Health-Related Quality-of-Life Assessments and Patient-Physician Communication: A Randomized Controlled Trial

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Context There has been increasing interest in the use of health-related quality-of-life (HRQL) assessments in daily clinical practice, yet few empirical studies have been conducted to evaluate the usefulness of such assessments.

Objective To evaluate the efficacy of standardized HRQL assessments in facilitating patient-physician communication and increasing physicians' awareness of their patients' HRQL-related problems.

Design Prospective, randomized crossover trial.

Setting Outpatient clinic of a cancer hospital in the Netherlands.

Participants Ten physicians and 214 patients (76% women; mean age, 57 years) undergoing palliative chemotherapy who were invited to participate between June 1996 and June 1998.

Intervention At 3 successive outpatient visits, patients completed an HRQL questionnaire (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30). The responses were computer scored and transformed into a graphic summary. Physicians and patients received a copy of the summary before the consultation.

Main Outcome Measures Audiotapes of the consultations were content analyzed to evaluate patient-physician communication. Physicians' awareness of their patients' health problems was assessed by comparing physicians' and patients' ratings on the Dartmouth Primary Care Cooperative Information Functional Health Assessment (COOP) and the World Organisation Project of National Colleges and Academics (WONCA) charts.

Results The HRQL-related issues were discussed significantly more frequently in the intervention than in the control group (mean [SD] communication composite scores: 4.5 [2.3] vs 3.7 [1.9], respectively \( P = .01 \)). Physicians in the intervention group identified a greater percentage of patients with moderate-to-severe health problems in several HRQL domains than did those in the control group. All physicians and 87% of the patients believed that the intervention facilitated communication and expressed interest in its continued use.

Conclusion Incorporating standardized HRQL assessments in daily clinical oncology practice facilitates the discussion of HRQL issues and can heighten physicians' awareness of their patients' HRQL.

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There are several possible explanations for the relative paucity of positive findings. In some studies, the HRQL assessments were made at fixed intervals, regardless of whether they coincided with specific medical visits, or were made at a single time point, thus precluding the possibility of monitoring changes in patients’ HRQL. None of the studies provided summaries of the patients’ responses to the HRQL questionnaires to the patients themselves. Most notable, however, is the lack of attention paid to the rigorous evaluation of the effect of HRQL assessments on patient-physician communication. Although in several of the studies the participating physicians and/or patients reported that the availability of the HRQL data facilitated communication, such self-reports need to be confirmed by direct behavioral measures.

Given that effective communication is an early step in the care process, it seems only logical that patient-physician communication be included as the most proximal outcome in studies that evaluate the effect of standardized HRQL assessments in daily clinical practice. If no effect on communication is found, it is unlikely that any effect on more distal outcomes, such as patient satisfaction or HRQL, will be observed.

The current study was undertaken to investigate the potential value of providing oncologists and their patients with timely, structured feedback on the patients’ HRQL during palliative chemotherapy treatment. Our primary hypothesis was that such HRQL assessments would facilitate the frequency with which HRQL issues were discussed during the consultations. Although in some of the studies the participating physicians and/or patients reported that the availability of the HRQL data facilitated communication, such self-reports need to be confirmed by direct behavioral measures.

Study Design

The study used a longitudinal, randomized, crossover design. The physicians were initially assigned, at random, to either the intervention or control condition. For each physician, a minimum of 10 consecutive patients were recruited into the study. The first study medical visit served as a baseline assessment for both groups. The intervention was introduced at the second study visit and continued through the fourth study visit.

Midway through the study, the physicians originally assigned to the control arm of the study were switched to the intervention arm and those originally assigned to the intervention arm to the control arm. A second cohort of at least 10 patients per physician was recruited and followed-up in a manner identical to that in the first study period. A buffer period of 2 months was introduced before starting recruitment of the second cohort of patients. This crossover design was deemed the most appropriate means of testing the effect of the intervention, given the relatively limited number of participating physicians. With each physician serving as his or her own control, the potential influence of between-physician differences in sociodemographics, professional experience, and attitudes and behavior on key study outcomes could be neutralized. The sample size was established to provide 80% power to detect a moderate between-group difference (effect size = 0.40) in the frequency with which patients’ problems were discussed during the medical consultations (α = .05).

