

Preliminary Treatment Considerations Among Men With Newly Diagnosed Prostate Cancer

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Most men with prostate cancer are diagnosed at early stage and have several treatment options available, including prostatectomy, external beam radiation therapy, brachytherapy, and watchful waiting. Overall survival following any management choice approaches 99% at 5 years.¹ A recent review found no compelling evidence favoring one approach versus another.² Despite the lack of consensus about treatment, prostatectomy is commonly selected by men with early-stage prostate cancer, particularly those with low-risk disease.^{3,4} The reasons for this preference are unclear. To understand why men favor prostatectomy versus other options, we conducted a prospective survey of a diverse sample of men. Participants included men newly diagnosed with local-stage prostate cancer who were considering their treatment options.

METHODS

Conceptual Model

We based our model on the taxonomy described by Holmboe and Concato, who categorized treatment attributes (likes and dislikes) into 4 axes: (1) external information, (2) intrinsic characteristics of treatment, (3) personal impressions, and (4) economic concerns.⁵ Using this taxonomy, we conducted focus groups with prostate cancer patients to develop relevant attributes for each management approach (including watchful waiting) that patients considered important. Based on our focus groups and literature review, we grouped characteristics into 5 domains: personal beliefs, treatment efficacy, others' experience, personal burden, and avoiding side effects (see the [Appendix](#)).

We hypothesized that patients who indicated *treatment efficacy* as a main concern would be more likely to prefer prostatectomy only. Second, we hypothesized that men who indicated that a *personal belief* influenced their decision (for reasons other than perceived efficacy) would favor surgery because perceptions about curing other common cancers involve removing the tumor (eg, breast cancer). Third, persons who listed *avoiding side effects* as highly important to their decision would be less likely to prefer prostatectomy, as surgery has been associated with

higher rates of incontinence and impotence compared with other options.⁶ Fourth, men who were influenced by the *experience of a family member or friend with pros-*

Objective: To assess factors that may influence men's preference for surgery versus nonsurgical options among newly diagnosed patients considering treatments for local-stage prostate cancer.

Study Design: Prostate cancer patients were approached at urology clinics after diagnosis but prior to starting treatment in California, South Carolina, and Texas. Using a survey about the treatment decision-making process, patients were asked about their likes and dislikes of 5 common treatment options: surgery (prostatectomy), brachytherapy, external beam radiation therapy, hormone therapy, and watchful waiting.

Methods: Logistic regression identified associations between treatment characteristics and choice of prostatectomy compared with nonsurgical options, controlling for demographic, clinical, and psychological covariates.

Results: Of the 198 eligible men who returned the baseline survey, 59% indicated they only considered surgery and 41% considered at least 1 nonsurgical option. In multivariate analysis, patients who thought treatment efficacy was a primary concern were significantly more likely to prefer surgery only (odds ratio [OR] = 6.20, 95% confidence interval [95% CI] = 1.74, 22.10); those indicating concern about personal burden were significantly more likely to prefer nonsurgical options (OR = 0.07, 95% CI = 0.02, 0.22). Advice of friends and relatives and concerns over side effects were not significantly associated with preference for surgery versus other treatments.

Conclusions: Men's perceptions about treatment efficacy and the personal burden of treatment dominated preferences for surgery versus nonsurgical options. Interventions to aid treatment decision making should account for these elements to minimize the impact of physician biases and patient misperceptions on men's decisions as how best to manage their prostate cancer.

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Take-Away Points

We conducted a multisite survey of men with local-stage prostate cancer to understand their preferences for available treatments. The most influential factors were perceptions of efficacy and personal burden of prostatectomy relative to nonsurgical options.

