Determinants of Satisfaction and Willingness to Recommend: Physician and Patient Perspectives

Dissertation
Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University
By
Maria Mikhailovna Jorina
Graduate Program in Public Health

The Ohio State University
2013

Dissertation Committee:
Ann McAlearney Scheck, Advisor
Sarah Anderson
Eric Seiber
Copyright by

Maria Mikhailovna Jorina

2013
Abstract

Today, when the U.S. health care system is undergoing significant transformations geared towards improving quality of, increasing access to and making more affordable health care services, hospitals are committed to attracting and retaining highly qualified physicians. At the same time, hospitals, in addition to providing excellent care, are interested in attracting new patients. Positive word-of-mouth is believed to be one of the most effective strategies for attracting both qualified physicians and loyal patients. While human resources management literature has demonstrated the link between satisfaction and willingness to recommend, very little research in this area has been conducted in the health care setting. This dissertation project was aimed at developing an in-depth understanding of factors affecting physician and patient willingness to recommend.

The project consisted of three studies. The first study was qualitative in design and consisted of 14 interviews with physicians working at a Midwestern Academic Medical Center. The physicians’ views on the factors influencing their job satisfaction were explored. It was discovered that physicians held different beliefs about job satisfaction drivers and the factors associated with job dissatisfaction. Additionally, the
respondents identified taking care of patients as being one of the most rewarding aspects of the job. Finally, it was possible to distinguish between factors common among academic medical centers and specific characteristics of the medical center under investigation that were associated with job satisfaction.

The second study analyzed data obtained from 1,030 physician satisfaction surveys collected at the medical center during 2009-2011 to measure the impact of various aspects of the work environment and job satisfaction on physicians’ willingness to recommend the medical center as a place of work. A series of logistic regressions revealed that job satisfaction, communication with administration, collaborative efforts between physicians and the medical center to improve quality of care, and physician-nurses collaboration were significantly and positively associated with willingness to recommend.

The third study analyzed data from 11,344 patients who were hospitalized at the medical center and completed post-discharge satisfaction surveys between 2009-2011. A series of logistic regressions tested the relationships between various characteristics of the hospitalization experience, satisfaction with care and patients’ willingness to recommend the medical center to others. The analyses demonstrated that overall satisfaction with care, as well as satisfaction with personal aspects of care, tests and treatments, and care delivered by physician were all significantly and positively associated with patients’ willingness to recommend. Additionally, the study tested the relationship between physicians’ job satisfaction and patients’ willingness to recommend. This relationship was not significant.
This dissertation project not only provides important insight into physician and patient perspectives on satisfaction and willingness to recommend, but also offers practical guidelines to health care managers, leaders, and physicians on ways hospitals could serve as attractive employers and excellent providers of care.
For my mother, Larissa Jorina
Acknowledgements

I would like to express my deepest gratitude to numerous people who inspired and helped me along the way as I was writing this dissertation. I thank Ann McAlearney for being a creative and demanding advisor who allowed my research passion to thrive. Sarah Anderson provided insightful, critical, and fresh perspective on my ideas as they were being fleshed out. Eric Seiber recommended always keeping the question in mind, “Does this make sense?”

I would also like to thank my dear friends and fellow doctoral students who were so helpful and supportive. Naomi Adaniya, Julie Robbins, Lindsey Asti, Tiasha Letostak, and Chrisanne Wilks served as honest and kind reviewers of my work.

I do not think I would have been able to complete this dissertation without understanding, support, and patience of my mother, Larissa, who let me go far away from home, to a foreign country across the ocean, to pursue my dreams.

I would like to thank Eric Jones for being the most supportive, honest, and insightful judge of my work who has been there for me from the tentative start, to the grueling days of data collection and analysis, to the long hours of writing, to the final moments of the defense.
Vita

1998..................................................High School #169, St. Petersburg, Russia
2003.................................................B.S. Philosophy, St. Petersburg State University, Russia
2003–2004 ........................................Grant specialist, St. Petersburg State University, Russia
2004–2005........................................M.A. Bioethics, Case Western Reserve University
2005–2008...........................................M.A. Philosophy, The University of Virginia
2008-2013.................................Graduate Research Associate, The Ohio State University

Publications


Fields of study
Major Field: Health Services Management and Policy
Minor Field: Human Resources Management
# Table of contents

Abstract ................................................................................................................................. ii
Acknowledgements .............................................................................................................. vi
Vita .......................................................................................................................................... vii
Table of contents ................................................................................................................ viii
List of Tables ........................................................................................................................ xi
List of Figures ....................................................................................................................... xiii

## CHAPTER 1: INTRODUCTION ......................................................................................... 1

RESEARCH AIMS .................................................................................................................. 3

## BACKGROUND AND SIGNIFICANCE ............................................................................. 4

Recruitment strategies ........................................................................................................ 4
Physician job satisfaction ................................................................................................. 10
Physician employment ...................................................................................................... 14
Customer/ patient willingness to recommend ............................................................... 17
The link in physician-patient attitudes ............................................................................ 24
Conceptual model .............................................................................................................. 27
Conclusion .......................................................................................................................... 27

References ............................................................................................................................ 29

Chapter 2: Physician Job Satisfaction and Dissatisfaction at One Academic Medical Center: A Qualitative Study ............................................................ 40

## ABSTRACT ...................................................................................................................... 40

## INTRODUCTION .............................................................................................................. 41

## BACKGROUND AND SIGNIFICANCE ............................................................................. 43

Job Satisfaction .................................................................................................................. 44
Physician Job Satisfaction ............................................................................................... 48
Academic and Non-academic Medical Centers ............................................................... 50

## METHODS ...................................................................................................................... 51

Research Design ................................................................................................................ 51
Study Setting ....................................................................................................................... 52
Sample ................................................................................................................................. 52
Physician interviews ........................................................................................................ 53
Analyses .............................................................................................................................. 56

## RESULTS ......................................................................................................................... 59
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCUSSION</td>
<td>76</td>
</tr>
<tr>
<td>MANAGEMENT IMPLICATIONS</td>
<td>82</td>
</tr>
<tr>
<td>LIMITATIONS</td>
<td>83</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>84</td>
</tr>
<tr>
<td>References</td>
<td>85</td>
</tr>
<tr>
<td>Chapter 3: Work Environment and Job Satisfaction as Predictors of Physicians’ Willingness to Recommend Their Place of Work to Others</td>
<td>96</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>96</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>97</td>
</tr>
<tr>
<td>BACKGROUND AND SIGNIFICANCE</td>
<td>99</td>
</tr>
<tr>
<td>DATA AND METHODS</td>
<td>101</td>
</tr>
<tr>
<td>Sample</td>
<td>101</td>
</tr>
<tr>
<td>Measures</td>
<td>102</td>
</tr>
<tr>
<td>Analyses</td>
<td>105</td>
</tr>
<tr>
<td>RESULTS</td>
<td>108</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>114</td>
</tr>
<tr>
<td>LIMITATIONS</td>
<td>121</td>
</tr>
<tr>
<td>MANAGEMENT IMPLICATIONS</td>
<td>124</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>126</td>
</tr>
<tr>
<td>References</td>
<td>127</td>
</tr>
<tr>
<td>Chapter 4: Patient Willingness to Recommend the Hospital to Others: Influence of Satisfaction With Care and Physician Job Satisfaction</td>
<td>136</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>136</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>137</td>
</tr>
<tr>
<td>BACKGROUND AND SIGNIFICANCE</td>
<td>139</td>
</tr>
<tr>
<td>DATA AND METHODS</td>
<td>142</td>
</tr>
<tr>
<td>Sample</td>
<td>143</td>
</tr>
<tr>
<td>Measures</td>
<td>144</td>
</tr>
<tr>
<td>Analyses</td>
<td>147</td>
</tr>
<tr>
<td>RESULTS</td>
<td>153</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>161</td>
</tr>
<tr>
<td>LIMITATIONS</td>
<td>165</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>166</td>
</tr>
<tr>
<td>References</td>
<td>167</td>
</tr>
<tr>
<td>Chapter 5: Conclusion</td>
<td>177</td>
</tr>
<tr>
<td>Summary of key findings</td>
<td>177</td>
</tr>
<tr>
<td>Management implications</td>
<td>182</td>
</tr>
<tr>
<td>Future directions for research</td>
<td>185</td>
</tr>
<tr>
<td>Conclusion</td>
<td>186</td>
</tr>
<tr>
<td>References</td>
<td>187</td>
</tr>
<tr>
<td>Appendix A. Physician Interview Guide</td>
<td>191</td>
</tr>
<tr>
<td>Appendix B. Initial coding dictionary</td>
<td>195</td>
</tr>
<tr>
<td>Appendix C. Finalized Coding Dictionary</td>
<td>197</td>
</tr>
</tbody>
</table>
List of Tables

Table 2.1. Demographic characteristics of physicians………………………………………………… 54
Table 2.2. Contributors to physician job dissatisfaction......................................................... 64
Table 2.3. Patient care factors that contribute to job satisfaction............................................. 68
Table 2.4. Work Environment/Setting Factors Contributing to Job Satisfaction............... 73
Table 3.1. Response distribution for job satisfaction and willingness to recommend.. 104
Table 3.2. Demographic characteristics of physicians.......................................................... 108
Table 3.3. Rate of satisfaction (“satisfied” and “very satisfied”) with aspects of work environment.................................................................................................................. 109
Table 3.4. Percent distribution of physicians who were satisfied with their job and aspects of work environment and differences in demographic characteristics .......... 110
Table 3.5. Spearman correlation coefficients for willingness to recommend and predictor variables.................................................................................................................. 112
Table 3.6. Univariate logistic regression for willingness to recommend......................... 115
Table 3.7. Multivariable logistic regressions, adjusted for covariates.............................. 116
Table 4.1. Response distribution for job satisfaction and willingness to recommend.. 145
Table 4.2. Descriptive statistics of survey constructs............................................................ 148
Table 4.3. Spearman’s rank correlation coefficients between willingness to recommend and construct variables........................................................................................................ 149
Table 4.4. Spearman’s rank correlation coefficients between construct variables......
Table 4.5. Demographic characteristics of patient and physician sample, compared to overall U.S. patient and physician population................................................................. 150
Table 4.6. Percentages of patients satisfied with care and willing to recommend, mean scores for covariates, by demographic characteristics........................................ 154
Table 4.7. Univariate logistic regression for patient’s willingness to recommend........ 156
Table 4.8. Multivariable logistic regressions for patients’ willingness to recommend, adjusted for covariates ..................................................................................................... 158
Table 4.9. Univariate logistic regressions of physician job satisfaction and patients’ willingness to recommend the hospital, by hospital type................................. 159
Table 5.1. Findings about the factors associated with physician job satisfaction, physician willingness to recommend the place of work, and patient willingness to recommend the hospital.......................................................... 162
Table 5.2. Results of the analyses of the relationship between satisfaction and willingness to recommend.
List of Figures

Figure 1: Conceptual Framework ............................................................................. 28
CHAPTER 1: INTRODUCTION

Willingness to recommend or engage in “positive word-of-mouth” regarding a product of service has been traditionally viewed as an expression of brand, service or customer loyalty to the organization (Baumann et al., 2007; Ewing, 2000). Patients are the primary customers of hospitals who may provide recommendations to others. Physicians, being hospital employees, could also serve as ambassadors by engaging in positive “word-of-mouth” about their place of work. Acquiring and retaining loyal customers and employees may result in many benefits to health care organizations, including profitability and reputation (Anderson & Fornell, 1994; Heskett et al., 1994; Rust, Zahorik, & Keiningham, 1995).

Given health care reform in the U.S., today hospitals, more than ever before, are interested in hiring and retaining a highly qualified physician work force (Kocher & Sahini, 2011). Physicians hired through employees’ word-of-mouth tend to stay longer with the organization, perform better and are more satisfied with their place of work than those who were hired through other recruitment means (Van Hoye & Lievens, 2009; Breaugh & Starke, 2000; Collins & Han, 2004; Saks, 2005; Zotolli & Wanous, 2000).
Due to lower turnover, hospitals may be saving between $40,000 and $245,000 per physician, depending on the specialty, hired through word-of-mouth (Buchbinder et al., 1999; Waldman et al., 2004). Similarly, health care organizations are striving to attract loyal patients, since they are more likely not only to return in the future (Heskett, 2002; Dick & Basu, 1994), but also to spread the good word about the organization (Zeithaml, Berry & Parasuraman, 1996). Furthermore, willingness to recommend is considered to be a good indicator of customer satisfaction (Bansal, 2004; Hausman, 2004). In the same vein, employee’s willingness to recommend the workplace to others has been linked to their job satisfaction (Anderson & Mittal, 2000; Anderson, 1998).

The overall goal of this dissertation was to investigate the determinants of physicians’ and patients’ willingness to recommend, and, more specifically, to understand its relationship with satisfaction. This goal was accomplished in the following steps: the first study was a qualitative investigation of the factors influencing physicians’ job satisfaction and willingness to recommend the workplace to others, and patient satisfaction with care and willingness to recommend the hospital to others; the second study quantitatively tested what aspects of work environment were associated with physicians’ willingness to recommend their place of work to others; the third study was a quantitative exploration of patients’ willingness to recommend the hospital to others and its relationship with physicians’ job satisfaction.

This chapter will outline the research aims of each paper, provide an overview of the background and significance of the topics of willingness to recommend and
satisfaction in the area of health care management research, and discuss the conceptual framework utilized in the design and analysis phases of the dissertation.

**RESEARCH AIMS**

**Paper 1:** A qualitative study of physician attitudes about their job satisfaction, willingness to recommend the workplace to others, and patient satisfaction with care and willingness to recommend the hospital to others.

- **Aim 1:** to explore physicians’ views on the aspects of work environment associated with job satisfaction and willingness to recommend the workplace to others;
- **Aim 2:** to elicit physicians’ opinions on determinants of patients’ satisfaction with care and willingness to recommend the hospital to others;
- **Aim 3:** to understand physicians’ perspectives on the relationship between physician job satisfaction and patients’ satisfaction with care.

**Paper 2:** A quantitative study of predictors of physicians’ willingness to recommend their place of work to others.

- **Aim 1:** to identify the aspects of physicians’ work environment influencing their willingness to recommend their place of work to others;
- **Aim 2:** to measure the relationship between physicians’ job satisfaction and willingness to recommend the place of work to others;
- **Aim 3:** to understand how physicians’ affiliation with their place of work is related to their willingness to recommend.
**Paper 3:** A quantitative study of predictors of patients’ willingness to recommend the hospital to others and its relationship with physician job satisfaction.

* **Aim 1:** to determine the factors that influence patients’ willingness to recommend the hospital to others;

* **Aim 2:** to measure the relationship between patients’ willingness to recommend the hospital to others and patients’ satisfaction with care;

* **Aim 3:** to measure the relationship between patients’ willingness to recommend the hospital to others and physicians’ job satisfaction.

**BACKGROUND AND SIGNIFICANCE**

This section provides an overview of literature generated by human resources management, health care management, marketing, and service quality research. In what follows, such topics as recruitment strategies, physician job satisfaction, physician employment, customer/patient willingness to recommend, and the link in physician-patient attitudes will be discussed. This literature review will help understand the extent of our current knowledge in these areas, as well as elucidate the research gaps which will be addressed in this dissertation project.

**Recruitment strategies**

Physician recruitment has been a troublesome challenge for hospitals since the early years of the new millennium when the discrepancies between physician demand and supply started to become more prominent (Cooper et al., 2002). With the implementation of the Patient Protection and Affordable Care Act in 2010 and the
expected increase in patient population by 32 million people, physician shortages are bound to remain a pressing issue for years to come (DeParle, 2010). The latest data from the Association of American Medical Colleges’ Center for Workforce Studies predict that the physician workforce will be suffering from a shortage of 45,000 primary care providers and a shortage of 46,000 surgeons and medical specialists by 2020 (AAMC, 2010). The analysis conducted by the Health Resources and Services Administration in 2008 projected even larger figures for surgeons and medical specialists in particular, with shortages of 35,000 and 27,000 physicians respectively by 2020 (DHHS, 2008). Predictions about such a notable shortage of physicians incited a plethora of research on effective mechanisms to recruit and retain physicians (Lehmann, Dieleman & Martineau, 2008; Hancock et al., 2009). Next, ideas on successful recruitment strategies borrowed from human resources management (HRM) literature will be discussed.

A prominent topic in HRM literature is person-organization fit, or the degree to which the values and cultures of new employees match those of the organization (Kristof-Brown, Zimmerman & Johnson, 2005; Verquer, Beehr & Wagner, 2003). Good person-organization fit is known to be positively related to the employees’ performance, job satisfaction, and commitment to the organization. At the same time, employees who fit well with the organization are less likely to leave (Cable & Judge, 1996).

Some researchers believe that one of the ways to reach candidates who potentially may have a strong person-organization fit is through effective communication (Dineen & Soltis, 2010). If an organization wishes to attract the most
qualified candidates who will remain employed for extended periods of time, perform well, and will be loyal, it needs to project accurate information about its practices, policies, culture, and values to candidates (Breaugh & Starke, 2000). An organization may employ various communication strategies with a twofold goal: to elucidate its culture and values on the one hand, and outline the specific candidate features it may be interested in on the other. Such communication strategies may be divided into “formal”, such as mass media advertisements, job postings on internet career sites, realistic job previews, various tests that measure person-organization fit of the candidates, as well as “informal” strategies, such as employee referrals (Ullman, 1966).

Advertisements travel through a spectrum of media, such as television, radio, newspapers, billboards, and corporate websites (Young & Foot, 2006). Due to the fact that these diverse media are capable of communicating messages to potential candidates on a variety of levels, including intellectual, emotional, and sensory, an organization employing these strategies can share a lot of useful information about its work practices, staff characteristics, strategic planning, vision, mission, and values (Van Vianen, Nijstad, & Voskyijl, 2008). The more information an organization shares with potential candidates, the more accurately they are able to estimate whether or not there would be a good person-organization fit.

