

Scientific Article

A Personalized Patient Teaching Session at the Time of Radiation Simulation May Improve Patient Satisfaction Scores



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Abstract

Purpose: Radiation therapy simulation is an excellent time for patient education. We implemented a comprehensive personalized patient experience-focused (PX) teaching session at the time of simulation and assessed its effect using patient satisfaction scores.

Methods and Materials: From February 2016 to June 2018, a single PX-trained radiation therapy therapist met patients at simulation to address and resolve all treatment-related questions. Results from a Centers for Medicare & Medicaid Services approved voluntary patient satisfaction tool were used to assess the effect of this intervention, using tools the patients received during the on-treatment period. Scores from patients contacted by the PX therapist were compared with those of noncontacted patients.

Results: For the survey, 1369 patients were contacted (median contact duration, 23 minutes; range, 0-117). Of 732 surveys submitted during this time, 98 were from on-treatment patients (69 contacted, 29 not contacted). The majority of contacted patients and survey responders were women (64% and 62%, respectively), patients with breast cancer (38%, 41%), and patients who had received curative therapy (82%, 69%). Scores from contacted patients were significantly higher for 10 of the 17 questions (registration helpfulness, $P = .03$; registration wait time, $P = .048$; facility way finding, $P = .03$; facility cleanliness, $P = .01$; treatment staff skill, $P = .03$; treatment staff concern for questions, $P = .003$; response to concerns, $P = .01$; staff worked together, $P = .01$; overall rating of care, $P = .01$; and likelihood of recommending care, $P = .04$) and 4 of the 5 domains (registration, $P = .04$; facility, $P = .03$; personal issues, $P = .02$; overall assessment, $P = .002$).

Conclusions: Contact by a PX therapist was associated with higher patient satisfaction scores, including areas specifically addressed by the PX teaching session (concerns for questions, response to concerns) as well as other areas (cleanliness, registration wait time).

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Introduction

Patient satisfaction scores are an important metric across all medical specialties, both because of the valuable feedback they provide and because of their role in

reimbursement. In the radiation therapy (RT) department, they allow assessment of patients' satisfaction with care across various time points. Although feedback from the time of initial consultation through follow-up all provides valuable information, insight into the patient experience at

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the time of RT simulation is of particular interest as this is a time of high distress for patients.¹

Patients are provided with high volumes of information at the time of simulation, which is intended to facilitate their navigation of the RT process. However, comprehension and retention of this information may be impaired by the high anxiety many patients experience at this time.² This may result in decreased patient satisfaction at the time of simulation, making the simulation period an ideal time for interventions aimed at improving patient satisfaction.

Efforts to improve patient satisfaction at the time of RT therapy simulation have been met with mixed success. One study showed that providing patients with more intensive written information does not significantly affect satisfaction scores.³ This may be related to the fact that not all patients desire the same level of information: patients who are older, male, have a primary lung or rectal malignancy, have more difficulty understanding information, and who have higher “trait anxiety” levels have been shown to desire less information.⁴ Conversely, several studies have shown that in-person interventions led by trained RT therapy staff are associated with improved anxiety scores and reduced depressive symptoms.^{5,6} Furthermore, patient-centered communication is associated with increased patient satisfaction.⁷ Therefore, we implemented in-person teaching sessions regarding the RT treatment process at the time of RT simulation and measured differences in patient satisfaction using the system-administered feedback.

Methods and Materials

Patients included in this study consisted of those treated at Beaumont Hospital Royal Oak. This is a large radiation oncology department treating approximately 1200 patients per year and is affiliated with a major metropolitan health system. A single senior RT therapist trained in personal patient experience communication (patient experience–focused [PX] trained therapist) met with patients at the time of simulation beginning in February 2016. The goal of this meeting was to address all patient questions and concerns after the initial consultation with the treating physician and before the start of RT. Issues addressed at this time varied; however, examples of topics addressed include questions regarding registration, wayfinding, and outstanding personal medical issues. The meeting ended when there were no further questions or unresolved issues.