- Men misperceived the efficacy (cure) of prostatectomy relative to other options.
- Personal burdens associated with treatment (eg, recovery time) were more influential than long-term side effects.
- Policymakers and clinicians should consider wider use of decision aids, which have been shown to improve men's understanding of management options, and may counter what appear to be biases influencing the decision processes.

tate cancer who had surgery would be more likely to prefer prostatectomy versus nonsurgical options. Patients who have undergone surgery have been reported to be strong advocates for surgery,⁷ and many men choose surgical options, which increases the “exposure” to this management option. Finally, we hypothesized that patients concerned with the *personal burden* of a treatment would prefer nonsurgical options because of the family and time burdens associated with recovery and managing a catheter. We also examined associations between treatment choice and general physical and emotional quality of life, prostate-specific symptoms, and the beliefs/perceptions patients had about prostate cancer and treatment.

Survey Development: Focus Groups and Cognitive Interviews

To develop questions that reflected the conceptual model, we conducted focus groups and cognitive interviews. Participants were identified through the Puget Sound Cancer Surveillance System, the Surveillance, Epidemiology and End Results (SEER) cancer registry for Western Washington State. Sampling randomly from SEER records for 2 urban counties, we contacted men diagnosed with local-stage prostate cancer within 6 months prior to the sampling date. Following physician notification to 69 patients, 14 men agreed to participate. Prior to the focus groups, participants received a set of likes and dislikes about treatment options based on the conceptual model.^{5,8-17} During the discussions, focus group participants ranked likes about the treatment they received and dislikes about treatments they did not select. Based on focus group feedback, we reduced the items in the final survey to 10 reasons (likes) for considering each treatment and 14 reasons (dislikes) for not considering a treatment. Survey items listing reasons for considering a treatment included doctor recommendation and opinions that the treatment would be more effective, have the fewest side effects, or have the least impact on the patient's life. Survey items listing reasons for not considering a treatment included the converse of the previous 3 items and insurance not covering the treatment or

out-of-pocket costs being too high. See the Appendix for the complete list.

We also included items from previous surveys developed for prostate cancer patients as well as surveys assessing general health,^{18,19} cancer worry,^{17,20,21} and trust in the healthcare system²² (see the Appendix). Using identical patient recruitment methods, these questions and the revised items were presented to 9 men in one-on-one cognitive inter-

views. The objectives were to confirm that patients understood the survey items and to assess survey fatigue. During the cognitive interviews, the participants completed semi-final versions of the survey while discussing the responses with an interviewer.

Participants were recruited through informed consent procedures approved by an institutional review board and were reimbursed \$25 for their involvement.

Patient Population and Recruitment

Patients were recruited for the Family And Cancer Therapy Selection (FACTS) study. This study was initiated to understand the full range of domains involved in decision making by patients and partners, and how they make prostate cancer treatment decisions together. Newly diagnosed patients were approached in urology clinics at 3 sites: the Medical University of South Carolina (the University Urology Department and Ralph H. Johnson Veterans Administration Medical Center, Charleston), the University of Southern California (3 university-affiliated medical centers in Los Angeles), and the University of Texas Health Science Center at San Antonio (University Physicians Group and Audie Murphy Veterans Administration Hospital). Eligible patients included those diagnosed with local-stage disease (prostate-specific antigen [PSA] <50; tumor, node, metastasis [TNM] stages T1-T2, N0, M0) who had not initiated treatment other than hormone therapy at the time of approach. Clinic study coordinators reviewed lists of newly diagnosed local-stage prostate cancer patients scheduled for clinic visits. Interested patients signed consent forms and received a take-home survey to return by mail. Patients who indicated they had started treatment prior to the survey return date were excluded from this analysis (n = 42).

Study materials were approved by the institutional review board at each accrual site and the coordinating center. Participants received \$25 after completing the baseline survey.