Another recruitment strategy, realistic job previews, has arguably received the most extensive attention in HRM literature (Phillips, 1998). Realistic job previews, in the form of a video, a booklet, a testimonial, or a story, are utilized by organizations to provide job candidates with both positive and negative information about the job
(Rynes, 1991). The popularity of realistic job previews as a recruitment strategy may be explained by the fact that they are effective at reducing candidates’ unmet expectations, a frequently reported issue in recruitment literature (Breaugh & Starke, 2000). Thus, Colarelli (1984) hypothesized that realistic job previews conducted face-to-face may be more effective at delivering information about the job and the organization, than written communications. While the exact process underlying this hypothesis was not explained, it is worthwhile because it highlights the importance of interpersonal communication mechanisms for successful employee recruitment.

Some information sources are used for recruitment more often than others. Unfortunately, comprehensive, national level research in this area is quite dated (Breaugh & Starke, 2000) and goes back to one of a more frequently cited studies of such informational sources done by the Bureau of National Affairs in 1988 (Bureau of National Affairs, 1988). The study looked at five job types – office, production, professional, commission sales, and managerial. Across the job types, mass media ads, employee referrals, and schools recruitment were found to be the most commonly utilized informational sources. As for information sources for physician recruitment, a study done by Riley and colleagues (1991), for example, revealed that referrals from faculty and other physicians were found to be the most important for physicians. Other important sources of information were contacts made during medical school, in-person recruitment presentations done by future colleagues, and classified adds (Riley et al., 1991).
Some of these sources are more effective than others in delivering the best candidates. Breaugh & Starke (2000) offered two possible theoretical explanations for the fact that not all communication strategies are always effective: provision of realistic information and existence of individual differences (e.g., gender, age, race). First, certain information sources are more likely to deliver accurate information about the organization than others. For example, before referring someone for a job, a current employee provides the candidate with information concerning the specifics of the job (Breaugh, 1992). The same line of reasoning applies to realistic job previews, which are typically conducted by the hiring manager, and are designed to aid an incumbent with figuring out what it would be really like to work at the organization. Interestingly, mass media ads and school career fairs have been found to provide inaccurate information to potential candidates (Williams et al., 1993). Second, the individual differences of potential candidates may explain why some communication mechanisms may reach certain people while missing others (Rynes, 1991). In other words, some candidates may be more receptive to interpersonal information exchange, while others may acquire sufficient information about the organization of their choice through the published advertisements. Interestingly, employee referrals have been suggested as an effective mechanism of selecting better performing candidates not only because employees are able to describe the job very well, but also because they prescreen the potential candidates for person-organization fit (Ullman, 1966; Breaugh & Starke, 2000).

The topic of employee referrals as an inexpensive yet effective recruitment strategy aimed at improving on-the-job performance has received considerable
attention in HRM literature (Zotolli & Wanous, 2000). Conard and Ashworth’s unpublished meta-analysis of recruitment strategies (Conard & Ashworth, 1986; Zotolli & Wanous, 2000) found that employee referrals had the strongest effect the average employment length of an individual. More specifically, 61.25 percent of employees hired through employee referrals remained employed after one year. Notably, referrals had a stronger effect on employment length than advertisements ($\theta = 0.12$) and career agencies ($\theta = 0.13$). The magnitude of the differences was expressed by a phi coefficient, a coefficient utilized to measure correlation between two dichotomous variables and ranging from -1 to 1.

Interestingly, most research has been focused on the effect employee referrals have on job withdrawal rates or turnover, but not on job performance (Zotolli & Wanous, 2000). Thus, an average “job survival” rate, or the time an employee remains on the job, for an entry position for someone who was recruited via “formal” sources is about 0.50 for the first year. In other words, if an organization hires 100 workers in one year utilizing job advertisements, only 50 will remain employed during the next year. Consequently, the organization may have to hire an additional 50 workers next year to maintain the required number of employees. At the same time, an estimated survival rate for employees recruited via “informal” sources, such as referrals, is 0.59 (Zotolli & Wanous, 2000). Thus, the organization would have to hire only 41 workers if it were using “informal” recruitment sources.

To summarize, employee referral is among the more utilized job recruitment strategies across organizations, industries and job types (e.g., permanent vs. temporary).
This strategy may be seen especially attractive to health care organizations due to its potential to reduce expenditures associated with formal recruitment strategies and it’s the fact that referred physicians may have longer job tenure. The two plausible explanations for the effectiveness of employee referrals that have received equal attention in HRM literature are accurate information transmission about the job from the referring employee to the potential candidates and the individual differences (i.e., sex, height, age, years of education) hypothesis. The first hypothesis has been supported extensively through empirical research which has focused on met/unmet expectations and realistic job previews. The individual differences hypothesis has received much less support, perhaps, due to the fact that such important factors as employee motivation and personality were not included in the hypothesis (Zotolli & Wanous, 2000).

**Physician job satisfaction**

The most recent systematic review of the physician job satisfaction literature, published by Danielle Scheurer and colleagues (2009), significantly contributed to our understanding of physicians’ attitudes not only by summarizing its antecedents, but also by pointing out that the majority of these factors are modifiable.

According to Scheurer et al. (2009), while levels of satisfaction among primary care providers and specialists remained stable between 1996 and 2001, significantly fewer primary care providers and younger physicians reported being “very” satisfied. A few studies demonstrated the existence of professional disillusionment among physicians. A study of 4,501 female physicians found that thirty one percent would not
choose medicine as a career, and thirty eight percent would choose another specialty (Frank et al., 1999). Although demographic characteristics in general are not strongly correlated with professional dissatisfaction, McMurray and colleagues (2000) found that 60 percent of female physicians surveyed for the Physician Work life Study reported higher burnout than men. A study conducted with 401 generalist physician revealed that twenty three percent would not choose medicine again as profession, with those physicians being twice as likely as the respondents who would choose medicine to believe that medicine will deteriorate in the future (Magee & Hojat, 2001). Landon and colleagues (2003) analyzed data from the Community Tracking Study Physician Survey conducted in 1997-2001 and found that declining levels of physician job satisfaction were significantly associated with decreasing clinical autonomy. A follow-up study by the same lead author revealed that dissatisfied physicians were more likely to retire and cut back on work hours than their satisfied counterparts (Landon et al., 2006). Even higher levels of physician job dissatisfaction are expected with the implementation of the Patient Protection and Affordable Care Act (ACA) due to increased job demands and burnout (Dyrbye & Shanafelt, 2011). The ACA contains provisions to extend access to health care services by insuring nearly 32 million people (DeParle, 2010). Such an influx of new patients may not be met with an adequate increase in physician supply and, therefore, will place additional burden on the existing physician workforce.

Further, Scheurer and colleagues (2009) dichotomized the factors affecting physician job satisfaction as intrinsic and extrinsic. Examples of intrinsic factors that had moderate association were physician-specific characteristics, such as age, years of
practice, and specialty. Interestingly, gender and race were not found to have a significant relationship with physicians’ job satisfaction. On the other hand, extrinsic factors strongly related to job satisfaction were work demands, work control, colleagues’ support, and income. Such factors as practice characteristics, capitation, and long-term patient relations were found to have weak association with job satisfaction. Part time work, patient payer mix, and patient characteristics were not found to have any association with job satisfaction.

Scheurer and colleagues (2009) importantly distinguish between extrinsic and intrinsic factors influencing physicians’ job satisfaction. Extrinsic factors have the ability to be modified by organizations when developing strategies to improve job satisfaction. Health care managers and administrators need to pay special attention to these factors if their goal is to achieve productive, stable and happy physician workforce. Importantly, this implication is strengthened by the fact that extrinsic factors were reported to have the strongest relationships with job satisfaction. In other words, it is in the power of health care organizations to affect positive change in physicians’ work environment and thus influence their job satisfaction. The authors further commented that, although intrinsic factors were not changeable, they should be taken into account when designing job satisfaction improvement initiatives.

In terms of consequences of physician job satisfaction, physician-related and patient-related outcomes are reported in literature most frequently. In their narrative review of studies on outcomes of physicians’ job satisfaction published through mid-2002, Williams and Skinner (2003) reported turnover, mental health, physical health,
non-work satisfaction, and work-related issues (i.e., satisfaction with the health care systems, sense of security) as studied most often. The latter category, work-related issues, appears to be intriguing when taken as an outcome of job satisfaction as it typically has been viewed as its antecedent (for an antecedent perspective, see Reames & Dunstone, 1989).

When viewed in terms of patient-related outcomes of physician job satisfaction, quality of care and physician relationship issues were the most prominent ones. Thus, Williams and Skinner (2003) cite a limited number of studies where dissatisfied physicians were found to prescribe more medications and have patients with poor treatment adherence. Additionally, physicians’ job dissatisfaction was reported to be associated with lower patient satisfaction. Finally, while some studies reported a significant relationship between physicians’ job dissatisfaction and patients considered “difficult”, others found that higher job satisfaction resulted in physicians' being more open with and attentive to patients. In summary, it may appear that patients of dissatisfied physicians may have worse health outcomes due to irregular adherence to treatment and poor communication with the doctor (Haas et al., 2000; DiMatteo et al., 1993).

To summarize, a couple of points are emphasized in physician job satisfaction research. First, much evidence points to declining levels of physician job satisfaction across specialties and demographic groups and greater disappointment in the profession in general. While this trend has been present for the past several decades, it is becoming particularly troubling with a higher demand for medical professionals being
generated by the advent of the health care reform. A second and even more important point has to do with evidence suggesting that dissatisfied physicians not only are more likely to quit, have poorer physical and mental health, but also have less satisfied patients. Since providing great patient care is one of the goals of the medical profession (Reuben & Tinetti, 2012), improving physician job satisfaction becomes an important component of this goal. Finally, on a more uplifting note, some encouragement comes from the fact that most of the factors affecting physician job satisfaction (i.e., job demands, work control, income, collegial support) are modifiable and thus can be improved by health care organizations.

**Physician employment**

Today, during an unprecedented shift in health care financing, policy, organization, and delivery initiated by health care reform, hospitals are more than ever interested in pursuing and retaining highly qualified, dedicated, and loyal physicians (Kocher R. & Sahini, 2011). Moreover, hospitals are particularly interested in hiring physicians, rather than purchasing practices or contracting with individual providers. The reasons explaining this interest are discussed below.

A similar phenomenon of hospitals seeking to hire physicians was evident in the 1990s, but today’s situation is somewhat different. In the 1990s, the integration happened primarily due to the proliferation of managed care and health maintenance organizations (HMOs). Thus, hospitals would purchase primary care practices in order to secure referral sources (O’Malley et al., 2011). Physicians, on the other hand, were seeking hospital employment because prospective payment plans that were introduced
together with HMOs limited revenues and viability of individual physician practices (Hoff, 1998). Today, hospitals, in order to secure market share, are continuing and increasing their efforts to hire more physicians, especially primary care providers, who bring in outpatient services and referrals (O’Malley et al., 2011). Additionally, employing large numbers of physicians allows hospitals leverage in negotiating better prices with health plans due to the greater purchasing power of patients contributing to these plans (Cuellar and Gertler, 2006). And hospitals are responding to the call to become accountable care organizations (ACOs) which will be reimbursed by Medicare based on their quality of care and patient experience outcomes. As part of this process, hospitals need to ensure that they employ loyal, engaged physicians who are responsible for coordination of patient care and who value teamwork (Healthcare Strategy Group, 2010). At the same time, by becoming employed, physicians are seeking security from receding reimbursement rates, malpractice lawsuits and an unstable economy.

Overall, greater integration and full-time employment may be beneficial for both physicians and hospitals. Satiani and Vaccaro (2010) point out that for employed physicians, being a part of a large hospital system can eliminate the hassles of reimbursement, insurance claims and malpractice issues. Physicians no longer have to worry about the business side of health care, and are guaranteed stable income and better work-life balance than their self-employed peers. In addition, interested physicians may be offered leadership positions within health care organizations – a factor which facilitates their participation in decision-making processes and increases loyalty. Coupled with greater access to health information technology, the latest
equipment, and better coordination of care, physicians’ desire to work for hospitals is understandable. Hospitals also benefit from employing physicians. Hiring physicians for a long run, especially new graduates, ensures secure future human capital (Satiani and Vaccaro, 2010), increases market share (Felland et al., 2011), continuous referral stream and competitiveness under various reimbursement mechanisms (Kocher and Sahini, 2011).

Such benefits come at a price, though. It is estimated that during the first three years after hiring a physician, hospitals lose money – between $150,000 and $250,000 per year (Kocher and Sahini, 2011), and continue to do so, at a smaller pace, afterwards. Not all physicians are optimistic about the change either. Some feel that their professional autonomy will become diminished once they become employed by a hospital (Satiani and Vaccaro, 2010). Others worry about being forced to follow admission, referral and prescription requirements at their employing hospital, which all aim at increasing the hospital’s revenues at the expense of patients (Kocher and Sahini, 2011). A hospital check-up report published by PressGaney in 2007 revealed that physicians were dissatisfied with the way administration responded to their needs and ideas (PressGaney, 2007), indicating points of tension that underlie hospital-physician integration. Additionally, even though some physicians are offered leadership roles within their employing organizations, this does not guarantee them support from other physicians. The problem is that physician leaders may not always be seen as representing the best interests of their peers, but rather as promoting the hospital’s party line (Satiani and Vaccaro, 2010).
Customer/ patient willingness to recommend

Word-of-mouth, applied to the description of customer behaviors, refers to “informal” communication between a customer and others in regard to evaluation of a product or a service (Anderson, 1998). It may take positive, neutral and/or negative forms. Health care organizations are primarily interested in minimizing negative word-of-mouth and promoting positive word-of-mouth among their patients due to the fact that such activity may result in increased revenues and a steady supply of patients (Ferguson, Paulin & Leiriao, 2006; Ennew, Banerjee & Li, 2000).

Today, “word-of-mouth” is considered one of the most important concepts in marketing research, believed to be “a dominant force in the marketplace” (Mangold, Miller, & Brockway, 1999, p. 73). Despite such a prominence, relatively little is known about the factors that influence “word-of-mouth” (Anderson, 1998; Brown et al., 2005). Most research on word-of-mouth has focused on its consequences, such as the impact on the receiver’s emotions and behavior, while relatively little attention has been devoted to its antecedents (Mahajan, Muller & Bass, 1990; Brown et al., 2005).

Satisfaction has traditionally been associated with positive word-of-mouth or willingness to recommend (Anderson & Mittal, 2000). Thus, patients, being the primary customers of health care organizations, may engage in positive word-of-mouth or recommendations for the reason of being satisfied with the hospital or its services. Numerous studies, spanning service industries from health care, to education, to banking, have confirmed that finding. For example, Ferguson, Paulin and Leiriao (2006) assessed the level of concordance between patients’ overall satisfaction with quality of
care and word-of-mouth behavior at a well-known Canadian hospital. The authors found that out of 361 participants, highly satisfied patients were also active supporters or “ambassador advocates” for the hospital. A side note, but a valuable observation, accompanied the results of this study – ninety-six percent of the respondents indicated that they were first introduced to the hospital through word-of-mouth, with the greatest number of recommendations coming from former patients (49%). In other words, recommendations were not only found to be significantly and positively related to satisfaction with care, but also turned out to be one of the major volume drivers for the hospital.

Further, authors of a study of the Spanish retail banking industry encompassing 576 banking customers (Beerli, Martin & Quintana, 2004) utilized structural equations modeling to test the causal relationship between customer satisfaction and customer loyalty. Customer loyalty was measured via three items: customers’ resistance to switch banks, loyalty attitude, and the degree to which customers would recommend the bank. The researchers found satisfaction with the services to be a strong and positive antecedent of customer loyalty. Given the fact that willingness to recommend was included in the loyalty measure, it follows that customers may be recommending a bank because they are satisfied with its services.

The service profit chain model draws the link between customer satisfaction, customer loyalty and firm profitability (Heskett et al., 1994). This model was developed in the 1990s by a group of researchers working at Harvard University who postulated that customer satisfaction leads to customer loyalty, which, in turn, leads to increased
firm’s profits (Heskett et al., 1994; Storbacka, Strandvik & Grönroos, 1994; Nelson et al., 1992). Especially notable was the work done by Nelson et al. (1992) who statistically demonstrated that patient satisfaction with quality of care explained 17%-27% of hospital financial measures, such as earnings, net revenue, and return on assets. In general, service management researchers argue that customers satisfaction results from the value customers derive from using the services of a particular organization. Such perception of value leads to strong customer loyalty which is expressed in, among other behaviors, positive word-of-mouth. Lastly, having a strong base of loyal customers can increase a firm’s profitability.

Despite a large body of research indicating a positive relationship between patient satisfaction and willingness to recommend, several studies have found an inverse relationship between the two, specifically, that dissatisfied patients may still be willing to recommend the hospital to others. These studies will be discussed in greater detail below.

Cheng et al. (2003) investigated the relationship between satisfaction and willingness to recommend among 4,945 patients discharged from 126 hospitals in Taiwan. While the researchers found that the majority of the respondents (52.4%) fell into the category “satisfied-recommend” – an outcome that was expected, about forty percent demonstrated a different relationship between the two categories. Thus, over twenty percent of the patients were dissatisfied with care, but still were willing to recommend it to others. The authors stopped short of hypothesizing what may explain these results and pointed out that this was an interesting finding.
Jenkinson et al. (2002) conducted a similar study among 2,249 patients discharged from hospitals within a National Health System trust in Scotland. The authors utilized a survey instrument developed by the former Picker Institute in Boston and aimed to identify the factors influencing patients’ satisfaction with care and willingness to recommend the hospital’s services to others. The factors measured in the study included, among other components, information, coordination of care, physical comfort, emotional support, and respect for patient preferences. The study results indicated a high correlation between satisfaction with care and willingness to recommend the hospital’s services to others (rho = 0.64, p<0.001). Notably, however, the questionnaires of the respondents who were highly satisfied contained indicators of problems with between ten and twenty-five percent of the elements of their health care experience. Moreover, individuals who were willing to recommend the hospital services found deficiencies with all aspects of care delivery. Finally, the authors also found that nine percent of individuals who rated their satisfaction with care as very good or excellent were not willing to recommend the hospital services to others.

