ORIGINAL ARTICLE

Market factors related to hospitals' patient satisfaction ratings

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Abstract

Patient satisfaction is an important dimension of care that has been linked to improved clinical outcomes and increased compliance as well as organizational success. The passage of the Patient Protection and Affordable Care Act included rules that incentivize hospitals to improve patient satisfaction by offering increased reimbursements. In this analysis, three data sets are used to retrospectively examine the relationship between environmental market factors and patient satisfaction. We find that per capita income within the hospital's catchment area, competition, metro status, and availability of general and specialty practitioners are significantly associated with hospitals' patient satisfaction levels. In a new era of pay-for-performance and increased competition for scarce resources, hospitals must closely monitor and respond to external forces. One strategy for overcoming a turbulent external environment may be to focus on patient satisfaction.

Key Words: Hospital patient satisfaction, Environmental factors, Hospital compare

1. Introduction

There has been increasing interest in providing patient centered care in the United States. The move toward patient centeredness includes measuring and improving patient satisfaction in hospitals. One compelling reason for the new focus is the recognized association between patient satisfaction and improvement in symptoms, compliance with treatment, and better overall outcomes.[1,2] Hospitals are being incentivized to participate in Accountable Care Organizations that promote care coordination through electronic health information exchange (HIE) and increased consumer engagement.[1,3] In fact, the Patient Protection and Affordable Care Act (ACA) of 2010 provides incentive payments to promote consumer-driven health care and increase hospitals' focus on the patient experience.[4,5]

Further evidence of the interest in patient satisfaction is the Hospital Quality Alliance's creations of the Hospital Compare effort to collect and publicly report patient satisfaction data on the Centers for Medicare and Medicaid Services (CMS) website. Since 2007, Medicare has assessed patient satisfaction in an effort to promote consumer-driven health care through pay-for-performance (P4P) programs.[3,5–7] In light of increased competition for patients and the additional financial incentives, hospitals have directed their efforts to

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creating patient centered care environments that will provide high levels of patient satisfaction.

The Value Based Purchasing (VBP) program from CMS relies on care reimbursement withholdings and redistribution to above average performing hospitals to incentivize quality. Within the CMS VBP scheme, patient satisfaction measures account for thirty percent of the total score used to determine which hospitals qualify for re-distributions of the pooled withholdings starting in 2013.[8,9] Thus, the motivation for hospitals to improve the patient experience relative to their competitors is significant.

Patient satisfaction is a complex set of constructs including patients' expectations, timeliness of care, appropriate care processes, interpersonal communication with providers, and clinical-care outcomes. Patient satisfaction is positively correlated with patient compliance, health outcomes, improvement in symptoms, perceptions of caregiver competence, reduced incidence of malpractice suits, and patient retention.[10,11] One study also suggests that hospital patient satisfaction is impacted specifically by four areas: hospital staff, patient care and treatment, information on leaving the hospital, and overall impression.[12] Finally, it has been shown that hospitals with higher patient satisfaction provide more efficient care and greater quality of care in surgery.[13] Such findings provide motivation to hospital leaders to invest in programs that will improve patient satisfaction to reap the organizational and quality benefits.

A study in the U.S. examining satisfaction in general medicine walk-in clinics found that patients 65 years and older, those with better functional status, improved symptom resolution, that received an explanation of their symptomology, and were informed about the likely duration of illness were more likely to be satisfied.[14] In the same study, patient dissatisfaction was associated with additional visits or unmet expectations in the visit. Based on this, achieving patient satisfaction is both a goal for clinical quality and for organizational sustainability. In an era of increased competition and scarcity of resources, cultivating demand for services, and developing and maintaining relationships with patients are important components of organizational success. One strategy for achieving such success is by adopting a patient-centered approach resulting in higher patient satisfaction scores.

Still other studies have focused on differences in hospital type and patient expectations based on demographic characteristics. For example, Bowling, Rowe, and McKee found that patient satisfaction is associated with, "a sense of having control over one's life, being older, female, White, and attending a general practice, compared to hospital outpatient clinics".[15] Shahian and colleagues found that while hospital teaching intensity was a predictor of higher quality in some areas such as surgical care improvement, mortality, and acute myocardial infarction, it was also associated with lower patient satisfaction.[16]

The purpose of this paper is to assess the relationship between the external market factors and patient satisfaction. The research question is: what environmental market factors are associated with patient satisfaction in hospitals? Results are presented and discussed based on how they might be used by hospital administrators and policymakers in the VBP era.

