

# Can 40 Seconds of Compassion Reduce Patient Anxiety?

By Linda A. Fogarty, Barbara A. Curbow, John R. Wingard, Karen McDonnell, and Mark R. Somerfield

**Purpose:** To use a standardized videotape stimulus to assess the effect of physician compassion on viewers' anxiety, information recall, treatment decisions, and assessment of physician characteristics.

**Participants and Methods:** One hundred twenty-three healthy female breast cancer survivors and 87 women without cancer were recruited for this study. A randomized pretest/posttest control group design with a standardized videotape intervention was used. Participants completed the State-Trait Anxiety Inventory (STAI), an information recall test, a compassion rating, and physician attribute rating scales.

**Results:** Women who saw an "enhanced compassion" videotape rated the physician as warmer and more caring, sensitive, and compassionate than did women who watched the "standard" videotape. Women who saw the enhanced compassion videotape

were significantly less anxious after watching it than the women in the other group. Nevertheless, information recall was relatively low for both groups, and enhanced compassion did not influence patient decisions. Those who saw the enhanced compassion videotape rated the doctor significantly higher on other positive attributes, such as wanting what was best for the patient and encouraging the patient's questions and involvement in decisions.

**Conclusion:** The enhanced compassion segment was short, simple, and effective in decreasing viewers' anxiety. Further research is needed to translate these findings to the clinical setting, where reducing patient anxiety is a therapeutic goal.

*J Clin Oncol* 17:371-379. © 1999 by American Society of Clinical Oncology.

... and as I left his office, he said, "you know, you have a very bad disease, but we are going to take care of you." The doctor-patient relationship was incredibly therapeutic and reassuring. I had no qualms, no doubts with putting my life in his hands. I had full confidence in his expertise, his concern and emotional support.

Breast cancer survivor

**B**REAST CANCER PATIENTS FACE difficult and critical treatment decisions on the heels of discovering that they have a life-threatening disease. Within this context, oncologists provide the news of both the disease and potential treatment options—both the threat of demise and the hope of survival. Consequently, during the cancer consultation, when physicians are describing treatment options, patients' anxiety is likely to be very high.<sup>1,2</sup> The immediate effects of this anxiety on cancer patients has not been systematically examined. However, according to what is known about anxiety and information processing,<sup>3,4</sup> anxiety is likely to interfere with patients' ability to obtain the very information they seek from physicians, information essential for a balanced treatment decision. Additionally, evidence suggests that a breast cancer patient's perceptions of her physician's behavior during the diagnostic consultation may influence her long-term psychologic adjustment.<sup>5</sup> One could also speculate that a patient's anxiety during the initial consultation might undermine the foundation of the new physician-patient relationship. Reducing anxiety during the consultation, therefore, may lead to better patient understanding, a stronger physician-patient relationship, and, ultimately, enhanced patient well-being.

Little research has been devoted to identifying methods to reduce patients' anxiety during the medical consultation.

However, substantial evidence suggests that provision of information may play a role. For example, in a review of 34 intervention studies to increase patients' psychosocial and informational preparedness, benefits of increased preparedness (for example, reductions in pain and use of analgesics, and an average 2-day reduction in hospital stay) were found in 85% of the studies.<sup>6</sup> Another study assessed the benefits of a 12-minute slide-tape presentation on treatment information in a study of 60 cancer patients receiving radiotherapy treatment.<sup>7</sup> The 30 patients receiving the slide-tape presentation on radiation therapy scored significantly higher on a knowledge questionnaire at the beginning of treatment and had lower-state anxiety scores during the last week of treatment, compared with the control group. Informational preparedness may also decrease morbidity. For example, in one study, cancer patients who received their medical charts before the physician consultation and were given training on active participation in the doctor-patient interaction had fewer symptoms during the course of chemotherapy.<sup>8</sup>

---

From the Department of Health Policy and Management, Johns Hopkins University School of Hygiene and Public Health, Baltimore, MD; Division of Hematology-Oncology, University of Florida Health Science Center, College of Medicine, Gainesville, FL; and American Society of Clinical Oncology, Alexandria, VA.

Submitted May 11, 1998; accepted August 31, 1998.

Supported by grant no. R03HSO8449 from the Agency for Health Care Policy and Research.

Address reprint requests to Linda Fogarty, PhD, Johns Hopkins University School of Hygiene and Public Health, 624 North Broadway, Baltimore, MD 21205; Email lfogarty@jhsph.edu.

© 1999 by American Society of Clinical Oncology.  
0732-183X/99/1701-0371\$3.00/0

Some suggest that it is not merely information, but the inferences patients make about the meaning of the information, that reduces anxiety levels.<sup>9</sup> Others speculate that the very act of providing complete information during this difficult period increases the patient's perception of the physician as compassionate, caring, and empathic, and it is this perception, not the facts provided, that relieves a patient's anxiety.<sup>10,11</sup> A look at the literature by medical ethicists and patient advocates reveals, not surprisingly, that empathy and compassion are valued and are assumed to have positive patient outcomes. Empathy and compassion are increasingly considered important topics for medical student training,<sup>12,13</sup> essential components of the physician-patient relationship, and the foundations of ethical medical practice.<sup>14-17</sup> Breast cancer activists also appeal for more physician compassion and for greater awareness of the difficulties patients have in understanding medical information after the trauma of a cancer diagnosis.<sup>18</sup> Although there seems to be agreement that provider compassion is a good thing, few studies have assessed the amount of provider compassion in physician-patient encounters<sup>19,20</sup> or have systematically evaluated compassion's effect on patients.<sup>21</sup>