Zineldin (2006) studied cultural differences in factors affecting patients’ perceptions of satisfaction and its relationship with willingness to recommend as the ultimate goal of the health care experience. The author compared responses collected from 224 patients discharged from three hospitals in Egypt and Jordan. The results from two hospitals indicated an expected relationship between satisfaction and willingness to recommend, where highly satisfied patients were willing to recommend and dissatisfied patients would not recommend the hospital to others. However, patients in the third
hospital were more willing to recommend it than they were satisfied with the hospital. In other words, the patients at the hospital were less satisfied but more willing to recommend its services. Unfortunately, the author glossed over this finding stating that it was interesting and did not attempt to explain it.

Studies demonstrating similar results obtained at the U.S. hospitals are quite scarce. One example is a study by Peyrot, Cooper and Schnapf (1993) who examined perspectives on satisfaction and willingness to recommend among 1,366 patients receiving magnetic resonance imaging (MRI) services at a free-standing imaging facility in the Mid-Atlantic region. The authors found that among the patients who were “very satisfied” with the service, 98% would recommend it. At the same time, 37% of patients who were dissatisfied with the service were willing to recommend it to others. Unfortunately, the authors did not explore this finding.

One possible reason for such scarcity of data in the U.S. on dissatisfied patients willing to recommend may be the fact that such behavior is not common. Anderson (1998) provided interesting insight into peculiar differences between the U.S. and Swedish consumer populations, including patients. Thus, the author found that there was significantly less word-of-mouth by satisfied customers and significantly more word-of-mouth by dissatisfied customers in the U.S. than in Sweden. While the type of word-of-mouth was not specified in the study, it is possible that dissatisfied customers, including patients, tended to provide mostly critical comments.

In summary, it appears that, where present, the inverse relationship between patient satisfaction and willingness to recommend is such that patients are willing to
recommend the hospital despite being dissatisfied with its services or the level of care provided. What could prompt patients to speak positively about the hospital to their family and friends after having had a negative overall experience? Despite lacking interpretation of this finding in the referenced studies, an explanation borrowed from the service industry management could be useful here.

In fact, it is not uncommon to observe situations where customers speak positively about a product, a service, or a firm while being dissatisfied. Such actions may be explained by the concept of switching costs developed in marketing literature. Thus, Fornell (1992) viewed switching costs – the costs associated with changing from one brand or a product to another that could be avoided if the customer did not switch – as a variable moderating the relationship between customer satisfaction and loyalty.

Customer loyalty, and engagement in positive word-of-mouth, may be explained either by their satisfaction or by high switching costs. Importantly, switching costs may have a strong effect on customer loyalty only where several viable alternatives are present. In other words, if there is only one provider in the area, neither satisfied nor dissatisfied customers would switch and their willingness to recommend would not decrease (Lee, Lee & Feik, 2001). In health care, even though a patient may not be satisfied with the quality of care received at a hospital, they would recommend it to family and friends because it is the only facility accessible to them or capable of treating their condition.

Within the context of healthcare, the connection that exists between employee satisfaction, customer satisfaction and their subsequent loyalty takes on an additional level of specificity. Health care experiences, especially hospitalizations and other acute
situations when care may be needed, presuppose the desirability of one-time rather than repeat consumption of the services. When someone gets sick and ends up in a hospital, they typically want to get better and return home as soon as possible. Health care organizations should also be interested in avoiding unnecessary readmissions or other repeated but avoidable provision of medical services to patients. The initiatives incorporated into the Affordable Care Act (ACA) emphasize these practices by providing monetary incentives to hospitals when readmission and medical error rates are below certain levels and penalizing the ones that exceed the established minimum thresholds (Naylor et al., 2011). Thus, customer loyalty within the context of health care should be understood not as repurchase behavior or repeated use of services provided by a hospital, but rather as the action of promoting the hospital among friends and family, serving as the hospital’s ambassadors (Ferguson, Paulin & Leiriao, 2007). This is why willingness to recommend the hospital and the act of engaging in positive word-of-mouth are of such great importance to health care managers and health care marketing researchers alike.

Research has shown that when patients deliberate about which health care organization to use, they typically trust the information provided by informal sources, such as word-of-mouth, more than formal sources (Bates & Gawande, 2000). Seeking an opinion of an experienced user is more typical when a choice has to be made about intangible services, such as health care, as opposed to tangible, concrete products or goods (Mourali, Laroche & Pons, 2005). Researchers have identified several explanations for such preferences, including similarities between the communicator and
the person receiving word-of-mouth information, the absence of any financial incentives to engage in recommendations (Oliver, 1997), and the customer’s perception that the informal source (which is typically a friend, an acquaintance, or a relative) is experienced, trustworthy, and credible (Cialdini, 1999).

The link in physician-patient attitudes

“It takes happy employees to make happy customers”, reportedly said J.W. Marriott Sr. (Barbee & Bott, 1991). The link between employee attitudes and customer satisfaction has been thoroughly established in the service quality literature. The founders of the service profit chain framework, Heskett et al. (1994), state that it “establishes relationships between profitability, customer loyalty, and employee satisfaction, loyalty, and productivity” (p. 264, italics mine). While employee job satisfaction is not directly related to customer satisfaction and willingness to recommend, there are a few intermediary steps which connect the two: satisfied, loyal and productive employees → value of services → customer satisfaction → customer loyalty.

While the entire framework appears to make sense, it has been most common to see tests of its particular links (Kamakure et al., 2002; Zeithaml, 2000). With that being said, empirical studies that have modeled all of the components of the framework simultaneously in order to demonstrate its accuracy exist as well (Loveman, 1998; Kamakure et al., 2002).

Of particular interest here, however, is the relationship between employee or physician job satisfaction and customer or patient loyalty. Since the relationship
between customer satisfaction and willingness to recommend was discussed earlier, I will focus here exclusively on the link between customer and employee attitudes.

Within the context of organizational profit generation, managers from different industries have applied and tested the link between employee and customer satisfaction, generating rich case study data. One of the more famous examples came from the experience of Sears where the executives modified their business patterns to develop an employee-customer-profit framework. The experience was described by Rucci, Kirn, and Quinn (1998), who reported a linear and positive relationship between employee satisfaction, customer satisfaction and organizational profits. More specifically, a 5 point improvement in employee attitudes resulted in 1.3 point increase in customer satisfaction, which, in turn led to Sears’ profit increasing by 5%. Additional support for the link between employee attitudes and customer satisfaction was provided by information technology and banking industries. Thus, Tornow and Wiley (1991) collected data from 667 employees and 633 customers of an organization offering computer-based assistance to corporations. The authors specifically wanted to measure the strength of association between employee attitudes, customer satisfaction, and organizational performance. The study results indicated that customer satisfaction with service, but not overall satisfaction or satisfaction with the product, was related to employee attitudes, including job satisfaction ($r = 0.69 – 0.42$, $p< 0.01$). This finding was not surprising, given the fact that customers typically can judge the quality of services (e.g., customer service or training to use the product) delivered to them better than the quality of a highly technical product.
Interestingly, these results largely replicated the earlier findings by Schneider and Bowen (1985) who collected data from banking branches and established a link between initiatives aimed at improving employee satisfaction and customer satisfaction. In short, the authors distinguished between customer and employee evaluations of service delivery and found that customer satisfaction was affected not only by the employees’ perceptions of the job-related functions, but also by the employees’ general evaluations of the organizational practices. In other words, the effects of the organizational practices on the employees were visible to the customers.

In summary, researchers have confirmed the relationship between employee job satisfaction and consumer satisfaction with a service and subsequent loyalty, expressed as willingness to recommend or positive word-of-mouth, through the service profit chain framework. It has been established that employees who are satisfied with their place of work deliver services to customers in a manner expressive of their attitudes. Customers, in turn, perceive these attitudes and experience greater satisfaction with the services. Notably, the relationship between employee and customer satisfaction holds true in relation to customers’ evaluations of services and not products. This provision is especially relevant in the hospital context where it can be very challenging for patients to understand and evaluate all of the highly technical aspects of care (Ferguson, Paulin & Leiriao, 2007).
Conceptual model

The conceptual model for Paper 1, Paper 2, and Paper 3 is depicted in Figure 1.

The main outcomes of interest are patient willingness to recommend the hospital and physician willingness to recommend their place of work. First, it is hypothesized that patient willingness to recommend the hospital is influenced by various aspects of their hospitalization experience (factors H₁ through Hₓ). The specific aspects of patients’ hospitalization experience to be measured are: admission, discharge, personal issues, meals, care delivered by physician, care delivered by nurses, room, and tests and treatments. The impact of patients’ overall satisfaction with the hospital on their willingness to recommend will be measured as well. Next, it is postulated that physician willingness to recommend their place of work to others is influenced by various aspects of their work environment (factors E₁ through E₃). The aspects of work environment to be measured will be identified by comparing the items in physician satisfaction surveys with the drivers of physician job satisfaction identified in the qualitative study. Additionally, the influence of physicians’ job satisfaction and the type of hospital affiliation (i.e., employed vs. not employed) on their willingness to recommend the place of work will be measured. Finally, it is expected that physician job satisfaction is also significantly and positively related to patient willingness to recommend.

Conclusion

Willingness to recommend, which can serve as an expression of both employee and customer loyalty, has received considerable attention in service management and marketing literature. As the health care industry is markedly recognizing its focus on the
provision of services to its customers – both patients and physicians – more research should be devoted to applying the knowledge acquired in other industries in the context of health care. This dissertation will attempt to accomplish this goal.

Figure 1. Conceptual Framework

E₁ - E₃ - characteristics of physician work environment
H₁ - Hₓ - aspects of patient hospitalization experience

Figure 1. Conceptual Framework

E₁ - E₃ - characteristics of physician work environment
H₁ - Hₓ - aspects of patient hospitalization experience
References


U.S. Department of Health and Human Services, Health Resources and Services Administration; Exhibit 51, Baseline FTE Supply Projects of Active Physicians; Exhibit 52, Baseline Physician Requirements Projections, December 2008.


Chapter 2: Physician Job Satisfaction and Dissatisfaction at One Academic Medical Center: A Qualitative Study

ABSTRACT

Job satisfaction of physicians is related to increased performance, longer tenure, and higher satisfaction among patients. Despite continuous efforts, hospitals still struggle to keep physicians satisfied. This issue is particularly important given the current environment of change associated with health care reform. This study aimed at developing an in-depth understanding of the factors associated with physician job satisfaction.

Fourteen in-depth semi-structured interviews with physicians practicing medicine in an inpatient setting were conducted at a Midwestern Academic Medical Center. The physicians were asked about their level of job satisfaction, about determinants of job satisfaction, and the importance of interacting with patients.
The study found that factors responsible for physician job satisfaction were separate from those associated with job dissatisfaction. Thus, both organization-level issues, such as lack of staff, bureaucracy, and poor communication, and physician-level issues, such as limited control over patient care and extended schedules, were identified by physicians as drivers of their dissatisfaction. On the other hand, helping patients, collaboration opportunities, professional variety, relationships with colleagues, reputation, and growth opportunities were identified as drivers of job satisfaction. The findings of this study could assist healthcare managers in designing effective strategies to improve physicians’ attitudes in ways that are more targeted and selective. An in-depth understanding of determinants of physician job satisfaction may allow healthcare managers to create favorable work environment where satisfaction drivers are enhanced and satisfaction deterrents are diminished.

**INTRODUCTION**

Physician job satisfaction has received renewed attention in health care management literature, especially in the last two decades (Scheurer et al., 2009). Hospitals want to keep physicians happy, since satisfied physicians deliver better care and have more satisfied patients (Haas et al., 2000; Mache et al., 2012). Satisfied physicians have lower intentions of quitting (Landon et al., 2006), which can significantly reduce hospital expenses associated with recruiting, hiring, and training new providers (Buchbinder et al., 1999; Waldman et al., 2004).
The topic of physician job satisfaction is not new. As an offspring of human resources management literature, it originated in the 1960s, in the wake of professional changes physicians were going through while transitioning from solo private practices to working at health maintenance organizations (HMOs) and hospitals (Lichtenstein, 1984). Accustomed to professional autonomy, physicians increasingly were becoming discontent with bureaucratic constraints placed on them by employers. This fact was first documented by Ben-David (1958) who conducted a small study of 52 physicians practicing in a nation-wide sick fund in Israel. Although limited by a small sample size and design issues, this study signified emergence of one of the most persistent issues in health care management, namely keeping physicians satisfied in bureaucratic institutional settings.

Over forty years later, as the U.S. is going through health care reform, physicians are once again transitioning from small group and solo practices to hospital employment (Satiani and Vaccaro, 2010; Kocher R. & Sahini, 2011). Yet, amidst these shifts, the evidence of increasing physicians’ job dissatisfaction is mounting (Scheurer et al., 2009; Landon et al., 2006). Additionally, physicians working at academic medical centers are experiencing lower levels of job satisfaction (Levinson & Rubenstein, 1999). In their study entitled “Why are a quarter of faculty considering leaving academic Medicine?,” Popoli and colleagues (2012) surveyed 2,381 faculty from a nationally representative sample of 26 medical schools to identify reasons of attrition among physicians working at academic medical centers. Over 20 percent of respondents were seriously considering leaving either their institution or academic medicine altogether.
due to job dissatisfaction. Further, among the specific reasons for dissatisfaction, the strongest were perceptions of organizational culture, such as unrelatedness, feeling moral distress at work and lack of engagement. These findings may suggest that the culture existing at academic medical centers may be thwarting physicians’ job satisfaction.

Almost exclusive reliance on quantitative methods to analyze physician satisfaction may be constraining potential research and management advancements in this area. A recent review of the frequency with which qualitative methods studies are published in health services research (Wisdom et al., 2012) revealed that between 2003 and 2007, only around 6 percent of empirical studies were qualitative in design. Yet, one of the most fruitful methods of collecting information about personal attitudes is through in-depth exploratory interviews where participants are asked to share their personal stories and opinions (Dacicco-Bloom & Crabtree, 2006).

This study is an in-depth, qualitative exploration of factors contributing to physicians’ job satisfaction. Understanding the drivers of physicians’ attitudes may help improve work environment to allow physicians to be more productive, having longer tenure, providing better care, and having more satisfied patients.

**BACKGROUND AND SIGNIFICANCE**
Job Satisfaction

John Locke, one the founding fathers of research on job satisfaction, defined it as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences” (1976, p. 1304). Job satisfaction is one of the most researched topics in organizational psychology literature, mostly due to its relation to an array of employee attitudes and behaviors, such as organizational citizenship behavior (Tsai & Wu, 2010; Zieger et al., 2012), organizational commitment (Boles et al., 2007; Spagnoli & Caetano, 2012), turnover (Mobley, 1977; Freund, 2005), job performance (Judge et al., 2001), absenteeism (Lease, 1998; Ybema, Smulders & Bongers, 2010), and life satisfaction (Erdogan, Bauer, Truxillo & Mansfield, 2012; Altinok, 2011). Roznowski and Hulin (1992) emphasize the importance of studying and measuring job satisfaction by stating that it is “the most informative data a manager or researcher can have for predicting employee behavior” (p. 26).

Porter, Steers, Mowday, and Boulian (1974) noted that job satisfaction is an attitude that is “associated with specific and tangible aspects of the work environment” (p. 608). Thus, many aspects of the work environment influencing job satisfaction have been identified, such as compensation, promotion, colleagues, supervisors, recognition, company, and management (Locke, 1976; Smith, Kendall & Hulin, 1969; Goris, Vaught & Pettit, 2003; Sellgren, Ekvall & Tomson, 2008). A broader understanding of job satisfaction may be obtained by looking at theoretical developments in the area of its antecedents as well as main job satisfaction outcomes.

Antecedents of job satisfaction
Judge et al. (2001a), in their comprehensive review of the job satisfaction literature, suggested a three-part classification of theories that focus on antecedents of job satisfaction: 1) situational, 2) dispositional, and 3) interactive theories.

Situational theories suggest that one's job satisfaction results from characteristics of their job or work environment. Examples of such theories are Herzberg’s motivation-hygiene theory, social information processing theory, and Hackman and Oldham’ job characteristics theory. Herzberg (1967) argued that factors contributing to job satisfaction (“motivators”) were different from factors contributing to job dissatisfaction (“hygiene factors”), and so, by eliminating the latter, employees’ job satisfaction would not be automatically improved. Since many researchers have failed to replicate the results of Herzberg’s study in various settings and samples, the motivation-hygiene theory has lost its popularity in recent years (Judge et al., 2001a; Chitiris, 1988).

Social information theory (Salanchik & Pfeffer, 1978) postulated that workers’ perceptions about their jobs are influenced by the social or relational environment in which the workers participate. In other words, individuals are likely to be satisfied if individuals in their professional circles have high job satisfaction. This theory has been criticized for overemphasizing the role of social environment in job satisfaction and the lack of attention to the processes through which it is generated (Staw & Ross, 1985).

The job characteristics theory (Hackman & Oldham, 1975) proposed that individuals have different needs and various jobs can meet these needs, leading to job satisfaction. The five job characteristics identified by Hackman and Oldham (1975) were:
skill variety, task identity, task significance, autonomy, and feedback. The authors argued that the higher each of the characteristics is scored by employees, the greater their overall job satisfaction is.

