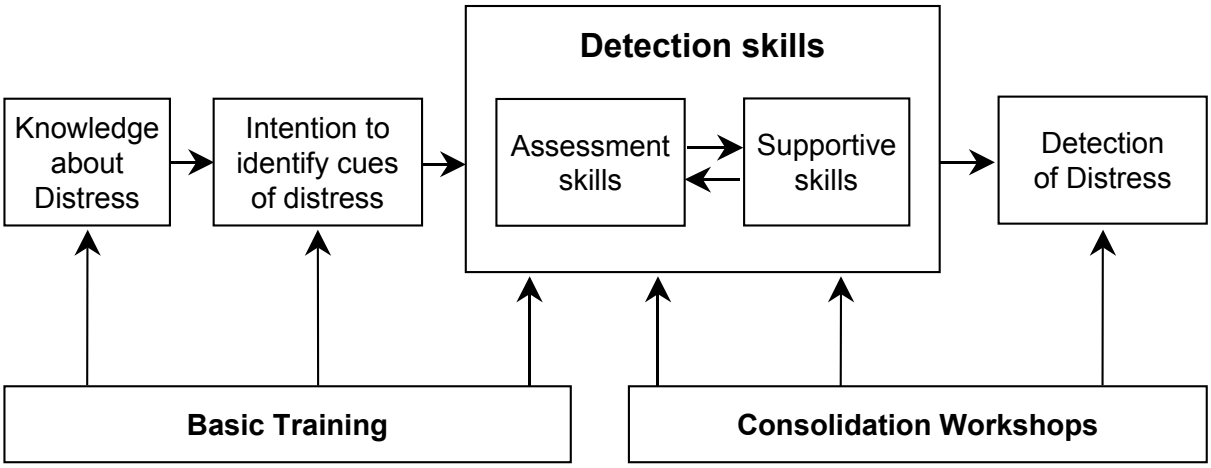
Figure 1. Relationship between phase of training and relevant development of knowledge and skills.

Figure 2. Recruitment procedure, study design and training and assessment procedures.


Detection skills
Knowledge about Distress
Intention to identify cues of distress
Assessment skills
Supportive skills
Detection of Distress
Basic Training
Consolidation Workshops