The VBP movement is intended to align care quality outcomes and reimbursement levels. However, environmental market factors play a significant role that neither policymakers nor hospital administrators can influence in the near-term. Accounting for such market-based differences is important for shaping both public policies and managers' responses to them as has been done in other programs such as the Medicare-plus Choice insurance that accounts for regional differences. Given that the patient experience is framed and relative to other available care, environmental predictors are expected to be related to patient satisfaction. The study at-hand informs policymakers and hospital stakeholders of associations between environmental predictors and patient satisfaction.

2. Materials and methods

2.1 Materials studied

Resource dependency theory (RDT) is an open system theory used to predict organizational behavior at the macro level. The theory posits that organizations are not in full control of the resources needed to survive and that successful strategies for survival should include reducing their dependence on external resources in times of uncertainty.[17] In the current study, we use RDT to predict the relationship between the external environment and patient satisfaction with the understanding that patient satisfaction is likely the result of a strategy to improve patients' perceptions of their care.

RDT proposes that environmental uncertainty, as measured through munificence and complexity, influences the variability and complexity organizations face to obtain resources.[18] Resources can include capital, technology, human resources, patient demand, or information and are assessed based on their scarcity and criticality. Resources that are more scarce and critical, such as patient demand for services in highly competitive environments, will garner the most managerial effort to secure.

Competing on comparative patient satisfaction vis-à-vis other hospitals in a market can be viewed as a strategy for hospitals

to increase demand for services and market share. In markets where data are publicly available, hospitals that attain and maintain a high level of patient satisfaction are more likely to see demand for services from new patients and return visits from existing patients. Thus, hospitals will employ strategies to achieve high patient satisfaction levels, and their ability and necessity to employ such strategies for survival will depend upon a number of external factors. The following hypotheses explain the relationship between eight measures of environmental munificence and complexity and their corresponding relationship to patient satisfaction. Essentially, hospitals in markets where there are more resources do not have to work as hard to secure resources. The corollary is also true, that is, hospitals in resource scarce areas are more likely view patient satisfaction as essential to survival and thus employ more strategic effort to achieve it.

Larger cities typically have both more hospitals and a wider variety of hospital types. In addition to traditional hospitals, metropolitan areas often have academic medical centers, specialty clinics, and multiple firms competing for patients. Therefore, hospitals will compete on quality in order to attract a larger market share. Hence it is hypothesized:

H1: Hospitals in metropolitan locations will have higher patient satisfaction than those in non-metro areas.

In addition to the size of the community, the demographic make-up of the environment will also influence hospitals' resource seeking behavior. Markets with larger percentages of customers that have Medicare coverage tend to be more munificent than those with lower percentages because this type of insurance is more generous than some other forms. Therefore, hospitals are typically better compensated on a case-by-case basis and need not compete as actively in order to survive. Hence, it is hypothesized that:

H2: Hospitals in areas with a high percentage patient population over 65 will have lower patient satisfaction.

Another form of insurance that tends to reimburse hospitals well is private coverage from Health Maintenance Organizations (HMOs). Hospitals where HMOs comprise a large percentage of their payer-mix are better compensated on a case-by-case basis compared to those facilities that rely heavily on public programs. Because environmental features beyond the hospital's control largely drive the payer-mix, having a high HMO penetration rate is analogous to being in a munificent market where competition is less rigorous. Therefore, it is hypothesized that:

H3: Hospitals in areas of greater HMO penetration will have lower levels of patient satisfaction.

Similar to the effect of large Medicare populations have on a community, having larger percentages of people covered by employer-based insurance creates a more munificent environment. However, where the number of people covered by Medicaid and other state-level public assistance programs is relatively high, the environment is not munificent due to systematically lower insurance reimbursement rates. More challenging still from a resource dependency perspective is when the payer mix swings back and forth between private and public coverage during periods of high unemployment. Under these conditions greater uncertainty about environment dynamism leads firms to limit their investment in high resource strategies such as improving the patient experience until more stability can be assured. Therefore, it is hypothesized that:

H4: Hospitals in areas with large changes in unemployment levels will have lower patient satisfaction.

Irrespective of a market's size, demographics or payer-mix, the amount of direct competition from hospitals providing similar services will increase everyone's competition for resources. Therefore, hospitals will compete on their reputations for patient satisfaction to attract consumers and the resources they provide. Hence it is hypothesized that:

H5: Hospitals in areas of higher competition will have higher levels of patient satisfaction.

