

doi:10.1016/j.ijrobp.2007.05.086

## **CLINICAL INVESTIGATION**

## **Radiation Oncology Practice**

# WHAT DO PATIENTS WANT FROM THEIR RADIATION ONCOLOGIST? INITIAL RESULTS FROM A PROSPECTIVE TRIAL

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Purpose: To assess patients' initial physician preferences using a newly developed instrument.

Methods and Materials: A total of 182 patients with a primary diagnosis of prostate, breast, or lung cancer referred for consultation to the University of Pittsburgh Cancer Institute Department of Radiation Oncology enrolled in our institutional review board—approved protocol. All patients completed patient preference instrument surveys before meeting their radiation oncologist. Survey responses to 10 statements were categorized into three groups (agree, neutral, or disagree), and the association of survey responses by cancer site was tested with chi-squared tests.

Results: Ninety-nine percent of all patients preferred to be addressed by their first name in encounters with their radiation oncologist. There were significant associations of Item 3 (hand holding) with gender (p = 0.039) and education (p = 0.028). The responses to Item 5, a statement that patients would feel uncomfortable if the radiation oncologist offered to hug them at the end of treatment, was significantly associated with disease site (p < 0.0001). Further analysis was performed for Item 5 and revealed that the male lung cancer patients had a much higher rate of disagreement with Item 5 compared with prostate cancer patients (37% vs. 18%).

Conclusions: Results of this study may afford greater insight and foster better understanding of what patients want from their radiation oncologist. For breast, lung, and prostate cancer patients, initial preferences for their radiation oncologist are generally similar, according to this tool. However, there are important difference among cancer sites (and gender) regarding physical contact at the end of treatment. © 2007 Elsevier Inc.

Patient preferences, Patient satisfaction, Radiation oncologist.

### INTRODUCTION

The physician–patient interaction is central to achieving the majority of key goals in healthcare delivery. Clinical outcomes can often be improved upon by a strong physician–patient relationship (1, 2). Several studies have shown that patients are more likely to comply with their physician's recommendations if they feel comfortable and have established strong communication with their physician (3, 4).

Cancer, as a devastating and all too common disease with complex treatment plans, is a prime example of the importance of the physician–patient relationship. When first diagnosed, cancer patients are often overwhelmed with a life-threatening diagnosis. Patients struggle with loss of control and are further burdened by the psychological impact of the diagnosis. Their

primary care physician and medical oncologist may be readily available, but by virtue of the daily radiation treatments, commonly for 6–8 weeks, the radiation oncologist has the unique opportunity to develop a strong bond with patients and gain their trust to serve as their leader through a complex treatment regimen.

Few studies have been conducted to ascertain what patients prefer from their radiation oncologist. Generally patient preference studies in the cancer field have been limited to primary care physicians and medical oncologists (5–8). In one study, Asai (8) reports that although many general internists are hesitant to disclose the full diagnosis and prognosis to their patient, most patients claim to want to know the severity and prognosis of their condition. To build a solid relationship, and thereby maximize the chances for the desired

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Supported by an American Society for Therapeutic Radiology and Oncology (ASTRO) Resident Seed Grant.

Conflict of interest: none.

Acknowledgments—The authors thank Karen Holeva and Elizabeth Huss for their clinical and administrative support of this clinical trial. Without their help neither this trial nor this article would have been possible.

Received April 15, 2007, and in revised form May 30, 2007. Accepted for publication May 31, 2007.

clinical outcomes mentioned above, it is necessary to study the different aspects of the physician–patient relationship. These aspects include communication skills, respect for cultural or religious beliefs, and intimacy (3, 9).

To ensure the utmost confidence of the patient and thus their full participation in achieving a positive outcome, the radiation oncologist must possess good technical, verbal, and nonverbal skills. Despite the level of education of the patient and the patient's family, the phenomenon of placing one's life in another person's hands invariably requires a leap of faith. The doctor's medical training, background, actions, dress, and mannerisms around the patient and family all have the potential to help instill confidence and trust (10).

The physician must also clearly and honestly communicate the disease extent, morbidity, and overall prognosis with the patient. Determining the extent and complexity of the information to be shared with the patient can be complicated. The demarcation of what is sufficient detail is not always clear, is frequently subject to subconscious bias by the individual preferences of both the patient and physician, and may be complicated by such practical issues as the time allocated to each visit.