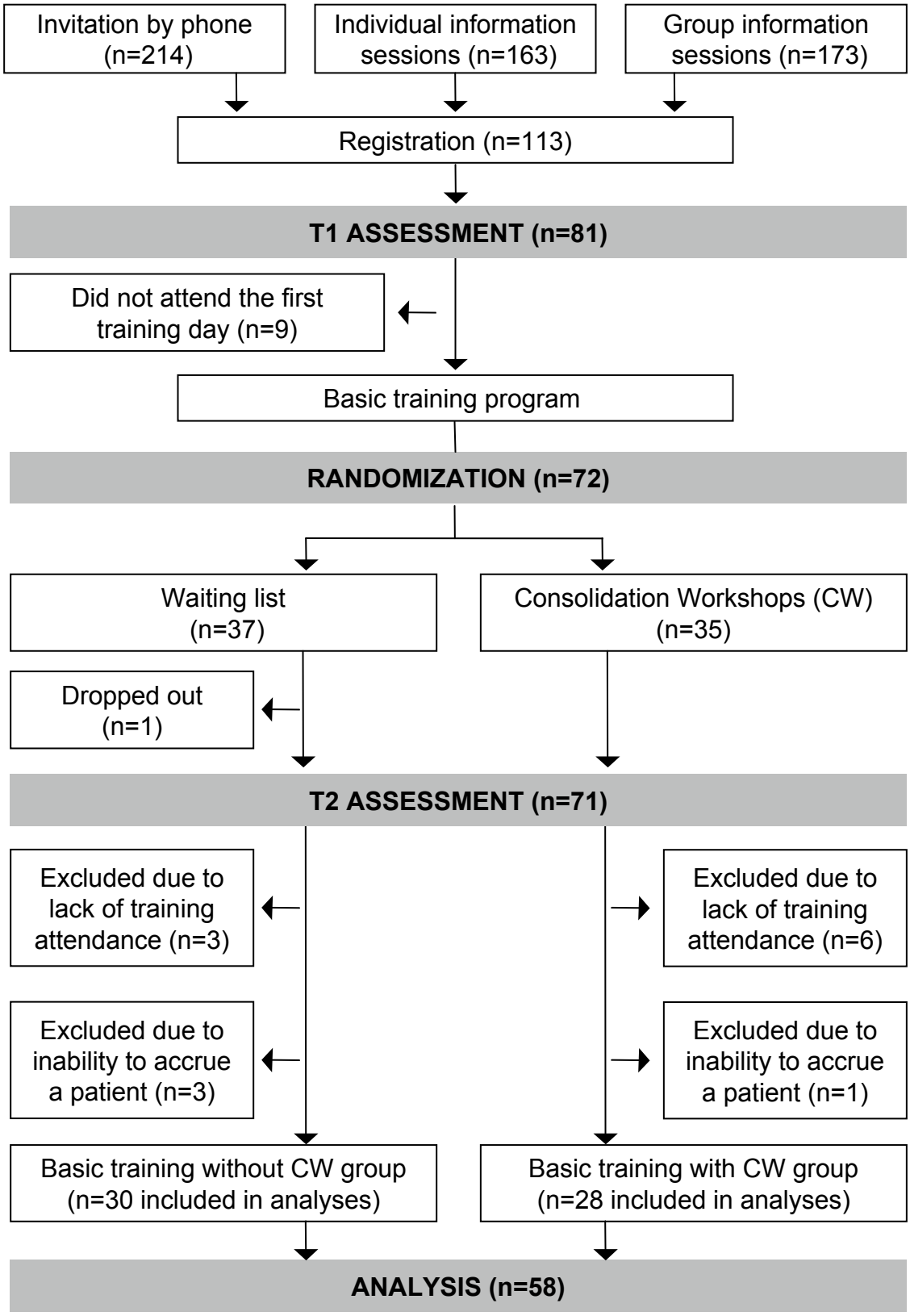

Invitation by phone (n=214)
Individual information sessions (n=163)
Group information sessions (n=173)
Registration (n=113)
T1 ASSESSMENT (n=81)
Did not attend the first training day (n=9)
Basic training program
RANDOMIZATION (n=72)
Waiting list (n=37)
Consolidation Workshops (CW) (n=35)
Dropped out (n=1)
T2 ASSESSMENT (n=71)
Excluded due to lack of training attendance (n=3)
Excluded due to lack of training attendance (n=6)
Excluded due to inability to accrue a patient (n=3)
Excluded due to inability to accrue a patient (n=1)
Basic training without CW group (n=30 included in analyses)
Basic training with CW group (n=28 included in analyses)
ANALYSIS (n=58)

Table 1. Comparison of Patient Variables over Time and between Groups

Characteristic	Basic training without CW (n=30)				Basic training with CW (n=28)			
	At baseline		5 months after basic training		At baseline		After CW	
	No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%
Patients sociodemographic characteristics								
Age								
Mean	56.3		59.8		56.6		61.5	
SD	11.2		14.0		15.8		15.4	
Gender								
Male	10	33.3	10	33.3	10	35.7	9	32.1
Female	20	66.7	20	66.7	18	64.3	19	67.9
Marital status								
Single, separated, divorced, widowed	11	36.7	13	43.3	16	57.1	16	57.1
Married or living with partner	19	63.3	17	56.7	12	42.9	12	42.9
Children								
Yes	26	86.7	20	66.7	22	78.6	19	67.9
No	4	13.3	10	33.3	6	21.4	9	32.1
Occupational status								
Working part or full time	9	30.0	9	30.0	7	25.0	6	21.4
Invalid, incapacitated, unemployed, homemaker, or retired	21	70.0	21	70.0	21	75.0	22	78.6
Educational level								
High school graduation or less	18	60.0	15	50.0	16	57.1	15	53.6
College or university graduation	12	40.0	15	50.0	12	42.9	13	46.4
Karnofsky score*								
80 or more	25	83.3	29	96.7	21	75.0	26	92.9
Less than 80	5	16.7	1	3.3	7	25.0	2	7.1
Disease characteristics								
Type of disease*								
Solid tumour	27	90.0	24	80.0	21	75.0	22	78.6
Hematologic cancer	3	10.0	6	20.0	7	25.0	6	21.4
Disease status								
In remission, no change or too early to assess	22	73.3	25	83.3	19	67.9	22	78.6
In progression	8	26.7	5	16.7	9	32.1	6	21.4
Prognosis								
Less than one year	7	23.3	3	10.0	8	28.6	7	25.0
One year or more	23	76.7	27	90.0	20	71.4	21	75.0
Previous cancer treatment								
Yes	23	76.7	21	70.0	23	82.1	19	67.9
No	7	23.3	9	30.0	5	17.9	9	32.1
Current cancer treatment								
Yes	15	50.0	13	43.3	19	67.9	19	67.9
No	15	50.0	17	56.7	9	32.1	9	32.1
Months since diagnosis								
Mean	31.5		32.2		31.3		27.7	
SD	36.2		42.0		40.2		30.7	
Interviews characteristics								
Type of news								
Bad	10	33.3	5	16.7	11	39.3	7	25.0
Neutral and/or good	19	66.7	25	80.3	17	60.1	21	75.0
Type of physician-patient relationship*								
First encounter	4	13.3	3	10.0	3	10.7	3	10.7
Seen previously	26	86.7	27	90.0	25	89.3	25	89.3

NOTE. No statistically significant differences were found over time and between groups (Chi-square and ANOVA); * Chi-square were not applicable due to expected count less than 5.