However, results of studies investigating physician-patient communication style and its effects on patients provide strong indirect support for the link between physician compassion and enhanced patient outcomes. A recent review of 21 studies of physician-patient communication found relationships between the quality of communication and several patient outcomes, such as increased physical function and emotional health and decreased physical symptoms and pain.<sup>22</sup> In a meta-analysis of studies on the effects of physician communication styles, Hall and colleagues<sup>23</sup> found that three dimensions of communication—*informativeness*, *interpersonal sensitivity*, and *partnership building*—were related to patient satisfaction, compliance, and medical information recall. More closely related to compassion, studies have found that “*affiliative physician style*” (eg, *friendliness*, *interest*, *empathy*, *social orientation*),<sup>24</sup> asking patients more questions about psychosocial topics,<sup>25</sup> and physician courtesy and competence<sup>26</sup> were related to patient satisfaction.

Finally, one study found that breast cancer patients who rated more favorably their physicians' behavior during the diagnostic interview (eg, “the doctor understood my fears,” “the doctor was warm and caring,” “I was given information”) had significantly better psychologic adjustment 6 months after breast cancer surgery.<sup>27</sup> Although compassion was not isolated specifically in any of these studies, together, they suggest that compassion may play an important role in a satisfying physician-patient relationship and may bring about positive patient outcomes.

To examine the importance of physician compassion to breast cancer patients making treatment decisions, this study used an experimental design to address the following study questions: (1) Can perceptions of physician compassion be easily varied? (2) Does physician compassion influence patients' anxiety levels? (3) Does physician compassion increase information recall? (4) Does hypothetical treatment choice vary according to physician compassion? (5) Does physician compassion influence perceptions of other physician attributes related to the physician-patient relationship? To answer these questions, a series of standardized videotaped scenarios of a physician describing metastatic breast cancer treatment options to a patient were developed that varied the level of compassion that the physician demonstrated to the patient. In this study, we use the Webster's dictionary definition of compassion as “*sympathetic concern for the suffering of another, together with the inclination to give aid or support or to show mercy.*”<sup>28</sup>

## PARTICIPANTS AND METHODS

### *Videotape Development*

To test our study questions, we developed a series of videotapes based on audiotaped consultations between two medical oncologists at two university hospitals and seven of their patients diagnosed with metastatic breast cancer. All of the taped consultations shared the following five components: an introduction of patient and physician; a summary of previous treatment; a statement of the objectives of the consultation and treatment (in this case, high-dose chemotherapy [HDC] with bone marrow rescue); a description of the treatment risks, side effects, and benefits; and an overview of the treatment procedures. Next, we wrote a script that included all five components, using the oncologists' own words from taped consultations where possible. In addition, we included a detailed description of an alternative treatment option—*standard, low-dose chemotherapy (LDC)*—which was not included in the consultations we listened to but was necessary to study the treatment decision-making questions central to this study. We then recorded a videotape, with an oncologist (J.R.W.) acting the part of the physician and reciting the prepared script, and a woman who had not had cancer previously acting the part of the patient. We created separate versions of the videotape that altered, in turn, each independent variable. Only one of the two independent variables, physician compassion, is described here. (The second was physician credibility or power. No interactions were found between conditions on all outcomes. Therefore, for the purposes of this article, subjects were collapsed across groups of the second independent variable for all analyses.)

*Standard videotape.* The dramatized oncologist-breast cancer patient consultation lasted approximately 18 minutes; it was shorter than a real consultation but contained the same basic information. In the “*standard*” videotape version, the physician described two options for metastatic breast cancer, HDC and LDC, and provided information on treatment risks and benefits, the probabilities of short- and long-term survival, and the probabilities of side effects.

*Enhanced compassion videotape.* This study was designed to vary viewers' *perceptions* of the physician's compassion by varying the

actor's behaviors that expressed support, sympathy, and compassion for the patient's difficult situation both in words and by touch. The "enhanced compassion" videotape was identical to the standard videotape (ie, the same footage was used) except for the addition of two short segments. In these two segments, the physician acknowledged the psychologic concerns of the patient, expressed partnership and support, validated her emotional state and the difficulty of making a decision with this uncertainty, touched her hand, and tried to reassure her. The brief segments were as follows:

*Segment 1:* I know this is a tough experience to go through and I want you to know that I am here with you. Some of the things that I say to you today may be difficult to understand, so I want you to feel comfortable in stopping me if something I say is confusing or doesn't make sense. We are here together, and we will go through this together.

*Segment 2:* I know this is a tough time for you and I want to emphasize again that we are in this together. I will be with you each step along the way.

Segment 1 appeared near the beginning of the videotape, before the physician provided treatment information. Segment 2 came close to the end of the consultation.

In all versions of the videotape, the oncologist provided a treatment recommendation at the patient's request. To determine the concordance between physician recommendations and viewers' decisions without confounding treatment type, HDC was recommended in half of the videotapes, and LDC was recommended in the remainder.