Statistical Issues

We conducted bivariate analyses of the relationships with each covariate and the primary outcome “preferring surgery

only versus preferring at least one nonsurgical option.” We collapsed the outcome variable rather than keep individual nonprostatectomy categories because of the small number of observations in the nonprostatectomy categories. Chi-square tests were used for all categorical variables, and *t* tests were used to assess bivariate relationships for continuous variables. We used logistic regression to assess the association between our hypothesized likes and dislikes, and preferring only surgery versus nonsurgical options, adjusting for the demographic, clinical, and patient psychological factors noted in the Results section. We used a fixed-effects model, including recruitment site as the fixed effect in the model. This allowed for a within-site assessment of the other variables. One limitation of this approach is the potential for other, unmeasured variables to confound the primary association between the outcome and our hypothesized likes and dislikes. Adjusting for the demographic, clinical, and patient psychological factors in the Results section addressed confounding to some extent. However, we recognize that there may be variables we were not aware of that could affect our results. The Hosmer-Lemeshow goodness-of-fit test was used to assess the overall adequacy of the model. All variables were retained in the model to assess their joint association on the outcome. For the continuous variables including the cancer worry scale,^{17,20,21} the cancer control scale,²³ the Health System Distrust scale,²² the Expanded Prostate Index Composite scores,^{24,25} and the SF-12 scores,²⁶⁻²⁸ nonparametric smoothing was used to assess the unadjusted functional form between each of these variables and choice of surgery. For all these variables, the functional form was approximately linear; thus, each of these variables was entered linearly into the logistic regression model. No adjustments were made for multiple tests. All tests for statistical significance used a *P* value of .05.

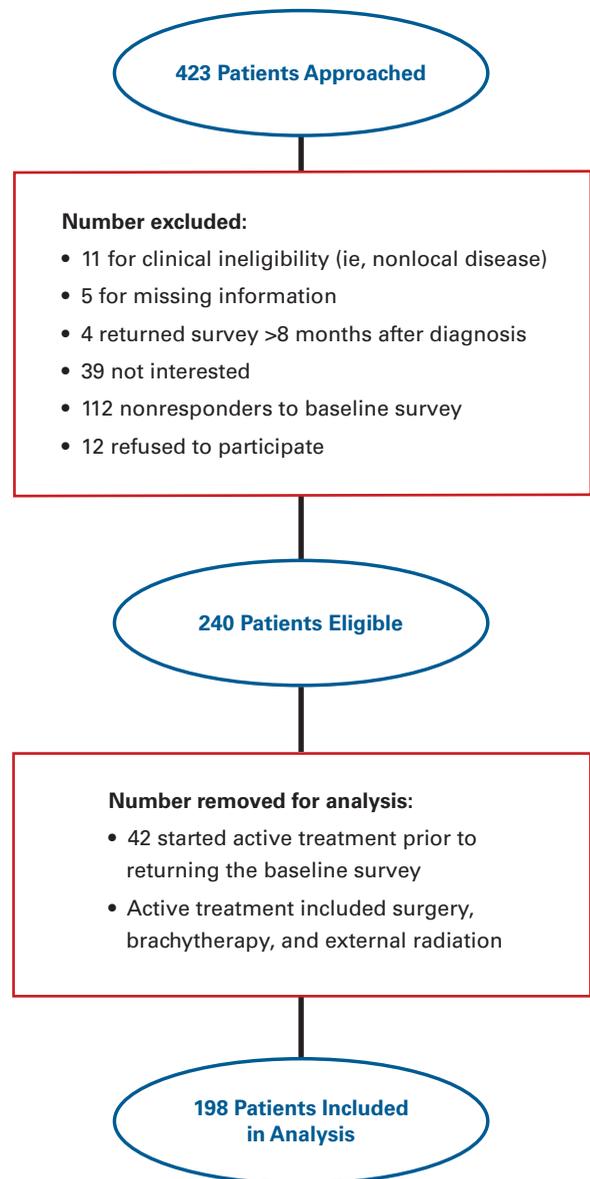
RESULTS

A total of 423 patients were approached for participation. Of these, 240 met eligibility criteria and 198 (83%) returned the survey prior to initiating treatment; the analysis included the 198 patients (Figure). The median time from diagnosis to participant survey return was 70 days.