We also expect that intimacy may affect the relationship in two often conflicting ways. Physical and verbal actions of comforting, such as holding the patient's hand, offering a hug, or offering a comforting story, may act to create a bond between the patient and the radiation oncologist, thereby building a stronger relationship. However, depending on the individual patient, these same actions may also have an adverse affect and make the patient feel uncomfortable, causing them to mentally and emotionally distance themselves from their radiation oncologist. Physicians may also be concerned that unwanted, unnecessary physical contact with patients could be interpreted as sexual harassment. Thus, knowledge of the patient's specific personal preference may prove invaluable for the treating radiation oncologist.

There may also be cultural and religious issues that affect the relationship (11). This is especially applicable to cancer patient because they are often facing life-threatening outcomes. Their beliefs could play a substantial role in how they wish to be treated.

It is natural to expect that patients will differ in their preferences regarding the above-mentioned issues, according to gender, age, race, education level, or other factors. Ideally physicians would be able to adapt their behavior according to patient preference when trying to build a strong relationship.

The purpose of this study was twofold: to analyze and report patient preferences for their radiation oncologist and to determine whether patient satisfaction is improved when radiation oncologists are cognizant of their patient's preferences. The hypothesis is that patient satisfaction will be improved when the treating physician is aware of these preferences and thus can modify their behavior accordingly. This initial analysis will report our interim results for the patient preferences portion of our study.

### METHODS AND MATERIALS

From April 2006 through November 2006, 182 patients with a primary diagnosis of breast, prostate, or lung cancer were prospectively accrued to this institutional review board (IRB)-approved protocol examining patient preferences for the radiation oncologist (IRB no. 0601098). This study used a survey instrument consisting of 10 questions focusing on certain aspects of the patient-radiation oncologist interaction, such as the professional image of the radiation oncologist, communication with the radiation oncologist, and physical and emotional behavior between the patient and the radiation oncologist (Appendix). The survey was developed by the authors and was then tested, critiqued, and modified on the basis of a sample focus group of breast, lung, and prostate cancer patients under a separate IRB-approved study (IRB no. 0512075). The focus groups established the content validity (relevance and coverage) of the items. The final survey was administered at three time points: before the initial consultation, midway through treatment, and at the end of treatment.

After subjects answered the questionnaire at the time of initial consultation, the subject was then randomized to either an experimental or control group. In the experimental group, the radiation oncologist participants read their patient's responses to this questionnaire before their initial consultation and tried to adapt to the subject's (patient's) preferences. In the control group, the radiation oncologist participant was blind to the results of their patient's questionnaire. At the end of treatment the patients completed a satisfaction survey, which was a modified version of an established, validated instrument currently being used at the University of Pittsburgh Cancer Institute to assess patient/subject satisfaction. The radiation oncologist participant did not have access to the patient satisfaction survey. For this report, data from only the first time point (before consultation with the radiation oncologist) for both arms were analyzed. Eligibility of patients was determined according to disease site, including age >18 years with lung, breast, or prostate malignancies, referred for radiation oncology consultation at the University of Pittsburgh Cancer Institute. This integrated cancer network comprised 14 eligible University of Pittsburgh Medical Center Cancer Center radiotherapy locations across western Pennsylvania.

To effectively capture patient responses across all cancer centers, a Web-based collection tool was designed to be used from randomization upon patient first consult until the final preference study was entered. The Web-based tool stored into a relational database the randomization of the patients, the patient preferences at baseline, midpoint, and final treatment stages, and the satisfaction survey results after treatment. Descriptive analyses were performed for the 182 patients with completed baseline surveys. For all items, survey responses (categorized as agree, neutral, or disagree) were cross-tabulated by patient characteristics (gender, age, education, and cancer site). The association of survey responses by cancer site was tested with chi-squared tests. When necessary because of small cells, responses neutral and disagree were combined. For three survey items (6, 7, and 9) comparisons were not possible because patients uniformly endorsed agreement. For Item 5 further comparisons were performed to explore correlations with gender, age, educational status, and cancer site.