Four focus groups were conducted to pilot test the videotapes, two with breast cancer survivors and two with women who had never had cancer. On the basis of focus group findings, the videotapes seemed to be both realistic and appropriate for the intended audience.

Next, a 2 (enhanced compassion *v* standard compassion)  $\times$  2 (cancer survivors *v* subjects with no history of cancer) factorial design experiment was conducted to evaluate the study questions.

### Subjects

Both breast cancer survivors and women who had never had cancer were recruited for this study because other studies have found differences in hypothetical decision making between the two groups<sup>29,30</sup> and because we believed that using survivors might make our results more generalizable than using only women who had never had cancer.

*Cancer survivor sample.* Female breast cancer survivors were recruited from two local breast cancer support groups. Support group representatives sent contact letters to women on their mailing lists and published an informational article presenting the study in their quarterly newsletter. The 334 letters sent to eligible members of this group yielded 152 respondents, 130 of whom were willing and able to participate, yielding a response rate of 39%. We had no access to information about support group members who did not respond; therefore, no comparisons on demographic characteristics could be made between those who responded and those who did not. Only 123 of the 130 volunteers participated in the study.

All survivors were screened by telephone before the study. Only women whose breast cancer diagnosis had been made at least 6 months previously, who were relatively healthy (ie, reported that their health was excellent, very good, good, or fair, but not poor), and who had had no disease recurrence were asked to participate.

*No-cancer sample.* Participating survivors nominated female friends, family members, or co-workers to serve as a comparison group for the study. The 87 women nominated in the no-cancer sample were matched to cancer survivors on age, race, and education. Women in the no-cancer sample were also screened by phone to verify that they were relatively healthy and had never had cancer. Although women in this sample had never had cancer, they reported having an average of three close friends or relatives with a history of breast cancer.

### Measures

*Physician compassion.* Participants rated the physician's compassion using a semantic differential format containing five pairs of physician characteristics. The characteristics were warm/cold, pleasant/unpleasant, compassionate/distant, sensitive/insensitive, and caring/uncaring. The paired physician characteristics were presented together, separated by a 10-cm line. For example, "warm" was the left anchor of the line, and cold was the right anchor. Participants were instructed to "please let us know what you thought of the physician in the video by putting an X on the line closest to the appropriate characteristic. For example if you thought the physician was very warm, put the X very close to the word "warm" on the line. If you thought he was neither warm nor cold, put the X in the middle of the line. The closer the X is to the word, the more of that characteristic the physician displayed." The distance of the X from the left anchor was calculated in millimeters, such that each item had a possible range of 0 to 100. The five items were summed, reflecting the extent to which viewers perceived the physician as compassionate. The scale was internally consistent (Cronbach's alpha coefficient, .92), reflecting that it measured a single, cohesive construct.

*Anxiety.* Anxiety was measured using the state version of the widely used and tested State-Trait Anxiety Inventory (STAI).<sup>31</sup> The state anxiety scale (STAI-S) provides an assessment of transient (or state) anxious mood and is commonly used to measure immediate changes in anxiety induced by experimental procedures. In our study, the alpha coefficient was .92 at pretest and .94 at posttest. Evidence supporting the content, convergent, divergent, and construct validity of the STAI scales is abundant.<sup>24</sup>

The STAI-S has 20 items, which are answered on a 4-point scale. Subjects were directed to "indicate how you feel right now, that is, at this moment" to statements such as "I feel calm" and "I am worried." The four response choices were 1 = not at all, 2 = somewhat, 3 = moderately so, and 4 = very much so.

*Treatment information recall.* A total treatment information recall score reflected the amount of information understood and remembered from the physician's treatment description in the videotapes. Three types of items made up the 54-item total information recall score: (1) treatment side effects (29 items), (2) probability of side effects (eight items), and (3) treatment outcome information, such as survival and treatment purpose (17 items). Potential treatment side effects were listed for both LDC and HDC treatments, and subjects were asked to identify the side effects mentioned by the physician for each treatment and to write in the corresponding probability or chance that the patient would experience the specified side effects. In addition, questions about treatment outcomes information were asked. For example, subjects were asked how many women out of 100 would die from each treatment, how many would be alive and free of cancer 3 years after treatment, and how long it usually took before a patient could return to work after treatment.

All 54 information recall items were coded as correct or incorrect based on information in the videotape transcript and were summed to create a total treatment information recall score with a possible range of 0 to 54.

**Hypothetical treatment decision.** Subjects were asked, "If you had to choose right now between the standard low-dose chemotherapy and high-dose chemotherapy, which treatment would you choose?" They were given the following response options: "high-dose chemotherapy," "low-dose chemotherapy," "no treatment," or "I would leave it up to my physician."

**Perceptions of physician attributes.** To assess the extent to which compassion influenced participants' perceptions of more general physician attributes, five pairs of statements were presented using a semantic differential format (possible range, 0 to 100). The following items were included: (1) "wants what's best for the patient" versus "wants what's best for himself"; (2) "encourages patient involvement in treatment decision" versus "discourages patient involvement in treatment decision"; (3) "encourages patient's questions" versus "discourages patient's questions"; (4) "acknowledges patient's emotions" versus "ignores patient's emotions"; and (5) "cares about the patient" versus "does not care about the patient."

