

Original Investigation

Patient Perception of Physician Compassion After a More Optimistic vs a Less Optimistic Message

A Randomized Clinical Trial

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IMPORTANCE Information regarding treatment options and prognosis is essential for patient decision making. Patient perception of physicians as being less compassionate when they deliver bad news might be a contributor to physicians' reluctance in delivering these types of communication.

OBJECTIVE To compare patients' perception of physician compassion after watching video vignettes of 2 physicians conveying a more optimistic vs a less optimistic message, determine patients' physician preference after watching both videos, and establish demographic and clinical predictors of compassion.

DESIGN, SETTING, AND PARTICIPANTS Randomized clinical trial at an outpatient supportive care center in a cancer center in Houston, Texas, including English-speaking adult patients with advanced cancer who were able to understand the nature of the study and complete the consent process. Actors and patients were blinded to the purpose of the study. Investigators were blinded to the videos observed by the patient.

INTERVENTION One hundred patients were randomized to observe 2 standardized, roughly 4-minute videos depicting a physician discussing treatment information (more optimistic message vs less optimistic message) with a patient with advanced cancer. Both physicians made an identical number of empathetic statements (5) and displayed identical posture. After viewing each video, patients completed assessments including the Physician Compassion Questionnaire (0 = best, 50 = worst).

MAIN OUTCOMES AND MEASURES Patients' perception of physician compassion after being exposed to a more optimistic vs an equally empathetic but less optimistic message.

RESULTS Patients reported significantly better compassion scores after watching the more optimistic video as compared with the less optimistic video (median [interquartile range], 15 [5-23] vs 23 [10-31]; $P < .001$). There was a sequence effect favoring the second video on both compassion scores ($P < .001$) and physician preference ($P < .001$). Higher perception of compassion was found to be associated with greater trust in the medical profession independent of message type: 63 patients observing the more optimistic message ranked the physician as trustworthy vs 39 after the less optimistic message ($P = .03$).

CONCLUSIONS AND RELEVANCE Patients perceived a higher level of compassion and preferred physicians who provided a more optimistic message. More research is needed in structuring less optimistic message content to support health care professionals in delivering less optimistic news.

TRIAL REGISTRATION clinicaltrials.gov Identifier: NCT02357108

JAMA Oncol. 2015;1(2):176-183. doi:10.1001/jamaoncol.2014.297
Published online February 26, 2015.

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Information regarding treatment options and prognosis is essential for patient decision making at the end of life.

Patients report the need to access this information to make a decision about future planning.¹ When this information is delivered appropriately, it can have a positive impact on the patient and promote patient reassurance.²⁻⁷ The timing, amount, and quality of the information provided should be tailored to patients' specific needs, given that information preferences vary among patients and along the disease trajectory.^{2,5,6,8-11}

A large proportion of patients with advanced-stage cancer reach the end-of-life phase without having discussed these issues.¹ In a study of 1193 patients, Weeks et al¹² found that 69% and 81% of patients with advanced lung and colorectal cancer, respectively, were unaware that chemotherapy was not likely to cure their cancer. Patients who have undergone end-of-life conversations with their physicians are more likely to receive care consistent with their values.¹³ One of the possible contributors to insufficient communication is physicians' reluctance to discuss this topic with patients.¹¹

It is recognized that physicians frequently have difficulties in delivering bad news and that many physicians find this process stressful and demanding.¹⁴⁻¹⁷ Factors that influence the reluctance of physicians to deliver less optimistic messages to patients with advanced cancer include, among others, fear of being blamed, fear of destroying hope or provoking emotional distress, and fear of confronting their own emotions and death.^{11,17,18} One possible concern for physicians is that conveying a less optimistic message will make them be perceived as less compassionate by the patient ("shooting the messenger"). Although modern communication practices emphasize the importance of patients being fully aware of their medical condition, disclosure of less optimistic news was historically considered a potential source of suffering for patients.¹⁹

Compassion is defined as a deep awareness of the suffering of others and the desire to alleviate it.²⁰⁻²² A foundation of compassion is an essential component for patient-centered care and improved health care outcomes.²³⁻²⁵ Time, empathy, and communication have been found to be overarching themes of compassion.^{21,22,26,27} Studies have shown that brief exchanges can influence the patient perception of physician compassion.^{26,28}