An area's average per capita income is a good proxy for the market's overall level of munificence from a RDT view. Higher resource availability levels are typically associated with lower patient satisfaction because resources are more plentiful and hospitals do not have to compete on quality as much when more generous reimbursements are available. It is also the case that those in wealthier markets will have a different perspective of the hospital environment than those that live in less prosperous conditions. Therefore, it is hypothesized that:

H6: Hospitals in areas of higher per capita income will have lower levels of patient satisfaction.

All hospital admissions require a physician's approval – even emergent care. However, most hospitals have moved away from granting "privileges" to community practitioners, relying instead on hospitalists or intensivists to care for patients.[19,20] While the change in hospital staffing models is consistent with quality improvement efforts, it does create fragmentation in the continuity of care akin to a supply chain disruption in the resource dependency view.[21] Such continuity of care disruptions will cause consumers to have lower satisfaction levels with hospital providers. Therefore, it is hypothesized that:

H7: Hospitals in areas with more PCPs will have lower levels of patient satisfaction.

The complement to hypothesis seven is that markets with more specialist physicians will have higher levels of patient satisfaction with hospitals. From a RDT perspective, specialists are more likely to be integrated into the hospital's operations. For example, many surgeons only refer to one facility because they are familiar with its policies and procedures and can influence them to some extent. Moreover, many patients seek care directly from specialist who makes the facility recommendation for procedures. Therefore, care coordination with the physician before, during, and after the hospitalization is continuous, leading to higher levels of patient satisfaction. Hence, it is hypothesized that:

H8: Hospitals in areas of more specialty physicians will have higher levels of patient satisfaction.

2.2 Methods

Using a retrospective, cross sectional study design, 2008 data from Hospital Compare, the American Hospital Association (AHA), the Area Resource File (ARF) and the 2008 Dartmouth Atlas are used in the analyses.[22] The Hospital Compare data contain ten measures of patient satisfaction and are presented in Table 1. The AHA provides data of hospital characteristics including the number of beds (bed size), teaching status, ownership, and system membership. The ARF include environmental variables including metro location, percent of the population over 65 years of age, change in unemployment rates, and per capita income. The Dartmouth Atlas provides information about HMO penetration in all of the markets. Only acute care hospitals are included in the analyses. We selected such a methodological approach to control for organizational factors that could impact patients satisfaction as shown in previous research.[16] We perform a retrospective analysis based on data availability and because this is an observational study.

Patient satisfaction is measured through variables that represent various constructs that contribute to the overall metric. These measures include whether the room was always clean, whether nurses communicated well, whether doctors communicated well, if pain was well controlled, if staff explained about medicines before giving them to patients, if staff told patients what to do for recovery at home, if the patient would rate the hospital as a nine or overall, if it was quiet around the room at night, and whether the patient would recommend the hospital. The first nine patient satisfaction variables are attitudinal in nature, while whether the patient would recommend the hospital is a behavioral factor.

Descriptive statistics of each of the variables were first calculated. Next, ten separate ordinary least squares regression models were run to measure the relationship between patient satisfaction and eight measures of environmental munificence and complexity including Metro location, percentage of the population over age 65, change in unemployment, competition as measured by the Hirschman-Herfindahl Index (HHI), HMO penetration, per capita income, general physicians per 1,000 residents, and specialty physicians per 1,000 residents. The HHI was calculated for hospital systems at the market level using admissions from the AHA. Control variables included in each model were organizational characteristics including number of beds, teaching status, ownership, and system membership. General physicians and specialist physicians per 1,000 population, percent over 65 years, and changes in unemployment rates were obtained from the ARF for the years 2004 - 2008. Hospital markets were defined by their FIPS County Code, and only non-federal, acute care hospitals were included in the study. Because the data were only recently added to the Hospital Compare tool, some hospitals did not report them publicly, and thus they could not be included in the sample.

3. Results

The study includes 2,727 hospitals that had non-missing values for each variable. Comparing facilities providing patient satisfaction data to non-respondents, no significant differences were detected on the remaining variables. The mean values for each of the ten patient satisfaction measures are presented in Table 1 and range from 54.0 percent to 80.1 percent. Descriptive statistics for the market variables and control variables are presented in Table 2. A majority of hospitals were not-for-profit, in metro locations, and system affiliated.