### Procedure

Breast cancer survivors recruited from participating support groups were randomly assigned to study groups (Fig 1). Approximately half of the women (n = 63) were assigned to a condition containing the enhanced compassion segment, and about half were assigned to the standard condition (n = 60). Breast cancer survivors were called, screened to confirm eligibility, and scheduled for testing. Names and phone numbers of possible matched control women were obtained during the scheduling call. Women without cancer who were willing to participate were assigned to the same group as the survivor who nominated them. This strategy helped to limit variability between the two samples along matched dimensions (ie, age, education, and race), without limiting comparisons of interest between the assigned treatment groups.<sup>32</sup> Forty-four of the matched control women were assigned to a condition containing the enhanced compassion segment, and 43 were assigned to the standard condition. Women without cancer were contacted by phone, screened for eligibility, and scheduled for testing. Participants were paid \$20.00 for their participation.

Participants watched the videotape in small groups (ie, two to seven women per group) but were requested not to converse until the study was complete. Participants read and signed a consent form approved by Johns Hopkins University's institutional review board. Next, participants completed a questionnaire, including demographic characteristics and the STAI-S. Participants watched the 18-minute videotape version appropriate for their group and then completed a second questionnaire,

		<u>Cancer Survivor</u>	
		Yes	No
<u>Enhanced Compassion</u>	Yes	63	44
	No	60	43

Fig 1. Study group assignment.

Table 1. Sample Characteristics by Cancer Status and Videotape Group

	Cancer Survivors		Women Without Cancer	
	Standard (n = 60)	Enhanced (n = 63)	Standard (n = 43)	Enhanced (n = 44)
Mean age, years	51	52	51	48
Age range, years	34-68	31-75	27-73	25-77
Education, years, mean	15	15	15	15
Married/living with partner, %	77	68	72	68
Race, %				
White	87	73	91	71
African-American	8	22	9	27
Other	2	5	0	2
Family income, %				
< \$30,000	17	16	14	23
\$31,000-\$50,000	20	33	28	20
\$51,000-\$70,000	22	16	14	30
> \$70,000	35	32	40	18
Missing	7	3	5	9
Survivors' treatment, %				
Modified radical mastectomy	87	86		
Lumpectomy	17	22		
Chemotherapy	50	56		
Radiation	20	30		
Hormone therapy	18	32		
Prophylactic breast removal	7	6		
Mean months since diagnosis	57	48		

in which physician compassion, treatment information recall, hypothetical treatment decisions, perceptions of physician attributes, and state anxiety were assessed.

## RESULTS

A summary of the characteristics of the two samples is presented in Table 1. The average age for women in this study was 50 years (range, 25 to 77 years). Participants were well educated (mean, 15 years), most were white, and more than 80% had an annual family income of more than \$30,000.

Survivors had received their cancer diagnosis an average of 52 months before participating in this study (range, 6 to 213 months). Only 7% of the survivors had been diagnosed within the last year. Most women had undergone a modified radical mastectomy (86%), and most had received chemotherapy (53%). Only 20% of the women had had a lumpectomy.

Analyses were performed to verify that subject sociodemographic and health characteristics were not associated with videotape group assignment. A significant association was found between one variable, race, and enhanced compassion group assignment ( $\chi^2_{210} = 8.8$ ;  $P \leq .05$ ); 46% of whites and 71% of nonwhites were assigned to the enhanced compassion videotape condition. No other differences were found between the two videotape groups. The inclusion of race as a covariate in subsequent analyses had no effect on the study

results, however (with one minor exception, noted below). Therefore, all remaining analyses are presented without the covariate.

*Comparing Breast Cancer Survivor and No-Cancer Samples*

First, women in the breast cancer survivor sample and the no-cancer sample were compared in terms of demographic characteristics, physician compassion ratings, state anxiety, treatment information recall, treatment choices, and physician attributes. Differences were found only in treatment choice and two physician attribute ratings, and those differences are described below. The two samples were combined for all other analyses.

*Verifying Compassion Variation*

To determine whether the difference between the physician behavior in the two videotape versions was perceived as a difference in physician compassion, the five physician rating items and total physician compassion scores of the enhanced compassion and standard videotape groups were compared using *t* tests. The average total compassion score was higher for women in the enhanced compassion videotape group (mean, 220), compared with the standard videotape group (mean, 137;  $t_{203} = 6.28$ ;  $P < .001$ ). Those in the enhanced compassion videotape group rated the physician as warmer ( $t_{206} = 5.33$ ;  $P < .001$ ), more pleasant ( $t_{205} = 3.81$ ;  $P < .001$ ), more compassionate ( $t_{206} = 6.87$ ;  $P < .001$ ), more sensitive ( $t_{206} = 5.52$ ;  $P < .001$ ), and more caring ( $t_{207} = 5.49$ ;  $P < .001$ ).

*Anxiety*

Pretest and posttest STAI-S scores were compared first by collapsing across videotape groups. Women were significantly more anxious after watching the videotape (mean, 42.0) than before watching the videotape (mean, 31.6;  $t_{203} = -12.37$ ;  $P < .001$ ). This finding corresponded to a change in STAI percentile scores from the 44th to the 71st percentile. In fact, 57% of respondents scored above the 75th percentile, and 18% scored in the 99th percentile of state anxiety after the videotape. However, posttest STAI-S scores were significantly lower for women in the enhanced compassion group (mean, 40.0) than for women in the standard videotape group (mean, 44.7), controlling for pretest anxiety scores ( $F_{2,202} = 6.65$ ;  $P = .011$ ).