The average age of the patient at the time of diagnosis was 63.0 years (SD = 8.1 years) and 36% were under the age of 60; 71% were white, 59% were employed, and 48% were college graduates (Table 1). Eighty-six percent had a PSA level of <10, 62% had a Gleason score of ≤6 at diagnosis, and 55% were categorized as low risk based on the combination of these factors.²⁹ Thirty-six percent listed 2 or more noncancer comorbidities at diagnosis (Table 1).

Overall, 116 (59%) patients indicated they were considering only surgery. More than three-quarters (76%) of all pa-

■ **Figure.** Consort Flow Diagram for Family and Cancer Therapy Selection



tients were only considering a single treatment option, with 12% considering 2 treatments, 8% considering 3 treatments, and 2% considering 4 or 5 treatment options. We examined all options considered by patients, including those considering multiple options: 71% reported they were considering prostatectomy, 19% brachytherapy, 15% external beam radiation therapy, 15% watchful waiting, and 8% hormone therapy (data not shown).

On bivariate analysis, men preferring prostatectomy only were more likely to be less than 70 years old, have private insurance, be married, and be employed compared with those considering at least 1 nonsurgical option (Table 1). Men pre-

■ **Table 1.** Patient Demographic and Medical Characteristics of Local-Stage Prostate Cancer Patients^a

Characteristic	Men Considering Only Surgery	Men Considering Other Treatment Options ^b	P ^c
Total	116 (59)	82 (41)	
Age, y			.027
<60	44 (38)	27 (33)	
60-69	56 (48)	31 (38)	
70+	16 (14)	24 (29)	
Race			.001
White	84 (72)	56 (68)	
Black	13 (11)	21 (26)	
Hispanic/Asian	19 (16)	5 (6)	
Insurance			.012
Medicare	44 (38)	36 (44)	
Private (non-Medicare)	53 (46)	19 (23)	
VA/military	16 (14)	18 (22)	
Other/unknown	3 (3)	9 (11)	
Employment			.038
Full time/part time/self-employed	74 (64)	43 (52)	
Retired/unemployed/unknown	42 (36)	39 (48)	
Education			.277
High school or less	19 (16)	21 (26)	
Some college	38 (33)	19 (23)	
College graduate	29 (25)	22 (27)	
Graduate degree	28 (24)	17 (21)	
Marital status			.031
Married or living with a partner	102 (88)	62 (76)	
Other/unknown	14 (12)	20 (24)	
Survey site			<.0001
USC	68 (59)	21 (26)	
UT	30 (26)	29 (35)	
MUSC	18 (16)	32 (39)	
Referral to recruiting physician			.010
Primary diagnosis	42 (36)	45 (55)	
Second opinion	74 (64)	37 (45)	
Disease classification^d			.482
Low risk	60 (52)	48 (59)	
Moderate/high risk	56 (48)	34 (41)	
Comorbidities			.037
No other health problems	35 (30)	22 (27)	
1 other health problem	47 (41)	22 (27)	
2+ other health problems	34 (29)	38 (46)	
EPIC domain summary scores, mean (SD)			
Urinary	84.62 (15.75)	84.75 (13.40)	.953
Bowel	95.36 (11.90)	90.37 (12.66)	.275
Sexual	58.38 (25.78)	42.21 (28.56)	<.0001
SF-12 component summary scales, mean (SD)			
Physical Component Summary	53.06 (8.31)	47.49 (10.44)	.0001
Mental Component Summary	49.34 (11.98)	50.75 (11.39)	.417

EPIC indicates Expanded Prostate Index Composite; MUSC, Medical University of South Carolina; USC, University of Southern California; UT, University of Texas Health Science Center.

^aValues are number (percentage) unless indicated otherwise.

^bExternal beam radiation therapy, brachytherapy, hormone therapy, watchful waiting, or surgery plus another treatment option.

^cP value for difference between men considering surgery only and men considering other treatment options. Statistically significant P values are boldfaced.

^dDefinition of low risk: T score <3, Gleason score <7, and prostate-specific antigen <10.