#### RESULTS

Patient characteristics are shown in Table 1. The median patient age was 65 years; 37% of patients were aged 70 years

Table 1 Patient characteristics

Table 1. Patient characteris	sucs
Patients (n)	182
Age (y)	
Median (range)	65 (35–89)
<50	23 (13)
51–60	46 (25)
61–70	45 (25)
>70	68 (37)
Gender	
Male	62 (34)
Female	120 (66)
Primary malignancy	
Breast	101 (55)
Lung	38 (21)
Prostate	43 (24)
Race	
White	142 (78)
Black	6 (3)
American Indian/Alaskan	1 (0.5)
Native Hawaiian/Pacific Islander	1 (0.5)
Not stated	32 (18)
Educational status	
8th grade	7 (4)
High school	101 (55)
College	45 (25)
Postgraduate	28 (15)
Unknown	1 (0.5)
Role of radiation therapy	
Definitive	139 (76)
Palliative	43 (24)

Values are number (percentage), unless otherwise noted.

or older. Fifty-five percent of patients had breast cancer as their primary malignancy; therefore a majority of the patient cohort was female. Seventy-eight percent of patients designated themselves as white. Only 4% of patients had less than a high school education.

The majority (76%) of patients were referred to a radiation oncologist for definitive therapy. Distributions of survey item responses by cancer site are provided in Fig. 1. One percent of patients preferred not to be addressed by their first name by their radiation oncologist. Seventy-five percent of all patients were neutral about the radiation oncologist wearing a white coat, whereas 97% of patients agreed (strongly or moderately) that they preferred the radiation oncologist to explain their radiation treatment in detail. Ninety-five percent also wanted the radiation oncologist to use everyday language to help explain their radiation treatment. Nearly all patients (95%) preferred to be told their prognosis and chances for cure. Only 19% of all patients did not feel comfortable (strongly or moderately) discussing their religious beliefs with their radiation oncologist, whereas 47% were neutral. Thirty-one percent of patients would feel uncomfortable if the radiation oncologist discussed his or her own religious beliefs.

There were significant associations of Item 3 (hand holding) with gender (p = 0.039) and education (p = 0.028). Women more often agreed with the statement, "If my doctor held my hand throughout any important discussion, that would make me feel that my doctor really cares about me,"

whereas highly educated patients more often disagreed. The latter effect is not explained by an association between education and gender, because women in this study were more educated than the men (17% postgraduate compared with 13% among men). In summary, men and highly educated patients (male or female) more often disagreed with the statement.

The response to Item 5 showed that 42% of all patients disagreed that they would feel uncomfortable if the radiation oncologist were to hug them the end of treatment. However, 56% of breast cancer patients disagreed with Item 5, compared with only 19% of prostate cancer patients (p < 0.0001). Item 5 was also associated with gender (p < 0.0001) but not with education or age. Patients were further grouped according to both disease and gender (breast, female/lung, male/lung, and prostate) and cross-tabulated with Item 5 (Table 2). Breast cancer patients had the highest rate of disagreement with item 5 (53%), followed by female lung cancer patients (42%), male lung cancer patients (37%), and prostate cancer patients (19%). Male patients were more often neutral on this item.

### DISCUSSION

To our knowledge this study represents the first patient preference study for radiation oncologists in the United States. As national programs such as Pay for Performance arise, such prospective evidence may become vital tools for objective measurements in the provision of quality clinical care. In addition to helping achieve the desired clinical outcome, optimization of the physician—patient relationship is also vital to furthering clinical research and maintaining the economic viability of a clinic.

It has become increasingly common to involve multidisciplinary teams, who often prescribe complex pharmacologic regimens and use sophisticated equipment to evaluate and treat many diseases, including cancer. The physician–patient interaction acts as the fulcrum in any attempt to use these new, sophisticated methodologies. Unfortunately, the time allocated to the patient visit has not expanded in parallel with the nascent information explosion. Although there have been studies of patient compliance, patient willingness to participate in clinical trials research, and patient satisfaction at the primary care level, physician–patient interaction at a subspecialty level, such as radiation oncology, has been less well defined (1, 2, 10).