*Treatment Information Recall*

The total information recall score was calculated summing across all 54 information recall items. Respondents had an average of 29.4 correct items (median, 30; range, 13 to 43).

A significant relationship was found between the enhanced compassion group and total information recall ( $t_{198} = -2.44$ ;  $P = .015$ ), but the direction of the trend was opposite of that hypothesized. Women in the enhanced compassion group had lower total information recall scores (mean, 28.37) than the other women (mean, 30.38), although this difference of two points may not be clinically meaningful.

*Treatment Choice*

Enhanced compassion was not associated with treatment choice in this sample ( $\chi^2 = .33$ ;  $P = .95$ ). Among both videotape groups, HDC was the most popular choice, followed by LDC; 49% in the enhanced compassion videotape group and 51% in the standard videotape group named HDC as their treatment choice. Of the remaining respondents, 37% in the enhanced compassion group and 34% in the standard group chose LDC. Overall, 54% of participants agreed with the doctor's treatment recommendation, and neither videotape group was significantly more likely to agree with the recommendation.

An association was found between survivor status and treatment choice ( $\chi^2_3 = 7.99$ ;  $P = .046$ ) (Table 2). More survivors chose the riskier HDC treatment and "no treatment," and fewer chose the standard LDC treatment option.

*Physician Attributes*

*t* tests comparing the enhanced compassion and standard groups on perceptions of general physician attributes found significant differences for all five characteristics (see average scores in Table 3). Those who saw the enhanced compassion videotape were more likely to believe that the doctor cared about the patient ( $t_{207} = -4.70$ ;  $P < .001$ ), acknowledged the patient's emotions ( $t_{205} = -6.04$ ;  $P < .001$ ), encouraged the patient's questions ( $t_{207} = -2.56$ ;  $P = .011$ ), and encouraged the patient's participation in treatment decisions ( $t_{206} = -2.90$ ;  $P = .004$ ) than those who saw the standard videotape. Those who saw the enhanced compassion videotape were also more likely to believe that the doctor wanted what was best for the patient ( $t_{205} = -1.98$ ;

Table 2. Hypothetical Treatment Choices by Cancer Status and Videotape Group

	Cancer Survivors				Women Without Cancer			
	Standard		Enhanced		Standard		Enhanced	
	No.	%	No.	%	No.	%	No.	%
High-dose chemotherapy	34	58	33	53	18	43	18	43
Low-dose chemotherapy	18	31	18	29	16	38	20	48
No treatment	7	12	2	5	3	7	7	11
"I would leave it up to my physician"	0	0	2	5	5	12	4	7

$P = .049$ ); however, this difference was no longer significant after controlling for race.

Differences were found between breast cancer survivors and women without cancer in two of the five physician characteristic ratings. Women in the control group rated the physician higher on encouraging the patient's questions ( $t_{205} = 2.48$ ;  $P = .014$ ) and encouraging the patient's involvement in decisions ( $t_{206} = 2.77$ ;  $P = .006$ ). After controlling for survivorship, the differences between enhanced compassion group ratings on the physician characteristics remained.

### DISCUSSION

In this study, videotapes were developed to systematically vary viewers' perceptions of physician compassion and to assess the effects of physician compassion on viewers' anxiety, treatment information recall, hypothetical treatment decision making, and perceptions of the physician. The answer to our first study question (Can perceptions of physician compassion be easily varied?) is yes. We found that when the physician acknowledged the patient's emotional state, viewers perceived the physician as more compassionate. The physician's expression of enhanced compassion took approximately 40 seconds. In the current climate of managed care and increased emphasis on efficiency and cost containment, the fact that conveying compassion can take so little time is important.

The answer to our second question (Does physician compassion influence patients' anxiety levels?) is yes. After watching the enhanced compassion videotape, women were more anxious than before watching the videotape; however, they were significantly less anxious than those who watched the standard videotape. It is clear that patients feel substantial anxiety during such a consultation<sup>2</sup> and throughout treatment<sup>33</sup> and that physicians may not easily detect depression and anxiety in their patients.<sup>34</sup> Therefore, the finding that compassion can reduce the patient's anxiety during the consultation is good news. Whether reducing patient anxiety during the consultation is related to a reduction in subsequent depression and anxiety remains to be investigated.

The answer to our third study question (Does physician compassion increase information recall?) is no. In fact, the opposite was true. As found in many previous studies,<sup>35-38</sup> treatment information recall was poor in this study for women in all groups; on average, just over half of the information tested was remembered. This finding emphasizes the importance of a complete and thorough explanation of treatment-related information irrespective of compassion. The number of items tested in this study was quite high, 54 individual pieces of information; however, this is probably not an atypical amount of information in this type of consultation. We hoped that, by reducing anxiety, we could increase the viewers' ability to understand and recall information; however, in this study, anxiety levels were not related to better information recall. Possibly, anxiety was not sufficiently reduced and still acted as a barrier to information. However, women in the enhanced compassion group had both less anxiety and poorer information recall than others.