Dispositional theories of job satisfaction link it to affective predispositions and personality profiles of workers and disregard the roles of work environment or job characteristics (Staw & Ross, 1985; Staw, Bell & Claussen, 1986). Dispositions are stable, long-term phenomena that are not strongly influenced by environment, but can affect one’s emotional response to it. Dispositional traits relevant here are neuroticism and extraversion, which are both components of the five-factor model of personality (Digman, 1990; Goldberg, 1993). Individuals high in neurotism are prone to negative mood states (e.g., anxiety, depression, hostility), while individuals high in extraversion are prone to being cheerful, enthusiastic, confident, and energetic. While these theories have received considerable attention in behavioral psychology, several avenues remain unexplored. For example, there is no consensus on whether moods, affective events, or core self-evaluations reflect job satisfaction (Judge et al. 2001a). Further, the process whereby personality traits affect job satisfaction remains unclear and theoretically underdeveloped (Brief, 1998; House, Shane & Herold, 1996).

Interactive theories combine features of the two previously discussed categories by referring to both situational and personality contributors to job satisfaction. One of the well-known and prominent theories in this category is Locke’s value-percept theory (1976) which postulates that an individual discriminates between different facets of the job and decides which are important based on the system of values s/he possesses.
Thus, if there is a disconnect between what an individual perceives about the job facet and what they desire, it will cause job dissatisfaction only if that job facet was important. This theory has been praised for its ability to distinguish between preferences of individual employees, but it has not been without criticism. The main point of weakness of the value-percept theory is the fact that desirable and important facets of the job are correlated (Judge & Kluger, 2008).

**Outcomes of job satisfaction**

Among some of the most commonly researched outcomes of job satisfaction are: job performance, turnover, and life satisfaction (Judge et al., 2001a). While intuitively it makes sense to infer that satisfied employees are more productive, most researchers support the results of a literature review carried out by Iaffaldano & Muchinsky (1985) who found the correlation between job satisfaction and performance to be relatively weak and mostly “illusory” (it was found to be 0.17). Nevertheless, a more recent and comprehensive review conducted by Judge and colleagues (2001b) has demonstrated that, when adjusted for sampling and measurement error, the correlation becomes more prominent, amounting to 0.3. This moderate correlation was reported to be even higher for more complex jobs, a fact which indicates that with more responsibilities on the job an employee tends to be more satisfied with that job.

There is general agreement among researchers that job satisfaction is negatively related to “withdrawal behaviors”, such as turnover and absenteeism. Thus, Williams and Hazer (1986), in their structural equation modeling analysis of studies relating job satisfaction to organizational commitment and turnover, found that turnover intentions
were moderately related to job satisfaction through commitment. A study based on the national sample of American workers conducted by Lambert, Hogan & Barton (2001) demonstrated that job satisfaction mediated the relationship between work environment and the intention to leave.

Research on the relationship between job satisfaction and life satisfaction has been extensive (see Tait, Padgett & Baldwin, 1989 for a review) and demonstrated a moderate, positive and reciprocal relationship between these two constructs (Judge & Watanabe, 1993). In other words, greater life satisfaction was found related to greater job satisfaction and vice versa.

Physician Job Satisfaction
Physician job satisfaction has recently received heightened attention within the health care management literature. Scheurer and colleagues (2009) carried out a systematic review of articles on physician job satisfaction published in peer-reviewed journals between 1970 and 2007 and found nearly 100 publications.

Why has the topic of physician job satisfaction gained popularity among the researchers in the past two decades? Two factors may offer an explanation: 1) the effect of physician job satisfaction on quality of care, and 2) the dynamics of physicians’ job market.

First, it is important to understand the drivers of physicians’ job satisfaction since their discontent has negative consequences on care quality, including aberrant prescribing patterns and patients’ reduced likelihood of adherence to recommended
medical regimens (Haas et al., 2000; DiMatteo et al., 1993). There is some evidence that dissatisfied physicians are more likely to join a union and go on a strike (Burke, 1996), which would disrupt regular provision of care. At the same time, researchers have confirmed that high job satisfaction among physicians is associated with greater patient trust, patient commitment, and patient satisfaction with care (Grembowski et al., 2005; Mache et al., 2012).

Second, hospitals are interested in recruiting and retaining a well qualified, engaged and dedicated physician workforce in order to maintain a competitive advantage in the market (Kocher & Sahini, 2011) and achieve high quality of care outcomes (Healthcare Strategy Group, 2010). Given the fact that physicians’ opinions about costs and benefits of being hospital-employed are split (Satiani & Vaccaro, 2010; Kocher & Sahini, 2011), hospitals that have employed physicians need to encourage physicians to stay. Ways hospitals can reduce turnover among physicians include increasing satisfaction with being employed (Landon et al., 2006) and reducing the sources of job dissatisfaction (Pathman et al., 2002).

Physician job satisfaction is believed to be influenced by such factors as burnout (Halbesleben & Rathert, 2008), level of pay (Stoddard, Hargraves, Reed, & Vratll, 2001), practice and specialty characteristics (Leigh et al., 2002), level of clinical autonomy (Stoddard, Hargraves, Reed, & Vratll, 2001), relationship with colleagues (Janus et al., 2008), as well as gender, age, and race (Landon, 2004; Haas et al., 1998). Generally, factors that influence physician job satisfaction can be categorized as either individual or organizational in nature (Bellou, 2010). Most often researchers consider individual-level factors...
factors, such as personality traits, affective dispositions, and demographics of employees as determinants of job satisfaction. Organization-level predictors, such as organizational structure, work environment, technical aspects of the job, and access to resources have received much less attention, despite their potential to be changed and improved (Judge et al., 2002).

**Academic and Non-academic Medical Centers**

Academic medical centers (AMCs) differ from non-teaching hospitals in several ways. Academic medical centers are uniquely positioned within the health care delivery system in the U.S. since they train health professionals, advance biomedical and behavioral sciences research, and provide care to underserved populations (Grant, Buse & Meigs, 2005). During the past three decades, teaching hospitals have been facing growing financial difficulties (Kassirer, 1994; Steinmann et al., 2009), continuously competing with non-teaching hospitals and managed care organizations. Since teaching medical students does not generate additional income for the academic medical center but is quite cost consuming, there is a growing pressure on teaching physicians to produce more clinical output (Steinmann et al., 2009). Increasing professional responsibilities and demands are taking a toll on academic physicians, reflected in decreasing levels of satisfaction, increased burnout (Levinson & Rubenstein, 1999; Kataria, 1998), and attrition (Popoli et al., 2012).

This study is an exploration of contributors to physician job satisfaction and willingness to recommend the place of work to others conducted at a Midwestern
Academic Medical Center. Specifically, I attempted to answer the following questions: 1) what aspects of the work environment contribute to physicians’ job satisfaction and willingness to recommend, 2) what aspects of patient hospital experience contribute to patients’ satisfaction with care and willingness to recommend the hospital to others, and 3) what are the physicians’ perspectives on the relationship between physician job satisfaction and patients’ satisfaction with care? Fourteen in-depth semi-structured interviews with physicians practicing medicine in an inpatient setting were conducted in order to answer the aforementioned research questions.

**METHODS**

**Research Design**

A qualitative study consisting of 14 in-depth semi-structured interviews with key informants (Maxwell, 1996; Yin, 2008) was conducted at a Midwestern Academic Medical Center in order to assess physicians’ perspectives on job satisfaction, job dissatisfaction and physician-patient interactions. The details of the recruitment process and data analysis are presented below.

This study was reviewed and received approval from the Institutional Review Board of the university affiliated with the Medical Center as containing minimal risks for the participants. Physicians’ privacy was maintained by de-identifying the survey responses and the demographical data and storing all of the data on a password protected institutional server.
**Study Setting**

This study is set at a Midwestern Academic Medical Center. The medical center consists of six hospitals, a College of Medicine, a physician practice, a network of primary and secondary care practices, and over a dozen research centers. The Inpatient care is delivered at one of the six hospitals belonging to the medical center.

**Sample**

Participants were physicians working at the medical center who were recruited and interviewed between May and November 2012. Physicians who had been practicing in an inpatient setting at the medical center for at least one year, either in the capacity of a resident or an attending physician, were recruited for this study. It was preferable to interview physicians who had been with the medical center for at least this period, because they had had the chance to observe various organizational practices and had seen a large number of patients in order to reflect on their position in the organization and physician-patient relationship. Potential participants were identified through the medical center’s administrators responsible for distributing and collecting physician satisfaction surveys. Physicians representing a variety of specialties were targeted during the recruitment phase. A purposeful sampling strategy, which is often employed in qualitative studies and is designed to provide a broad range of perspectives (Maxwell, 1997; Glaser, 1978), was used during the recruitment phase. First, several physicians working at the medical center were interviewed and then asked to recommend other physicians who might want to participate in the study. In order to obtain diverse
perspectives, the interviewees were asked to recommend candidates who may agree or disagree with their points of view. Informant recruitment and interviews were carried out until theoretical saturation was achieved (Miller and Crabtree, 1999), that is, until no new themes emerged from the interviews.

**Physician interviews**

Physicians were contacted either directly by the researcher or through the administrative assistants working in clinical departments at the medical center. Out of 24 physicians I contacted directly by email, 9 responded. Additionally, the administrative assistants sent out mass emails containing recruitment materials to physicians affiliated with their corresponding departments. 17 physicians responded to email recruitment messages. Out of those, 5 more agreed to participate. In total, 14 interviews were conducted – 13 in person and 1 over the phone. The final sample consisted of surgical specialists (n = 7), medical specialists (n = 5), a family practitioner and a general internist. Additional information about key informants’ characteristics is presented in Table 2.1.

Prior to initiating the interviews, a Physician Interview Guide was developed by the researcher. The Interview Guide was pilot tested with 2 physicians (other than the 14 physicians noted above) in order to gather the respondents’ feedback regarding the wording and order of the questions. The main revisions suggested during the pilot test included wording adjustments. For example, the original question “Do you hold any management roles within the organization?” was
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean tenure, years</td>
<td>8.9</td>
<td>-</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>0.71</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>0.29</td>
</tr>
<tr>
<td><strong>Specialty</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General internists</td>
<td>1</td>
<td>0.07</td>
</tr>
<tr>
<td>Family practitioners</td>
<td>1</td>
<td>0.07</td>
</tr>
<tr>
<td>Medical specialists</td>
<td>5</td>
<td>0.36</td>
</tr>
<tr>
<td>Surgical specialists</td>
<td>7</td>
<td>0.50</td>
</tr>
<tr>
<td><strong>Administrative roles</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>0.36</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>0.64</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>12</td>
<td>0.86</td>
</tr>
<tr>
<td>Asian</td>
<td>2</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Table 2.1 Demographic characteristics of physicians

reworded as “Do you hold any administrative roles within the organization?” Further, the follow-up question “Does this arrangement fit your needs?” was reframed as “Are these roles satisfactory to you?” Another instance where the initial questionnaire was modified was related to the segment on patient satisfaction and willingness to recommend. Thus, it was suggested by both reviewers that the question “In your specialty, what is your perception of patient satisfaction with care?” was followed by: “Is it different from the Medical Center’s measures?” The feedback collected during the pilot testing was incorporated in the final version of the guide that is provided as Appendix A.
The final Physician Interview Guide contained fifteen open-ended questions covering the following five domains: 1) determinants of physician job satisfaction, 2) determinants of physicians’ willingness to recommend their place of work to others, 3) physicians’ perceptions of determinants of patient satisfaction with care, 4) details of patient-physician encounters, and 5) perception of the physician regarding their role in patients’ overall satisfaction with care. During the interview process, emergent topics that were not solicited by the questions included in the Physician Interview Guide were incorporated into the guide as new question probes and were included in all subsequent interviews. For example, one physician, in response to the question “Are [the administrative roles] satisfactory to you?” spoke about the professional freedom associated with doing research and mentioned limited organizational resources inhibiting the ease of getting things done. This topic was included in later interviews in the form of the question probe, “If you wanted to get something done, maybe buying a piece of equipment, is it easy to get things done here?” The responses to this question were later organized under the code “Organizational processes”. Another example of an emergent question probe is related to the topic of the difference between patient satisfaction scores as perceived by the physician and the official satisfaction scores published by the medical center. The question, “In your specialty, what is your perception of patient satisfaction with care? Is it different from the Medical Center’s measures”? prompted one physician to state that the patient satisfaction scores are included in physicians’ annual performance evaluations. Thus, the question probe, “What are you typically evaluated on?” was included in subsequent interviews. The final
example of an emergent question is related to the topic of doctor-patient interactions. To the question “What are the goals you want to achieve when treating a patient?”, one physician mentioned communication and talked about ways to determine whether or not patients understood what was being communicated to them. All of the subsequent interviews included the question probe, “How do you assess the success of communication with patients”?

Face-to-face and telephone interviews lasted on average 30-45 minutes, were audio recorded and transcribed verbatim to achieve maximum accuracy. Informed consent was obtained from all of the participants.

Analyses

Data from the interviews were analyzed using both deductive and inductive methods (Miles & Huberman, 1994; Strauss & Corbin, 1998). The deductive method involved deriving explanations for the findings from a set of codes which were developed prior to the analysis. The codes were created from the interview guide questions as well as the questions that were added during the interview process. Thus, initially, 26 codes were derived from the Physician Interview Guide. For example, all responses to the question, “In your specialty, what factors do you believe are the most important for you to feel satisfied with place of work”? were initially coded as “Factors – physician satisfaction”. Responses to the question, “Would you say it [your job satisfaction] describes the general sentiment among the colleagues within your specialty or major role in the organization”? were coded as “Colleagues – job satisfaction”.

56
Finally, responses to the question, “Is there a particular reason for [recommending the medical center as a place of work to others]?, were coded as “Recommend – place of work – rationale”. The full list of codes and their definitions are provided in Appendix B.

The inductive method involved closely scanning the interviews for emergent themes that were not directly asked in the interviews. For example, in response to questions, “In your specialty, what is your perception of patient satisfaction with care? Is it different from the Medical Center’s measures”?, a few physicians discussed the limitations of what can be measured in the surveys in relation to physician performance, quality of care they delivered, and doctor-patient communication. The respondents noted that many things measured in the surveys, such as room temperature, noise level, and quality of hospital food, are outside of physicians’ control. Thus, the emergent code “Control” was created and included in the final coding dictionary. Similarly, when asked about the factors that influenced patients’ satisfaction with care, a few physicians mentioned the importance of setting expectations upfront in order to avoid misunderstanding between a patient and the care team. Thus, the emergent code “Patient expectations” was created and included in the final coding dictionary.

All interviews were reviewed by the author, with several interviews reviewed together with an assistant applying the initial coding dictionary. The researchers first individually coded three interviews, then met and compared their notes to ensure consensus and consistency of coding (Crabtree & Miller, 1999). The interviews were coded utilizing both the initial coding dictionary and developing new codes that emerged during the coding process, as described above. The emergent codes that were
agreed on by the research team were compared and added to the list of existing codes (Miles and Huberman, 1994). The initial and final coding dictionaries were then reviewed by an experienced qualitative researcher to ensure accuracy and comprehensiveness. The final coding dictionary consisted of 48 codes; these are provided and defined in Appendix C. Examples of new codes included: “Factors – physician satisfaction”, “Factors – patient dissatisfaction”, “Patient expectations”, and “Organizational support and recognition”. Once the coding structure was finalized based on the discussions held between the qualitative researcher, the assistant, and the author, as described above, the author coded all the interviews. The qualitative software, Atlas.ti (version 6.0), was utilized to help the author manage, map and analyze all identified codes.

During the coding and the analysis phases, the method of constant comparison was used (Glaser & Strauss, 1967). To use this method, each statement to be evaluated was compared to previously coded statements to allow codes to could be combined into larger themes and subthemes. In qualitative research, themes, also called concepts (Strauss & Corbin, 1990), are typically defined as abstract conceptual categories that describe discrete events and phenomena. These categories are identified when statements are compared to one another and commonalities are found between them. For example, within the topic of Contributors to physicians’ job dissatisfaction, two themes were identified – 1) Organization-level issues, and 2) Physician-level issues. Further, the broad themes were then divided into more narrow subthemes, which provided more insight into and helped pinpoint particular variations within the themes.
Thus, the aforementioned theme “Organization-level issues” was further divided into three subthemes: a) Lack of assistance/staff, b) Bureaucracy, and c) Poor communication. The analysis was carried out by the author and an experienced qualitative researcher by repeatedly reading the interviews until all of the content was classified, ensuring that the data were explained well by the themes and subthemes, and that there was no overlap in the scope of the classification structures.

RESULTS

Three broad topics representing physicians’ perspectives on job satisfaction and willingness to recommend the hospital were identified – 1) Contributors to physicians’ job dissatisfaction, 2) Contributors to physicians’ job satisfaction, and 3) Work setting contributors to physicians’ job satisfaction. The main themes that emerged regarding these topics, as well as more specific subthemes, are described in detail and supported with illustrative quotes next.

Contributors to physicians’ job dissatisfaction

Among the factors that determined their job dissatisfaction, issues that physicians discussed were categorized into the following two themes: 1) Organization-level issues, and 2) Physician-level issues. The themes and quotes that support these categories are discussed below.