To date, three international studies have examined radiation oncology patient preferences (12–14). The German study reported by Schafer *et al.* (12) focuses on the amount of information the patient prefers to be told, as well as the development of a patient questionnaire. Schafer used a developed patient questionnaire to determine the ideal amount of information physicians should share with patients. At the beginning and end of their radiation oncology treatment, 51 German patients completed this questionnaire. Compared with curatively treated patients, there was a significant decrease in satisfaction among palliative patients. Schafer

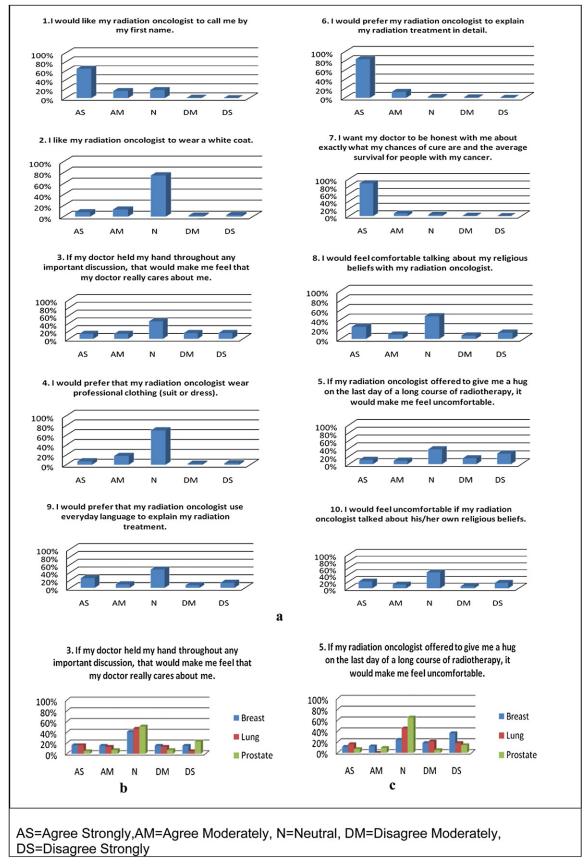


Fig. 1. Patient preference instrument and response. (a) Distribution of responses for all patients for all survey items. (b) Subset distribution of responses to Item 3. (c) Subset distribution of responses to Item 5.

Table 2. Cross-tabulation of patient responses to survey item 5

Disease site	Agree (%)	Neutral (%)	Disagree (%)
Breast	23 (23)	24 (24)	54 (53)
Lung/female	4 (21)	7 (37)	8 (42)
Lung/male	2 (11)	10 (53)	7 (37)
Prostate	7 (16)	28 (65)	8 (19)

Values are number (percentage).

et al. stressed the importance of providing adequate information in the management of oncology patients. They state, "The radiation oncologist needs to discuss radiation therapy in general, to describe the treatment goal and the side effects of radiotherapy, as well as to discuss treatment alternatives." (12)

In an Australian study, Zissiadis *et al.* (13) evaluate the process of developing a successful satisfaction questionnaire for long-term use with radiation oncology patients. This study enrolled 120 patients. The majority of patients claimed to be satisfied or very satisfied with the explanation of their radiation toxicities. Fewer patients were satisfied with the explanation of lifestyle and practical issues than with the explanation of the treatment plan and side effects. After the study, the Perth Radiation and Oncology Center in Australia developed and began distributing information booklets addressing lifestyle and practical issues.

A third study, reported by Tang et al. (14), examines radiation oncology patient preferences under the specific setting of the implementation of severe acute respiratory syndrome (SARS) precautionary measures in a Singapore hospital. The goal of this study was to obtain information for future use by radiation oncology centers during times of infectious disease precautionary control. The study found that, "despite the high satisfaction levels with SARS precautions, 24% of patients believed that the precautionary measures adversely affected the doctor patient interaction." A significant portion of patients were upset by the possible delay, restrictions on patient visitors, and lack of physical contact, such as shaking hands as a greeting, which resulted from the precautionary measures. The study also found that age and type of cancer were both predictive factors for patients' dissatisfaction. Older patients were less likely to feel satisfied with the amount of information given to them, although this is also likely affected by cultural factors. In addition, non-breast cancer patients were less satisfied with the doctor-patient interaction, which Tang et al. postulate may be owing to more time spent counseling breast cancer patients compared with other cancer patients.