Patient surveys (a Centers for Medicare & Medicaid Services approved and commercially available tool; Press-Ganey, South Bend, IN) were administered per health system policy. Patients seen in the outpatient radiation oncology department for consultation, follow-up, or during RT were eligible to receive a survey, except

those who had completed a previous survey from any department within the past 90 days. Therefore, not all patients seen in the department were eligible for a survey. Surveys were administered by the commercial provider, initially by mail and later exclusively via e-mail, with the goal of obtaining approximately 30 surveys per month.

In the survey, patients were instructed to evaluate only the visit that triggered the survey. The survey consisted of a total of 17 questions designed to assess 5 dimensions of care: registration, facility, treatment, personal issues, and overall assessment. Patient responses were given using the Likert scale (very poor = 1, poor = 2, fair = 3, good = 4, very good = 5). Scores were converted by the commercial provider to a scale from 0 to 100 (very poor = 0, poor = 25, fair = 50, good = 75, very good = 100) for analysis. An average score for each domain was calculated from all answered questions in that domain, and an overall facility rating was calculated from the average score from all answered questions.

To assess the effect of our intervention on satisfaction, we reviewed the records of patients who returned the survey to obtain baseline patient characteristics and to determine which of these patients had been contacted by our PX trained therapist. This study was approved by our institutional review board. Surveys prompted by visits from February 2, 2016 (the time when the PX trained therapist intervention was initiated) through June 4, 2018 were included for analysis in this study. Tools received between the date of simulation and the date of first follow-up were considered an on-treatment evaluation. Survey scores from patients who had met with the PX trained therapist (“contacted”) were compared with scores of “noncontacted” patients via a Mann-Whitney *U* test and were considered significant if $P < .05$. Unanswered survey questions were not counted for calculation of the average score for each question and domain. The PX teaching session was the only formal departmental patient satisfaction effort during the period of this study.

Results

The PX trained therapist met with 1369 patients at the time of RT simulation, excluding follow-up phone calls. Of these, 64.1% were women and the majority (82%) were receiving treatment with curative intent (Table 1). The most common primary malignancy site was breast (37.6%). The mean age of patients was 64.4 years. The mean time spent with the PX trained therapist was 25.2 minutes (range, 0–117 minutes). Four patients spent 0 minutes with the PX therapist, and for the remaining patients the teaching session ranged from 4 to 117 minutes.

During the study period, a total of 811 patient satisfaction surveys were received from patients treated in the Beaumont Hospital Royal Oak outpatient radiation

Table 1 Demographics of patients contacted by the PX trained therapist (all patients included for analysis, n = 1369)

Sex	
Male	492 (35.9%)
Female	877 (64.1%)
Diagnosis	
Benign	40 (2.9%)
Breast	515 (37.6%)
CNS	39 (2.8%)
GI	147 (10.7%)
GU	110 (8%)
GYN	69 (5%)
H&N	97 (7.1%)
Lung	240 (17.5%)
Lymphoma	31 (2.3%)
Misc	59 (4.3%)
Skin	22 (1.6%)
Treatment intent	
Creative	1123 (82%)
Other	246 (18%)
Age (years)	
mean (SD)	64.4 (12.3)
median (range)	64.8 (16.4-95.6)
Time spend (minutes)	
Mean (SD)	25.2 (13.7)
Median (range)	23.0 (0-117)

Abbreviations: CNS = central nervous system; GI = gastrointestinal; GU = genitourinary; GYN = gynecologic; H&N = head and neck; PX = patient experience-focused; SD = standard deviation.

oncology department. Of these, 732 were completed by patients seen in the same clinic where the PX teaching session was implemented. The demographics of the patients who completed these 732 surveys were similar to those of the patients met by the PX trained therapist: 61.1% were women, 67.9% received treatment with curative intent, the most common primary malignancy site was breast (39.5%), and the mean age of patients was 65.9 years (Table 2). Of these, the majority of surveys were triggered by follow-up visits (492, 67.2%), whereas 141 (19.3%) were triggered by consults, 98 (13.4%) by on-treatment visits, and 1 (0.1%) by a second survey. One hundred ninety-seven patients who submitted surveys (26.7%) had been contacted by the PX-trained therapist, whereas 535 (73.1%) had not been contacted. Of the 98 surveys that were triggered by on-treatment visits, 69 patients (70.4%) had been contacted, whereas 29 (29.6%) had not.