Organization-level issues
Among organization-level issues, three subthemes emerged from comments most commonly mentioned by the respondents: a) lack of assistance/staff, b) bureaucracy, and c) poor communication.

a. **Lack of assistance/staff.** Despite the size of the medical center, physicians noted the need for more support for their practices, especially in the form of additional staff. As one physician expressed it, “physicians, generally, they complain about not having enough help to do the job... from office staff to physician extenders, to half staff [half-time] and all of that...” The respondents felt certain frustration about the lack of assistance, since it was counterproductive to their professional growth. According to another physician, “as you develop and grow and get a bigger and busier clinical practice, you need more support. But support in an academic institution like this... has to come from the hospital. So where you can become frustrated is, if there is a need, there's always a lack”.

b. **Bureaucracy.** On the same note, if a physician were unhappy about the lack of support and wanted to request additional staff, this would be quite problematic, as was noted by many respondents. A common source of frustration was organizational bureaucracy which made it difficult to get things done. One physician expressed a sentiment common among his colleagues that “this is a big, bureaucratic, slow moving gorilla of a hospital that takes forever to make a move on anything”. The problem was not only the time it took for the organization to make decisions or implement changes, but the effort it took to overcome the bureaucracy itself. The system “is like a road block after road block”, lamented a Division chief. He shared that “most people stop” trying as
“the overwhelming amount of work that it takes to try to get the right thing done is just ridiculous”. The difficulty of getting things done is aggravated by the fact that the medical center is a matrix-based, multiple level organization with “a lot of layers of leadership”, noted a physician educator. As noted by a physician leader, this fact explains why “a lot of folks are unhappy – they don’t know who they are dealing with, they don’t know who to go to and it can get quite confusing”.

c. Poor communication. The challenges of navigating the complex, multi-layered system were exacerbated by the fact that it was quite difficult to communicate issues across the organization. Poor communication manifested in inadequate communication channels and poor use of satisfaction surveys. First, some respondents remarked on the fact that while physicians did communicate their concerns, it was unclear whether or not such communication was effective. "Of course, we all listen to each other. Again, I am not sure that it always trickles back... The problem is, there is no good way of communicating", remarked an Associate professor. Further, the hierarchical composition of the medical center did not allow for free flow of information. A surgeon expressed the issue in the following way: “The problem is that there is a lot of overlap [in the organization]. And sometimes there is lack of communication between the different matrices that makes it ... difficult from below to figure out exactly where things go”. Whether or not a physician was heard pretty much determined their job satisfaction. As an Associate professor described it, “As long as I feel that I’m being heard, whether or not change happens, my satisfaction goes back up. When I feel like I’m not being heard, then my satisfaction goes down” (Associate professor).
The medical center routinely collects job satisfaction surveys targeted at different physician groups. Despite the fact that a vast amount of information is being collected, very few physicians saw value in these surveys. Some respondents pointed out the inadequacy of satisfaction surveys in collecting specific feedback. Being standardized in a way to be suitable across hospitals, departments, and specialties, surveys limit the specificity of comments. In the words of a Division director, “a lot of times the questions - like, your interaction with the organization - have to be general enough to be applicable to everybody, but then they lose specificity”.

**Physician-level issues**

Among physician-level issues, two subthemes – a) limited control over patient care, and b) work schedule/professional role demands – were mentioned most frequently.

a. **Limited control over patient care.** First, physicians described the disconnect between their professional duty to provide quality care to patients and limited ability to influence all the aspects of the care delivery process. An Associate professor described this issue in the following way: “I can't be with them [patients] one hundred percent of the time while they're in the hospital. So I can have influence on my own team that sees them, and if it seems like there is a problem coming or is recurring, how we can manage that. But to a certain extent, some of those problems are left to trust the hospital and the hospital administration, the nursing mentors to supervise their folks.” The disconnect also stemmed from the fact that physicians are responsible for the work of many people who participate in patient care – “from... trainees, to office staff, to non-
physician healthcare workers like nurses, physician assistants, and nurse practitioners, radiologists and everyone else” (Physician). As an Assistant professor described it, “I take responsibility for that, that’s my team, I am my team”. Since the work done by the members of the care team reflects on the physician, they can sometimes “feel frustrated...ultimately whether all that work is done well for the patient so that they are satisfied” noted one physician who also characterized this responsibility as “a burden that you carry”.

b. Work schedule/professional role demands. The second physician-level issue expressed by the respondents was also related to limited control over overextended work responsibilities and long work hours. As many physicians typically fulfill more than one role within the hospital – clinical, research, and teaching – managing one’s time and keeping up with multiple tasks can be taxing. In words of a Physician educator, “I know we all feel stretched. We are trying to research and see patients, so we have those competing demands”. Many physicians expressed discontent with demanding, long, and unpredictable work schedules. As an Associate professor put it, “I think that all of us wish that the clinical time that we had could be more predictable”. This sentiment was common among both young and more seasoned physicians. A physician who had started her clinical practice about a year before, shared: “working like 80 hours a week can be difficult on you if you have a family. Or even when you are single, not being able to socialize when you want; if you are married, not being able to spend time with your spouse. I think that the hours are long, definitely. And people have been doing it for a long time - you know, residency, fellowship - this is a very long road. People get burnt
out, basically”. A similar attitude was expressed by a Department director, a senior physician who had been practicing medicine for over thirty years: “I think that a lot of people feel like they are working harder... Particularly people my age who’ve been in this for years, who remember what it was like 10-20 years ago, feel it’s not as much fun as it used to be...I hear that a lot”.

Additional illustrative quotes are provided in Table 2.2

<table>
<thead>
<tr>
<th>Emergent Themes</th>
<th>Verbatim Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization-Level Issues</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Lack of assistance/staff</strong></td>
<td>“It would always be nicer to have more support from the cancer center for additional staff to help out with things” (Associate professor).</td>
</tr>
<tr>
<td></td>
<td>“I can have a good idea but in practice there are no resources... It’s difficult to get things done” (Division chief)</td>
</tr>
<tr>
<td></td>
<td>“they don’t have enough staff. They should hire more people” (Physician).</td>
</tr>
<tr>
<td><strong>Bureaucracy</strong></td>
<td>“the response to that will be months in the least” (Associate professor)</td>
</tr>
</tbody>
</table>

Table 2.2 Contributors to physician job dissatisfaction
<table>
<thead>
<tr>
<th>Table 2.2 Continued</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poor Communication Channels</strong></td>
</tr>
<tr>
<td>“...this is a business that is very hierarchical. And because of that there is always the fear. Folks that are at the bottom would be concerned about complaining” (Associate professor)</td>
</tr>
<tr>
<td>“... there may be some kind of communication about something that’s going to happen in OR or in Labor and Delivery, which at the top of those leadership structures may get communicated, but then does not necessarily get communicated down in the most efficient way” (Division director)</td>
</tr>
<tr>
<td><strong>Lack of Feedback Despite Surveys</strong></td>
</tr>
<tr>
<td>“The way the satisfaction surveys are written, they don’t really give you an opportunity to say what the real problems are” (Division chief)</td>
</tr>
<tr>
<td>“The only reason you are giving us this survey is to make us believe that you care and try. And in reality, it does not stand a chance” (Division chief)</td>
</tr>
<tr>
<td>“most people are not willing to make comments. It’s too risky. If you really speak your mind, it won’t be anonymous” (Division director)</td>
</tr>
<tr>
<td><strong>Physician-Level Issues</strong></td>
</tr>
<tr>
<td><strong>Limited control over patient care</strong></td>
</tr>
<tr>
<td>“No matter how well you deliver care, you always will – especially in cardiology – will have bad outcomes occasionally. A surgery that did not go well, or a diagnosis that gets missed somehow. It’s no one’s fault, but it’s a bad outcome. It’s very hard to convert - one of the challenges is to convert a bad outcome into a still positive patient experience where the patient understands that everybody did the right thing, but you can’t always make everything perfect again” (Department director).</td>
</tr>
</tbody>
</table>

Continued
“... a lot of things we have no control over - if things go well, if food is good, if are not waken up too much during the night, if they are out of the hospital quickly, if they have good news, the nurses are friendly. You know - those are all important. And the physician has nothing to do with it” (Department director).

“I understand very clearly that health care is delivered not by me, it’s delivered by other people. My job is to assimilate information and to lay out care plan, but the implementation of the care plan is done by other people” (Division director).

“if you do everything right in the world in terms of communicating with the patient and something otherwise kind of really destructive happens during the hospital stay, then they won’t be happy. So, you certainly have a large responsibility for it. But you don’t have the full control over either” (Division director).

“they [patients] can get state of the art care - hopefully, by kind and compassionate health care members. I’ve seen varying degrees of that. But I personally strive to do that and I won’t accept it from members of my team. But I can’t be with them 24/7” (Physician educator).

Work schedule/professional roles

“what I struggle with, I think everybody struggles, is with balancing their time” (Associate professor).

“It’s the level of unhappiness because of the unnecessary pressures...” (Associate professor).

“I think I have worked an excessive amount of hours” (Physician).

“you are spread in too many directions” (Physician educator)

Patient care factors contributing to physician job satisfaction
In relation to how patient care affected physicians’ job satisfaction, three themes emerged: 1) helping patients is rewarding, 2) receiving immediate feedback from patients, and 3) making a difference in patient’s experience. The themes and supporting quotes are discussed below.

**Helping people is rewarding**

Helping patients as a rewarding experience was frequently mentioned by the respondents in relation to their job satisfaction. Speaking about the most rewarding part of their job, a Division director shared that “there is nothing like feeling being able to help someone”. Seconded by another physician – “the biggest reward is always making a difference for patients”.

There were a couple of views on the reasons why helping patients was so rewarding. A Division director stated that “feeling like you are a positive part of a patient’s life ... real emotion based on the type of connectedness you can have with the person” makes it like “no other type of interaction”. A physician educator noted that helping patients brought rewards on levels surpassing satisfaction with the job – “seeing patients for me is very fulfilling from an individual, personal, professional perspective. I love to take care of patients, take care of people”.

**Receiving immediate feedback from patients**

Taking care of patients was not only one of the most rewarding experiences for the physicians, it also brought the most immediate feedback. As a Physician educator put it, the clinical piece of the job “certainly provides the most immediate reward”. Another physician explained the “immediate fulfillment” in the following way: “you take
care of someone and they are thankful, or they do well clinically, or are healthy afterwards basically”.

**Making a difference in patient’s experience**

The third theme pertaining to physicians’ job satisfaction was related to making a difference in patient’s experience. A physician administrator pointed out that, regardless of the amount of time a physician spends with their patients, even if it they are seen “once a day”, the physician has the ability to make patients “feel like you care, and they feel like you have answered the questions, and that you are concerned about them, most people... feel overall trust and confidence.” The respondent added, “I think you are [physician] the most important part. And I think we need to see that as our responsibility”. Another physician underscored the important role physicians play in patients’ experiences, even if the time spent with the patient is limited, by saying, “I think you can make a difference... your ability to maximize the positive experience for the amount of time that you do spend with them [patients] I think goes a long way”.

Additional illustrative quotes are provided in Table 2.3.

<table>
<thead>
<tr>
<th>Emergent Themes</th>
<th>Verbatim Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Helping Patients Is Rewarding</em></td>
<td>“I think I get a lot of rewards through work – patients being happy and giving you cue that you’ve done something well” (Physician educator).</td>
</tr>
<tr>
<td></td>
<td>“I like patients...It’s pretty easy for me. It’s not hard to be nice to people” (Department director).</td>
</tr>
</tbody>
</table>

Table 2.3. Patient care factors that contribute to job satisfaction
Table 2.3 Continued

<table>
<thead>
<tr>
<th><strong>Helping Patients Is Rewarding</strong></th>
<th>“clinical role, at this time. Patient care is the most important role for me” (Associate professor).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“I think that’s why I initially became interested in medicine, to help patients with their problems. So I think that this is pretty much the most rewarding part.” (Physician)</td>
</tr>
<tr>
<td></td>
<td>“It’s just, generally speaking, the patients are what probably will give you the most direct job satisfaction” (Division director)</td>
</tr>
<tr>
<td><strong>Receiving Immediate Feedback from Patients</strong></td>
<td>“Probably the most rewarding would be the clinical care. I enjoy my patients and I get immediate feedback on my efforts. I should say immediate gratification. So I can help somebody and then immediately see the effect of that” (Associate professor).</td>
</tr>
<tr>
<td><strong>Making a difference in patient’s experience</strong></td>
<td>“I think the physician plays a big part. If I imagine myself at the hospital, I would want my surgeon to come see me before the surgery, I want them to see me after surgery” (Associate professor).</td>
</tr>
</tbody>
</table>

**Work setting contributors to job satisfaction**

Generally speaking, work setting was a more widely discussed topic with relation to job satisfaction. Within this topic, two major themes emerged: 1) general academic medical center factors, and 2) the medical center specific factors. The themes and supporting quotes are discussed below.

*General academic medical center factors*
When speaking about their work environment, the physicians mentioned a number of things important for their job satisfaction which were characterized as general academic medical center factors. Among these subthemes, a) research and collaboration opportunities, and b) professional variety were mentioned.

a. **Research and collaboration opportunities.** Working at an academic medical center may itself contribute to physicians’ job satisfaction. In words of the Division director, “Being at the university itself is a big part of job satisfaction”, explaining that it is possible to work with “people in other disciplines that you can collaborate to try to answer scientific questions together”. Interdisciplinary collaboration may further “research that pushes the standard of care, better next year than it was last year” which “is kind of part and parcel of what makes the job rewarding”, commented an Associate professor who was simultaneously working on several collaborative research projects at the medical center.

b. **Professional variety.** Not only are physicians able to engage in research opportunities across the organization, they are provided the freedom to become involved in various organizational roles contributing to professional variety. As a physician educator put it, “I love that you can expand and become different things within [here]”. A Division director commented, along the same lines, that “what makes my job very enjoyable is the variety, all of which are challenging, but very, very interesting”. For those physicians who enjoy teaching, there is an option to become engaged in resident and fellow training sessions. As one physician shared, “it’s interesting to continue to work with residents and fellows who are learning and you are
deriving some kind of benefit from providing them education”. Other physicians take on administrative duties. A Division director, 40 percent of whose work time is devoted to administrative duties, said “I like going to meetings and being on committees. I like the way the institution is moving forward and backwards and I have some input to that”. Fulfilling clinical and educational roles as well, the respondent concluded that “I like them [roles] all. I like variety”.

The Medical center-specific factors

Contributors to physicians’ job satisfaction related specifically to the medical center were categorized into four subthemes: a) colleagues, b) resources and facilities, c) reputation, and d) growth opportunities.

a. Colleagues. When speaking about colleagues, physicians mentioned both coworkers in general and specific leaders/mentors. “I enjoy the people I work with”, a physician educator responded to a prompt about contributors to his high job satisfaction. Additionally, several physicians spoke about a special “atmosphere of collegiality” present within departments at the medical center. For example, a physician educator, an Associate professor, stated that “the main reason why I was attracted to [here] was the incredible atmosphere of collegiality that was present. It was a small program, but a very friendly program”. “People are really collegial and willing to help each other out”, explained a Division director.

Further, several respondents were attracted either to come work to the medical center or to stay there after medical school training because of specific leaders and mentors. One physician, an Associate professor, indicated that “my current division
director is a big reason that I came [here]”. Another physician tied her career choice to the mentors she had known from training: “I did my fellowship for one year here and then my residency for three years here... I thought that would be a good transition from being a fellow to being an attending, because I have mentors there that I trust and ask for advice. If I needed help with a certain procedure, they would be there for me”.

b. **Resources and facilities.** Next, many physicians spoke about the vast resources and facilities that the medical center offers as a contributor to their job satisfaction. As one physician put it, “[this] is such a huge hospital that basically you have pretty much anything you want”. In words of a Department director, “we have beautiful facilities. Our heart hospital and the research institute are state of the art. It’s a multi-billion dollar hospital”.

c. **Reputation.** Another contributor to physicians’ job satisfaction is the medical center’s national reputation. When comparing the medical center to the institution where he had worked previously, a Division director noted that “This is a very different organization from the one I came from... More national recognition. [Medical center] is very well known, very well respected”. A physician educator emphasized the reputation of the medical center to be one of the key attraction points for someone who is considering working there: “a lot of... national visibility will happen here better than anywhere else”.

d. **Growth opportunities.** The final medical center specific contributor to physician job satisfaction is growth opportunities. Within this subtheme, personal growth and growth within the institution were mentioned most frequently. Speaking
about the reasons he was attracted to the medical center, a physician educator noted that “this was obviously a very dynamic place, ready to grow and explode. At the time, I saw an opportunity that was pretty much unmatched and unparalleled in other, bigger name places”. According to another physician educator, this is still a major asset of the hospital, especially in relation to personal research opportunities: “there is a lot of research growth going on right now... setting up my own research and collaboration”.

Lastly, not only opportunities for individual physicians, but also general growth and expansion of the hospital keep physicians satisfied. The organizational growth is clearly visible to physicians. As a Department chair put it, “I’ve had the opportunity to both witness the growth of my own clinical department, as well as the Medical Center at large”. More broadly speaking, “as a whole, the institution is on kind of an upward trajectory”, said a Division director who also added that “it’s an up and coming place to work”. Additional illustrative quotes are provided in Table 2.4.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Verbatim comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>General Academic Medical Center Factors</strong></td>
</tr>
<tr>
<td><strong>Research/ Collaboration Opportunities</strong></td>
<td>“there were excellent clinical research opportunities” (Department chair)</td>
</tr>
<tr>
<td></td>
<td>“I did my fellowship here for two years and then stayed on faculty... I stayed on mostly for my research endeavors” (Associate professor).</td>
</tr>
<tr>
<td><strong>Professional variety</strong></td>
<td>“I have a very diverse job in terms of responsibilities” (Department chair)</td>
</tr>
</tbody>
</table>

Table 2.4. Work environment/setting factors contributing to job satisfaction
“It's really probably the administrative side of things. The physician practice point of view, which, as the division director, is probably most satisfying, other than taking care of patients... I kinda like to problem solve and make things better. And so when I feel like I have a problem I can work on and improve things for people, I enjoy that part” (Division director).

“If all I did was seeing patients and did not have the opportunity to use those skills and my experience to improve those other things, that would probably feel less than satisfying. But if all I did was administrative stuff, to be honest, I would pretty quickly become a guy in a suit writing memos, I would not be seen by my peers as a doctor any more” (Physician).

“I like them [roles] all. I like variety, I’d be bored to death just working in an office every day” (Division director).

