Patient Perceptions of Readmission Risk: An Exploratory Survey

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Interventions to prevent readmissions often rely upon patient participation to be successful. We surveyed 895 general medicine patients slated for hospital discharge to (1) assess patient attitudes surrounding readmission, (2) ascertain whether these attitudes were associated with actual readmission, and (3) determine whether patients can estimate their own readmission risk. Actual readmissions and other clinical variables were captured from administrative data and linked to individual survey responses. We found that actual readmissions were not correlated with patients' interest in preventing readmission, sense of control over readmission, or intent to follow discharge instructions. However, patients were able to predict their own readmissions ($P = .005$) even after adjusting for predicted readmission rate, race, sex, age, and payer. Reassuringly, over 80% of respondents reported that they would be frustrated or disappointed to be readmitted and almost 90% indicated that they planned to follow all of their discharge instructions. Whether assessing patient-perceived readmission risk might help to target preventive interventions warrants further study. *Journal of Hospital Medicine* 2018;13:695-697. Published online first March 26, 2018. © 2018 Society of Hospital Medicine

Recent years have seen a proliferation of programs designed to prevent readmissions, including patient education initiatives, financial assistance programs, postdischarge services, and clinical personnel assigned to help patients navigate their posthospitalization clinical care. Although some strategies do not require direct patient participation (such as timely and effective handoffs between inpatient and outpatient care teams), many rely upon a commitment by the patient to participate in the postdischarge care plan. At our hospital, we have found that only about two-thirds of patients who are offered transitional interventions (such as postdischarge phone calls by nurses or home nursing through a "transition guide" program) receive the intended interventions, and those who do not receive them are more likely to be readmitted.[1] While limited patient uptake may relate, in part, to factors that are difficult to overcome, such as inadequate housing or phone service, we have also encountered patients whose values, beliefs, or preferences about their care do not align with those of the care team. The purposes of this exploratory study were to (1) assess patient attitudes surrounding readmission, (2) ascertain whether these attitudes are associated with actual readmission, and (3) determine whether patients can estimate their own risk of readmission.

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METHODS

From January 2014 to September 2016, we circulated surveys to patients on internal medicine nursing units who were being discharged home within 24 hours. Blank surveys were distributed to nursing units by the researchers. Unit clerks and support staff were educated on the purpose of the project and asked to distribute surveys to patients who were identified by unit case managers or nurses as slated for discharge. Staff members were not asked to help with or supervise survey completion. Surveys were generally filled out by patients, but we allowed family members to assist patients if needed, and to indicate so with a checkbox. There were no exclusion criteria. Because surveys were distributed by clinical staff, the received surveys can be considered a convenience sample. Patients were asked 5 questions with 4- or 5-point Likert scale responses:

(1) "How likely is it that you will be admitted to the hospital (have to stay in the hospital overnight) again within the next 30 days after you leave the hospital this time?" [answers ranging from "Very Unlikely (<5% chance)" to "Very Likely (>50% chance)"];

(2) "How would you feel about being rehospitalized in the next month?" [answers ranging from "Very sad, frustrated, or disappointed" to "Very happy or relieved"];

(3) "How much do you think that you personally can control whether or not you will be rehospitalized (based on what you do to take care of your body, take your medicines, and follow-up with your healthcare team)?" [answers ranging from "I have no control over whether I will be rehospitalized" to "I have complete control over whether I will be rehospitalized"];

(4) "Which of the options below best describes how you plan to follow the medical instructions after you leave the

TABLE. **Patient Survey Responses and Readmission Outcomes**

Survey Question (N respondents)	Likert Scale Choices[a]	N (%) Responses	N (%) Readmitted	Unadjusted *P* for Trend[b]
"*How likely* is it that you will be *admitted* to the hospital (have to stay in the hospital overnight) again within the next 30 days after you leave the hospital this time?" (n = 895)	1) Very unlikely (<5% chance)	352 (39.3%)	46 (13.1%)	*P* = .002
	2) Unlikely	229 (25.6%)	28 (12.2%)	
	3) Somewhat likely	156 (17.4%)	27 (17.3%)	
	4) Likely	73 (8.2%)	15 (20.6%)	
	5) Very likely (>50% chance)	85 (9.5%)	22 (25.9%)	
"How would you *feel* about being rehospitalized in the next month?" (n = 830)	1) Very sad, frustrated, disappointed	433 (52.2%)	68 (15.7%)	*P* = .43
	2) A little sad, frustrated, disappointed	265 (31.9%)	42 (15.9%)	
	3) Don't care	64 (7.7%)	6 (9.4%)	
	4) Happy or relieved	45 (5.4%)	11 (8.0%)	
	5) Very happy or relieved	23 (2.8%)	5 (21.7%)	
"How much do you think that you personally can control whether or not you will be rehospitalized (based on what you do to take care of your body, take your medicines, and follow-up with your healthcare team)?" (n = 840)	1) Complete control	111 (13.2%)	16 (14.4%)	*P* = .32
	2) A lot of control	213 (25.4%)	27 (11.7%)	
	3) Some control	240 (28.6%)	36 (15.0%)	
	4) Very little control	118 (14.0%)	18 (15.3%)	
	5) No control	158 (18.8%)	18 (15.3%)	
"Pick the item that best describes YOUR OWN VIEW of the care team's recommendations:" (n = 861)	1) Fully agree	697 (81.0%)	101 (14.5%)	*P* = .62
	2) Mostly agree	128 (14.9%)	24 (18.8%)	
	3) Somewhat agree	28 (3.3%)	2 (7.1%)	
	4) Do not agree at all	8 (0.9%)	2 (25.0%)	
"Which of the options best describes how you plan to follow the medical instructions after you leave the hospital?" (n = 863)	1) Plan to do EVERYTHING asked	770 (89.2%)	116 (15.1%)	*P* = .52
	2) Plan to do ALMOST EVERYTHING	76 (8.8%)	12 (15.8%)	
	3) Plan to do SOME things asked	15 (1.9%)	1 (3.7%)	
	4) Do NOT plan to do much of asked	2 (0.2%)	0 (0%)	