For all survey responders, average scores were relatively high across all 5 domains of care: scores were 93.7 for registration, 91.2 for facility, 96.9 for treatment, 95.3 for personal issues, and 96.7 for overall. For surveys triggered by any visit, contacted patients reported significantly higher satisfaction scores than noncontacted patients for the following questions: “staff worked together” (Mann-Whitney U , $P = .03$) and “overall rating

Table 2 Demographics of patients who submitted surveys (patients submitting surveys triggered by a visit, n = 732)

Survey origin	
Consultation	141 (19.3%)
On-treatment visit	98 (13.4%)
Follow-up	492 (67.2%)
Second survey	1 (0.10%)
Survey origin	
On-treatment visit	98 (13.4%)
Other	634 (86.6%)
Sex	
Male	285 (38.9%)
Female	447 (61.1%)
Diagnosis	
Benign	64 (8.7%)
Breast	289 (39.5%)
CNS	10 (1.4%)
GI	19 (2.6%)
GU	138 (18.9%)
GYN	48 (6.6%)
H&N	69 (9.4%)
Lung	52 (7.1%)
Lymphoma	15 (2.0%)
Miscellaneous	19 (2.6%)
Skin	9 (1.2%)
Treatment intent	
Creative	497 (67.9%)
Other	235 (32.1%)
Age	
Mean (SD)	65.9 (10.4)
Median (range)	67.2 (28.5-91.1)

Abbreviations: CNS = central nervous system; GI = gastrointestinal; GU = genitourinary; GYN = gynecologic; H&N = head and neck; SD = standard deviation.

of care” ($P = .05$) (Table 3). The average score in the overall section also differed significantly ($P = .01$). The remaining dimensions of care (registration, facility, your treatment, and personal issues) and the calculated overall score were not different between the contacted and non-contacted groups ($P > .05$).

When survey results triggered by on-treatment visits alone were examined, the average satisfaction scores for several domains were significantly higher for contacted patients than for noncontacted patients: average scores were higher for registration ($P = .04$), facility ($P = .03$), personal issues ($P = .02$), and the overall domain ($P = .002$) (Table 4). There were also individual questions from all dimensions that were significantly higher. Several of the individual questions with significantly different scores pertained to issues directly addressed during the PX teaching session (such as “staff concern for questions,” treatment, $P = .003$; and “response to concerns,” personal issues, $P = .01$), whereas others were not directly addressed by this intervention (such as “way finding,” $P = .03$; “facility cleanliness,” $P = .01$; and “staff skill,” $P = .03$). Patients

Table 3 Press-Ganley patient satisfaction survey results from surveys prompted by all visit types for noncontacted (n = 535) and contacted (n = 197) responders.

	Noncontacted (scores)	Contacted (scores)	P value
Registration			
Helpfulness	93.9	95.2	.386
Ease	94.4	95.1	.733
Wait time	92.0	93.0	.702
Average	94.1	94.5	.267
Facility			
Comfort	91.7	91.3	.882
Way finding	87.6	91.1	.070
Cleanliness	93.4	95.2	.077
Average	91.6	92.5	.146
Treatment			
Staff courtesy	97.4	98.3	.213
Staff explanations	96.5	97.4	.665
Staff skill	97.8	97.9	.984
Staff concern for comfort	96.4	97.7	.219
Staff concern for questions	95.8	97.4	.154
Average	96.7	97.4	.298
Personal issues			
Privacy	95.1	96.9	.085
Sensitivity to needs	94.8	96.4	.363
Response to concerns	94.6	96.4	.111
Average	95.1	96.5	.235
Overall			
Staff worked together	95.8	97.8	.031
Overall rating of care	96.4	98.2	.048
Likelihood of recommending	96.5	97.7	.315
Average	96.3	97.9	.010
Calculated overall rating	94.4	95.1	.338

Bolded numbers are considered significant.

