Two Specialists, Two Recommendations: Discordance Between Urologists' & Radiation Oncologists' Prostate Cancer Treatment Recommendations

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OBJECTIVE To examine the treatment recommendation patterns among urologists and radiation oncologists, the level of concordance or discordance between physician recommendations, and the association between physician recommendations and the treatment that patients received.

METHOD The study was a secondary analysis of data from a randomized clinical trial conducted November 2010 to April 2014 (NCT02053389). Eligible participants were patients from the trial who saw both specialists. The primary outcome was physician recommendations that were scored using an adapted version of the validated PhyReCS coding system. Secondary outcomes included concordance between physician recommendations and the treatment patients received.

RESULTS Participants were 108 patients (Mean age 61.9 years; range 43-82; 87% non-Hispanic White). Urologists were more likely to recommend surgery (79% of recommendations) and radiation oncologists were more likely to recommend radiation (68% of recommendations). Recommendations from the urologists and radiation oncologists were concordant for only 33 patients (30.6%). Most patients received a treatment that both physicians recommended (59%); however, 35% received a treatment that only one of their physicians recommended. When discordant, urologists more often recommended surgery and radiation oncologists recommended radiation and surgery as equally appropriate options.

CONCLUSION Urologists and radiation oncologists are more likely to differ than agree in their treatment recommendations for the same patients with clinically localized prostate cancer and more likely to favor treatment aligned with their specialty. Additional studies are needed to better understand how patients make decisions after meeting with two different specialists to inform the development of best practices within oncology clinics. UROLOGY 169: 156–161, 2022. Published by Elsevier Inc.

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Among men diagnosed with low-intermediate risk, clinically localized prostate cancer, the most common treatments include radical prostatectomy, radiation (external beam and brachytherapy), or active surveillance. Equipoise in terms of lifetime mortality rate occurs among these three treatment options. In these situations, ideally, both clinical expertise surrounding these different options and patients' goals, values, and preferences should inform the treatment decision. Previous research, however, has indicated that physicians' recommendations often outweigh patient factors in influencing treatment decisions.[1] Furthermore, patients may receive recommendations from multiple physicians from different prostate cancer specialties (ie, urology or genitourinary radiation oncology). The patterns of

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recommendations and treatment patients receive when they meet with both a urologist and a radiation oncologist, however, is unknown.

In early-stage prostate cancer, physician recommendations have a strong impact on treatment decisions. For example, in one study, urologist treatment recommendations, not patient preferences, significantly predicted which treatment patients received.[1] Although radiation oncologists' treatment recommendations were not examined in that study, some evidence from survey-based studies suggests that urologists and radiation oncologists differ in their reported treatment beliefs, preferences, and recommendations. These studies have found that urologists and radiation oncologists differ in the treatment preferences they would choose for themselves,[2] their treatment recommendations for a hypothetical patient with localized prostate cancer,[3-6] and their perception of which treatment results in the highest survival rate[3,5] and fewest side effects.[5]

In previous studies, physicians showed a preference for the prostate cancer treatment performed by their specialty. Urologists were more likely to recommend surgery and radiation oncologists were more likely to recommend radiation across a range of clinical case scenarios of varying progression risk levels and patient demographic characteristics.[5,6] Despite evidence that there are no differences in 10-year survival rates between treatment options,[7] one study found that the majority of urologists believed surgery resulted in higher survival rates. In contrast, most radiation oncologists reported that surgery and radiation had equivalent survival rates.[3] Yet unknown are the treatment recommendation patterns of urologists and radiation oncologists in their clinical visits with the same patients, as well as the relative influence of urologists' and radiation oncologists' recommendations on patients' treatment choices.

The goal of this study was to examine treatment recommendation patterns using qualitatively coded, audio-recorded data of clinical visits between patients with low or intermediate risk, localized prostate cancer who saw both urologists and radiation oncologists, and the treatment that patients ultimately received in relation to what physicians recommended. Drawing from prior research in the hypothetical context, our study poses the following research questions: (1) What are the treatment recommendation patterns for urologists and radiation oncologists? (2) To what extent are urologists' and radiation oncologists' treatment recommendations concordant or discordant? (3) What is the association between patients' received treatment and the recommendations they received from urologists and radiation oncologists?