The primary objective of this study was to examine patients' perception of physicians' compassion after the patient viewed 2 different videos: one that shows a physician conveying an empathetic and more optimistic message about treatment options to a patient with advanced cancer, and a second that shows another physician conveying to the same patient an equally empathetic but less optimistic message. Secondary objectives included examining patients' preference after watching the 2 videos and establishing demographic and clinical predictors of compassion to establish patients' physician preference regarding the type of message they hear independent of the compassion scores, and factors that may influence patients' perception of how compassionate a physician is.

At a Glance

- Better compassion scores were given to physicians delivering a more optimistic vs less optimistic message.
- Physicians delivering the more optimistic message were ranked as more trustworthy.
- Effort to structure less optimistic message content to support health care professionals in delivering bad news is needed.

Methods

The Institutional Review Board (IRB) at the University of Texas MD Anderson Cancer Center approved this study, and all patients gave written informed consent. The MD Anderson Cancer Center IRB did not require registration of this trial in a clinical trials registry. However, the trial was registered retrospectively in clinicaltrials.gov. The trial protocol is available in Supplement 1.

Patient Population

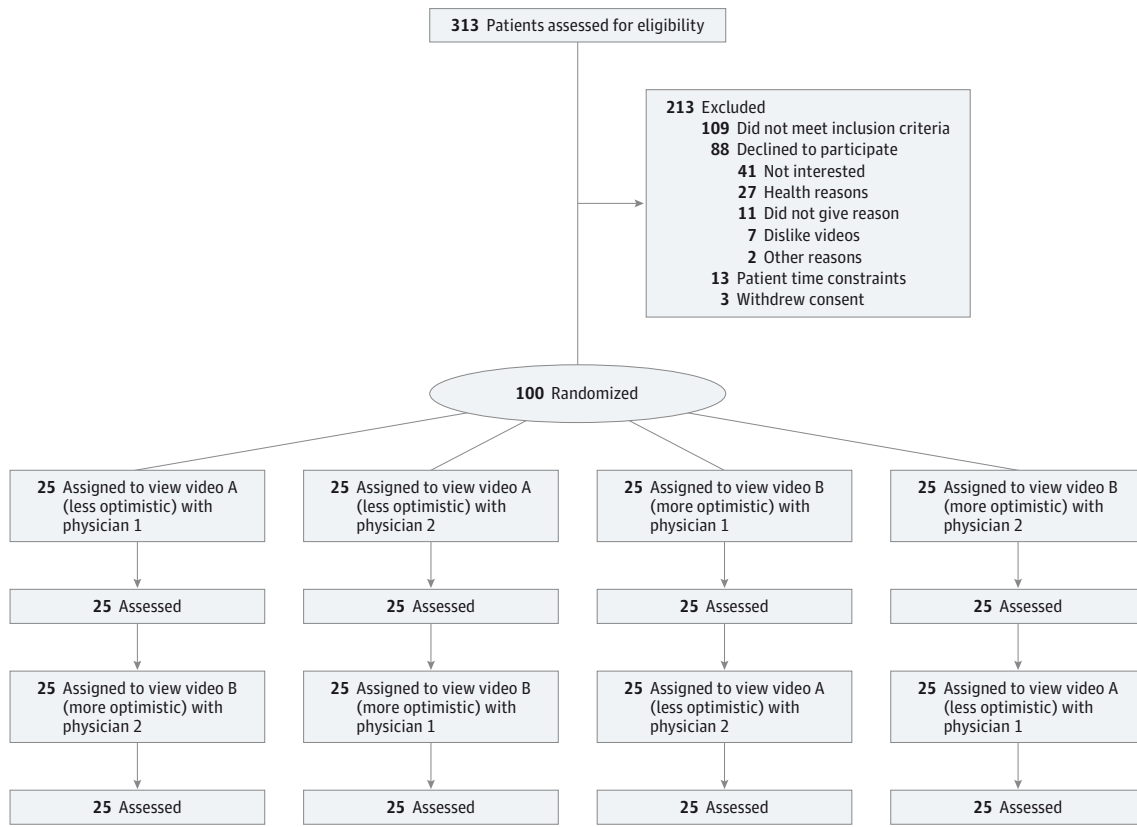
Eligible patients who attended the Supportive Care Clinic at MD Anderson Cancer Center were screened and subsequently asked to participate. Patients were included if they were 18 years or older; spoke English; and had a diagnosis of advanced cancer, defined as locally advanced, recurrent, or metastatic. Patients with impaired cognition as determined by the interviewer on the basis of the ability to understand the nature of the study and consent process and those experiencing severe physical and/or emotional symptoms capable of substantially interfering with study participation as determined by the attending palliative care physician were excluded. The potential participants were informed that the messages they would view were not in any way a reflection of their current disease process.