Table 4 Press-Ganley patient satisfaction survey results from on-treatment visit surveys only for noncontacted (n = 29) and contacted (n = 69) responders.

	Noncontacted (scores)	Contacted (scores)	P value
Registration			
Helpfulness	88.5	94.3	.032
Ease	88.9	93.8	.074
Wait time	85.6	91.9	.048
Average	87.3	93.4	.043
Facility			
Comfort	85.7	89.1	.467
Way finding	81.9	89.5	.026
Cleanliness	86.2	93.8	.008
Average	84.3	90.8	.027
Treatment			
Staff courtesy	95.5	98.1	.121
Staff explanations	94.6	97.1	.653
Staff skill	93.8	98.9	.031
Staff concern for comfort	93.8	97.5	.195
Staff concern for questions	87.5	97.0	.003
Average	93.0	97.3	.133
Personal issues			
Privacy	92.6	96.0	.195
Sensitivity to needs	88.9	96.0	.082
Response to concerns	87.0	96.8	.006
Average	89.5	96.1	.016
Overall			
Staff worked together	90.2	97.8	.010
Overall rating of care	89.3	98.2	.005
Likelihood of recommending	87.5	97.8	.036
Average	89.0	97.9	.002
Calculated overall rating	89.4	94.3	.043

Bolded numbers are considered significant.

in the contacted group had significantly higher satisfaction scores for all questions under the “overall” domain (“staff worked together,” $P = .01$; “overall rating of care,” $P = .01$; and “likelihood of recommending,” $P = .04$). An overall facility rating was calculated by averaging scores from all answered questions. This score was not statistically different for contacted versus noncontacted patients when surveys triggered by any visit type were included; however, the calculated overall score was significantly higher ($P = .043$) for contacted patients when on-treatment only visits were examined.

Discussion

Overall, a reasonable amount of time was required to resolve patients’ concerns at simulation (median of 25 minutes). However, there was considerable variation, with

1 patient requiring almost 2 hours. Because patient satisfaction data are often averaged, a single patient’s negative experience can have a great consequence on the overall report. Taking 2 hours to satisfy an individual with many concerns may have prevented a poor or neutral evaluation. We also found that most evaluations were from women with breast cancer, similar to the proportions of simulated patients in our practice. Although hampered by the method of feedback (a commercial survey), we found highly significant improvements in patient satisfaction scores in the group receiving the personalized interaction, suggesting that face-to-face teaching is best. This benefit may have engendered a global impression of goodwill, causing favorable scores even in unaddressed areas, like cleanliness.

The predominance of patients included in this study were women (64.1% of contacted patients, 61.1% of submitted surveys) and patients with breast cancer (37.6%

of contacted patients, 39.5% of submitted surveys), which is similar to other studies examining the effect of educational material for RT patients, possibly owing to the high census of patients with breast cancer in most RT clinics.³ Women with breast cancer have been used as a model in many studies on this subject,^{1,8-11} and 1 study showed no effect of breast cancer primary compared with nonbreast primaries on mean anxiety scores.³

RT simulation is an ideal time for interventions aimed at improving the RT patient experience. Although pretreatment anxiety is common to patients with cancer receiving all treatment types,¹² anxiety in RT patients is highest immediately after consultation with the RT oncologist and before simulation and the start of treatment.¹ Before consultation, patients' pre-existing knowledge of the role of RT in their care is limited and often inaccurate, which leads to worry and misconceptions,¹¹ and the vast majority of patients do have specific informational needs before RT and prior to pre-RT education.¹³