METHODS

Study Design

This study was a secondary analysis of a randomized clinical trial conducted between November 2010 and April 2014 (clinicaltrials.gov identifier: NCT02053389) designed to evaluate whether the likelihood of shared decision making improved among patients who received a decision aid accompanied by a DVD modeling shared decision making compared to patients who received the decision aid alone. The clinical trial was conducted at two clinics within a university-affiliated hospital in the Midwestern United States and was approved by the Institutional Review Board. These methods and results are described in detail elsewhere.[8]

Participants

Participants of this study were a subset (n = 108) of participants from the parent trial (N = 208). Participants in the parent trial were patients who were recruited sequentially during an appointment where they received biopsy testing for prostate cancer. As the parent trial was testing decision support interventions for localized prostate cancer, only those diagnosed with clinically localized prostate cancer (Gleason 6 or 7, Prostate-Specific Antigen (PSA) <20 ng/mL) were retained. Patients with a previous diagnosis of prostate cancer were excluded from the parent trial and thus the current study. Additional eligibility criteria for the current study included having an audio-recorded medical visit with both a urologist and a radiation oncologist.

Physician participants were providers who specialized in urology or radiation oncology whose patients participated in the study and who consented to participate in the study and have visits audio-recorded.

Procedures

Patients who were eligible to participate were recruited by the research staff during a prostate biopsy appointment. Most patients were receiving biopsies for elevated PSA levels on screening tests. Those who provided informed consent were randomized to receive a decision aid (DA) booklet or to receive a DA booklet accompanied with a DVD modeling shared decision-making behaviors for patients to implement in their clinical appointments. Treating physicians did not receive any training in shared decision making or in the use of DAs. They may have been aware that patients had received a DA booklet with or without a DVD, but were not asked to alter their practice in any way. Demographic data on physicians was also collected at recruitment.

After participants provided informed consent, they completed a baseline survey at their biopsy and prior to randomization. Participants were asked to review the study materials within five days of biopsy in order to complete a pre-appointment survey with research staff over the phone. Participants then received a phone call from the urologist who had performed the biopsy. During this call, the urologist delivered their diagnosis and, for those with a positive biopsy, briefly discussed their treatment options. This provided patients time to cope with their diagnosis and learn more about their disease prior to their first in-person discussion with their care team about treatment options. Visits with urologists and radiation oncologists were audio-recorded and transcribed. In the audio-recorded visits, participants could interact with more than one provider (eg, nurse practitioners, residents, and attending physicians), as is typical in these clinics.

Measures

Patient Characteristics. Patients' self-reported treatment preference, demographic characteristics, including age, race, ethnicity, educational attainment, and marital status, were collected in the baseline survey.

Patient Clinical Characteristics and Treatment. Electronic medical record data was used to collect patients' PSA, Gleason score, cancer stage, and the treatment that they received 6 months post-diagnosis.

Physician Characteristics. Physicians completed a self-report survey, which included questions on their age, gender, race, ethnicity, number of years since they completed their medical training, and typical patient load (ie, number of patients with prostate cancer seen per week).

Physician Treatment Recommendations for Patients. Clinical visits with physicians and patients were audio-recorded, transcribed, and coded. An adaptation of the previously validated PhyReCS coding system was used to capture how physicians recommended each of the primary treatment options (surgery, radiation, and active surveillance).[9] Treatment options were ranked in order from most to least favorably recommended; multiple treatments could receive the same rank if the physician portrayed them as equivalent options. The rank for radiation incorporated physicians' recommendations for both brachytherapy and external beam radiation; if the physician made a distinction between the two forms of radiation, coders were instructed to rank radiation based on whichever treatment form was portrayed more positively. A subset of transcripts (n = 50 transcripts with 3 rankings for each treatment option, 46%) was double coded with high reliability (krippendorf alpha = .93, 95% CI [.91, .95]). This rank order was then translated into a "final recommendation" based on which treatment(s) received the highest rank (surgery; radiation; active surveillance; surgery and radiation; surgery and active surveillance; radiation and active surveillance; surgery, radiation, and active surveillance).