Description of the Intervention

All patients had standard follow-up visits with their physician before the start of each cycle of chemotherapy. Patients in the intervention arm were asked to complete a standardized HRQL questionnaire, the 30-item European Organization for Research and Treatment of Cancer, Quality of Life Questionnaire-Core 30 (QLQ-C30) (version 3.0), in the waiting room immediately before each visit. The QLQ-C30 is organized into 5 functional scales (physical, role, cognitive, emotional, and social), 3 symptom scales (fatigue, pain, and nausea or vomiting), a global HRQL scale, and a number of single items that assess additional symptoms. The questions are posed in terms of the previous week. For most items, a 4-point Likert-type response scale is used (ranging from “not at all” to “very much”). Following standard European Organization for Research on the Treatment of Cancer procedures, all scores were linearly converted to a 0 to 100 scale, with higher scores indicating a higher level of functioning and no more severe symptoms.

The patients’ responses to the QLQ-C30 were optically scanned into a desktop computer, scored, and printed as a graphic summary profile (Figure 1). Copies of the summary were given to the patient and physician immediately before consultation. A copy was also placed in the medical records. At the 2 subsequent outpatient visits, the QLQ-C30 summary included both the patients’ current scores and those elicited at the previous visit(s).

Before the start of the intervention period, each physician received a single, half-hour educational session on how to interpret the QLQ-C30 summary scores. Patients in the intervention group received a similar explanation in a pamphlet mailed to their home. If desired, a research assistant provided further explanation of the summary. No specific guidelines were provided for the
Figure 1. Example of Graphic Summary Profile of Quality of Life Questionnaire-Core 30

For the functional scale, higher scores indicate higher functioning. For the symptom scale, higher scores indicate more symptoms.

use of the summary during the medical consultations.

**Study Measures**

**Patients’ Sociodemographic and Clinical Characteristics.** At the time of the baseline visit, the patients completed a brief sociodemographic questionnaire, and the physicians rated their patients’ performance status using the Eastern Cooperative Oncology Group scale.\(^{24}\) Clinical information was extracted from the medical records.

**Patient-Physician Communication.** All of the medical consultations were audiotaped, transcribed, and content analyzed with the aid of a checklist to determine whether the HRQL topics included in the QLQ-C30 were discussed and to record the total length of the consultations. Coding was performed directly from audiotape by three trained raters (S.B.D. and L.D.V.W.) who were blinded to group assignment. All raters coded a random sample of 15% of the audiotapes to assess interrater reliability. A high level of agreement was reached (mean, 95%). A composite communication score (range, 0-12) was calculated by summing all HRQL-related topics that were discussed. This composite score served as the primary study outcome.

**Physicians’ Awareness of Patients’ HRQL.** At the first and fourth study visits, the physicians and patients were asked to complete the Dartmouth Primary Care Cooperative Information Functional Health Assessment (COOP) and the World Organisation Project of National Colleges and Academics (WONCA) charts.\(^{25}\) These charts assess physical fitness, feelings, daily and social activities, pain, and overall health. An additional chart that assessed fatigue was also included. A 5-point response scale is used, with 1 representing the best and 5 representing the worst level of functioning. The charts were used to (1) determine the physicians’ awareness of their patients HRQL and (2) identify patients with serious HRQL impairments.

**Patient Management.** Medical records and the audiotapes were used to abstract notations and comments relating to HRQL-related patient management, including prescription of medication, ordering of tests, referrals to other health care practitioners, and counseling. A composite patient management score was calculated by summing all HRQL-related actions taken by the physicians per patient.

**Patient and Physician Satisfaction.** Following the first and the fourth study visits, patients completed the 5-item Patient Satisfaction Questionnaire C, which assessed satisfaction with how their needs were addressed, their active involvement during the visit, patient-physician interaction, and information and emotional support received.\(^{26}\) An overall satisfaction score was calculated by averaging the responses to the 5 questions. At the same time points, the physicians were asked to rate their global satisfaction by means of a single question: “How satisfied were you with the communication with your patient during this visit?”

**Patients’ Self-Reported HRQL.** At the first and fourth visits, the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36)\(^{27,28}\) was administered to all patients. The SF-36 is organized into 8 multi-item scales. The questions referring to general health perceptions were omitted because they had been shown to be upsetting to patients with advanced cancer.\(^{28}\)

**Patient and Physician Evaluation of the Intervention.** Following the fourth study visit, patients in the intervention group completed a questionnaire and a brief telephone interview regarding their experience with the intervention. Similarly, all of the participating physicians underwent a semistructured interview to obtain their views.