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Table 2. Decision-Making Factors for Patients With Local-Stage Prostate Cancer

Decision-Making Factor	Men Considering Only Surgery (n = 116)	Men Considering Other Treatment Options ^a (n = 71)	P ^b
Trust in healthcare, mean (SD)	66.81 (20.80)	68.29 (16.17)	.576
Anxiety/worry, mean (SD)	45.60 (20.04)	46.26 (20.08)	.822
Control/self-efficacy, mean (SD)	55.47 (16.78)	50.76 (20.04)	.086
Received multiple recommendations from doctors, n (%)	20 (17)	23 (28)	.079
Doctor's recommendation, n (%)			
Surgery	87 (75)	27 (33)	<.0001
Brachytherapy	12 (10)	18 (22)	.034
External beam radiation	12 (10)	18 (22)	.034
Watchful waiting	6 (5)	24 (29)	<.0001
Personal burden, n (%) ^a	12 (10)	37 (45)	<.0001
Others' experience, n (%) ^a	55 (47)	26 (32)	.025
Avoidance of side effects, n (%) ^a	52 (45)	46 (56)	.120
Treatment efficacy, n (%) ^a	100 (86)	54 (66)	.001
Other personal beliefs, n (%) ^a	99 (85)	72 (88)	.617

^aFor a description of the variables, see the Appendix.
^bStatistically significant P values are boldfaced.

ferring prostatectomy scored higher on the SF-12 physical component, but not the mental component, than patients preferring other options. Sexual function was significantly higher for men preferring prostatectomy only (Table 1).

The survey domains were commonly ranked as important to the treatment decision. Nearly half (45%) of the patients considering nonsurgical options reported personal burden as important to their decision compared with 10% of men only considering surgery (Table 2). The experience of others was more likely to influence men considering surgery only. Both groups listed avoidance of side effects and personal beliefs nearly evenly in their likes and dislikes about treatment options; treatment efficacy was more commonly listed by surgery-only men as important to their decision (see the Appendix).

Men preferring prostatectomy only were no different from those preferring other options regarding their trust in the healthcare system, levels of prostate cancer anxiety and worry, and feelings of cancer control and self-efficacy (Table 2). For those preferring prostatectomy only, there was no significant difference in the likelihood of receiving multiple different treatment recommendations compared with men considering other options.

Men concerned about the personal burden of treatment were significantly more likely to prefer nonsurgical options, and men who gave weight to the experiences of others were more likely to prefer prostatectomy only. Those concerned with treatment efficacy were significantly more likely to con-

sider only prostatectomy. There were no significant differences in preferences for prostatectomy or nonsurgical options between those who indicated that personal beliefs or avoiding side effects was a key factor in their treatment decision.

Of the hypothesized likes and dislikes explored in the multivariate logistic regression analysis, treatment efficacy and personal burden remained strongly associated with treatment preference after adjusting for demographic, clinical, and psychological factors (Table 3). The experience of others was not significantly associated with treatment preference. Those who indicated that treatment efficacy was a main reason for their treatment choice were significantly more likely to prefer surgery only (odds ratio [OR] = 6.20, 95% confidence interval [95% CI] = 1.74, 22.10). Those who considered personal burden a top reason for their treatment preference were much less likely to prefer surgery (OR = 0.07, 95% CI = 0.02, 0.22). General and prostate-specific measures of quality of life were not significantly associated with preferring surgery only. In the multivariate model, Hispanics and Asians were more likely to only consider surgery compared with whites (OR = 10.77, 95% CI = 1.77, 65.33).