Table 1. Descriptive statistics of patient satisfaction measures

Measures	Min	Max	Mean	*SD*
Nurses Always Communicated Well	35	93	73.1	6.5
Doctors always communicated well	45	96	78.7	5.6
Patients always received help as soon as they wanted	32	89	60.6	8.7
Pain was always well controlled	36	87	67.4	5.6
Staff always explained about medicines before giving them to patients	28	88	57.7	6.4
Staff always gave patients information about what to do for recovery at home	49	95	80.1	5.0
Patients rate hospital as 9 or 10 overall	28	99	63.1	8.8
Always quiet around room at night	26	94	54.0	9.5
Would definitely recommend the hospital	25	100	66.8	9.7
Valid N (listwise)	2,727			

Table 2. Descriptive statistics of control and environmental predictors (N = 2,727)

	For Profit		Not for Profit	
Ownership	535 (19.6%) Member		2,192 (80.4%) Non-system Member	
System Membership	1,824 (66.9%) Teaching		903 (33.1%) Non-Teaching	
Teaching Status	199 (7.3%) Metro		2,528 (92.7%) Non-metro	
Metro location	1,868 (68.5%)		859 (31.5%)	
	Minimum	**Maximum**	**Mean**	***SD***
Percent over 65	0.03	0.35	0.1344	.03596
Change Unempl	-14.20	4.60	-0.2142	1.49560
HHI411	0.0000017	1.0000000	0.3463	.3850
Pen08	0.00	10,006.00	18.4440	428.0398
Per Cap income	0.00	11,0292.00	34,495.3374	10,770.5887
GenPrac per/1,000	0.00	40.98	3.6931	2.1958
SpecMD per/1,000	0.00	36.80	2.3983	3.4341
Valid N	2,727			

Each of the ten regression models was significant and the results are presented in Table 3. Overall, the signs on the independent variables' coefficients are uniform across regressions and dependent variables. In addition, four of the eight hypotheses were supported outright, one hypothesis had mixed support, and three were rejected (see Table 4).

Significant market correlates of whether the room was clean include metro location, per capita income, and the availability of general and specialty practitioners. Significant market correlates of whether nurses communicated well include metro location, change in unemployment, competition, per capita income, and availability of general and specialty practitioners. Significant environmental predictors of doctors always communicating well include metro location, percent of the population over 65 years, competition, per capita income, and availability of general and specialty practitioners. For patients always receiving help as soon as they wanted, significant market correlates include metro location, change in unemployment, competition, per capita income, and availability of general and specialty practitioners. When considering the measure of whether pain was always well controlled, metro location, percent of the population over 65 years, competition, per capita income, and availability of general and specialty practitioners were significant market correlates.

For the measure of whether staff gave patients information about medication before giving them to patients, significant market correlates include metro location, population over 65 years old, competition, per capita income, and availability of general and specialty practitioners. For whether staff gave patients information about what to do for recovery at home, significant market correlates include percent of the population over 65 years old, change in unemployment, competition, per capita income, and availability of general and specialty practitioners. Significant market correlates of patients rating the hospital as a nine or ten overall include metro location, population over 65 years old, change in unemployment, per capita income, and availability of general and specialty practitioners. For the measure of whether the room was always quiet around the room at night, significant market correlates include metro location, percent of population over 65 years old, change in unemployment, per capita income, and availability of general and specialty practitioners. Finally, for whether the patient would recommend the hospital, significant market correlates include percent of the population over 65 years old, change in unemployment, and availability of general and specialty practitioners.

Several organizational control variables were significant across multiple analyses including size, teaching status, and ownership. Generally, larger hospitals have lower patient satisfaction, teaching hospitals have higher patient satisfaction, and for-profit hospitals have lower patient satisfaction.

4. Discussion

The regression analyses show that there is a relationship between environmental market factors and patient satisfaction. Such results support the use of RDT to examine the relationship, since hospitals are strategically responding and behaving based on factors in the communities that surround them. This is not unexpected, as any rational hospital leader would be more likely to tailor the patient experience to please patients in instances where the patient had more choice in where to seek care. Competing on comparative patient satisfaction vis-à-vis other hospitals in a market can be viewed as a quality differentiation strategy for hospitals to increase demand for services and market share. In markets where quality data are publicly available, hospitals that attain and maintain a high level of patient satisfaction are more likely to see demand for services from new patients and return visits from existing customers. Even when considering physicians as the customer, that is, the referral source for hospital admissions, physicians may be influenced by patient preferences, at least to the extent the physician has choices of where to admit patients. Thus, hospitals will employ quality-differentiation strategies to achieve high levels of patient satisfaction, and their ability and necessity to employ such strategies for survival will depend upon a number of external factors.