Concordance and Discordance Between Physician Recommendations. Physician recommendations were coded as "concordant" if the urologist and radiation oncologists' recommendations matched exactly (eg, only surgery was ranked as the highest recommendation by both urologist and radiation oncologist). All others were categorized as discordant (eg, only surgery was ranked as strongest recommendation by urologist whereas surgery and radiation were ranked as equally-strong recommendations by the radiation oncologist). The concordance rate is the number of patients who had physicians that made the same recommendations divided by total number of patients assessed (N = 108).

Statistical Analysis

Data analysis was conducted in *R* version 3.6.0. Descriptive statistics (proportions) were used to examine treatment recommendations and concordance rates. McNemar (for dichotomous) and independent samples *t*-tests (for continuous outcomes) were used to examine differences in proportions and the study outcomes. A significance level of $P < .05$ was used and two-tailed tests were conducted.

RESULTS

Baseline demographic and clinical characteristics for patient participants are in Table 1. There were no significant differences between the current study sample and excluded participants (ie, those who saw one specialist; see Table 1). Most participants were non-Hispanic white, and completed a college degree or higher. Patients' reported baseline treatment preferences were 29% for active surveillance and 36% were not sure. Patients had audio-recorded visits with 55 providers. Of these, 40 provider participants completed the provider survey. Provider characteristics based on the survey are shown in Table 2. Results did not differ across the study arms from the parent trial; thus, study results are presented collapsed across study arms.

Treatment Recommendations by Physician Specialty

Figure 1 displays the frequencies of treatment recommendations that patients received from the urologists and the radiation oncologists. Physicians could recommend one or more treatments as credible options for patients; therefore, percentages can exceed 100. The frequency of treatment recommendations provided by the urologists differed from those provided by the radiation oncologists, with each more likely to recommend a treatment that aligned with their specialty. Surgery was the most frequent recommendation from urologists (79% of recommendations) compared to radiation oncologists (57% of recommendations; $\chi 2$ (1) = 13.08, $P < .001$). Radiation was the most frequent treatment recommendation from radiation oncologists (68% of recommendations) compared to urologists (31% of recommendations; $\chi 2$ (1) = 26.22, $P < .001$). Urologists and radiation oncologists recommended active surveillance at similar rates (31% and 35%, respectively; $\chi 2$ (1) = 0.94, $P = .332$).

Concordance and Discordance Rates of Physician Treatment Recommendations

Of 108 patients, recommendations from the urologists and the radiation oncologists were concordant for only 33 patients (30.6%). Concordance was most often observed when both physicians recommended active surveillance only (n = 11, 33.3%). Urologists and radiation oncologists were discordant for 75 patients (69.4%). Discordance was most often observed when urologists recommended surgery only and radiation oncologists recommended radiation only (n = 14, 18.7%) or when radiation oncologists recommended radiation and surgery (n = 23, 30.7%) as equally appropriate options. See Supplemental Table 1 to see concordance between each treatment recommendation. Concordance was not significantly associated with patient (eg, Gleason, age) or provider (eg, years of training, age) characteristics ($Ps > .05$; see Supplemental Table 2).

Relation Between Physician Recommendations and the Treatment Patients Chose

Medical record data were used to identify the treatment each patient chose 6 months postdiagnosis, and to determine the proportion of patients who chose a treatment at least one of their physicians recommended. Patients may have chosen a treatment that both physicians recommended, even if the physicians were discordant in their overall recommendations. More than half of the patients chose a treatment that both of their physicians recommended (n = 62, 59%), whereas a small proportion (n = 6, 6%) selected a treatment that differed from either physician recommendation (Table 3). Approximately 35% of patients chose a treatment recommended by only one of the physicians; 21% selected a treatment only recommended by a radiation oncologist and 14% selected a treatment only recommended by a urologist. More patients chose surgery (n = 46, 44%), than chose radiation (n = 34, 32%) or active surveillance (n = 25, 24%; $\chi 2$ (2) = 6.34, $P = .04$). Three patients were missing treatment outcome data.

Table 1. Patient baseline characteristics.