Table 4 lists the top reasons for considering and not considering each treatment choice. Patients considering brachytherapy most often believed it had the fewest side effects. The most common reason stated by those considering external radiation was research they had done on their own. The most common reason men stated for not considering

■ **Table 3.** Factors Associated With Considering Prostatectomy Only Versus Considering at Least 1 Nonsurgical Option: Multivariate Model^a

Factor	Odds Ratio	95% Confidence Interval
Age, y		
<60	Reference	
60-69	2.60	0.87, 7.81
70+	0.58	0.12, 2.73
Race		
White	Reference	
Black	0.46	0.12, 1.67
Hispanic/Asian	10.77	1.77, 65.33
Education		
Less than college	Reference	
College degree	0.53	0.18, 1.55
Employment		
Retired/unemployed/unknown	Reference	
Full time/part time/self-employed	1.34	0.49, 3.65
Marital status		
Divorced/separated/widowed/single	Reference	
Married/living with partner	2.19	0.50, 9.50
Survey site		
UT	Reference	
MUSC	0.58	0.14, 2.35
USC	2.39	0.51, 11.14
Disease classification		
Moderate/high risk	Reference	
Low risk	0.85	0.31, 2.34
Comorbidities		
No other health problems	Reference	
1 other health problem	0.78	0.25, 2.44
2+ other health problems	0.99	0.23, 4.17
EPIC domain summary scores^b		
Bowel	0.98	0.94, 1.02
Sexual	1.02	1.00, 1.04
Urinary	0.98	0.95, 1.02
SF-12 component summary scales^b		
Mental Component Summary	0.99	0.94, 1.05
Physical Component Summary	1.08	1.00, 1.15
Number of recommendations from doctor(s)		
None/one	Reference	
Multiple	0.36	0.11, 1.18
Referral to recruiting physician		
Second opinion	Reference	
Primary diagnosis	1.86	0.55, 6.34
Trust in healthcare		
	1.00	0.98, 1.03
Worry/anxiety		
	1.00	0.97, 1.03
Control/self-efficacy		
	1.00	0.96, 1.04
Personal burden^c		
	0.07	0.02, 0.22
Others' experience^c		
	1.37	0.55, 3.46
Avoidance of side effects^c		
	0.47	0.18, 1.22
Treatment efficacy^c		
	6.20	1.74, 22.10
Other personal beliefs^c		
	0.90	0.20, 4.01

EPIC indicates Expanded Prostate Index Composite; MUSC, Medical University of South Carolina; USC, University of Southern California; UT, University of Texas Health Science Center at San Antonio.

^aOdds ratios greater than 1 denote a preference for surgery only. Statistically significant associations are boldfaced. Logistic model contained all covariates in the table.

^bOdds ratio refers to a 1-unit change.

^cFor a description of the variables, see the Appendix.

prostatectomy, brachytherapy, external radiation, and/or hormone therapy was that the doctor recommended other treatment(s) (Table 4). The most common reason for not considering watchful waiting was fear about the cancer spreading.

DISCUSSION

To better understand the decision-making process for men who have been diagnosed with local-stage prostate cancer, we conducted a prospective, multicenter study of patients prior to initial therapy. We asked participants to report the management options they were considering and their reasons for liking and disliking each option. Our primary aim was to identify differences in likes and dislikes that influence treatment choice, focusing on differences between men preferring prostatectomy only and men preferring at least 1 nonsurgical option. Approximately 59% of men preferred only prostatectomy. We identified 2 strong influences on patient preferences. First, men who cited a strong concern for treatment efficacy were significantly more likely to prefer surgery. Second, men concerned with personal burdens of treatment were significantly more likely to prefer nonsurgical options. Notably, factors including disease risk among this population with local-stage cancer, side effects, and quality-of-life considerations did not emerge as strong predictors of preference for or against only considering surgery.

Prior studies of prostate cancer decision making surveyed men weeks to months after they had started or completed therapy.^{5,7,9,30,31} The FACTS study is unique because men provided insight into their treatment preferences as they were

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making their decision. A second feature of our study is our attempt to include a racially diverse cohort. Interestingly, we found that Hispanics and Asians, both of whom have a lower likelihood of prostate cancer than whites and blacks, are much more likely to prefer surgery only. This finding is consistent with a study of Hispanic men by Denberg and colleagues, who found that Latinos received prostatectomy more often than whites.³² We are not aware of studies of decision making among Asian men.