**Statistical Analysis**

All statistical analyses relating to the effectiveness of the intervention were performed on an intention-to-treat basis and were based on data obtained from the fourth study visit. Patients’ sex, the study period (precrossover vs postcrossover), and, when possible, baseline (ie, first visit) values were used as covariates. Stepwise linear regression analysis was used to test for between-group differences in the mean scores on the composite communication scale, and forward, unconditional logistic regression analysis was used to compare the percentage of consultations in the intervention with the control group in which the specific HRQL topics were discussed.

Physicians’ awareness of patients’ HRQL problems was assessed by calculating the percentage of exact and global agreement between patient and phy-
physician ratings for the COOP/WONCA charts. Exact agreement was defined as identical patient and physician ratings, whereas global agreement was defined as agreement within 1 response category in either direction. Logistic regression analyses were performed for the total sample and for the subgroup of patients experiencing moderate-to-severe problems (rating of 3 to 5 on the COOP/WONCA charts) at the fourth visit. Additionally, within-group change over time in physician awareness of patients with moderate-to-severe problems was examined. For these latter analyses, no formal statistical testing could be performed because the patients with moderate-to-severe problems at the fourth visit were not necessarily the same patients as those at the first visit. Rather, a within-group shift over time of at least 10% of cases in which agreement was taken as an indication of improved physician recognition of patients’ problems.

Stepwise linear regression analysis was used to test for between-group differences on the measures of patient management, patient and physician satisfaction, and patients’ self-reported HRQL as measured by the SF-36. Additionally, between-group comparisons were made of the percentage of patients whose SF-36 scores improved by at least 0.5 SD unit from the first to the fourth visit. All statistical tests were 2-sided, with the significance level set at \( P = .05 \). All analyses were performed using SPSS version 10.1 (SPSS Inc, Chicago, Ill).

**RESULTS**

**Patient and Physician Recruitment and Sample Description**

Of the 12 physicians asked to participate in the study, 10 agreed to do so. The 2 who declined objected to having their consultations audiotaped. Four of the participating physicians were women. Their mean age was 44 years (range, 35-53 years), with an average of 11 years of working experience in oncology (range, 2-24 years).

Between June 1996 and June 1998, 382 patients were invited to participate in the study, of whom 273 agreed (71% response rate). Of the 109 nonrespondents, 30 declined to participate because of poor physical or emotional condition, 43 indicated insufficient interest or lack of time, and 16 had objections to the audiotaping. A nonrespondent analysis indicated that patients who declined to participate were significantly less well educated than those who agreed to participate (\( P < .001 \)). No statistically significant differences were found for other background characteristics. During the study, 31 patients in the intervention group and 28 in the control group were lost to follow-up: 33% died, 30% changed physicians, and 37% transferred to another hospital. There were no statistically significant differences between groups in reasons for loss to follow-up (Figure 2).

The background characteristics of the remaining 214 patients are presented in Table 1. The intervention and control groups were well-balanced on variables except primary diagnosis, with the control group having proportionally more breast cancer patients than the intervention group (62% vs 41%, \( P = .03 \)).

**Communication About the Patients’ HRQL**

The mean (SD) composite communication score at the fourth visit was 4.5 (2.3)
in the intervention group and 3.7 (1.9) in the control group ($P = .01$; effect size = .38). Ten of the 12 HRQL issues were discussed more frequently in the intervention group compared with the control group. These differences reached statistically significant levels for social functioning, fatigue, and dyspnea (Table 2).

**Physicians’ Awareness**

There were no statistically significant between-group differences at the fourth visit in exact or global physician-patient agreement in ratings on the COOP/WONCA charts. Similar results were obtained when limiting the analysis to those patients who reported moderate-to-severe problems on one or more of the COOP/WONCA charts. In this later case, the only statistically significant group difference was in ratings of social functioning (83% agreement in the intervention group vs 65% in the control group; $P = .05$). However, within the intervention group, an increase over time of at least 10% in physician recognition of moderate-to-severe problems was observed for daily activities, feelings, social activities, pain, and fatigue. Within the control group, this was the case only for daily activities and pain (Table 3).

**Patient Management**

The between-group difference in the mean number of HRQL-related patient management actions taken per patient was negligible (0.6 for the intervention group and 0.5 for the control group). No statistically significant between-group differences were observed in the prescription of medications, ordering of tests, or referrals to other health care practitioners. However, a significantly greater percentage of patients in the intervention group (23%) received counseling from their physician on how to manage their health problems than the control group (16%) ($P = .05$).