“So just about 40 percent of my time is clinical, and then the rest is mostly administrative... I am very content with my job, I’m very happy here. My current distribution of effort is probably about where it should be” (Department director).

<table>
<thead>
<tr>
<th>Resources/Facilities</th>
<th>“it’s obvious that there are resources” (Associate professor)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“the facilities are nice” (Associate professor)</td>
</tr>
<tr>
<td></td>
<td>‘the resources were just immense” (Associate professor)</td>
</tr>
</tbody>
</table>

| Reputation           | “this was the most appealing academic job that was available to me at the time... I liked the department a great deal ... the department had a good reputation (Physician). |

Continued
<table>
<thead>
<tr>
<th><strong>Growth Opportunities/ Trajectory</strong></th>
<th><strong>Personal Growth Opportunities</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>“it’s the reputation and what we’ve built in terms of the faculty. People are on the map, so to speak, nationally and we are well regarded” (Department chair).</td>
<td></td>
</tr>
<tr>
<td>“those who are involved in the academic work, that is, producing scholarly research, are probably more likely to value the reputation of the institution outside of [here] in terms of national rankings” (Department chair)</td>
<td></td>
</tr>
<tr>
<td>“This was by far and away the best opportunity – to have early independence. I think, the Ohio State does a great job of letting junior faculty sort of define their role in the department and do the things they are interested in doing” (Department director).</td>
<td></td>
</tr>
<tr>
<td>“there were excellent clinical research opportunities that had presented themselves” (Department chair)</td>
<td></td>
</tr>
</tbody>
</table>

**Growth in the Institution**

“the leadership... have a clear vision of growing, not just the huge new building for the cancer hospital, but the role for the university itself and the direction it’s going, this is very positive”

“At this point not only the department, the medical center as a whole, is clearly in favor of accomplishing the stated plan. They are hiring more physicians for this program” (Physician).

“There have been tremendous areas of growth here, which has allowed the expansion of clinical services, research opportunities in particular” (Department chair).
DISCUSSION

In their systematic review of physician job satisfaction literature, Scheurer and colleagues (2009) concluded that such variables as work demands, control, reimbursement, and relationships with colleagues were most frequently associated with physicians’ job satisfaction. The present qualitative study supports and adds to these findings in a number of important ways.

First, this study demonstrated that different factors were responsible for job satisfaction than for job dissatisfaction among physicians. Thus, while contributors to physicians’ job satisfaction included aspects of the work environment abundantly present at the medical center, factors contributing to physicians’ job dissatisfaction represented deficiencies and areas needing improvement. While mostly the same respondents spoke about positive and negative aspects of their work environment, there were several individuals particularly dissatisfied with working at the medical center. Second, the study provided additional information on the aspects of working at an academic medical center that were responsible for physicians’ job satisfaction. Third, patient care was identified as a special area contributing to physicians’ attitudes.

Job satisfaction vs. job dissatisfaction

In terms of the aspects of work environment, a clear distinction could be drawn between physicians’ job satisfaction drivers and factors responsible for job dissatisfaction. Thus, among job satisfaction drivers the respondents mentioned: research opportunities, professional variety, relationships with colleagues, access to
facilities, reputation, and growth opportunities. On the other hand, the biggest discontent was associated with lack of assistance, bureaucracy, poor communication, limited control over patient care, and competing organizational roles.

Our findings provide, unexpectedly, support for Herzberg’s motivation-hygiene theory. According to Herzberg, motivation factors that drive job satisfaction up are: achievement, recognition, the work itself, responsibility, and advancement. The hygiene factors associated with high job dissatisfaction are: supervision, interpersonal relations, physical working conditions, salary, company policy and administration, benefits, and job security. As mentioned earlier, this theory has received a lot of skepticism from researchers due to a common failure to replicate its findings. Researchers could not find support for the theory if using research methods other than those utilized by Herzberg (i.e. clinical incident method) or when applying the factor typology proposed in the original Herzberg’s work (Judge et al., 2001a; Chitiris, 1988). At the same time, the theory has been widely supported by empirical research, enjoying popularity among human resources managers who adopted its principles in order to increase worker motivation and productivity (Chitiris, 1988; Manolopoulos, 2008; Gullickson & Gullickson, 2011; Dartey-Baah & Amoako, 2011). In an integrative literature review devoted to Herzberg’s two-factor theory, Stello (2011) highlighted its practical value in guiding managers to select actionable factors that improve job satisfaction.

Indeed, it is not necessary to follow Herzberg’s typology to arrive at the same conclusion. When analyzing the results of this study, it becomes quite apparent that the
factors responsible for physicians’ job satisfaction are not opposite of those driving their dissatisfaction, but are instead different. Thus, following Herzberg’s logic, physicians’ job satisfaction will not be improved if more staff are hired or organizational bureaucracy is reduced. Those efforts will be most effective at reducing levels of dissatisfaction. Job satisfaction will be improved when factors such as increasing research opportunities and promoting better relationships with colleagues, are present.

It is important to note that, although professional variety and competing organizational roles may appear to represent two sides of the same coin, namely, the scope of professional roles and duties one performs at the job, they really are not the same. On the one hand, opportunities to develop new skills and apply them in the work setting offer variety and thus make a job exciting. If roles are managed effectively, conflict between them is not imminent. On the other hand, competing job demands may be caused not by the sheer number of one’s roles and responsibilities, but by the roles being excessively demanding, or by poor time management, or by some extrinsic factors. For example, Summer and colleagues (2012), in a recent study found that when physicians were measured on performance targets related to clinical tasks, 75 percent of them reported a decline in teaching activities and 48 percent decreased time spent on research. Thus, even though physicians were charged with performing several tasks, the imbalance in roles was caused by an extrinsic factor – performance measurement – and not by conflicting role demands.

*Academic Medical Center- and hospital-specific factors*
Another peculiar finding of this study concerned the distinction between job satisfaction drivers specific to academic medical centers in general and those specific to the medical center I studied. Specifically, research opportunities and professional variety were identified as factors which are present at any academic medical center. The remaining factors - relationships with colleagues, access to facilities, the medical center’s reputation, and growth opportunities – were specific to this medical center as drivers of physicians’ job satisfaction.

Research opportunities and professional variety are known to be factors many physicians find attractive when selecting a place of employment (Mohr & Burgess, 2011). Furthermore, job satisfaction among physicians who are involved in research tends to be higher than that of non-academic physicians (Linzer et al., 2000; Pratt, 2010). This fact is attributable to opportunities to gain more autonomy through conducting research (Tight, Kayrooz & Åkerlind, 2007), recognizing that autonomy has been traditionally associated with job satisfaction (Hackman & Oldman, 1975). Another driver of job satisfaction identified by Hackman and Oldman (1975) is skills variety, or the ability to use different skills on the job. The physicians in this study were greatly content with the freedom to take on different professional roles, such as clinical, research, and administrative, that were available to them through the medical center. These findings are supported by research in social service work carried out by Deborah Smith and Joel Shields (2013) who found that job variety was a motivating factor directly related to social service workers’ job satisfaction. Furthermore, a comprehensive review of
research on job satisfaction of GPs published in the U.S., Australia, New Zealand, and a number of European countries, including UK and Spain (Van Ham et al., 2006) demonstrated that variety on the job was one of the most commonly mentioned factors of job satisfaction.

Although in this study physicians identified a number of job satisfaction drivers specific to the hospital where they worked, previous research has linked those factors, in general form, to job satisfaction: relationships with colleagues (Laschinger & Finegan, 2005), facilities (Wada et al., 2009), reputation (Ayanian & Weissman, 2002), and growth opportunities (Barnes, 1998). Thus, a question may arise: Is job satisfaction at a particular place of work a different phenomenon? This issue may be clarified by drawing an important distinction between job satisfaction and organizational satisfaction (Ajzen & Fishbein, 1977; Shore, Newton & Thornton, 1990). While organizational satisfaction may be associated with more general characteristics of the company and may result from a favorable comparison with competitors, job satisfaction is derived from employees’ direct experiences at their place of work. Thus, it appears that, in context of job satisfaction, it is appropriate to speak of, for example, satisfaction with colleagues and satisfaction with particular colleagues as synonymous. Therefore, a physician’s direct relationships with colleagues, working at specific modern facilities, being aware of the hospital’s local and national reputation, and observing first hand growth opportunities present at the hospital contribute to his or her job satisfaction.

*Patient care as a driver of job satisfaction*
Our results highlight the importance of helping patients in order for physicians to feel satisfied with their jobs. Research on prosocial behaviors has demonstrated that helping others influences wellbeing of the helper, in particular their life satisfaction (Wheeler, Gorey & Greenblatt, 1998). Furthermore, helping others is reported to be one of the main reasons students choose medicine as a career (Epstein & Hundert, 2002). Helping others has been identified as one of the intrinsic factors associated with job motivation (Wright & Beasley, 2004) and job satisfaction (Randolph, 2005). Wright and Beasley (2004), in a study of internal medicine physicians, found that female physicians reported being more motivated by helping others than male physicians, while male physicians cared more about extrinsic motivators, such as pay. In the context of this study, where over 70 percent of the participants were males, it is encouraging to see that helping others was viewed as a powerful driver of physician job satisfaction. If taking care of patients is rewarding for physicians and drives their job satisfaction, this can have far-reaching positive impact on patients’ perceptions of care. Patient-physician encounters have been found to have a significant effect on patient satisfaction, compliance, and recommendations (Clever et al., 2008; Williams, Weinman & Dale, 1998; Cheng et al., 2003). Positive interactions with the physician create positive impressions for the patient with respect to their experience of hospitalization in its entirety (Hausman, 2004), even when a patient’s condition does not improve dramatically (Williams et al., 1995).
MANAGEMENT IMPLICATIONS

The findings of this study in relation to physician job satisfaction and dissatisfaction have several management implications. First, the study demonstrates the importance of separating factors responsible for job satisfaction from drivers of job dissatisfaction. Knowing that certain aspects of the work environment are associated with physicians’ dissatisfaction will enable managers to devise the most effective strategies to reduce or eliminate those factors. Doing that will result in reduction of dissatisfaction among physicians. Second, it is also important to understand that reduction in dissatisfaction levels will not automatically lead to higher job satisfaction. In fact, the study demonstrated quite clearly that job satisfaction is associated with a different set of drivers which need to be addressed in their own right. Thus, health care managers can employ this knowledge to create the environment conducive to high job satisfaction. Third, understanding the importance of separating drivers of job satisfaction from factors associated with job dissatisfaction will enable health care managers to measure physicians’ attitudes more accurately. Thus, instead of surveying physicians on their general satisfaction with various aspects of the work environment and characteristics of the organization, it may be more efficient to ask questions targeting job satisfaction and dissatisfaction. Fourth, since practicing at an academic medical center often times requires physicians to fulfill multiple roles and may cause them to become overextended, it appears important that organizational assistance in the form of additional staff, more predictable schedules, or the freedom to perform one role at a time is provided.
LIMITATIONS

This study is not without limitations. First, it was initially planned that physicians’ attitudes towards recommending their place of employment to others would be a focus of this study. Despite the fact that the respondents were directly asked about their willingness to recommend the medical center, very few of them provided more than a “yes” or “no” answer. Additionally, when asked to expand on the reasons one would or would not be willing to provide a recommendation, the respondents were more inclined to hypothesize rather than share their personal views on this matter. I developed a sense that the physicians were not particularly interested in the topic of willingness to recommend or may not have been familiar with it to the extent that they felt comfortable to comment. Such a finding came as a surprise given the amount of attention willingness to recommend gets in management literature and the fact that a question on physicians’ willingness to recommend in included in the organization’s satisfaction surveys. It is plausible that there is a discrepancy between topics that motivate researchers and issues that interest physicians. On the same note, it may be the case that the organization’s leaders, aware of the existing research on satisfaction and willingness to recommend, have not been very successful at spreading this knowledge among the physicians. More research is needed in the area of physician willingness to recommend in order to shed some light on this matter.

Among additional limitations of this study, its results might have been affected by respondent bias. It is possible that only the most contented physicians responded to the invitation to participate in this study and, therefore, the author could not obtain a
more comprehensive range of existing perspectives on job satisfaction. Additionally, a relatively small number of physicians agreed to participate, limiting our ability to conclude whether or not other physicians working at the medical center shared the opinions of the participants. Moreover, it is challenging to know whether theoretical saturation was indeed achieved and all the main themes related to physician job satisfaction were captured in the study. Lastly, since the majority of the participants were males, it is quite possible that some issues important to female physicians were left out of the study.

**CONCLUSION**

This study provided support for Herzberg’s two-factor theory of motivation in demonstrating that the set of factors influencing physician job dissatisfaction was different from job satisfaction drivers. Additionally, the study highlighted distinguishing features of academic medical centers which may be positively affecting physician job satisfaction. Finally, taking care of patients as one of the most rewarding aspects of the job was identified as an important predictor of physician job satisfaction. Understanding the components of the physician work environment associated with their job satisfaction and dissatisfaction may prove useful for health care administrators who want to attract and retain highly qualified and loyal providers.
References


Gullickson L. & Gullickson L. (2011). Herzberg’s theory of motivation as applied to community college full-time and adjunct online faculty.

Health Care Strategy Group. Is your strategic planning process set up to fail?

*Strategic Focus*, May 2010. Accessed on May 15, 2013 at:


Chapter 3: Work Environment and Job Satisfaction as Predictors of Physicians’ Willingness to Recommend Their Place of Work to Others

ABSTRACT

Physicians hired through referrals may be more qualified, have longer tenure, be better performers, and have higher job satisfaction than physicians hired via other means. Referrals as a recruitment method, also known as positive word-of-mouth, and one’s willingness to provide such referrals have been rarely studied in health care management literature. This study was designed to measure the relationship between several aspects of work environment, which were identified in an earlier qualitative study, and physicians’ willingness to recommend the hospital as a place of work to others. The study also tested the link between physicians’ job satisfaction and willingness to recommend.

A total of 1,030 physician satisfaction surveys collected at a Midwestern Academic Medical Center during 2009-2011 were analyzed utilizing a series of logistic regressions. Relationships between physicians’ willingness to recommend, their
assessments of various aspects of work environment, job satisfaction, and type of hospital affiliation were analyzed.

Physician job satisfaction was positively and strongly related to their willingness to recommend the place of work to others. Additionally, communication with administration, perception that the hospital and physicians worked together to improve quality of care, and physician-nurse collaboration were found to be significantly related to willingness to recommend. These findings suggest that, given the fact that referrals are considered a cost-effective recruitment method, hospital managers would benefit from enhancing the aspects of work environment that are associated with physicians’ willingness to recommend.

INTRODUCTION

In the current health care environment, more than ever before, hospitals are interested in hiring and retaining highly qualified physician workforce (Kocher & Sahini, 2011). Research has demonstrated that candidates hired through employee referrals tend to stay longer with the organization, perform better and are more satisfied with their place of work than those who were hired through other recruitment means (Van Hoye & Lievens, 2009; Breau & Starke, 2000; Collins & Han, 2004; Saks, 2005; Zottoli & Wanous, 2000). Physicians hired through employee referrals may bring additional savings to their organizations by staying employed longer and thus reducing hospital expenses associated with the hiring of new physicians and initial productivity loss (Buchbinder et al., 1999; Waldman et al., 2004). While employee referrals as a
recruitment method has received considerable attention in human resources and sociological literature (see a review by Breaugh, 2008), physicians’ referrals have received very little attention in health care management literature. Additional research into physician referrals may help hospitals improve their understanding of their human resources capital.

Willingness to recommend a product or service is a good indicator of customer satisfaction (Bansal et al., 2004; Hausman, 2004). Thus, it may be implied that satisfied physicians are more likely to recommend their place of work, than physicians who are less satisfied. However, scholars disagree on the exact relationship between satisfaction and willingness to recommend a health care facility to others as a place of work. Some researchers suggest an inverse relationship, where poor job satisfaction may still result in a recommendation (Anderson, 1998) or high satisfaction resulting in low recommending behavior (Hart et al., 1990). Though such interplay between satisfaction and willingness to recommend is possible, it has attracted little attention among researchers within the context of inpatient care.

Third, the relationship between willingness to recommend the place of work to others and physician employment type has not been studied yet. Currently, many physicians are transitioning from contractual to employment-based relationships with hospitals (Satiani & Vaccaro, 2010; Kletke et al, 1996). Since hospital employment is becoming more common, understanding how it affects physicians’ recommendations will allow successful health care organizations to stand out. This study addressed these limitations and investigated the factors influencing physicians’ willingness to
recommend their place of work to others. I analyzed physician satisfaction survey data collected at a Midwestern Academic Medical Center during 2009-2011. A series of logistic regressions measured the relationship between physicians’ willingness to recommend and perceptions of organizational factors, job satisfaction and employment.

BACKGROUND AND SIGNIFICANCE

It has been shown that referrals play an important role in bringing the right people to the organization. For example, studies in the banking industry demonstrated that referred applicants had better skills and experience, higher levels of education, and were more qualified (Fernandez & Weinberg, 1997; Fernandez, Castilla & Moore, 2000) than other employees. In healthcare, some evidence suggests that professional referrals are not only common (Paulin, Ferguson & Bergeron, 2006), but also preferred by physicians (Riley et al., 1991).

Studies that looked at the determinants of one’s willingness to recommend a product or a service to others have focused specifically on the person’s satisfaction with that product or service. Moreover, general satisfaction or dissatisfaction with a product or service was regarded as an antecedent of any type of word-of-mouth activity (Anderson & Mittal, 2000; Anderson, 1998). Researchers disagree, however, on whether this is a positive or a negative relationship. It is highly plausible that satisfied individuals engage in recommendations of a product or service they like. At the same time, dissatisfied individuals may speak about their experience in a favorable way as well. This instance may occur when dissatisfied customers cannot switch to another product or
company due to lack of acceptable alternatives (Fornell, 1992; Lee, Lee & Feik, 2001).