	All Patients (n = 208)	Study Sample (n = 108)	Excluded Participants (n = 100)	*P*-Value*
Age (years), mean (standard deviation), range	61.6 (7.7), 43-84	61.9 (7.4), 43-82	61.2 (8.0), 44-84	.48
PSA (ng/mL), mean (standard deviation), range	6.2 (2.7), 1.2-17.6	6.1 (2.8), 1.8-15.6	6.4 (2.7), 1.2-17.6	.44
Gleason score, no. (%)				
6	89 (44)	43 (40)	46 (48)	.24
7	115 (56)	65 (60)	50 (52)	
Risk level†, no. (%)				
Low	73 (37)	40 (37)	33 (36)	.87
Intermediate	125 (63)	67 (63)	58 (64)	
Middle eastern origin, no. (%)	3 (1)	2 (2)	1 (1)	1
Race & ethnicity, no. (%)				
Non-Hispanic white	180 (87)	94 (87)	86 (86)	.70
Hispanic white	3 (1)	1 (1)	2 (2)	
Non-Hispanic African American	16 (8)	9 (8)	7 (7)	
Hispanic African American	1 (0.5)	1 (1)	0 (0)	
Non-Hispanic Asian	5 (2.4)	1 (1)	4 (4)	
Non-Hispanic other race	1 (0.5)	1 (1)	0 (0)	
Hispanic other race	2 (1)	1 (1)	1 (1)	
Marital status, no. (%)				
Married or living with a civil or domestic partner	172 (83)	91 (84)	81 (82)	.64
Not married or living with partner	35 (17)	17 (16)	18 (18)	
Education, no. (%)				
High school or less	23 (11)	10 (9)	13 (13)	.56
Trade school, some college, associate's degree	51 (25)	29 (27)	22 (22)	
College graduate or higher	134 (64)	69 (64)	65 (65)	
Patients' initial treatment preference, no. (%)				.32
Active surveillance	64 (31)	29 (27)	35 (35)	
Surgery	34 (16)	17 (16)	17 (17)	
Radiation	29 (14)	18 (17)	11 (11)	
Not sure or not applicable	75 (36)	39 (36)	36 (36)	
Other	6 (3)	5 (5)	1 (1)	

PSA, prostate-specific antigen.

* P-values are for the comparisons between the study sample and participants that were excluded from the current study because they did not see both a urologist and a radiation oncologist.

† Low risk level was defined as patients who had a Gleason <7, PSA <10, and T-stage T1a-T2a. Intermediate risk level was defined as patients who were not low or high risk, typically with a Gleason = 7, PSA 10-20, and T-stage T2b or T2c.

Table 2. Provider characteristics.

	Urology (n = 19)	Radiation Oncology (n = 20)	*P*-Value
Age (years), mean (standard deviation), range	38.3 (9.3), 27-65	34.7 (7.8), 25-56	.20
Gender, no. (%)			1
- Female	7 (37)	8 (40)	
- Male	12 (63)	12 (60)	
Race & Ethnicity, no. (%)			.11
- White/Caucasian	16 (84)	12 (60)	
- African American	0 (0)	1 (5)	
- Asian	2 (11)	7 (35)	
- Hispanic/Latino	1 (5)	0 (0)	
Years since training, mean (standard deviation), range	18.8 (10.4), 6-48	11.5 (4.6), 5-22	.01
Patients with prostate cancer seen per week, mean (SD), range	10.6 (9.8), 0-40	7.0 (8.0), 0-30	.23
Degree, no. (%)*			.84
- M.D. or M.D./PhD	14 (78)	17 (85)	
- Other	2 (11)	1 (5)	
- Nurse practitioner or physician assistant	2 (11)	2 (10)	

* One participant, who was a physician assistant specializing in medical oncology, was not included in this table because their specialty (ie, urology vs radiation oncology was unclear). During the course of an appointment, patients may have multiple providers in the room who were asked to complete this survey. Therefore the "other" degree category includes participants who identified as a medical student, nurse, and one not specified. One of the urologists did not provide degree information.

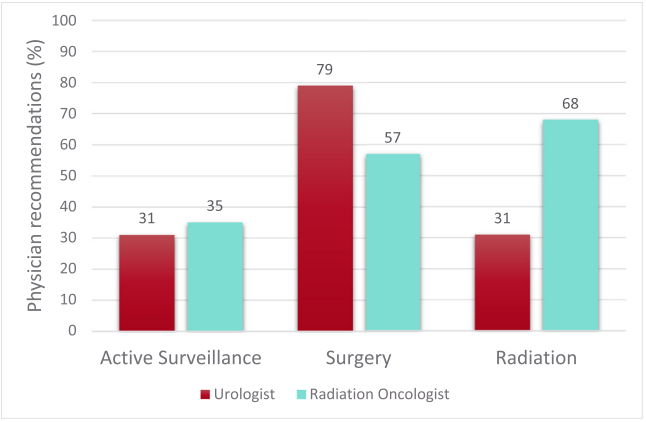

Figure 1. Percentage of treatments recommended by urologists and radiation oncologists.