Table 2. Intercorrelations between patients' self-reported distress (HADS), physicians' ratings of patients' distress (VAS) and physicians' assessment and supportive skills

	Basic-training without CW group (n=30)				Consolidation-workshops group (n=28)			
	HADS	VAS	Assessment skills	Supportive skills	HADS	VAS	Assessment skills	Supportive skills
At baseline								
HADS	1	.29	.19	- .05	1	.17	.24	- .31
VAS	—	1	.03	- .10	—	1	.10	- .10
Assessment skills	—	—	1	.12	—	—	1	- .07
Supportive skills	—	—	—	1	—	—	—	1
6 Months after								
HADS	1	.49**	.28	.05	1	.64***	.44*	.22
VAS	—	1	.56***	.12	—	1	.53**	.65***
Assessment skills	—	—	1	.43*	—	—	1	.64***
Supportive skills	—	—	—	1	—	—	—	1

Abbreviations: CW, consolidation workshops
HADS, Patients' self-reported Distress assessed with the Hospital Anxiety and Depression Scale
VAS, Physicians' Ratings of Patients' distress assessed with a visual analogue scale
Assessment skills, Physicians' eliciting and clarifying psychological information
Supportive skills , Physicians' educated guesses, empathy, alerting to reality and confronting
¶ Six Months after baseline which means 5 months after basic training for the Basic-training-without-CW group and after consolidation workshops for the Consolidation-workshops group
* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$

Table 3. Changes in Physicians' Ratings of Patients' Distress (VAS), in Patients' self-reported Distress (HADS total score) and in Physicians' Detection of Patients' Distress

	Basic training without CW (n=30)§				Basic training with CW (n=28)§§				MANOVA			
	At baseline		5 Months After Basic Training		At baseline		After CW		Time		Group by Time	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	$F_{1,56}$	*P*	$F_{1,56}$	*P*
Physicians' Ratings of Patients' distress (VAS)	3.3	2.1	3.5	2.1	4.0	2.0	3.9	2.8	.00	.85	.08	.77
Patients' self-reported Distress (HADS Total Score)	10.4	6.1	12.6	7.1	13.2	6.8	11.8	8.1	.12	.73	2.1	.16
Physicians' detection of patients' distress*	7.9	21.5	4.7	19.8	8.3	23.6	11.1	21.5	.00	.96	.58	.45

Abbreviations: CW, consolidation workshops; MANOVA, repeated measures of variance; SD, standard deviation.
§ Missing data due to the physician's inability to get an interview with a relative present; §§ Missing data due to a technical failure.
* Computed through a difference between physicians' ratings of patients' distress (VAS) and patients' self-reported distress (HADS)

Table 4. Mixed-Effects Model for Physicians' detection of patients' distress over Time and between Groups (fixed effects)

Variables in Order Entered into Model	Estimates of Effects	Standard Error	95% CI	*P*
Physicians' detection of patients' distress*				
Intercept	16.42	5.08	6.33 to 26.51	.002
Group				
BT with CW group *vs* BT without CW group	3.41	5.36	-7.34 to 14.15	.528
Time				
6 months after baseline *vs* baseline	-1.61	5.00	-11.53 to 8.31	.748
Group X Time	-2.45	7.16	-16.65 to 11.75	.733
Patient educational level				
High school graduate or less *vs* College graduate or more	-7.31	3.55	-14.35 to -0.27	.042
Type of news given by physicians				
Bad news *vs* good or neutral news	9.15	3.94	1.35 to 16.96	.022
Patients' self-reported Distress[§]	-1.05	0.27	-1.57 to -0.52	<.000
Physicians' assessment skills	1.55	0.62	0.31 to 2.78	.015
Physicians' supportive skills	3.27	1.61	0.01 to 6.47	.045

Abbreviations: CW, Consolidation-workshops; BT, Basic-training; HADS, Hospital Anxiety and Depression Scale.

* Computed through a difference between physicians' ratings of patients' distress (VAS) and patients' self-reported distress (HADS)

[§] HADS Total Score