Many men in our sample appeared to believe that prostatectomy has superior efficacy compared with other options. This finding has been observed in multiple studies among men who were asked to recall reasons for their treatment choice,⁸ but is not consistent with current evidence.² In contrast to our hypothesis about side effects and decisions, and despite evidence showing differential risk for side effects among management options,⁶ we found that concern about side effects appeared not to influence men's preferences for surgery and consideration of nonsurgical options. This finding, combined with the apparent positive relationship between men's concern about efficacy and preference for prostatectomy, suggests that many men have either limited access to or a poor understanding of the evidence regarding management options for local-stage prostate cancer. To address this issue, medical professionals who support prostate cancer patients during their decision process may need to take additional measures to ensure patients have a clear and balanced picture of the risks and benefits of all management options. Decision aids (eg, online or

■ **Table 4.** Most Common Reasons for Patients Considering Each Treatment (Likes/Dislikes)

Reason	% Patients Like	% Patients Dislike
Surgery	n = 140	n = 52
Recommended by doctor	69	—
Believed more effective than other options	60	—
Doctor recommended other treatment	—	42
Someone else's experience with the treatment	39	—
Doctor recommended against	—	31
Research done on my own	—	31
Brachytherapy	n = 38	n = 158
Doctor recommended other treatment	—	49
Not as effective	—	44
Believed to have fewest side effects	42	—
Research done on my own	37	33
Believed more effective than other options	37	—
External beam radiation	n = 28	n = 162
Doctor recommended other treatment	—	52
Research done on my own	50	40
Recommended by doctor	46	—
Not as effective	—	42
Believed to have fewest side effects	29	—
Hormone therapy	n = 15	n = 173
Recommended by doctor	67	—
Doctor recommended other treatment	—	49
Believed more effective than other options	40	—
Not as effective	—	40
Research done on my own	—	39
Believed to have fewest side effects	33	—
Watchful waiting	n = 29	n = 163
Recommended by doctor	79	—
Fear cancer would spread	—	48
Doctor recommended other treatment	—	45
Research done on my own	38	—
Not as effective	—	37
Least impact on daily life	34	—

in the form of DVDs) have been shown to help patients make more informed decisions about treatment.^{33,34}

Many men in this study expressed concern with the impact of treatment on daily life (ie, personal burden). Perceived treatment burdens had a substantial negative impact on patients' willingness to undergo prostatectomy. Holmboe and Concato also found burden of treatment to be a powerful factor in treatment decision making.⁵ Gwede and colleagues

noted that persons who chose options other than prostatectomy cited burden issues as reasons to avoid surgery.³⁵ These findings may explain the recent popularity of robotic prostatectomy, which has been touted to reduce recovery time compared with open prostatectomy.³⁶

The results of the multivariate analysis did not support our hypotheses regarding the influence of affected friends or family members on patients' decisions. In contrast to our study, Diefenbach and colleagues found that the influence of fellow patients was second only to physicians in the decision process.¹⁵ It is possible that our sample included men who were different in some respects from men in prior studies and who were less likely to consider the opinions of friends and family. This possible difference may be due to the academic environment of our study sites, where second opinions are common.

We note some limitations of the FACTS study. We conducted it in academic urology clinics in 3 states. Although there was considerable diversity in this sample, our findings may not be generalizable to other settings. Additionally, many of the men in the sample (56%) were seeking second opinions. Our sample, therefore, may include a cohort of self-selected men with a preference for surgery. Although this factor was not an important predictor of surgery preference in the multivariate model, we acknowledge that our findings may be unique to urology settings with many patients seeking a second opinion. Second, although all patients were approached prior to treatment and the majority of men in our study returned their surveys prior to starting therapy, a portion returned surveys after initiating treatment. Although we excluded from the analysis men who had started treatment, it is possible that men who received treatment soon after diagnosis may have different perceptions than men who completed the survey prior to treatment. Third, a substantial proportion of our participants favored prostatectomy as their sole treatment consideration, thus limiting our statistical power to detect differences among the various nonsurgical treatments. We did not differentiate between robotic or open surgical procedures. Future studies of patient decision making could oversample patients considering nonsurgical options to better delineate differences between those management strategies. Although we observed differences in beliefs about treatment efficacy and personal burdens, we did not specifically measure patient knowledge about prostate cancer treatment. Future studies should examine whether inaccurate perceptions about treatment persist among men who receive accurate information, as measured by consistency in knowledge about treatment outcomes.