Our study builds on these three studies by examining new aspects of the physician–patient relationship and focusing on the determinants of patient preferences for these specific aspects of the interaction. We found general agreement for 8 of our 10 questions when patients were stratified by cancer site, gender, age group, and education status. We were unable to analyze race because of the homogenous patient population of the study thus far. Nearly all patients preferred to be

addressed by their first name by their radiation oncologist, whereas the majority of patients were neutral about the radiation oncologist wearing a white coat.

Items 3 and 5 were found to have significant associations. Women more often agreed with the statement, "If my doctor held my hand throughout any important discussion, that would make me feel that my doctor really cares about me," whereas highly educated patients more often disagreed. Interestingly, the response to Item 5, which dealt with physical contact after the completion of radiation treatment, was associated with cancer site and gender. Because cancer sites correlated with gender for breast and prostate cancer, we performed a subset analysis of lung cancer to determine any unique associations for cancer site compared with gender. Subset analysis of cancer sites revealed that male lung cancer patients had a much higher rate of disagreement compared with prostate cancer patients (37% vs. 18%). A possible hypothesis for this distinction between male lung and prostate cancer patients is the increased emotional needs for lung cancer patients due to the poorer prognosis compared with prostate cancer. This finding will be validated once the study has completed its planned accrual of 500 patients.

For this preliminary analysis, the items of our instrument have been examined separately. The focus groups established the content validity (relevance and coverage) of the items. For a future report we will examine whether scales may be formed from the items. The psychometric properties of the instrument will be presented at that time.

There are potential limitations despite the prospective design of our study. First is the lack of racial diversity in our current patient population, which is primarily due to the demographics of western Pennsylvania. In an effort to increase the diversity of our study participants, we have targeted our centers in areas with more heterogeneous populations. Another limitation of this study is that these patient preferences may not be representative of the U.S. population but only representative of the regional population. A multi-institutional study spanning the country could potentially minimize this limitation. Regardless, we hope the data from this study will motivate radiation oncologists to consider these patient preferences when interacting with their future patients.

There are multiple downstream effects of the doctor–patient relationship, which further increases the importance of these patient preferences. For instance, clinical research may be affected by the physician–patient relationship. For compliance with the details of the specific study and appropriate self-reporting of symptoms, it will be important that the patient understand what is expected of him or her. The ability of the physician to communicate clearly is of paramount importance.

Additionally, a good doctor—patient relationship will improve patient satisfaction, thereby improving the reputation of the treatment facility, with all of the attendant consequences. At a time when the financial margins of many medical practices are decreasing, it is imperative that clinical facilities develop a self-sustaining service model. A positive relationship with a patient will reduce attrition and facilitate growth of the practice (15). The second part of our study

will help answer this question. All patients were randomized according to whether their radiation oncologist was blinded or unblinded to their patients' initial survey responses. Our hypothesis is that patients who were randomized to the non-blinded cohort (in which physicians had access to their responses) would have a greater satisfaction score than pa-

tients whose radiation oncologists were blinded to the patient preference survey responses. Patient satisfaction will be measured using the satisfaction survey administered upon treatment completion. Whether our hypothesis is null or valid, we believe that these final results will be of significant scientific importance.

## REFERENCES

- Kaplan SH, Greenfield S, Ware JE Jr. Assessing the effects of physician-patient interactions on the outcomes of chronic disease. *Med Care* 1989;27(3 Suppl.):S110–S127.
- Winefield HR, Murrell TG, Clifford J. Process and outcomes in general practice consultations: Problems in defining high quality care. Soc Sci Med 1995;41:969–975.
- 3. Speedling EJ, Rose DN. Building an effective doctor-patient relationship: From patient satisfaction to patient participation. *Soc Sci Med* 1985;21:115–120.
- 4. Loblaw DA, Bezjak A, Bunston T. Development and testing of a visit-specific patient satisfaction questionnaire: The Princess Margaret Hospital Satisfaction With Doctor Questionnaire. *J Clin Oncol* 1999;17:1931–1938.
- Wallberg B, Michelson H, Nystedt M, et al. Information needs and preferences for participation in treatment decisions among Swedish breast cancer patients. Acta Oncol 2000;39:467–476.
- Vennin P, Taieb S, Carpentier P. [Patient choice for cancer treatment: Towards a shared-decision model?]. *Bull Cancer* 2001; 88:391–397.
- Schofield PE, Beeney LJ, Thompson JF, et al. Hearing the bad news of a cancer diagnosis: The Australian melanoma patient's perspective. Ann Oncol 2001;12:365–371.