Interventions

Scripted video vignettes were used to deliver the intervention, which complied with recommendations by Hillen and van Vliet.^{29,30} After randomization, all patients watched 2 videos containing the 2 messages to the same patient (**Figure**). Accompanying caregivers were asked to step out or keep silent throughout the study. Each video lasted approximately 4 minutes and showed a professional actor portraying a physician discussing treatment and prognostic information with a professional actor portraying a patient with advanced cancer who had received several lines of chemotherapy, had poor performance status, and who was not a good candidate for additional therapy. In one video, the physician provided explicit information about the lack of further treatment options (video A: less optimistic). In the other video, the physician added vague information about possible future treatments, including a statement considering the possibility of further treatments if the patient improved in functional status (video B: more optimistic).

In each video, the physician role was played by 2 professional actors, who had similar physical characteristics in

Figure. Clinical Trial Flowchart



Flowchart shows the crossover study design. After patients viewed a video, they were assessed for their perception of physician compassion.

terms of sex, age, and race (male, middle aged, white). They acted the same way in each video, with the same body language and delivery of both messages, including the same number of empathic statements (5) and nonverbal communication, leading to 2 different less optimistic videos (script A in Supplement 2 performed by physicians 1 and 2) and 2 different more optimistic videos (script B in the Supplement 2 performed by physicians 1 and 2). An independent review of the videos was performed without sound by 3 of the authors (K.T., S.T., E.B.) to ensure that the physician’s expression and body posture when delivering the different messages was similar. Reviewers also compared the performance of the 2 actors, by listening only to the audio, to assess for any possible voice bias. In all the videos, the patient was portrayed by the same actress: a white woman approximately 50 to 60 years old.

Randomization and Blinding

Equal randomization was used to distribute patients (1:1:1:1) into the 4 video/physician sequence arms. In previous studies, we have seen that the sequence in which patients watched a video had an impact on their perception of physician compassion. These studies suggested that patients generally prefer the physician that they see in the second video.^{31,32} Therefore, a randomization of the sequence allowed us to control

for this bias. With this randomization strategy, we had 4 intervention groups.

The research coordinators (C.M., H.C.) and principal investigator (K.T.) were blinded to the allocation sequence throughout the study. Actors and patients were blinded to the specific hypothesis of the study.

Outcome Measures

The patients completed 3 sets of surveys during the experimental phase of the study: one set was completed before the first video was shown and the other sets done after each video was played. In the first set, we assessed patients’ demographic characteristics and current physical and psychological factors that could influence patient preferences, including symptom distress scores (Edmonton Symptom Assessment System [ESAS]),³¹⁻³⁴ anxiety and depression (Hospital Anxiety Depression Scale [HADS]),³⁵ hope (Herth Hope Index),^{36,37} disease acceptance (Peace, Equanimity, and Acceptance in the Cancer Experience [PEACE] scale),³⁸ patients’ information preference,³⁹ and trust in the medical profession.⁴⁰ After each video, the patient evaluated the physician who delivered the information, including physician compassion and professionalism. After completing the assessments, patients were asked to choose which physician they preferred and their reason for the preference.