**Patient and Physician Satisfaction**

Overall patient satisfaction with the fourth medical visit was high in both groups. At the individual item level, the only statistically significant between-group difference was with regard to the degree of emotional support received (mean [SD], 4.3 [.72] vs 4.0 [.89] for the intervention and control groups, respectively; $P = .05$). The level of physician satisfaction with the medical encounter was similarly high in the intervention and control conditions (mean score, 4.5 in both groups).

**Consultation Duration and Evaluation of the Intervention**

No statistically significant between-group difference was found in the mean duration of the visits (mean [SD], 19.8 [6.2] minutes for the intervention group and 20.4 [6.8] minutes for the control groups). Ninety-seven percent of the patients in the intervention group re-

### Table 1. Characteristics of the Patient Sample*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Control (n = 100)</th>
<th>Intervention (n = 114)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>81 (81)</td>
<td>83 (73)</td>
<td>.15</td>
</tr>
<tr>
<td>Men</td>
<td>19 (19)</td>
<td>31 (27)</td>
<td></td>
</tr>
<tr>
<td><strong>Age, mean (range), y</strong></td>
<td>55 (24–81)</td>
<td>58 (25–84)</td>
<td>.24</td>
</tr>
<tr>
<td><strong>Educational level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (&lt;high school)</td>
<td>18 (18)</td>
<td>29 (25)</td>
<td>.56</td>
</tr>
<tr>
<td>Middle (&lt;high school)</td>
<td>45 (45)</td>
<td>63 (55)</td>
<td></td>
</tr>
<tr>
<td>Advanced (college)</td>
<td>37 (37)</td>
<td>29 (25)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>27 (27)</td>
<td>24 (21)</td>
<td>.37</td>
</tr>
<tr>
<td>Married</td>
<td>73 (73)</td>
<td>90 (79)</td>
<td></td>
</tr>
<tr>
<td><strong>Cancer diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td>62 (62)</td>
<td>47 (41)</td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
<td>16 (16)</td>
<td>21 (18)</td>
<td>.03</td>
</tr>
<tr>
<td>Gynecological</td>
<td>3 (3)</td>
<td>10 (9)</td>
<td></td>
</tr>
<tr>
<td>Lymphoma</td>
<td>9 (9)</td>
<td>16 (14)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>10 (10)</td>
<td>21 (18)</td>
<td></td>
</tr>
<tr>
<td><strong>Chemotherapy†</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>48 (48)</td>
<td>52 (46)</td>
<td>.94</td>
</tr>
<tr>
<td>Moderate to severe</td>
<td>52 (52)</td>
<td>62 (54)</td>
<td></td>
</tr>
<tr>
<td><strong>No. of previous palliative chemotherapy treatments</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-line</td>
<td>70 (70)</td>
<td>76 (67)</td>
<td>.36</td>
</tr>
<tr>
<td>Second-line</td>
<td>23 (23)</td>
<td>24 (21)</td>
<td></td>
</tr>
<tr>
<td>Third-line</td>
<td>7 (7)</td>
<td>13 (11)</td>
<td></td>
</tr>
<tr>
<td><strong>No. of treatment courses received, median</strong></td>
<td>3 (3)</td>
<td>3 (3)</td>
<td>.44</td>
</tr>
<tr>
<td><strong>Received chemotherapy treatment on fourth visit</strong></td>
<td>61 (61)</td>
<td>71 (62)</td>
<td>.96</td>
</tr>
<tr>
<td><strong>COOP and WONCA scores, mean (SD)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical fitness</td>
<td>3.2 (1.1)</td>
<td>3.3 (1.1)</td>
<td>.64</td>
</tr>
<tr>
<td>Daily activities</td>
<td>2.8 (1.2)</td>
<td>2.9 (1.1)</td>
<td>.64</td>
</tr>
<tr>
<td>Feelings</td>
<td>2.3 (1.2)</td>
<td>2.2 (1.0)</td>
<td>.36</td>
</tr>
<tr>
<td>Social activities</td>
<td>2.2 (1.2)</td>
<td>2.2 (1.2)</td>
<td>.72</td>
</tr>
<tr>
<td>Overall health</td>
<td>3.4 (0.8)</td>
<td>3.3 (1.0)</td>
<td>.42</td>
</tr>
<tr>
<td>Pain</td>
<td>2.3 (1.0)</td>
<td>2.3 (1.0)</td>
<td>.75</td>
</tr>
<tr>
<td>Fatigue</td>
<td>2.9 (1.0)</td>
<td>2.9 (1.0)</td>
<td>.73</td>
</tr>
</tbody>
</table>