[a]Likert responses are paraphrased for brevity. See text for complete wording.
[b]Ordered patient responses were modeled continuously (1-4 or 1-5).

hospital?" [answers ranging from "I do NOT plan to do very much of what I am being asked to do by the doctors, nurses, therapists, and other members of the care team" to "I plan to do EVERYTHING I am being asked to do by the doctors, nurses, therapists and other members of the care team"]; and

(5) **"Pick the item below that best describes YOUR OWN VIEW of the care team's recommendations:"** [answers ranging from "I DO NOT AGREE AT ALL that the best way to be healthy is to do exactly what I am being asked to do by the doctors, nurses, therapists, and other members of the care team" to "I FULLY AGREE that the best way to be healthy is to do exactly what I am being asked to do by the doctors, nurses, therapists, and other members of the care team"].

Responses were linked, based on discharge date and medical record number, to administrative data, including age, sex, race, payer, and clinical data. Subsequent hospitalizations to our hospital were ascertained from administrative data. We estimated expected risk of readmission using the all payer refined diagnosis related group coupled with the associated severity-of-illness (SOI) score, as we have reported previously.[2-5] We restricted our analysis to patients who answered the question related to the likelihood of readmission. Logistic regression models were constructed using actual 30-day readmission as the dependent variable to determine whether patients could predict their own readmissions and whether patient attitudes and beliefs about their care were predictive

of subsequent readmission. Patient survey responses were entered as continuous independent variables (ranging from 1-4 or 1-5, as appropriate). Multivariable logistic regression was used to determine whether patients could predict their readmissions independent of demographic variables and expected readmission rate (modeled continuously); we repeated this model after dichotomizing the patient's estimate of the likelihood of readmission as either "unlikely" or "likely." Patients with missing survey responses were excluded from individual models without imputation. The study was approved by the Johns Hopkins institutional review board.

RESULTS

Responses were obtained from 895 patients. Their median age was 56 years [interquartile range, 43-67], 51.4% were female, and 41.7% were white. Mean SOI was 2.53 (on a 1-4 scale), and median length-of-stay was representative for our medical service at 5.2 days (range, 1-66 days). Family members reported filling out the survey in 57 cases. The primary payer was Medicare in 40.7%, Medicaid in 24.9%, and other in 34.4%. A total of 138 patients (15.4%) were readmitted within 30 days. The Table shows survey responses and associated readmission rates. None of the attitudes related to readmission were predictive of actual readmission. However, patients were able to predict their own readmissions (*P* = .002 for linear trend). After adjustment for expected readmission rate, race, sex, age, and

payer, the trend remained significant (*P* = .005). Other significant predictors of readmissions in this model included expected readmission rate (*P* = .002), age (*P* = .02), and payer (*P* = .002). After dichotomizing the patient estimate of readmission rate as "unlikely" (n = 581) or "likely" (n = 314), the unadjusted odds ratio associating a patient-estimated risk of readmission as "likely" with actual readmission was 1.8 (95% confidence interval, 1.2-2.5). The adjusted odds ratio (including the variables above) was 1.6 (1.1-2.4).

DISCUSSION

Our findings demonstrate that patients are able to quantify their own readmission risk. This was true even after adjustment for expected readmission rate, age, sex, race, and payer. However, we did not identify any patient attitudes, beliefs, or preferences related to readmission or discharge instructions that were associated with subsequent rehospitalization. Reassuringly, more than 80% of patients who responded to the survey indicated that they would be sad, frustrated, or disappointed should readmission occur. This suggests that most patients are invested in preventing rehospitalization. Also reassuring was that patients indicated that they agreed with the discharge care plan and intended to follow their discharge instructions.

The major limitation of this study is that it was a convenience sample. Surveys were distributed inconsistently by nursing unit staff, preventing us from calculating a response rate. Further, it is possible, if not likely, that those patients with higher levels of engagement were more likely to take the time to respond, enriching our sample with activated patients. Although we allowed family members to fill out surveys on behalf of patients, this was done in fewer than 10% of instances; as such, our data may have limited applicability to patients who are physically or cognitively unable to participate in the discharge process. Finally, in this study, we did not capture readmissions to other facilities.

We conclude that patients are able to predict their own readmissions, even after accounting for other potential predictors of readmission. However, we found no evidence to support the possibility that low levels of engagement, limited trust in the healthcare team, or nonchalance about being readmitted are associated with subsequent rehospitalization. Whether asking patients about their perceived risk of readmission might help target readmission prevention programs deserves further study.

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