Primary Outcome Measure: Physician Compassion Questionnaire

The main outcome was patients' rating of physicians' compassion using a 5-item tool consisting of 5 numerical ratings on a scale of 1 to 10 assessing 5 dimensions: warm/cold, pleasant/unpleasant, compassionate/distant, sensitive/insensitive, and caring/uncaring.^{28,31,32,41,42} The sum of the 5 scales gave a final score representing physicians' compassion on a 0 to 50 scale. The results are inversely interpreted, with lower scores meaning higher physician compassion. Internal consistency of the scale was shown by a Cronbach α coefficient of 0.92, indicating that it measured a single, consistent concept. This scale was developed by Fogarty and colleagues²⁸ and has been used to determine perception of compassion in several clinical studies.^{31,32,41}

Secondary Outcome Measures

Physician Professionalism Questionnaire

A 6-item questionnaire adapted from the General Medical Council patient questionnaire was used to assess professional performance including patients' perception of the physicians' trustworthiness and ability to provide care after each video.⁴³ The physician was considered trustworthy and able if the rating was at least 4. Reliability of the original 9-item questionnaire was $\alpha = 0.962$.

Edmonton Symptom Assessment System

A 10-item self-administered measure was used to assess symptoms on a visual analogue scale of 0 to 10 with higher scores indicating worse symptom burden. Symptoms measured include pain, fatigue, nausea, anxiety, depression, drowsiness, anorexia, shortness of breath, insomnia, and well-being.^{33,34} Interrater weighted κ analysis showed strongest agreement for well-being (0.78), anxiety (0.72), and depression (0.71).⁴⁴

Hospital Anxiety Depression Scale

A 14-item self-administered scale split between anxiety and depression subscales, designed to measure psychological distress primarily in nonpsychiatric populations, was administered. Internal consistency showed Spearman correlations of $r = 0.70$ for depression and $r = 0.74$ for anxiety.³⁵

Herth Hope Index

A 12-item questionnaire, with internal consistency of $\alpha = 0.97$, was used to assess components of hope. It was composed of 3 subscales: temporality and future, positive readiness and expectancy, and interconnectedness.³⁴⁻³⁶ Degree of hopefulness was captured on a 10-point scale, with a higher score signifying less hope.

Peace, Equanimity, and Acceptance in the Cancer Experience Scale

A 12-item questionnaire developed to measure the extent of acceptance of or struggle with their terminal illness experienced by patients with advanced cancer, containing a 5-item subscale on peaceful acceptance of illness, was administered.³⁸ Degree of acceptance of the disease was captured on a 10-point scale, with a higher score signifying less acceptance. In-

ternal consistency ranged from $\alpha = 0.78$ to 0.81 for the 2 subscales of the instrument.³⁸

Patients' Information Preference

A 3-item questionnaire was used to determine the type of information patients preferred: detailed vs general information, all vs part of the information, and realistic vs optimistic message.³⁹

Trust in Medical Profession

A 5-item scale with internal consistency of $\alpha = 0.87$, developed as an abbreviated instrument to measure trust as a key element in a therapeutic relationship, was administered. The total sum of responses is scored on a 5 to 25 scale, with higher values indicating more trust.⁴⁰ Degree of trust was captured on a 10-point scale with a higher score signifying less trust. This scale was used as a baseline measure of trust in the medical profession prior to watching the videos.

Statistical Considerations

The primary outcome of physician compassion was tested using compassion data from the first video viewed by each patient. A sample size of 50 patients per group ("more optimistic" and "less optimistic") provided 80% power for a 2-sided 2-sample t test to detect an effect size of 0.57 when the type I error rate is set at 5%. The observed effect size is calculated as the difference of the means divided by the pooled standard deviation of the 2 groups, resulting in an observed effect size of 0.535 (6.9/12.9) and post hoc power of 75%. We determined whether the proportion of patients who preferred the optimistic message was different from the proportion of patients who preferred the realistic message by assessing the patient's preference for physician as a surrogate for the message. A sample size of 100 achieved 83% power to detect a difference of 0.15 using a 2-sided binomial test. The target significance level was .05. These results assumed that the population proportion under the null hypothesis is 0.5. NCSS PASS 2005 software was used to perform statistical tests.