*Data are presented as number (percentage) unless otherwise indicated. COOP indicates Dartmouth Primary Care Cooperative Information Functional Health Assessment; WONCA, World Organization Project of National Colleges and Academics Chart.
†Chemotherapy burden was rated by one of the coauthors (J.H.S.), an experienced medical oncologist.
ported that the HRQL summary profile provided an accurate picture of their functioning and well-being, 57% reported that it was used explicitly during the medical visits; 79% believed that the summary enhanced their physician's awareness of their health problems, and 87% believed that it would be useful to introduce the intervention as a standard part of the outpatient clinic procedure. Approximately 25% of the patients indicated that they had discussed the HRQL summary profile with family members or close friends, and 6% had shared it with their family physician.

All physicians reported that the summary profile provided a useful, overall impression of their patients' symptom experience and functional health and indicated that it facilitated communication, especially with regard to psycho-social topics and “unexpected” symptoms (eg, sleep disturbances). Although all of the physicians indicated that they would like to continue use of the HRQL summary profile in their daily practice, several suggested that the information could be more tailored to the problems of specific patient groups (eg, site of pain and use of pain medication for patients with bone metastases).

**COMMENT**

As hypothesized, the intervention resulted in a significant increase in the frequency with which HRQL issues were discussed. The observed salutary effect of the intervention on patient-physician communication is particularly encouraging in that the most notable increase was in the discussion of HRQL issues that are less observable (ie, social functioning) or are of a more diffuse and long-term nature (ie, fatigue) and thus are often left unaddressed by health care practitioners.

No statistically significant between-group differences were observed in physicians’ awareness of the level of functioning or symptom experience of their patients. However, a series of within-group analyses indicated that, over time, physicians in the intervention group improved in their recognition of patients' with moderate or severe problems in 5 of the 7 HRQL domains covered by the COOP and WONCA. Again, it is noteworthy that substantial improvement was observed in the recognition of problems in areas that tend to be underestimated by health care practitioners (eg, emotional and social health, fatigue, and pain).

The intervention had only a modest effect on patient management activities, primarily in terms of increased levels of patient counseling. The only statistically significant difference between the intervention and control groups in patient satisfaction was in the perceived emotional support received from the physician. This is not trivial in that previous research has indicated that patients are significantly more likely to disclose information about their psychosocial functioning when their physician exhibits such supportive behavior. The failure to detect significant between-group differences in other aspects of patient satisfaction and in physician satisfaction may be because the levels of satisfaction tended to be high, leaving little room for improvement. Such a "ceiling-
ing” effect has been reported in other studies.8,13,32

Most patients exposed to the intervention and all of the physicians reported that the HRQL summary profile was useful in facilitating communication and in enhancing physician awareness of patients’ problems and favored continued use of the intervention as a standard part of the outpatient clinic procedure. An additional, unanticipated finding was that approximately 25% of the patients shared the results of the summary profile with family members or with their primary care physician. We consider this to be a positive spin-off, in that previous studies have shown that patients’ partners and formal caregivers are often less than fully informed about the patients’ HRQL33 and that problem-oriented feedback (eg, letters and lists) from medical specialists can be a useful means of keeping primary care physicians informed about their patients’ health status.34-36

The intervention had only a modest impact on patients’ self-reported HRQL over time as assessed by the SF-36. This was not unanticipated, given the complex array of factors that can affect patients’ health. Nevertheless, the finding that significantly more patients in the intervention than the control group improved by more than half an SD unit on the 2 SF-36 indicators of emotional health is encouraging.

We are cognizant of a number of limitations of our study. First, the results need to be interpreted with some caution because of the relatively large number of statistical tests performed. When correcting for multiple testing using the Hommel procedure,37 the between-group differences noted in the percentage of consultations in which specific HRQL topics were discussed no longer reached conventional levels of statistical significance. Nevertheless, statistically significant between-group differences were observed for the mean composite communication score and 10 of the 12 specific HRQL topics were discussed with greater frequency (in absolute terms) in the intervention than in the control group. These 2 findings suggest that the intervention had the intended, salutary effect on patient-physician communication.