An alternative explanation, consistent with persuasive communication theory,<sup>39</sup> is that women in the enhanced compassion group, when asked to put themselves in the place of the patient, trusted the physician because of his caring nature and therefore felt that they did not need to be as diligent about listening to his words and critically assessing them. In short, they chose to trust their care to the physician rather than to scrutinize his message. Interpreted in this way, these findings are similar to those from a large body of research examining the effects of the "source" (ie, message provider) on the listener's message processing and ultimate attitude changes. These studies have found that messages given by sources perceived as credible and trustworthy are more persuasive and less likely to be heavily scrutinized.<sup>40-42</sup>

Nevertheless, the finding that compassion may be related to decreased information recall, although perhaps understandable, is troubling. In this era of "informed consent," information is assumed to be good, and the more the better. In reality, sufficient information is only one component of a satisfactory doctor-patient consultation with the goal of informed patient consent to treatment. In this study, those who watched the enhanced compassion videotape remembered, on average, only two fewer items of a possible 54 than those who did not, but they were less anxious and rated the physician more positively. We would argue that providing information is essential, but not at the expense of the quality of the physician-patient interaction.

It is clear from previous research that information is highly valued by patients.<sup>25,35,43,44</sup> Unfortunately, studies also suggest that the initial cancer consultation may supply adequate information but patients' socioemotional needs may not be met,<sup>20</sup> and these consultations are not patient centered and lack psychosocial discussion.<sup>19</sup> It seems,

Table 3. Physician Attribute Ratings by Videotape Group

Statements	Standard		Enhanced	
	Mean	SD	Mean	SD
Wants what is best for the patient	69	20.6	75	18.7
Cares about the patient	56	24.1	71	21.8
Acknowledges patient's emotions	41	25.6	63	26.4
Encourages patient's questions	62	26.2	70	23.4
Encourages patient involvement in treatment decision	59	25.4	69	24.7

NOTE. The possible range for each attribute rating is 0 to 100.

however, that it is precisely this dimension of the information delivery process that is most valued by patients<sup>5</sup> and may have the greatest impact on long-term patient outcomes.<sup>22,23,45,46</sup>

The answer to our fourth question (Does hypothetical treatment choice vary according to physician compassion?) is no. However, women with greater increases in anxiety scores were more likely to agree with the physician's recommendation. As others have found, survivors in this study chose more aggressive<sup>29</sup> or riskier<sup>27</sup> treatment options than those who had never had cancer.

Finally, the answer to our fifth question (Does physician compassion influence perceptions of other physician attributes related to the physician-patient relationship?) is yes. The very brief enhanced compassion segment went beyond anxiety buffering to change viewers' general perceptions of the physician. The compassionate physician was rated higher on wanting what was best for the patient, caring about the patient, acknowledging the patient's emotions, encouraging questions, and encouraging involvement in decision making. Studies examining physician interaction styles indicate that these behaviors are likely to be related, in turn, to patient satisfaction, the perceived quality of the physician-patient interaction,<sup>21,45,46</sup> and long-term psychologic adjustment.<sup>2,47</sup>

The finding that 40 seconds of a physician's behavior can have global effects is compatible with our open-ended discussions with survivors. Women reported that often a physician's simple gesture of kindness or concern was an immense comfort and a powerful symbol of caring. According to one survivor:

*All those things you go through are made much easier by the kind of doctor you have. At some point with my surgeon I said, "I'm going to go home and drink a bottle of Chardonnay." The night after my surgery, he brought me a bottle of Chardonnay.*

Such gestures created trust in the relationship. Another survivor told us:

*I pretty much listen to Dr. A. I knew what he had in mind. He's very good with patients. He does what's best for you. He called me from Pennsylvania and said, "Just remember you have a bone scan." There aren't too many doctors who will do that.*

As previously described, studies on information provision and patient-centered interaction style have also found positive global effects on patient outcomes.<sup>22,23</sup> Studies have found that physician behavior during the initial cancer consultation, such as providing an atmosphere of choice for patients, is related to better long-term adjustment<sup>2,5</sup> and lower clinical levels of anxiety and depression 2 months postoperatively.<sup>47</sup> From the picture painted by these findings, it is the quality of the physician-patient relationship that may be responsible for the positive findings that we

alternatively attribute to courtesy,<sup>26</sup> information, choice, and patient-centered interactions. From our discussions with women, it seemed to be this "closeness" with a physician that was of primary importance. One woman, who was in her early 40s, described how she had asked her physician to remove her uninvolved left breast prophylactically after the mastectomy of her involved right breast, but he refused. She was otherwise very happy with her physician and remained with him, even after cancer was found in the left breast. Her husband, who worked in the music industry, tried to explain why the quality of the relationship between themselves and the oncologist was so important, in this way:

*It's not that he'll treat you better. It's like a back-stage pass. The show's not better. You're just closer.*

Physicians convey reassurance and support in a variety of ways, both verbal and nonverbal,<sup>48</sup> and some are better at recognizing patients' psychosocial needs than others.<sup>33</sup> However, it also is evident that teaching interventions can effectively change physicians' behaviors<sup>49,50</sup> and increase physicians' emotional skills without increasing visit length and with a sustained impact on patients' emotional distress.<sup>51</sup> At a minimum, our results suggest that small changes may have a positive impact on patients and thereby on the physician-patient relationship.