Our results are concordant with other studies showing that more intensive patient education through various methods results in increased satisfaction or improvement in psychological symptoms. Multiple studies have shown additional in-person instruction with a trained department staff member before RT to be effective.^{5,6} A review of the effect of various formats of preparatory information before cancer treatment on patient outcomes showed that information provided via written, audiovisual, in-person, and electronic formats were beneficial in terms of patient satisfaction, quality of life, and psychological symptoms when they were tailored to patient preferences, when information was presented in multiple formats, and when both procedural and sensory information were provided.¹² Correlation between improved outcomes and the presentation of educational material via multiple formats is a common theme of several studies: patients with prostate cancer who received educational materials in multimedia formats felt more prepared for RT planning and treatment.¹⁴ Incorporation of a virtual RT environment in pretreatment teaching improves patient knowledge compared with standard treatment methods.^{1,15} The use of additional formats to present educational material offers a particular advantage over written materials alone to patients with poor health literacy.¹⁶ This is in contrast to the finding that increasing the amount or duration of educational materials provided to patients with cancer is not sufficient to improve outcomes. An investigation of the effect of an intensive pre-RT informational session on depression and anxiety symptoms in Chinese patients with breast cancer did not show improved outcomes,¹⁰ and more intensive education programs for patients receiving chemotherapy did not improve overall distress.¹⁷

The PX teaching session was associated with higher patient satisfaction across multiple domains, including

areas not readily explained by the intervention, such as satisfaction with facility cleanliness. Patients who underwent the PX teaching session may have felt more emotionally supported, resulting in increased satisfaction across all domains. Prior work has shown that when meeting with RT therapists for informational sessions, patients most frequently ask questions related to logistics and scheduling, whereas questions about side effects were the second most common.¹⁸ However, RT therapists also play an important role in providing emotional comfort to patients during treatment, which patients rate as highly important.⁸ The RT Prepare study was a multisite, multiple-baseline study trial that assessed the efficacy of a radiation therapist-delivered intervention in reducing psychological distress in women with breast cancer referred for RT.⁹ This trial investigated the effect of a presimulation and pretreatment consultation with a RT therapist who had been specifically trained in providing emotional support and preparing patients for RT.¹⁹ This study was similar to our own in several ways: the majority of patients in our study were women with breast cancer, and both assessed the efficacy of an intervention involving a RT therapist who met with patients before simulation. Our findings of an association between contact by a PX therapist and higher patient satisfaction scores also agree with the results of the RT Prepare study, which showed that the RT therapist intervention reduced psychological distress in patients with breast cancer.⁹

There are several limitations to this study, 1 of which was that this was not a prospective randomized study. Another limitation was that methods of patient education outside of the PX teaching session were not standardized. Although it is common practice in our department to provide written material and/or to offer an informational video to patients before the start of treatment, this was not tracked for patients included in this analysis. Second, this intervention involved a single RT therapist. Therefore, it is unknown whether these results can be generalized to other therapists trained in similar techniques. Other studies have shown success with interventions where multiple therapists were trained in active listening, the use of open questions, response to patients' emotional cues, and the use of a patient-centered communication, although the time spent and the subject material varied.¹⁹ Third, although this intervention improved satisfaction during the on-treatment time, the durability of this benefit was not specifically assessed. RT patients need information even after the completion of treatment,²⁰ and some studies have shown that providing patient education in a step-wise fashion may be more beneficial.²¹ Therefore, patients may gain additional benefit from similar interventions at other timepoints as well. Lastly, although patient family members were present at the time of intervention in some cases, the effect of the presence of family members on satisfaction was not assessed. It has been suggested that dedicated educational sessions aimed

at both educating family members and easing the transition from treatment into survivorship may add additional value to the RT patient experience.²²

Conclusions

In conclusion, performing a PX teaching session at the time of RT simulation was associated with improved patient satisfaction in multiple domains, including registration, facility, personal issues, and overall satisfaction. Some domains and questions with improved satisfaction scores covered areas specifically addressed during the intervention, for example questions related to “staff concerns for questions” and “responses to concerns.” Other questions with improved satisfaction scores pertained to matters not addressed by the intervention, such as “facility cleanliness” and “registration wait time.” This suggests that PX teaching sessions not only successfully addressed outstanding patient concerns, as they were intended to, but they were also associated with generalized improvement in patient satisfaction. Therefore, performing a PX teaching session at the time of RT simulation warrants further study in a prospective manner.

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