The total percentages can exceed 100% because physicians could recommend one or more treatments as appropriate options for patients. For example, within the radiation category, this would include physicians who recommended radiation only, active surveillance and radiation as equally strong options, radiation and surgery as equally strong options, and all three treatments as equally strong options. (Color version available online.)

DISCUSSION

In this study of 108 audio-recorded clinical visits between patients with clinically localized prostate cancer and physicians from two different specialties, patients were likely to receive different treatment recommendations from urologists and radiation oncologists. Urologists more frequently recommended surgery than radiation oncologists and radiation oncologists recommended radiation more often than urologists. Physician recommendations had a high rate of discordance (69%). Although most patients chose a treatment that both physicians recommended, over one-third chose a treatment that only one physician recommended. These findings critically add to the literature by providing results from audio-recorded clinical visits between patients and their physicians instead of survey-based and hypothetical studies that can have limitations in the external validity.[3-6]

Contrary to a previous survey-based study that found urologists were more likely to recommend active surveillance than radiation oncologists,[6] we found that both types of specialists recommended active surveillance at similar rates. The differences in findings could be related to the hypothetical patient scenarios in that study, whereas our study was from a clinical patient sample. Despite increased advocacy surrounding shared decision making and the first survey-based study in 2000 that found bias in physician recommendations in prostate cancer,[3] our results confirm results of prior survey studies—specialists recommend treatment performed by their specialty.[3-6]

Overall, there was a low rate of concordance between physicians' treatment recommendations. Importantly, concordance in physicians' treatment recommendations was also not associated with patient clinical factors (ie, Gleason scores, cancer risk, and age). This finding suggests that non-clinical factors play an important role in physicians' treatment recommendations. For example, in addition to physicians' own preferences, patient factors (eg, initial preferences, engagement in shared decision making) and clinical-encounter factors (eg, order of physicians seen by the patient;[10] length of time spent discussing treatment options) may influence physicians' recommendations. Although some of these factors (eg, patients' initial treatment preferences) were collected in this study, we lacked sufficient statistical power to test these hypotheses. However, discordant recommendations may indicate that patient preferences were not a significant driver of treatment recommendations, as it is unlikely physicians' recommendations would differ if they had incorporated patient preferences in their recommendations.

Our findings add to the literature by examining associations between each physician's recommendation and patients' treatment choice. Understanding how patients navigate physician recommendations when specialists offer different perspectives is critical for designing decision-support interventions for contexts with no clear "best" option. We found that most patients chose a treatment that aligned with both physician recommendations, but 35% chose a treatment that aligned with only one physician recommendation.

Table 3. Proportion of patients who did and did not choose treatment recommended by their physicians.

		Patient Received Treatment that Urologist Recommended		
		Yes	No	Total
Patient received treatment that radiation oncologist recommended	Yes	62 (59%)	22 (21%)	84 (80%)
	No	15 (14%)	6 (6%)	21 (20%)
	Total	77 (73%)	28 (27%)	105 (100%)

Despite each of the three treatment options being acceptable and most patients reporting a higher initial preference for active surveillance (27%), most patients chose active treatment (ie, surgery or radiation) rather than active surveillance. Most patients selected surgery. Future research could examine whether the amount of time physicians take to discuss different treatments affect patients' choice of active treatment versus active surveillance. A small percentage of patients chose a treatment neither physician recommended.

Although this is one of the first studies to use audio-recorded clinical visits to understand the concordance of physician recommendations for prostate cancer treatment, there are some limitations. First, while we captured physician recommendations using a valid and reliable qualitative coding method to minimize participant or physician recall bias, there is a potential for coder bias. Second, the small sample size precluded testing other factors that may contribute to patients' treatment decisions and how patients weigh physician recommendations in their decision-making process. Additionally, we do not know how patients specifically processed the two recommendations (eg, if a patient used one physician's recommendation to corroborate another's) as this was beyond the scope of the study. Conducting a larger study and examining the relative contribution of patients' treatment preferences and trust in each physician recommendation, for example, as predictors of treatment decisions would be important next steps. Lastly, the study sample may be less generalizable relative to other patient populations due to their exposure to a decision aid intervention and less diverse demographic characteristics. Replicating this study in diverse patient samples and across different clinics will improve the field's understanding of the patient and clinician factors that influence prostate cancer treatment decisions when patients meet with multiple specialists.