#### *Study Limitations*

This study has several limitations. First, the women in this study were well educated, most were white, and they had above-average family incomes. We cannot be certain that our findings would be the same in a sample with a different demographic profile. Second, although we know generally the types of treatment the survivors underwent and the length of time since their breast cancer diagnosis, we do not know the tumor size, the axillary node involvement, the hormone receptor assay results, or the time since their last cancer treatment. If this information were available, we could examine the relationship between time since treatment and survivors' anxiety or information recall. However, we have no reason to believe that survivors randomized to the two groups were different on this dimension (in fact, there was no difference in time since diagnosis between the two groups); therefore, we would not expect the overall study findings to be affected differentially. The most important limitation of this study is that our study group comprised breast cancer survivors no longer in active treatment and healthy women, and we do not know whether the results are generalizable to women with breast cancer at the time they are making treatment decisions. Further studies are needed to address this issue.

This brief and simple compassion intervention both increased perceived physician compassion and created differ-

ences in actual state anxiety levels. This should be good news to physicians, who may be asked to be both physician and friend, are expected to be compassionate, but feel the pressure of time in every physician-patient encounter. The words of Mumford and colleagues<sup>52,p.144</sup> are still pertinent 15 years later: "It is often argued that the medical care system cannot afford to take on the emotional status of the patient as its responsibility. Time is short and costs are high. However, it may be that medicine cannot afford to ignore the patient's emotional status assuming that it will take care of itself." Fortunately, influencing patients' emotional status

may not be time intensive. This study found that being perceived as compassionate, and thereby influencing anxiety levels and perceptions of physician attributes, took less than 40 seconds.

#### ACKNOWLEDGMENT

We are indebted to the breast cancer support groups Arm-in-Arm and Sisters Surviving and their members for participating in this study and to the staff of the Wellness Community-Baltimore for their support of this project. We also thank Debra Roter for her thoughtful comments on a previous version of the manuscript and Patti Ringers for her help with data collection and coding.

#### REFERENCES

1. Dermatis H, Lesko LM: Psychosocial correlates of physician-patient communication at time of informed consent for bone marrow transplantation. *Cancer Invest* 9:621-628, 1991
2. Fallowfield LJ, Hall A, Maguire GP, et al: Psychological outcomes of different treatment policies in women with early breast cancer outside a clinical trial. *BMJ* 301:575-580, 1990
3. Jepson C, Chaiken S: Chronic issue-specific fear inhibits systematic processing of persuasive communications. *J Soc Behav Pers* 5:61-84, 1990
4. Eagly AH, Chaiken S: *The Psychology of Attitudes*. Orlando, FL, Harcourt Brace Jovanovich, 1993
5. Roberts CS, Cox CE, Reintgen DS, et al: Influence of physician communication on newly diagnosed breast cancer patients' psychological adjustment and decision-making. *Cancer* 74:336-341, 1994
6. Mumford E, Schlesinger HJ, Glass GV: The effects of psychological intervention on recovery from surgery and heart attacks: An analysis of the literature. *Am J Public Health* 72:141-151, 1982
7. Rainey LC: Effects of preparatory patient education for radiation oncology patients. *Cancer* 56:1056-1061, 1985
8. Kaplan SH, Greenfield S, Ware JE Jr: Assessing the effects of physician-patient interactions on the outcomes of chronic disease. *Med Care* 27:S110-S127, 1989 (suppl)
9. Teasdale K: Information and anxiety: A critical reappraisal. *J Adv Nurs* 11:25-1132, 1993
10. Roter DL, Hall JA: *Doctors Talking with Patients/Patients Talking with Doctors: Improving Communication in Medical Visits*. Westport, CT, Auburn House, 1992
11. Roter DL, Hall JA, Katz NR: Relations between physicians' behaviors and analogue patients' satisfaction, recall, and impressions. *Med Care* 25:437-451, 1987
12. President's Commission for the Study of Ethical Problems in Medicine and Biomedical Research: *Making Health Care Decisions: A Report on the Ethical and Legal Implications of Informed Consent in the Patient-Practitioner Relationship*. Washington, DC, Government Printing Office, 1982
13. Lipkin M, Kaplan C, Clark W, et al: Teaching medical interviewing: The Lipkin model, in Lipkin M, Putnam S, Lazare A (eds): *The Medical Interview: Clinical Care, Education and Research*. New York, NY, Springer-Verlag, 1995, pp 422-435
14. Katz J: *The Silent World of Doctor and Patient*. New York, NY, Free Press, 1984
15. Smith DH, McCarty K: Ethical issues in the care of cancer patients. *Prim Care* 821-833, 1992
16. Emanuel EJ, Dubler NN: Preserving the physician-patient relationship in the era of managed care. *JAMA* 273:323-329, 1995
17. Chervenak FA, McCullough LB, Chez RA: Responding to the ethical challenges posed by the business tools of managed care in the practice of obstetrics and gynecology. *Am J Obstet Gynecol* 175:523-527, 1996
18. Gibson B: Breast cancer activists call for more research, more compassion. *Can Med Assoc J* 148:254-256, 1993
19. Ford S, Fallowfield L, Lewis S: Doctor-patient interactions in oncology. *Soc Sci Med* 42:1511-1519, 1996
20. Crawford DE, Bennett CL, Stone NN, et al: Comparison of perspectives on prostate cancer analyses of survey data. *Urology* 50:366-372, 1997
21. Reid-Ponte P: Distress in cancer patients and primary nurses' empathy skills. *Cancer Nurs* 15:283-292, 1992
22. Stewart MA: Effective physician-patient communication and health outcomes: A review. *Can Med Assoc J* 152:1423-1433, 1995
23. Hall JA, Roter DL, Katz NR: Meta-analysis of correlates of provider behavior in medical encounters. *Med Care* 26:657-675, 1988
24. Buller MK, Buller DB: Physicians' communication style and patient satisfaction. *J Health Soc Behav* 28:375-388, 1985
25. Bertakis KD, Roter D, Putnam SM: The relationship of physician medical interview style to patient satisfaction. *J Fam Pract* 32:175-181, 1991
26. Willson P, McNamara JR: How perceptions of a simulated physician-patient interaction influence intended satisfaction and compliance. *Soc Sci Med* 16:1699-1704, 1982
27. Blanchard CG, Labrecque MS, Ruckdeschel JC, et al: Information and decision-making preferences of hospitalized adult cancer patients. *Soc Sci Med* 27:1139-1145, 1988
28. Webster's II New Riverside University Dictionary. Boston, MA, Houghton Mifflin, 1988
29. Slevin ML, Stubbs L, Plant HJ: Attitudes to chemotherapy: Comparing views of patients with cancer with those of doctors, nurses, and general public. *BMJ* 300:1458-1460, 1990
30. Levine MN, Gafni A, Markham B: A bedside decision instrument to elicit a patient's preference concerning adjuvant chemotherapy for breast cancer. *Ann Intern Med* 117:53-58, 1992
31. Spielberger CD: *Manual for the State-Trait Anxiety Inventory STAI (form Y) "Self-Evaluation Questionnaire"*. Palo Alto, CA, Consulting Psychologists Press, 1983
32. Gordis L: *Epidemiology*. Philadelphia, PA, Saunders, 1996
33. Derogatis LR, Abeloff MD, McBeth CD: Cancer patients and their physicians in the perception of psychological symptoms. *Psychosomatics* 17:197-201, 1976
34. Ormel J, Van Den Brink W, Koeter MWJ, et al: Recognition, management and outcome of psychological disorders in primary care: A naturalistic follow-up study. *Psychol Med* 20:909-923, 1990