We tested whether the proportion of patients preferring the optimistic message differed by video sequence using a χ^2 test. Standard descriptive statistics including means, medians, standard deviations, ranges, proportions, and frequencies, together with 95% confidence intervals, were computed for all study variables. Mixed-model techniques were used to further explore the primary hypothesis using compassion results from both videos for each patient and accounted for treatment, time, and patient effects. Adjusted logistic regression analysis was used to explore demographic and clinical predictors of physician preference. A crossover analysis was performed to test for impact of the order of videos on perception of physician compassion and to allow the patient to express physician preference. Analysis was performed using SAS software, version 9.2.

Results

One hundred patients were randomized between May 2013 and March 2014, and all were evaluable. Patient characteristics are summarized in **Table 1**. Median age was 57 years, and 52% were female. The majority of the sample was white (78%).

Table 1. Patient Demographic Characteristics and Variables

Variable	Value (N = 100)
Age, median (IQR)	57 (49-64)
Female sex, No.	52
Ethnicity, No.	
White	78
African American	8
Hispanic	7
Others	7
Marital status, No.	
Married	58
Not married	42
Education level, No.	
At least completed college	42
Less than college	55
Unknown	3
Religion, No.	
Christian/Protestant/Catholic	80
Other	20
Primary cancer diagnosis, No.	
Breast	16
Gastrointestinal (colon, liver, pancreas)	19
Genitourinary	7
Gynecological	10
Head and neck	15
Lung	18
Other	15
Cancer stage, No.	
Locally advanced	20
Metastatic	74
Recurrent	6
Previous cancer treatment, No.	
Chemotherapy	
1-2 Types	42
>2 Types	47
Targeted therapy/phase 1	19
Radiation	61
Surgery	57
Other	6
ESAS, median (IQR)	
Pain	3 (2-6)
Fatigue	4 (2-6)
Nausea	1 (0-3)
Depression	1 (0-3)
Anxiety	2 (0-4)
Drowsiness	2 (0-4)
Shortness of breath	2 (0-4)
Appetite	4 (2-6)
Sleep	3 (1-5)
Well-being	4 (2-5)
ECOG, median (IQR)	2 (1-2)
HADS, median (IQR)	
Anxiety	7 (4-9)
Depression	6 (3-9)

(continued)

Table 1. Patient Demographic Characteristics and Variables (continued)

Variable	Value (N = 100)
PEACE, median (IQR)	
Total	17 (15-19)
Degree	3 (1-5)
Trust in medical profession, median (IQR)	
Total	13 (11-14)
Degree	2 (1-4)
Herth Hope Index Total, median (IQR)	22 (20-25)
Hopefulness degree, median (IQR)	2 (0-5)
Patient's Information Preference, median (IQR)	
Detailed	22 (10-28)
General	31 (15-46)
All possible	22 (11-30)
Part	31 (24-50)
Optimistic	28 (25-33)
Realistic	22 (10-29)

Abbreviations: ECOG, Eastern Cooperative Oncology Group Performance Status; ESAS, Edmonton Symptom Assessment System; HADS, Hospital Anxiety Depression scale; IQR, interquartile range; PEACE, Peace, Equanimity and Acceptance in the Cancer Experience.

Primary Outcome

Comparing the first video only, patients reported significantly lower compassion scores (reflecting higher physician compassion) after the more optimistic video as compared with the less optimistic video (median [interquartile range {IQR}], 19 [9-27] vs 26 [14-34]; $t = -2.67, P = .009$) (Table 2). In the less optimistic video group, patients' median (IQR) perceptions of compassion were 28 (16-36) for physician 1 and 25 (10-33) for physician 2 ($P = .38$). In the more optimistic video group, patients' median (IQR) perceptions were 15 (7-28) for physician 1 and 20 (8-27) for physician 2 ($P = .62$; Table 3). On the basis of the Patient's Information Preference instrument, there was no significant difference between patients' preference of listening to an optimistic (median, 28 [IQR, 25-33]) vs a realistic message (median, 22 [IQR, 10-29]; $t = 2.04, P = .06$) prior to watching both videos.