- 8. Asai A. Should physicians tell patients the truth? *West J Med* 1995;163:36–39.
- Steinhauser KE, Christakis NA, Clipp EC, et al. Factors considered important at the end of life by patients, family, physicians, and other care providers. JAMA 2000;284:2476–2482.
- Gooden BR, Smith MJ, Tattersall SJ, et al. Hospitalised patients' views on doctors and white coats. Med J Aust 2001; 175:219–222.
- 11. Searight HR, Gafford J. Cultural diversity at the end of life: Issues and guidelines for family physicians. *Am Fam Physician* 2005;71:515–522.
- Schafer C, Dietl B, Putnik K, et al. Patient information in radiooncology results of a patient survey. Strahlenther Onkol 2002; 178:562–571.
- 13. Zissiadis Y, Provis A, Harper E, *et al.* Patient satisfaction in radiation oncology. *Australas Radiol* 2006;50:455–462.
- 14. Tang JI, Shakespeare TP, Zhang XJ, et al. Patient satisfaction with doctor-patient interaction in a radiotherapy centre during the severe acute respiratory syndrome outbreak. Australas Radiol 2005;49:304–311.
- 15. DiConsiglio J. Building patient satisfaction. *Mater Manag Health Care* 2003;12:14–17.

## APPENDIX: PATIENT PREFERENCE SURVEY

Below are statements about how some patients wish to be treated by their physicians. Please indicate your agreement or disagreement with the statements below as if you were in the same situation.

Please indicate your physician preferences specifically for your Radiation Oncologist.

By checking Agree Strongly, you would indicate that you would agree strongly with the feeling that the person is expressing in the statement, IF YOU WERE IN THE SAME SITUATION.

. I would like my radiation oncologist to call me by my first name.					
Agree Strongly	Agree Moderately	Neutral □	Disagree Moderately	Disagree Strongly	
2. I like my radiation	oncologist to wear a white co	at.			
Agree Strongly	Agree Moderately	Neutral □	Disagree Moderately	Disagree Strongly	
3. If my doctor held my	y hand throughout any importa	ant discussion, tha	at would make me feel that my c	loctor really cares about me	
Agree Strongly	Agree Moderately	Neutral	Disagree Moderately	Disagree Strongly	
4. I would prefer that	my radiation oncologist wear	professional clot	hing (suit or dress).		
Agree Strongly	Agree Moderately	Neutral	Disagree Moderately	Disagree Strongly	

5. If my radiation once uncomfortable.	ologist offered to give me a h	ug on the last da	y of a long course of radiother	rapy, it would make me fee
Agree Strongly	Agree Moderately	Neutral	Disagree Moderately	Disagree Strongly
6. I would prefer my r	radiation oncologist to explain	my radiation tre	eatment in detail.	
Agree Strongly	Agree Moderately	Neutral	Disagree Moderately	Disagree Strongly
7. I want my doctor to cancer.	be honest with me about exact	ly what my chan	ces of cure are and the average	survival for people with my
Agree Strongly	Agree Moderately	Neutral	Disagree Moderately	Disagree Strongly
8. I would feel comfor	rtable talking about my religio	ous beliefs with n	ny radiation oncologist.	
Agree Strongly	Agree Moderately	Neutral	Disagree Moderately	Disagree Strongly
9. I would prefer that	my radiation oncologist use e	veryday languag	e to explain my radiation treat	ment.
Agree Strongly	Agree Moderately	Neutral	Disagree Moderately	Disagree Strongly
10. I would feel uncon	mfortable if my radiation onco	ologist talked abo	out his/her own religious belief	ŝs.
Agree Strongly	Agree Moderately	Neutral	Disagree Moderately	Disagree Strongly
Please tell us a little	more about yourself. What	is the highest le	vel of school you have comp	leted?
8 <sup>th</sup> grade □	High school □	College	Post-graduate	
Thank you for particip	pating in our survey. We hope	to make our pat	ients as comfortable with their	physicians as possible.

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