Second, although the patient sample was large, the physician sample was limited. However, we have no reason to believe that the results are in any way atypical of what would be found with a larger group of physicians in that the participating physicians varied substantially in age, sex, and years of work experience.

Third, although the use of a crossover in the study design enabled us to largely neutralize any effect that might be attributed to physicians’ background characteristics, it also carried with it the risk of a carryover or contamination effect. In fact, some evidence was found suggesting that the physicians who

Table 4. Scores for the 36-Item Short-Form Health Survey Scales*

<table>
<thead>
<tr>
<th>Type of functioning</th>
<th>Control (n = 100)</th>
<th>Intervention (n = 114)</th>
<th>Control (n = 95)</th>
<th>Intervention (n = 104)</th>
<th>P Value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>57 (25)</td>
<td>55 (28)</td>
<td>52 (26)</td>
<td>53 (28)</td>
<td>.44</td>
</tr>
<tr>
<td>Social</td>
<td>70 (25)</td>
<td>72 (24)</td>
<td>63 (29)</td>
<td>65 (30)</td>
<td>.96</td>
</tr>
<tr>
<td>Role</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>35 (42)</td>
<td>35 (42)</td>
<td>31 (41)</td>
<td>36 (42)</td>
<td>.92</td>
</tr>
<tr>
<td>Emotional</td>
<td>74 (38)</td>
<td>73 (41)</td>
<td>60 (44)</td>
<td>69 (44)</td>
<td>.15</td>
</tr>
<tr>
<td>Bodily pain</td>
<td>68 (25)</td>
<td>68 (25)</td>
<td>66 (28)</td>
<td>68 (28)</td>
<td>.58</td>
</tr>
<tr>
<td>Vitality</td>
<td>53 (22)</td>
<td>54 (19)</td>
<td>49 (25)</td>
<td>51 (25)</td>
<td>.79</td>
</tr>
<tr>
<td>Mental health</td>
<td>73 (21)</td>
<td>73 (16)</td>
<td>68 (21)</td>
<td>70 (19)</td>
<td>.41</td>
</tr>
</tbody>
</table>

*Data are presented as mean (SD). Higher scores indicate better functioning.
†Based on stepwise linear regression analysis of scores at the fourth visit, controlling for patients’ sex, study period (precrossover or postcrossover), and baseline values.

Figure 3. Illustration of Possible Carryover Effect

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began in the experimental condition and subsequently crossed over to the control condition may have been sensitized to HRQL issues and may have changed their behavior during the period in which they were no longer exposed explicitly to the intervention. This can be illustrated by the pattern of results pertaining to the discussion of patients’ emotional functioning (Figure 3). In the absence of a carryover effect, one would expect that, both before and after the crossover, the percentage of baseline consultations in which patients’ emotional functioning was discussed would be similar for the groups that included the same physicians. This was, in fact, the case for those physicians who were first in the control group (36%) and then crossed over to the intervention (41%). However, the percentage of baseline consultations in which emotional functioning was discussed was considerably higher after crossover when physicians were first exposed to the intervention (22%) and then crossed over to the control group (39%) (P = .06). A similar pattern of results was observed when exploring other HRQL outcomes. Importantly, however, any such carryover effect would tend to have a conservative effect, because it would tend to suppress between-group differences in the principal study outcomes.

Finally, the study was conducted in a single hospital that specialized in the treatment of patients with cancer. Future studies are needed to evaluate the efficacy of the intervention in other treatment settings and with larger and more diverse physician and patient samples. In conclusion, our results support the use of standardized HRQL assessments in the palliative cancer treatment setting as a means of facilitating the discussion of HRQL issues and of heightening physicians’ awareness of their patients’ problems. Future efforts should be directed at improving the flexibility and precision of HRQL assessments and at linking patients’ HRQL (change) scores to specific treatment and care strategies.

Author Contributions: Study concept and design: Detmar, Muller, Schornagel, Weaver, Aaronson. Acquisition of data: Detmar, Schornagel, Weaver, Aaronson. Analysis and interpretation of data: Detmar, Muller, Aaronson. Drafting of the manuscript: Detmar, Schornagel, Aaronson. Critical revision of the manuscript for important intellectual content: Detmar, Muller, Schornagel, Weaver, Aaronson. Statistical expertise: Muller. Obtained funding: Schornagel, Aaronson. Administrative, technical, or material support: Muller, Weaver. Study supervision: Schornagel, Aaronson. Funding/Support: This study was supported by grant NKI 95-1134 from the Dutch Cancer Society, Amsterdam, the Netherlands.