Such complexity in the relationship between satisfaction and willingness to recommend, as well as a paucity of studies integrating the physician population warrant more research in this area.

Despite the fact that job satisfaction is the factor most commonly associated with positive word-of-mouth, some believe that this account of willingness to recommend is narrow and simplistic (Mazzarol, Sweeney & Soutar, 2006). Willingness to recommend is not an inseparable outcome of a satisfactory experience, but it occurs under specific conditions. Hence the need for further research into factors influencing one’s willingness to recommend their place of work to others (Gremler and Brown, 1999).

Physicians have been transitioning from solo and small group physician practices to being employed by hospitals (Kletke et al, 1996; Satiani and Vaccaro, 2010; Liebhaber and Grossman, 2007). To the best of our knowledge, a direct relationship between physician employment and willingness to recommend their place of work has not been studied. Studies of employment and satisfaction are, in contrast, quite common. To begin with, there is a general belief that physicians employed by hospitals are more satisfied with their job and place of work due to shorter work hours, better family life, more time to practice medicine, job and income security, and involvement in managerial roles (Leigh et al., 2009; Janus et al., 2008). At the same time, Beasley et al. (2005) found that, when compared to independent family physicians, hospital employed physicians were less satisfied with being a physician, reported worse perceived quality
of care that they delivered, and were more likely to change their place of work.

Employed physicians may be more involved with the organization in a sense of being generally interested in it (Mitchell, 1979), more knowledgeable and more willing to promote it than non-employed physicians (Lau & Ng, 2001). Thus, hospital employed physicians may be more willing to recommend their organization to others.

**DATA AND METHODS**

**Sample**
This study relied on data from physician satisfaction surveys collected by a Midwestern Academic Medical Center between January 1, 2009 and December 31, 2011. The Medical Center consists of six hospitals, the College of Medicine, a physician practice, a network of primary and secondary care practices, and over a dozen research centers. It began utilizing the services of PressGaney Associates in 2009 and subsequently conducted yearly surveys of randomly selected physicians. PressGaney provides consulting services in performance measurement to health care organizations across the U.S. Reliance on the same vendor for collection of the survey data ensured sampling consistency and utilization of the same survey tool. Over 1,500 physicians practice at the medical center, with approximately 1,000 working on the inpatient side. All physician surveys collected in 2009, 2010 and 2011 were included in the analysis. The data were obtained from 342, 394 and 294 physicians in 2009, 2010 and 2011, with response rates of 38%, 44% and 33% respectively.
This study was reviewed and received approval from the Institutional Review Board of the university affiliated with the Medical Center as containing minimal risks for the participants. Physicians’ privacy was maintained by de-identifying the survey responses and the demographical data and storing all of the data on a password protected institutional server.

**Measures**

The dependent variable in this study was physicians’ willingness to recommend the facility as a place of work to other physicians. The survey question for this one-item variable was worded in the following way: “How likely are you to recommend this facility to other physicians as a place of work?” This item was measured on a 5-point Likert scale with ordinal responses: “very likely”, “likely”, “somewhat likely”, “not too likely”, and “not at all likely”. This variable was dichotomized in the following way: 0, indicating lower willingness to recommend (categories “not at all likely” through “somewhat likely”) and 1, indicating higher willingness to recommend (categories “likely” and “very likely”). Due to the fact that very few physicians rated their willingness to recommend as “very likely”, this response was combined with the response, “likely” for the analysis.

The main predictor of physicians’ willingness to recommend, physician job satisfaction, was defined by the responses to the question, “How satisfied are you with working at the medical center?” Response options to this question were also offered in the ordinal form using a 5-point Likert scale: “very dissatisfied”, “somewhat dissatisfied”, “neither”, “somewhat satisfied”, and “very satisfied”. This variable was
dichotomized in the following way: 0, indicating lower job satisfaction (categories “very dissatisfied” through “neither”), and 1, indicating higher job satisfaction (categories “somewhat satisfied” and “very satisfied”). Response distributions of the dichotomized Willingness to recommend variable and ordinal and dichotomized Job satisfaction variable are presented in Table 3.1 below.

The survey contained 36 items measuring physicians’ perceptions of various aspects of the care delivery process, their relationship with nurses, practice characteristics, and relationship with the administration. Respondents were asked to indicate how satisfied they were with the items and were offered the following response options: “very dissatisfied”, “somewhat dissatisfied”, “neither”, “somewhat satisfied”, and “very satisfied”. These responses were transformed from ordinal to dichotomized variables in the following way: 0, indicating lower satisfaction (categories “very dissatisfied” through “neither”), and 1, indicating higher satisfaction (categories “somewhat satisfied” and “very satisfied”). The survey questions are presented as Appendix D.

Physicians’ demographic information included age, gender, race, length of employment at and affiliation with the medical center. Age was dichotomized as 0 for physicians younger than 46 years old and 1 for those 46 and older. Race was dichotomized into “White” (0) and “Other” (1). Length of employment was coded into 0 to indicate tenure shorter than 5 years, and 1 to indicate tenure of 5 years or longer. Physicians’ affiliation status with the medical center was dichotomized into 0 for “employed” and 0 for “not employed”. Information on the employment status was
<table>
<thead>
<tr>
<th>Job satisfaction</th>
<th>Not satisfied¹</th>
<th>Satisfied²</th>
</tr>
</thead>
<tbody>
<tr>
<td>“very dissatisfied”</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>“dissatisfied”</td>
<td>22</td>
<td>52</td>
</tr>
<tr>
<td>“neither”</td>
<td>52</td>
<td>29</td>
</tr>
<tr>
<td>“satisfied”</td>
<td>7</td>
<td>125</td>
</tr>
<tr>
<td>“very satisfied”</td>
<td>0</td>
<td>72</td>
</tr>
</tbody>
</table>

| Total | 87 | 228 | 89 | 279 | 64 | 218 |

Table 3.1. Response distribution for job satisfaction and willingness to recommend

¹ represented responses: “very dissatisfied”, “dissatisfied”, “neutral”
² represented responses: “satisfied” and “very satisfied”
³ represented responses: “not at all likely”, “not too likely”, “somewhat likely”
⁴ represented responses: “likely” and “very likely”
collected only in 2009. This is a limitation of the study which is discussed in a later section.

**Analyses**

Out of 36 survey items measuring physicians’ perceptions of work environment, 4 predictor variables – job satisfaction, hospital and physician improve quality of care, physician-nurse collaboration, and communication with administration – were selected for further analysis. Job satisfaction was selected as one predictor of physician willingness to recommend the place of work to others as indicated in the research aims of this study. The three remaining predictors were selected based on the results of an earlier exploratory qualitative study on physician’s job satisfaction (see “Physician Job Satisfaction and Dissatisfaction at One Academic Medical Center: A Qualitative Study”). Briefly, the results obtained from the qualitative study indicated that the following aspects of work environment were contributing to job satisfaction: providing patient care is rewarding, research/collaboration opportunities, professional variety, colleagues, resources/facilities, reputation, and growth opportunities. At the same time, lack of assistance/staff, bureaucracy, poor communication with the organization, limited control over patient care, and work schedule/professional roles were identified as the drivers of job dissatisfaction. In the present study, the author attempted to select the items from the physician satisfaction survey that best matched the themes identified in the qualitative study. Because the wording of the survey items differed from the qualitative themes, the perfect match could not be obtained. However, the author attempted to select the items that closely approximated the qualitative themes. As a
result, the item, “Extent to which hospital and physicians work together to improve quality of care” was selected as proxy for providing patient care. Next, the item, “Physician-nurse collaboration” was selected as proxy for colleagues. Finally, the item, “Communication between yourself and hospital administration” was selected as proxy for poor communication. Even though poor communication was identified as a driver of physician job dissatisfaction, it was important to measure the relationship between communication with administration and physicians’ willingness to recommend the place of work. Since communication was brought up as a troublesome issue in the qualitative study, investigating whether or not it was a significant predictor of physicians’ willingness to recommend the place of work was warranted.

Because the primary outcome of interest was a dichotomous variable, willingness to recommend, binary logistic regression utilizing statistical software SPSS.19 was employed in the analyses. A general logistic regression model is represented in the following way:

\[
\logit(Y) = \text{natural log(odds)} = \ln(\frac{\pi}{1 - \pi}) = \alpha + \beta X,
\]

where \( Y \) is the outcome, willingness to recommend, \( \pi \) is the probability of the outcome, \( \alpha \) is the \( Y \) intercept, and \( \beta \) is the regression coefficient.

Four univariate logistic regression models were fitted for the data in the study:

\[
\logit(\text{Recommend}) = \alpha + \beta_1 X
\]

\[
\logit(\text{Recommend}) = \alpha + \beta_2 X
\]

\[
\logit(\text{Recommend}) = \alpha + \beta_3 X
\]

\[
\logit(\text{Recommend}) = \alpha + \beta_4 X,
\]
where Recommend – willingness to recommend; 0 = “not at all likely” through
“somewhat likely”, 1 = “somewhat likely” through “very likely”

$X_1$ - job satisfaction; 0 = “very dissatisfied” through “neither”, 1 = “somewhat satisfied” through “very satisfied”

$X_2$ - hospital and physicians improve quality of care; 1 = “very dissatisfied”, 2 = “somewhat dissatisfied”, 3 = “neither”, 4 = “somewhat satisfied”, 5 = “very satisfied”

$X_3$ - physician-nurse collaboration; 1 = “very dissatisfied”, 2 = “somewhat dissatisfied”, 3 = “neither”, 4 = “somewhat satisfied”, 5 = “very satisfied”

$X_4$ - communication with administration; 1 = “very dissatisfied”, 2 = “somewhat dissatisfied”, 3 = “neither”, 4 = “somewhat satisfied”, 5 = “very satisfied”.

Further, binary logistic regressions adjusted for demographic covariates were fitted for the data:

$$\text{logit}(\text{Recommend}) = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5,$$

where $X_1$ - predictor variable
$X_2$ - Gender: 0 = female, 1 = male
$X_3$ - Age: 0 = younger than 46 y.o., 1 = 46 y.o. or older
$X_4$ - Race: 0 = White, 1 = Non-white
$X_5$ - Length of employment: 0 = less than 5 years, 1 = 5 years or more.

The null hypothesis tested in the models states that all of the $\beta$ equal zero. If the null hypothesis is rejected, this means that the model predicts the probability of the outcome, willingness to recommend, better than the mean of the outcome variable.
Results of logistic regressions are interpreted as odds ratios of having the outcome \((Y = 1)\) given transition from one level of a predictor variable to the next.

**RESULTS**

Demographic characteristics of the study participants are presented in Table 3.2.

The majority of the physicians were male and over 46 years old. Approximately two-thirds of the respondents were White. About two-thirds of the respondents had worked at the medical center for at least 5 years. Data on employment type were collected only in 2009. During that year, about 80% of physicians were full-time employees.

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N)</td>
<td>342</td>
<td>394</td>
<td>294</td>
</tr>
<tr>
<td>Gender (% male)</td>
<td>71.1</td>
<td>68.3</td>
<td>70.1</td>
</tr>
<tr>
<td>Age group (% over 46 y.o.)</td>
<td>55.2</td>
<td>46.5</td>
<td>49.7</td>
</tr>
<tr>
<td>Race (% White)</td>
<td>76.6</td>
<td>77.7</td>
<td>80.3</td>
</tr>
<tr>
<td>Work experience (% over 5 years)</td>
<td>77.5</td>
<td>72.3</td>
<td>79.6</td>
</tr>
<tr>
<td>Employment (% employed)</td>
<td>80.1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 3.2. Demographic characteristics of physicians

Missing values analysis revealed that a relatively small portion of the data was missing (5.9%, 4.9%, and 4.3%). Additionally, I tested whether or not missing values in the samples were occurring randomly by performing Little’s missing completely at random test (Little & Rubin, 2002). The test revealed that the data were missing at
random (2009: χ² = 31.04, d.f. = 40, sig. = 0.84; 2010: χ² = 48.54, d.f. = 40, sig. = 0.19; 2011: χ² = 32.96, d.f. = 40, sig. = 0.61) and missing values were list-wise deleted from the models.

Percentages of physicians who had high job satisfaction and rated aspects of their work environment highly are presented in Table 3.3. In 2009, over 60 percent of respondents indicated that they were “very satisfied” for Job satisfaction (95% CI: 59.7 – 70.2), and over 30 percent were “very satisfied” with how Hospital and physicians improve quality of care (95% CI: 29.5 – 40.1). The results were similar in 2010 and 2011. Communication with administration received fluctuating assessment, with about 20 percent of the respondents being “very satisfied” with it in 2009 (95% CI: 18.5 – 27.7), but around 60 and 40 percent (95% CI: 54.8 – 64.8; 37.3 – 48.8) indicating high satisfaction in 2010 and 2011. In contrast, Physician-nurse collaboration, was rated highly in 2009 by around 60 percent of the physicians, but in 2010 and 2011 only over 20 percent of the respondents reported being “very satisfied” with that aspect of their work environment. Table 3.4 provides percentages of physicians, by demographic characteristics, who were highly satisfied with their job and other predictors.

<table>
<thead>
<tr>
<th>Items</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent (95% CI)</td>
<td>Percent (95% CI)</td>
<td>Percent (95% CI)</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>61.1 (59.7, 70.2)</td>
<td>69.3 (68.3, 77.3)</td>
<td>68.7 (66.1, 76.7)</td>
</tr>
<tr>
<td>Hospital and physicians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>improve quality of care</td>
<td>32.5 (29.5, 40.1)</td>
<td>33.5 (30.3, 40.1)</td>
<td>30.6 (26.3, 37.1)</td>
</tr>
<tr>
<td>Physician-nurse collaboration</td>
<td>61.1 (67.6, 78.0)</td>
<td>22.8 (20.5, 29.5)</td>
<td>20.1 (17.1, 27.1)</td>
</tr>
<tr>
<td>Communication with administration</td>
<td>22.2 (18.5, 27.7)</td>
<td>57.4 (54.8, 64.8)</td>
<td>42.2 (37.3, 48.8)</td>
</tr>
</tbody>
</table>

Table 3.3. Rate of satisfaction (“satisfied” and “very satisfied”) with the job and aspects of work environment

109
<table>
<thead>
<tr>
<th>Covariates (%, 95% CI)</th>
<th>Gender (Men)</th>
<th>Age (&gt; 46 y.o.)</th>
<th>Race (White)</th>
<th>Length of work (&gt; 5 years)</th>
<th>Employment (Yes)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job Satisfaction (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>65.5 (59.4, 71.7)</td>
<td>62.7 (55.5, 69.9)</td>
<td>66.0 (60.0, 71.9)</td>
<td>64.0 (58.1, 69.9)</td>
<td>65.8 (60.1, 71.5)</td>
</tr>
<tr>
<td>2010</td>
<td>71.7 (66.2, 77.2)</td>
<td>73.0 (66.3, 79.7)</td>
<td>72.9 (67.8, 78.1)</td>
<td>69.5 (63.9, 74.9)</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>71.4 (65.1, 77.8)</td>
<td>69.8 (62.1, 77.5)</td>
<td>74.0 (68.3, 79.8)</td>
<td>73.0 (67.2, 78.8)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Willingness to Recommend (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>73.8 (68.1, 79.5)</td>
<td>71.0 (64.3, 77.8)</td>
<td>75.3 (69.9, 80.8)</td>
<td>72.5 (67.0, 78.1)</td>
<td>71.5 (66.0, 77.1)</td>
</tr>
<tr>
<td>2010</td>
<td>73.4 (67.9, 78.8)</td>
<td>73.5 (66.8, 80.2)</td>
<td>76.2 (71.3, 81.1)</td>
<td>71.1 (65.7, 76.5)</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>80.9 (75.4, 86.3)</td>
<td>81.7 (75.3, 88.1)</td>
<td>80.2 (75.0, 85.3)</td>
<td>77.9 (72.5, 83.3)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Hospital and physicians work together to improve quality of care (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>37.6 (31.2, 43.9)</td>
<td>40.3 (33.0, 47.7)</td>
<td>35.2 (29.2, 41.3)</td>
<td>38.4 (32.4, 44.4)</td>
<td>32.7 (26.7, 38.4)</td>
</tr>
<tr>
<td>2010</td>
<td>34.5 (28.7, 40.3)</td>
<td>39.1 (31.8, 46.4)</td>
<td>34.5 (29.0, 39.9)</td>
<td>34.7 (29.0, 40.3)</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>35.4 (28.6, 42.1)</td>
<td>38.8 (30.6, 47.1)</td>
<td>32.0 (25.9, 38.1)</td>
<td>33.9 (27.7, 40.1)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Physician-nurse collaboration (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>73.7 (67.8, 79.7)</td>
<td>71.7 (64.5, 78.9)</td>
<td>70.5 (64.5, 76.6)</td>
<td>72.2 (66.4, 78.1)</td>
<td>73.2 (67.4, 78.9)</td>
</tr>
<tr>
<td>2010</td>
<td>25.0 (19.6, 30.4)</td>
<td>30.1 (22.9, 37.2)</td>
<td>22.3 (19.4, 27.1)</td>
<td>25.4 (20.1, 30.7)</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>22.6 (16.6, 28.6)</td>
<td>22.0 (14.7, 29.4)</td>
<td>22.1 (16.5, 27.7)</td>
<td>22.7 (17.1, 28.3)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Communication with administration (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>25.6 (20.0, 31.3)</td>
<td>27.1 (20.5, 33.6)</td>
<td>21.7 (16.7, 26.9)</td>
<td>24.9 (19.6, 30.2)</td>
<td>22.4 (17.4, 27.4)</td>
</tr>
<tr>
<td>2010</td>
<td>62.3 (56.4, 68.2)</td>
<td>58.7 (51.3, 66.2)</td>
<td>62.2 (56.7, 67.8)</td>
<td>57.7 (51.8, 63.6)</td>
<td>-</td>
</tr>
<tr>
<td>2011</td>
<td>48.0 (41.1, 54.9)</td>
<td>47.1 (38.8, 55.5)</td>
<td>45.7 (39.2, 52.1)</td>
<td>45.0 (38.5, 51.5)</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 3.4. Percent distribution of physicians who were satisfied with their job and aspects of work environment and differences in demographic characteristics.