Patients' personal beliefs about the value of one treatment versus another, as well as their assessments of the efficacy, burden, and side effects of various treatments, are influenced by several factors. These factors include their doctor's advice

and information available through a variety of other sources such as pamphlets, books, and the Internet. Further research is needed to characterize what leads to men's likes and dislikes of various treatment choices. In particular, the content of the physician-patient interaction and its influence on patient considerations need further evaluation.

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■ **Appendix. Survey Items**

Background Information	Source
<p>Demographic Data Age, education level, marital status, race/ethnicity, insurance coverage, employment status</p>	
<p>Clinical Data—Comorbidities Health problems requiring medication and/or treatment (12 items)</p>	Prostate Cancer Outcomes Survey ^{18,19}
<p>Clinical Data—Prostate Cancer Date of diagnosis, risk status (grade, PSA, Gleason score), treatments received and dates</p>	
<p>Treatment Likes and Dislikes</p>	
<p>Personal Burden Least impact on my daily life (Like). Too much trouble to get this treatment (Dislike).</p>	Developed based on focus group input and literature ^{5,8-17}
<p>Others' Experience Experience of someone I know (or know of) who had this treatment (Like and Dislike).</p>	
<p>Avoiding Side Effects I think it will have the fewest side effects (Like). Worried about side effects (Dislike—not applicable to watchful waiting).</p>	
<p>Treatment Efficacy I think it will be more effective for me than other options (Like). I did not think it would be as effective for me as other options (Dislike—not applicable to watchful waiting). Worried about cancer progressing (Dislike—only applicable to watchful waiting).</p>	
<p>Other Personal Beliefs Research I did on my own (Like and Dislike). Because of my age (Like and Dislike). I did not like the idea of the other options (Like). I did not like the idea of this option (Dislike).</p>	
<p>Additional Items Survey included 3 additional likes items (10 total) and 6 additional dislikes items (14 total) for each treatment.</p>	
<p>Physician Factors</p>	
<p>Recommendations Treatment recommendations received (6 items)</p>	Developed based on focus group input and literature ^{5,8-17}
<p>Patient Beliefs/Perceptions</p>	
<p>Prostate Cancer Worry and Anxiety (5 items) Because cancer is unpredictable, I feel I cannot plan for the future. My fear of my cancer getting worse gets in the way of my enjoying life. I am afraid of my cancer getting worse. I am more nervous since I was diagnosed with prostate cancer. I worry a lot that my PSA will rise.</p>	Memorial Anxiety Scale for Prostate Cancer (MAX-PC) fear of recurrence ^{20,21} and PSA worry ¹⁷
<p>Control Over Cancer Your emotional responses to your cancer (such as worrying, feeling anxious, feeling depressed). The physical side effects of your cancer and its treatment (such as pain, tiredness, or problems with urinary, bowel, or sexual function). The kind of medical care you receive for your cancer. The course of your cancer (whether your cancer will come back, get worse, or you will develop a different kind of cancer).</p>	Assessment of Patients' Experience of Cancer Care (APECC) study ²³
<p>Trust in Healthcare System The healthcare system puts my medical needs above all other considerations when treating my medical problems. The healthcare system cares more about holding costs down than it does about doing what is needed for my health. I receive high-quality medical care from the healthcare system.</p>	Rose et al Trust scale ²²
<p>Quality of Life</p>	
<p>Prostate-Specific Symptoms Urinary function Bowel function Sexual function</p>	Expanded Prostate Index Composite (EPIC) questionnaire ^{22,25}
<p>General Quality of Life PSA indicates prostate-specific antigen.</p>	SF-12 ²⁶⁻²⁸