REFERENCES
CORRECTIONS

Incorrect Data in Tables and Figures: In the Original Contribution entitled “Early and Sustained Dual Oral Antplatelet Therapy Following Percutaneous Coronary Intervention” published in the November 20, 2002, issue of THE JOURNAL (2002;288:2411-2420), there were incorrect numbers in several tables and figures. In Table 1 on page 2414, the data for statin use should have read 563 (53.5%) for clopidogrel and 609 (57.3%) for placebo, with a \( P \) value of .08. In the top half (1-year data) of Table 3 on page 2417, numbers of clopidogrel patients for CABG and non–CABG bleeding should have read 63 and 18, respectively. In the bottom half (28-day data) of Table 3, data for any major bleeding should have read 50 (4.7%) for clopidogrel and 38 (3.6%) for placebo, with a \( P \) value of .19. Data for nonprocedural major bleeding should have read 3 (0.3%) for placebo, with a \( P \) value of .62. Data for procedural major bleeding should have read 49 (4.7%) for clopidogrel and 35 (3.3%) for placebo, with a \( P \) value of .11. Data for any minor bleeding should have read 33 (3.1%) for clopidogrel and 24 (2.3%) for placebo, with a \( P \) value of .23. Data for procedural minor bleeding should have read 30 (2.9%) for clopidogrel and 23 (2.2%) for placebo, with a \( P \) value of .33.

In Table 4 on page 2418, for the outcomes of death or MI, clopidogrel data should have been 84 (8.0%). For the outcome of MI, clopidogrel data should have read 70 (6.6%), placebo should have read 90 (8.5%), and the RRR (95% CI) should have been 21.7 (~7.1 to 42.7). For stroke, placebo should have read 12 (1.1%) and the RRR (95% CI) should have been 25.0 (~7.9 to 68.4). Under “revascularization,” any TVR data should have read 139 (13.2%) for clopidogrel, 144 (13.5%) for placebo, and the RRR (95% CI) should have been 3.2 (~2.2 to 23.3). Data for any revascularization should have read 225 (21.4%) for clopidogrel and the RRR (95% CI) should have been 1.6 (~2.2 to 15.3).

In Figure 3, panel B, the number of patients for ACS “yes” should have been 583 and the RRR (95% CI) should have been 34.6 (63.4 to −16.9). In Figure 5, the number of patients for ACS “yes” should have been 1408 and the RRR (95% CI) should have been 27.5 (47.8 to −0.6).

None of these corrections substantively affects the results or conclusions of the article.

Incorrect Wording: In The Patient-Physician Relationship article entitled “Health-Related Quality of Life Assessments and Patient-Physician Communication: A Randomized Controlled Trial” published in the December 18, 2002, issue of THE JOURNAL (2002;288:3027-3034), there was incorrect wording and data in a table. The title of Table 2 that read “Patients’ Health-Related Quality of Life (HRQL) at Fourth-Visit Consultations” should read “Fourth-Visit Consultations Discussing Health-Related Quality of Life (HRQL).” Also in Table 2 in the “Physical” type of functioning row under the “Intervention” column that read “76 (73)” should have read “29 (28)” and the “Role” type of function row under the “Intervention” column that read “28 (27)” should have read “68 (66).” The differences between the control and intervention groups for those domains remain statistically nonsignificant.

Incorrect Link: In the Instructions for Authors published in the January 1, 2003, issue of THE JOURNAL (2003;289:104-110), the link for the STARD flow diagram and checklist was incorrect. On page 106, under “Reports of Diagnostic Tests,” the link should have read http://www.clinchem.org/cgi/content/full/49/1/1. The correct link appears in the Instructions for Authors online at http://www.jama.com.

Author Name Misspelled and Incorrect Affiliations: In the Research Letter entitled “Humming, Nitric Oxide, and Paranasal Sinus Obstruction” published in the January 15, 2003, issue of THE JOURNAL (2003;289:302-303), the name of the second author was misspelled. Rather than “Maniscalo,” the name should have been “Maniscalco.” Also, Dr Lundblad is affiliated not with the Department of Surgical Science, but with the Department of Otorhinolaryngology; and Dr Weitzberg is affiliated not with the Department of Otorhinolaryngology, but with the Department of Anesthesiology and Intensive Care.

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