The most consistent market correlates of patient satisfaction in hospitals include the availability of general and specialty practitioners and per capita income. As the number of general practitioners goes up, patient satisfaction significantly

decreases for each measure, suggesting that patients that have access to more practitioners have higher expectations of care in the hospital. On the other hand, as specialty practitioners go up, patient satisfaction in hospitals increases. This may indicate that more specialists allow for more appropriate and tailored care in hospitals, thus allowing providers more time to communicate with and treat patients. All hospital admissions require a physician's approval. However, most hospitals have moved away from granting "privileges" to general practitioners relying on hospitalists or intensivists to care for patients.[19,20] While the change in hospital staffing models is consistent with quality improvement efforts, it does create fragmentation in the continuity of care akin to a supply chain disruption in the resource dependency view.[23] As per capita income increases, patient satisfaction decreases. This is likely a reflection of expectations since many in areas with higher per capita income would likely have secure and comfortable living arrangements that may make time in the hospital less appealing than returning home. On the other hand, those in areas with very low per capita income may have less comfortable normal living accommodations and therefore would be more satisfied with the hospital experience, relative to their daily experiences and accommodations outside of the hospital.

Table 3. Regression models of environmental predictors of patient satisfaction

	Room Was Always Clean	Nurses Always Communicated Well	Doctors Always Communicated Well	Patients Always Received Help As Soon As They Wanted	Paint Was Always Well Controlled	Staff always explained about medicines before giving them to patients	Staff always gave patients information about what to do for recovery at home	Patients rate hospital as a 9 or 10	Always quiet around room at night	Would definitely recommend the hospital
Constant	77.676***	79.353***	84.81***	69.983***	72.503***	65.519***	83.757***	71.673***	66.422***	72.714***
Bed Size	-0.012***	-0.006***	-0.005***	-0.012***	-0.004***	-0.006***	-0.003***	-0.005***	-0.006***	-0.001
Teaching Status	0.854	2.1***	0.978*	1.952**	0.515	2.486***	1.684***	2.91***	0.548	2.905***
For Profit	-4.385***	-4.478***	-1.807***	-4.418***	-2.565***	-3.744***	-2.375***	-5.794***	1.671***	-5.739***
System Member	-1.264***	-0.161	-0.112	-0.45	0.04	-0.242	0.18	0.683	1.043**	0.488
Metro Location	-2.949***	-1.984***	-2.815***	-3.088***	-1.491***	-2.288***	0.028	-1.233*	-3.52***	0.089
Population over 65 (%)	-4.323	-3.106	-12.45***	-5.058	-10.027**	-15.304***	-6.214*	-17.506***	-42.015***	-14.697**
Change in unemployment	0.085	0.282***	-0.061	0.328***	0.133	0.017	0.373***	0.522***	-0.226*	0.408**
Competition (HHI)	0.304	1.309**	0.911*	2.184***	1.033*	1.092*	1.594***	0.105	0.615	-0.366
HMO Penetration	-0.001	-0.00005	-2.58E-05	5.24E-05	-4.51E-05	0	4.6E-5	0	0	0
Per Capita Income	-7.0E-5***	-7.6 E-5***	-4.0 E-5***	-9.2 E-5***	-4.0E-5***	-6.0 E-5***	-5.0E-5***	-5.0E-5**	0***	-3.0E-6
Gen Prac. MD / 1,000	-0.322***	-0.195***	-0.129**	-0.407***	-0.183***	-0.264***	-0.246***	-0.716**	-0.358***	-0.86***
Spec. MD / 1,000	0.324***	0.244***	0.235***	0.413***	0.193***	0.239***	0.044	0.272***	0.383***	0.13*

*$p < .05$, **$p < .01$, ***$p < .001$

Competition is a significant predictor in six out of the ten measures, indicating that a markets approach to improving health care quality through patient satisfaction may be effective. Our results show that patient satisfaction is higher as competition increases; thus, the more hospitals in a given area, the better for the patient experience since hospitals must directly compete for business as patients have choices of where to go for care. Metro status is negatively associated with seven out of the ten patient satisfaction measures potentially indicating that rural patients are more satisfied. This may be a function of the fact that residents of metro areas are accustomed to many comforts and conveniences, which make hospital stays less desirable, or that residents in more rural areas are more connected to the hospitals and providers in their small, cohesive community and thus feel more comfortable and "at home" in the hospital.