In the crossover analysis, there was no significant carry-over effect seen ($t = -0.35, P = .73$), allowing us to test the message and order effects. The more optimistic message resulted in significantly better compassion scores ($P < .001$; Table 2). We also observed a significant order effect, with compassion scores consistently better after the second video ($t = -3.85, P < .001$) (Table 2). Analyzing the results for the second video only, the median (IQR) compassion scores for the more optimistic video message were 10 (5-17) vs 17 (8-27) for the less optimistic video message ($t = -2.14, P = .04$). Overall physician compassion score by sequence observed showed that the second physician observed had better compassion scores, with a median (IQR) of 14 (5-23) vs 23 (11-30) for the first physician observed ($P < .001$).

Secondary Outcomes

Our findings for physician preference were that 57 patients (57%) preferred the one delivering the more optimistic message,

Table 2. Physician Compassion Score Comparison

Video	Physician Compassion Score Comparison, Median (IQR) (N = 100)	
	After First Video ^a	Crossover ^b
More optimistic	19 (9-27)	15 (5-23)
Less optimistic	26 (14-34)	23 (10-31)

Abbreviation: IQR, interquartile range.

^a Mann-Whitney test, $P = .009$.

^b t Test, $P < .001$.

21 patients (21%) expressed no preference, and 22 patients (22%) preferred the physician who delivered the less optimistic message. There was also a significant order effect on physician preference ($P < .001$). There was no significant actor effect (physician 1 vs physician 2) on preference of the message ($P = .69$).

On the basis of the Physician Professionalism Questionnaire, 63 patients observing the more optimistic message ranked the physician as trustworthy vs 39 after the less optimistic message ($P = .03$). Seventy-three patients observing the more optimistic message vs 50 after the less optimistic message ranked the physician as able ($P = .02$).

In the univariate analysis, degree of trust in the medical profession ($P < .001$), ESAS fatigue ($P = .02$), ESAS anxiety ($P = .03$), ESAS depression ($P = .04$), and ESAS pain ($P = .07$) were associated with a higher perception of compassion independent of message conveyed. Only degree of trust remained in the multivariate model (along with message and sequence) after backward elimination of all significant variables. None of the other variables including Herth Hope Index, HADS, PEACE, patient information preference, cancer stage, and other ESAS items showed a significant association with compassion. After adjustments for message and sequence effects, each point less degree of trust in the medical profession corresponded to a 1.75 point decrease in perception of physician compassion.

Discussion

In this randomized clinical trial, we found that physicians delivering a more optimistic message were perceived as more compassionate as compared with equally empathetic physicians delivering a less optimistic message. There was no significant difference in perception of compassion or preference when comparing the 2 physicians, suggesting that the professional actors provided an equally empathetic intervention. To our knowledge, this is the first randomized clinical trial aimed at determining the impact of content of communication in the perception of physician compassion.

In a study on patients with advanced cancer, Weeks et al¹² reported that patients who were less aware of their prognosis rated their physicians' communication higher. Back et al⁴⁵ described the challenge of hoping for the best in patients facing life-threatening illness. Adequate symptom management, psychosocial support, and existential issues may be missed when

Table 3. Median Physician Compassion Score by Physician per Video Group

Video	Physician Compassion Score, Median (IQR)	<i>P</i> Value
Less Optimistic		
Physician 1 (n = 25)	28 (16-36)	.38
Physician 2 (n = 25)	25 (10-33)	
More Optimistic		
Physician 1 (n = 25)	15 (7-28)	.62
Physician 2 (n = 25)	20 (8-27)	

Abbreviation: IQR, interquartile range.

the physicians and patients focus solely on hope of curative options. Discussions on a lack of curative options and potential death are often difficult conversations. Our findings suggest that extra support is needed for patients and families and extra care is necessary from physicians when the news is less optimistic as physicians face a challenge to deliver honest prognostic information while still preserving hope.⁴⁶ The results support previous findings that the content of the message, and not only the manner in which it is conveyed, might affect patients' perception of physician compassion and preference. In a survey of 220 outpatients with cancer in the United Kingdom, patients reported that when listening to bad news, the content of the message delivered was the most important aspect of communication, whereas supportive aspects of communication were rated lower although still important.⁴⁷ Further research is needed to determine whether these conversations are equated to physicians delivering bad news being perceived as less compassionate and the effect that this has on physician-patient communication regarding treatment and prognostic information.