CONCLUSION

Significant variation exists between the treatment recommendations of urologists and radiation oncologists for the same patients with clinically localized prostate cancer. When patients saw both specialists, many chose a treatment recommended by both physicians; however, some chose a treatment only one physician recommended. Better understanding of the decision-making process for patients who meet with two specialists is necessary to inform development of best practices within oncology clinics. Integrating decision support tools or patient navigators into oncology practices to help patients navigate discordant physician recommendations should also be considered.

DATA AVAILABILITY

The data underlying this article will be shared on reasonable request to the corresponding author.

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The funding source had no role in the study's design, conduct, or reporting.

AUTHORS' CONTRIBUTION

RD, BST, PU, AF, Conceptualization; RD, BST, XW, BH, JKD, Formal analysis; AF, PU, Funding acquisition; KS, VK, PU, AF, Investigation; PU, DH, JW, AF, JKD, FM, TG, Methodology; RD, BST, VK, Project administration; RD, BST, XW, Writing- original draft; RD, BST, XW, KS, PU, BH, VK, DH, JW, AF, JKD, FM, TG, Writing- review and editing.

SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found in the online version at https://doi.org/10.1016/j.urology.2022.06.009.

References

1. Scherr KA, Fagerlin A, Hofer T, et al. Physician recommendations trump patient preferences in prostate cancer treatment decisions. *Med Decis Making*. 2017;37:56–69. https://doi.org/10.1177/0272989X16662841.
2. Moore MJ, O'Sullivan B, Tannock IF. How expert physicians would wish to be treated if they had genitourinary cancer. *J Clin Oncol*. 1988;6:1736–1745. https://doi.org/10.1200/JCO.1988.6.11.1736.
3. Fowler FJ, Collins MM, Albertsen PC, Zietman A, Elliott DB, Barry MJ. Comparison of recommendations by urologists and radiation oncologists for treatment of clinically localized prostate cancer. Article. *JAMA*. 2000;283:3217. https://doi.org/10.1001/jama.283.24.3217.
4. Lavallée LT, Fergusson D, Mallick R, et al. Radiotherapy after radical prostatectomy: treatment recommendations differ between urologists and radiation oncologists. Article. *PLoS ONE*. 2013;8:1-1. https://doi.org/10.1371/journal.pone.0079773.
5. Kim SP, Gross CP, Nguyen PY, et al. Specialty bias in treatment recommendations and quality of life among radiation oncologists and urologists for localized prostate cancer. Article. *Prostate Cancer Prostatic Dis*. 2014;17:163–169. https://doi.org/10.1038/pcan.2014.3.
6. Ariane M, Ploussard G, Rebillard X, et al. Differences in practice patterns between urologists and radiation oncologists in the management of localized prostate cancer: a cross-sectional survey. Article. *World J Urol*. 2015;33:1741–1747. https://doi.org/10.1007/s00345-015-1543-2.
7. Hamdy FC, Donovan JL, Lane JA, et al. 10-year outcomes after monitoring, surgery, or radiotherapy for localized prostate cancer. *N Engl J Med*. 2016;375:1415–1424. https://doi.org/10.1056/NEJMoa1606220.
8. Scherr K, Delaney RK, Ubel P, et al. Preparing patients with early stage prostate cancer to participate in clinical appointments using a shared decision making training video. *Med Decis Making*. 2021;42:364–374. https://doi.org/10.1177/0272989X211028563.
9. Scherr K, Fagerlin AW, LD, et al. The Physician Recommendation Coding System (PhyReCS): a reliable and valid method to quantify the strength of physician recommendations during clinical encounters. *Med Decis Making*. 2017;37:46–55.
10. Shuman A, Larkin KT,D, et al. Patient reflections on decision making for laryngeal cancer treatment. *Otolaryngol Head Neck Surg*. 2017;156:299–304.