35. Cassileth BR, Zupkis RV, Sutton SK, et al: Information and participation preferences among cancer patients. *Ann Intern Med* 92:832-836, 1980
36. Rimer B, Jones WL, Keintz MK, et al: Informed consent: A crucial step in cancer education. *Health Educ Q* 10:30-42, 1983
37. Penman DT, Holland JH, Bahna GF, et al: Informed consent for investigational chemotherapy: Patients' and physicians' perceptions. *J Clin Oncol* 2:849-855, 1984
38. Sutherland HJ, Lockwood GA, Till JE: Are we getting informed consent from patients with cancer? *J R Soc Med* 83:439-443, 1990
39. O'Keefe JD: *Persuasion: Theory and Research*. Newbury Park, CA, Sage Publications, 1990
40. Hovland CI, Weiss W: The influence of source credibility on communication effectiveness. *Public Opin Q* 15:635-650, 1951
41. Bochner S, Insko CA: Communicator discrepancy, source credibility, and opinion change. *J Pers Soc Psychol* 4:614-621, 1966
42. Chaiken S, Maheswaran D: Heuristic processing can bias systematic processing: Effects of source credibility, argument ambiguity, and task importance on attitude judgment. *J Pers Soc Psychol* 66:460-473, 1994
43. Henriques B, Stadil F, Baden H: Patient information about cancer: A prospective study of patients' opinion and reaction to information about cancer diagnosis. *Acta Chir Scand* 146:309-311, 1980
44. White DR, Muss HB, Michielutte R, et al: Informed consent: Patient information forms in chemotherapy trials. *Am J Clin Oncol* 7:183-190, 1984
45. Roter DL, Hall JA: Physician's interviewing styles and medical information obtained from patients. *J Gen Intern Med* 2:325-329, 1987
46. Stewart M: What is a successful doctor-patient interview? A study of interactions and outcomes. *Soc Sci Med* 19:167-175, 1984
47. Morris J, Royle GT: Offering patients a choice of surgery for early breast cancer: A reduction in anxiety and depression in patients and their husbands. *Soc Sci Med* 26:583-585, 1988
48. Hall JA, Roter DL, Katz NR: Task versus socioemotional behaviors in physicians. *Med Care* 25:399-411, 1987
49. Davis DA, Thomson MA, Oxman AD, et al: Changing physician performance: A systematic review of the effect of continuing medical education strategies. *JAMA* 700-704, 1995
50. Roter DL, Fallowfield L: Principles of training medical staff in psychosocial and communication skills, in Holland J (ed): *Psychoncology*. New York, NY, Oxford Press, 1998, pp 1074-1082
51. Roter DL, Hall JA, Kern DE, et al: Improving physicians' interviewing skills and reducing patients' emotional distress: a randomized clinical trial. *Arch Intern Med* 155:1877-1884, 1995
52. Mumford E, Schlesinger HJ, Glass GV: The effects of psychological intervention on recovery from surgery and heart attacks: An analysis of the literature. *Am J Public Health* 72:141-151, 1982