Our findings confirmed an order effect on compassion scores and physician preference. In 2 previous randomized clinical trials on physician posture,^{31,32} we found that patients preferred the second physician that they observed. A possible explanation of this sequence effect is that dialogue on difficult topics may need to be repeated and processed to become acceptable. Hence, patients may perceive that the physician is more thoughtful during the second visit and that they themselves are also more ready to make difficult informed decisions regarding their cancer care.³¹ Unfortunately, end-of-life discussions are rarely held early in the disease process.^{11,41} The order effect favoring the second video that we observed in this, as well as our 2 previous randomized clinical trials, has not been observed in all video vignette studies, and therefore our findings must be considered preliminary and should be tested in future research. However, this information should be considered in the delivery of treatment options by specialists to patients and also in the design of clinical research on physician-patient communication.^{31,32}

Perception of a higher degree of compassion was associated with higher degree of trust in the medical profession independent of the type of message. It is of interest that few variables showed a univariate association with compassion. Our findings suggest that future studies on physician compassion

should be controlled for trust level. More research is needed to better understand contributors to patient perception of physician compassion.

A limitation of the study was that it was conducted on patients with advanced cancer who had already received multiple courses of treatment and been exposed to the delivery of bad news multiple times. It is possible that the results would be different for patients at an earlier stage in the disease trajectory, and this may hold true as well for patients seen in institutions without palliative care services. Furthermore, results may be different in situations in which the patient has had a long-standing trusted relationship with a physician. Another limitation was that the video vignettes were reviewed by 3 of the authors (K.T., S.T., E.B.). Professionals trained to code emotional expressions would have been more ideal as reviewers. The use of backward correction to determine the multivariable analysis is also a limita-

tion of the study, particularly in that it is not a universally accepted statistical method.

Conclusions

The finding that patients perceived a higher level of compassion and preferred physicians providing a more optimistic message may explain physicians' reluctance to give bad news because of fear of being perceived to be less compassionate. Further research and educational techniques in structuring less optimistic message content would help support professionals in delivering bad news, as well as decreasing the burden of feeling less compassionate in these instances. At the same time, improved delivery of treatment and prognostic information would enable patients to make a more informed decision.

ARTICLE INFORMATION

Accepted for Publication: December 26, 2014.

Published Online: February 26, 2015.
doi:10.1001/jamaoncol.2014.297.

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Author Contributions: Drs Tanco and Rhondali had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. Drs Tanco and Rhondali served as co-first authors, each with equal contribution to this manuscript.

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Administrative, technical, or material support:

Frisbee-Hume, Williams, Masino, Cantu, Sisson,

Arthur, Bruera.

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Conflict of Interest Disclosures: None reported.

Funding/Support: Departmental funds were used for the study. The videos were created with the

assistance of University of Texas (UT) Television, including provision of the actors.

Role of the Funder/Sponsor: The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

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Invited Commentary

The Complexities of Compassion in Patient Care

Teresa Gilewski, MD

The practice of medicine is an art, not a trade, a calling, not a business; a calling in which your heart will be exercised equally with your head.^{1(p386)}

William Osler, MD, 1849-1919

The eloquent and provocative insights of the renowned physician William Osler imply that medicine cannot be viewed exclusively as a data-driven entity. Today, business is substantially



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intertwined with the medical system. Yet, at the core of the day-to-day care of patients, there are a myriad of human interactions. They incite an awareness of suffering in its many forms, including the physical, psychological, social, financial, and existential aspects of illness. The scientific and technological response to the anguish of illness may

at times substitute for or overshadow attention to the heartfelt reaction that Osler considered so important.

Many terms have been used to describe this heartfelt response including compassion, kindness, empathy, understanding, and humanistic attitudes. Compassion—“a sympathetic consciousness of others' distress together with a desire to alleviate it”²—is arguably an integral component of optimal medical care. A recognition and alleviation of patients' distress and an awareness of its broader effect on family members is a goal that many physicians strive to attain.

Yet, unfortunately, a seamless integration of compassion with the scientific and business components of medicine has yet to be achieved for multiple reasons. The current focus of medical education, the subjectivity of the compassionate interaction, the personal impact of compassion on the physi-