Given that nine of the ten patient satisfaction measures are attitudinal, hospital administrators might focus more on the behavioral measure, which is whether or not the patient would recommend the hospital to others. For this measure, teaching status is the strongest positive predictor of patient satisfaction indicating that patients appreciate the value of this component of the organization's mission or that they recognize value in being close to cutting edge research often found

in teaching hospitals. Shahian and colleagues found that intense hospital teaching status was associated with lower patient satisfaction, which brings to question the role of patient perceptions and overall satisfaction relative to a patient's likelihood to recommend a provider.[16] This discrepancy might be explained by the varying patient perceptions of care or the need to study more about what influences patients' likelihood to recommend a hospital or provider to others since this is just one measured component of patient satisfaction. It is also noteworthy that the higher the percentage of patients over the age of 65, the lower the likelihood that a patient would recommend a hospital others. This may reflect that hospitals are not meeting the specific needs of a growing patient population: baby boomers.

Table 4. Hypothesis test results

Hypothesis	Result	
H1: Hospitals in metropolitan locations will have higher patient satisfaction than those in non-metro areas.	Rejected	Increased urbanization was negatively and significantly correlated to eight of the ten measures of patient satisfaction. There were no significant positive correlations. The two overall measures ("Patients rate hospital as a 9 or 10" and "Would definitely recommend the hospital") had mixed results. "Patients rate hospital as a 9 or 10" was negatively and significantly related to urbanization. The measure reading "Would definitely recommend the hospital" was not significantly related to the dependent variable.
H2: Hospitals in areas with a high percentage patient population over 65 will have lower patient satisfaction.	Supported	Increased average age of the population was negatively and significantly correlated to seven of the ten measures of patient satisfaction. There were no significant positive correlations. The two overall measures ("Patients rate hospital as a 9 or 10" and "Would definitely recommend the hospital") were significantly and negatively related to the increased population levels over 65 years of age.
H3: Hospitals in areas of greater HMO penetration will have lower levels of patient satisfaction.	Rejected	Markets with higher HMO penetration did not differ significantly on any of the patient satisfaction measures although some variables did have negative coefficients.
H4: Hospitals in areas with large swings in unemployment levels will have higher patient satisfaction.	Supported	Increased swings in unemployment levels were positively and significantly correlated to five of the ten measures of patient satisfaction. Both of the overall measures ("Patients rate hospital as a 9 or 10" and "Would definitely recommend the hospital") were significantly related to swings in unemployment levels.
H5: Hospitals in areas of higher competition will have higher levels of patient satisfaction.	Mixed	Increased competition was positively and significantly correlated to five of the ten measures of patient satisfaction. There were no significant negative correlations. The two overall measures ("Patients rate hospital as a 9 or 10" and "Would definitely recommend the hospital") were not significantly related to competition levels.
H6: Hospitals in areas of higher per capita income will have higher levels of patient satisfaction.	Rejected	Markets with higher per capita income had significantly lower levels of patient satisfaction across all measures (negative coefficients).
H7: Hospitals in areas with more general practitioners will have lower levels of patient satisfaction.	Supported	The independent variable, number of general practice physicians in a market was negative and significantly associated with all the patient satisfaction measures.
H8: Hospitals in areas of more specialty physicians will have higher levels of patient satisfaction.	Supported	As an independent variable, higher specialty physician levels in a market were positively associated with all the patient satisfaction measures. The only satisfaction measure that was not significantly correlated with the variable was "Staff always gave Patients information about what to do for recovery at home".

Our study does have limitations. First, we use cross-sectional data, which can show association, but not causation. Second, patient satisfaction is a complex construct, and it is difficult to assess. We attempt to overcome this by examining ten measures of patient satisfaction that consider different aspects of patient satisfaction.

5. Conclusions

To the extent that market factors influence organizational behavior and strategy, patient satisfaction is no exception. We find that there are significant differences in patient satisfaction based on availability of resources such as providers, patient expectations, metro status, and competition.

Given the national emphasis of patient centered care and improving the patient experience, improved satisfaction is a variable performance that is influenced by organizational behavior. Improving patient satisfaction is a strategy that hospitals use to attract and retain patients and their reputations, but it is also a strategy that can be costly to implement. An increased focus on quality improvement, comfortable facilities,

use of a new technology such as EHRs,[23] employment of hospitalists, and communication training for clinicians and staff have been strategies that hospitals have used to improve the patient care experience and thereby patient satisfaction. This study demonstrates that the environment, specifically the munificence and complexity, can influence the strategies that hospitals will use to secure resources and survive. Given the trend in VBP, hospitals will have to more closely strategize and consider options to secure the best resources.

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