Note: Categories in Gender are men and women, categories in Age are < 46 y.o. and > 46 y.o., categories in Race are White and non-White, categories in Length of work are < 5 years and > 5 years, categories in Employment are yes and no.
The direction and strength of relationships between the selected predictors and the outcome variable, willingness to recommend, were assessed utilizing Spearman’s rank correlation. All of the predictors were positively and significantly related with the outcome at significance level of $\alpha = 0.001$. Correlation results are presented in Table 3.5. Additionally, correlation analysis of the predictors revealed moderate and significant relationships between the variables. However, no collinearity was detected, with Variance Inflation Factors (VIF) ranging from 1.48 to 3.03 and Tolerance values ranging from 0.34 to 0.68 (Allison, 1999).

Univariate logistic regressions

A series of univariate logistic regression models were run to measure the relationships between physicians’ perceptions of the four predictor variables and willingness to recommend the facility to other physicians. All individual predictors were positively and significantly related to the outcome. Physician job satisfaction was highly, positively and significantly related to the outcome. Thus, in 2009, the odds of recommending the medical center as a place of work for a satisfied physician were more than 70 times those of someone who was dissatisfied with working there (OR = 72.6, 95% CI = 30.7 – 171.7). In 2010, the magnitude of the relationship was half of that (OR = 37.9, CI = 19.7 – 73.3), and in 2011 it was about three times lower than in 2009 (OR = 21.5, CI = 10.7 – 43.6).
<table>
<thead>
<tr>
<th>Variable</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Job satisfaction¹</td>
<td>Hospital and physicians improve quality of care</td>
<td>Physician-nurse collaboration</td>
</tr>
<tr>
<td>Hospital and physicians improve quality of care</td>
<td>0.45</td>
<td>0.63</td>
<td>0.72</td>
</tr>
<tr>
<td>Physician-Nurse Collaboration</td>
<td>0.52</td>
<td>0.64</td>
<td>0.59</td>
</tr>
<tr>
<td>Communication with Administration</td>
<td>0.59</td>
<td>0.43</td>
<td>0.38</td>
</tr>
</tbody>
</table>

p < 0.001

Table 3.5. Spearman correlation coefficients for willingness to recommend and predictor variables

¹ All of the variables were measured on a 5-point Likert scale with responses: “very dissatisfied”, “dissatisfied”, “neutral”, “satisfied”, and “very satisfied”.


Further, physicians’ assessment of Communication with administration had a strong and positive relationship with willingness to recommend. Thus, in 2009, being satisfied with Communication with administration resulted in physicians’ having 8 times the odds of recommending the hospital as a place of work (OR = 8.6, 95% CI = 3.02 – 24.4). In contrast, physicians satisfied with Physician-nurse collaboration had 4.7 times the odds of recommending the hospital as a place of work than dissatisfied physicians (OR = 4.7, 95% CI = 2.6 - 8.4). Odds ratios for 2010 and 2011 data generally decreased in comparison to 2009 levels, except for Communication with administration, where the odds ratio increased (OR = 11.7, CI = 4.8 – 28.2). Results of the univariate logistic regressions are provided in Table 3.6.

*Multivariable logistic regressions adjusted for covariates*

A series of multivariable logistic regressions adjusted for demographic covariates were run to determine if these covariates were confounding the relationship between the outcome of interest and one of the main predictor variables. Race, gender, and length of work had small but significant and positive associations with physicians’ willingness to recommend the hospital as a place of work. For example, in 2009, physicians of racial backgrounds other than White who were satisfied with how Hospital and physicians improve quality of care, with Physician-nurse collaboration, and Communication with administration, had the odds of recommending the hospital as a place of work larger than those of Whites (OR = 1.9, CI = 1.01 – 3.6; OR = 2.2, CI = 1.1 – 4.4; OR = 1.2, CI = 1.2 – 4.1). When regressed on willingness to
recommend together with *Job satisfaction*, employment dramatically inflated the odds ratio of the *Job satisfaction* item (OR = 119.7, CI = 43.6 – 328.8), indicating that the two variables are highly collinear. Due to this fact, employment was excluded from the adjusted model regressing job satisfaction on willingness to recommend. It was included, however, in all other adjusted models since no similar inflation was observed. Employment was found to have a positive but not significant relationship with willingness to recommend. The adjusted logistic regression models results are presented in Table 3.7.

**DISCUSSION**

The goal of this paper was to investigate determinants of physicians’ willingness to recommend the place of work to others. One of the most interesting findings of this study was that physicians’ willingness to recommend the hospital as a place of work was positively and strongly related to their job satisfaction. In fact, job satisfaction had an association with willingness to recommend that was stronger than any other predictors in the regression models. These findings demonstrate that, within the medical center, highly satisfied physicians had at least twenty times the odds of reporting they were more willing to recommend it as a place of work compared to dissatisfied physicians. Thus, a well established belief that job satisfaction is associated with willingness to recommend the place of work, was supported in this study (Anderson, 1998; Anderson & Mittal, 2000).
<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>Parameter estimate (SE)</th>
<th>OR</th>
<th>95% CI for OR</th>
<th>Parameter estimate (SE)</th>
<th>OR</th>
<th>95% CI for OR</th>
<th>Parameter estimate (SE)</th>
<th>OR</th>
<th>95% CI for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2009</td>
<td></td>
<td></td>
<td>2010</td>
<td></td>
<td></td>
<td>2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Intercept</td>
<td>-0.9 (0.2)</td>
<td>0.4</td>
<td>72.6**</td>
<td>-0.9 (0.2)</td>
<td>0.4</td>
<td>37.9**</td>
<td>-0.5 (0.2)</td>
<td>0.6</td>
<td>21.5**</td>
</tr>
<tr>
<td></td>
<td>Job satisfaction</td>
<td>4.3 (0.4)</td>
<td></td>
<td>(30.7, 171.7)</td>
<td>3.6 (0.3)</td>
<td>3.1 (0.4)</td>
<td>(19.7, 73.3)</td>
<td>0.6 (0.2)</td>
<td>2.3</td>
<td>(10.7, 43.6)</td>
</tr>
<tr>
<td>2</td>
<td>Intercept</td>
<td>0.5 (0.14)</td>
<td>1.6</td>
<td></td>
<td>0.7 (0.2)</td>
<td>1.9</td>
<td></td>
<td>0.9 (0.2)</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hospital and physicians improve quality of care</td>
<td>2.03 (0.4)</td>
<td>7.7**</td>
<td>(3.5, 16.6)</td>
<td>1.8 (0.4)</td>
<td>6.1**</td>
<td>(3.04, 12.3)</td>
<td>1.6 (0.4)</td>
<td>5.1**</td>
<td>(2.2, 11.6)</td>
</tr>
<tr>
<td>3</td>
<td>Intercept</td>
<td>0.03 (0.2)</td>
<td>1.0</td>
<td></td>
<td>0.9 (0.1)</td>
<td>2.5</td>
<td></td>
<td>1.1 (0.2)</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physician-nurse collaboration</td>
<td>2.03 (0.4)</td>
<td>4.7**</td>
<td>(2.6, 8.4)</td>
<td>1.4 (0.4)</td>
<td>4.1**</td>
<td>(1.9, 8.8)</td>
<td>0.9 (0.4)</td>
<td>2.7**</td>
<td>(1.1, 6.2)</td>
</tr>
<tr>
<td>4</td>
<td>Intercept</td>
<td>0.7 (0.14)</td>
<td>1.9</td>
<td></td>
<td>0.2 (0.7)</td>
<td>1.2</td>
<td></td>
<td>0.5 (0.2)</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication with administration</td>
<td>2.1 (0.53)</td>
<td>8.6**</td>
<td>(3.02, 24.4)</td>
<td>1.9 (0.3)</td>
<td>6.8**</td>
<td>(4, 11.6)</td>
<td>2.5 (0.4)</td>
<td>11.7**</td>
<td>(4.8, 28.2)</td>
</tr>
</tbody>
</table>

* p< 0.001

Table 3.6. Univariate logistic regression for willingness to recommend

Note: This table presents results of four univariate logistic regressions assessing the relationship between physician willingness to recommend and predictor variables.
<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>Unadjusted OR</th>
<th>OR, Adjusted for Covariates</th>
<th>95% CI for OR</th>
<th>Unadjusted OR</th>
<th>OR, Adjusted for Covariates</th>
<th>95% CI for OR</th>
<th>Unadjusted OR</th>
<th>OR, Adjusted for Covariates</th>
<th>95% CI for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intercept</td>
<td>0.3</td>
<td></td>
<td></td>
<td>0.1</td>
<td></td>
<td></td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Job satisfaction</td>
<td>72.6**</td>
<td>(30.5, 179.2)</td>
<td>37.9**</td>
<td>40.6**</td>
<td>(20.3, 81.01)</td>
<td>21.5**</td>
<td>30.5**</td>
<td>(13.4, 69.7)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>1.5</td>
<td>(0.7, 3.5)</td>
<td>1.003</td>
<td>(0.5, 2.1)</td>
<td>0.4*</td>
<td>(0.2, 0.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>1.5</td>
<td>(0.5, 2.9)</td>
<td>1.3</td>
<td>(0.6, 2.9)</td>
<td>0.4*</td>
<td>(0.2, 0.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Race</td>
<td>2.4</td>
<td>(0.9, 6.2)</td>
<td>2.3*</td>
<td>(1.0, 5.2)</td>
<td>1.2</td>
<td>(0.5, 2.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length of work</td>
<td>0.9</td>
<td>(0.3, 2.7)</td>
<td>1.9</td>
<td>(0.8, 4.9)</td>
<td>2.2</td>
<td>(0.8, 6.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Intercept</td>
<td>0.7</td>
<td></td>
<td></td>
<td>4.7</td>
<td></td>
<td></td>
<td>1.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hospital and physicians improve quality of care</td>
<td>7.7**</td>
<td>(3.6, 17.6)</td>
<td>6.1**</td>
<td>6.3**</td>
<td>(3.1, 12.8)</td>
<td>5.1**</td>
<td>4.6**</td>
<td>(2, 10.8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>1.3</td>
<td>(0.7, 2.3)</td>
<td>0.9</td>
<td>(0.5, 1.7)</td>
<td>0.6</td>
<td>(0.3, 1.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>1.4</td>
<td>(0.8, 2.7)</td>
<td>0.9</td>
<td>(0.5, 1.7)</td>
<td>0.8</td>
<td>(0.4, 1.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Race</td>
<td>1.9*</td>
<td>(1.0, 3.6)</td>
<td>0.6</td>
<td>(0.3, 1.02)</td>
<td>1.8</td>
<td>(0.9, 3.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length of work</td>
<td>1.2</td>
<td>(0.6, 2.7)</td>
<td>0.4*</td>
<td>(0.2, 0.8)</td>
<td>1.1</td>
<td>(0.5, 2.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employment</td>
<td>1.3</td>
<td>(0.5, 3.04)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Intercept</td>
<td>0.4</td>
<td></td>
<td></td>
<td>6.4</td>
<td></td>
<td></td>
<td>2.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physician-nurse collaboration</td>
<td>4.7**</td>
<td>(2.8, 9.3)</td>
<td>4.1**</td>
<td>4.3**</td>
<td>(1.9, 9.6)</td>
<td>2.7**</td>
<td>2.7*</td>
<td>(1.2, 6.5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>1.1</td>
<td>(0.6, 2.2)</td>
<td>0.8</td>
<td>(0.5, 1.5)</td>
<td>0.5*</td>
<td>(0.3, 0.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>1.3</td>
<td>(0.7, 2.6)</td>
<td>1.2</td>
<td>(0.7, 2.1)</td>
<td>0.7</td>
<td>(0.4, 1.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Race</td>
<td>2.2*</td>
<td>(1.1, 4.4)</td>
<td>0.5*</td>
<td>(0.3, 1)</td>
<td>1.7</td>
<td>(0.9, 3.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length of work</td>
<td>0.9</td>
<td>(0.4, 1.9)</td>
<td>0.4*</td>
<td>(0.2, 0.7)</td>
<td>1.1</td>
<td>(0.5, 2.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employment</td>
<td>1.9</td>
<td>(0.7, 5.04)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p-value < 0.05  
** p-value < 0.001

Table 3.7. Multivariable logistic regressions, adjusted for covariates

Continued
### Table 3.7 Continued

<table>
<thead>
<tr>
<th>4</th>
<th>Intercept</th>
<th>Communication with administration</th>
<th>Gender</th>
<th>Age</th>
<th>Race</th>
<th>Length of work</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.7</td>
<td>2.2</td>
<td>1.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.6**</td>
<td>9.3**</td>
<td>(3.2, 26.9)</td>
<td>6.8**</td>
<td>6.9**</td>
<td>(4.02, 11.9)</td>
<td>11.7**</td>
<td>10.6**</td>
</tr>
<tr>
<td>1.3</td>
<td>(0.7, 2.3)</td>
<td>0.8</td>
<td>(0.4, 1.4)</td>
<td>0.7</td>
<td>(0.3, 1.2)</td>
<td>0.7</td>
<td>(0.4, 1.5)</td>
</tr>
<tr>
<td>2.2</td>
<td>(0.8, 2.8)</td>
<td>1.3</td>
<td>(0.7, 2.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2*</td>
<td>(1.2, 4.1)</td>
<td>0.8</td>
<td>(0.4, 1.4)</td>
<td>1.5</td>
<td>(0.7, 3.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>(0.5, 2.6)</td>
<td>0.5</td>
<td>(0.3, 1.1)</td>
<td>1.3</td>
<td>(0.6, 2.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>(0.6, 3.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p-value < 0.05
** p-value < 0.001

Note: This table presents results of four multivariable logistic regressions, adjusted for demographic covariates. For gender, male is the reference group; for age, being over 46 y.o. is the reference group; for race, white is the reference group; for length of work, having worked over 5 years is the reference group; for employment, being hospital employed is the reference group.
Among the variables reflecting physicians’ perceptions of their work environment, *Communication with administration* was strongly and positively related to willingness to recommend. Organizational literature has shown that when employees’ feedback is collected by the organization, they feel more engaged, empowered, and perform better (Avery & Quiñones, 2002). Additionally, if employees feel the organization is unreceptive to feedback, they are less likely to share their feedback in the first place (Saunders et al., 1992). Further, clear organizational communication is key to higher trust, perceptions of organizational openness and employee involvement (Thomas, Zolin & Hartman, 2009). Lack of transparency in communication may lead to a disengaged workforce and administration operating with incorrect perceptions of organizational openness. Additionally, physicians’ being actively involved in communication processes with the hospital may lead to their greater involvement in the decision-making process at the organization (Andersen, 2005). Being involved in an organization’s decision-making process allows employees to feel empowered (Ransom, 1992), which can lead to higher job satisfaction (Seibert, Silver & Randolph, 2004), and lower turnover (Grieffeth, Hom & Gaertner, 2000). Furthermore, it may be helpful if physicians become more involved in organizational communications, especially at the time of major transformations in the health care system. Research has indicated that communication fosters support for organizational change (Visagie & Steyn, 2011), confidence in changes (Reichers, Wanous & Auston, 1997), and trust in management to handle changes successfully (Swanson & Power, 2001).
The findings of this study, however, suggest an ambivalent message. On the one hand, physician-administration communication received high ratings by almost half of respondents in 2010 and 2011 and was strongly and positively associated with physicians’ willingness to recommend the workplace to others. On the other hand, nearly half of the respondents did not rate this aspect of work environment highly in 2010 and 2011, and, in 2009, almost 80 percent of the respondents were dissatisfied with it. Thus, it appears that while the medical center has made some accomplishments in the area of physician-administration communication, there is still a lot of room for improvement.

About one-third of the respondents indicated that they were “very satisfied” with the extent to which the Hospital and physicians work together to improve quality of care. Additionally, there was a strong and positive association between satisfaction with that item and physicians’ willingness to recommend the place of work to others. This finding supports and advances previous research findings about physicians’ attitudes towards collaboration in the workplace. For instance, a study of 1,475 physicians, nurses, and other health care professionals working at four hospitals in Taiwan, demonstrated that physicians perceived fewer collaborative relationships than nurses and other healthcare professionals (Chang et al., 2009). The fact that only about a third of the physicians in the present study were very satisfied with the extent to which the medical center was working together with physicians to improve care is thus not surprising. Additionally, Chang and colleagues found that collaborative relationships were among the strongest predictors of job satisfaction, underscoring the importance of
strengthening these relationships. This study goes even further by demonstrating an association between physicians’ satisfaction with the extent to which the hospital works together with physicians to improve care and physicians’ willingness to recommend the hospital as a place of work.

Finally, *Physician-nurse collaboration* was rated somewhat variably by the physicians; over sixty percent of the respondents expressed high satisfaction with this item in 2009, but only around twenty percent reported they were highly satisfied with it in 2010 and 2011. To see such a big drop in rating from one year was quite surprising. The lower levels of satisfaction with physician-nurse collaboration may be more likely given the fact that traditionally, the doctor-nurse relationship has been described as controversial and a relationship of struggle (Sweet & Norman, 1995). Patriarchic role of physicians, gender-based division of labor, and deeply rooted professional stereotypes have been identified among some of the reasons for this (Carpenter, 1995). With this explanation in mind, it is not entirely clear what caused the rating of this item to be quite high in 2009. This may indicate that physician-nurses collaboration was perceived to be more rewarding and positive in 2009, than in subsequent years. Researchers underline the importance of promoting effective doctor-nurse collaboration, which is pivotal for providing high-quality care in the current, complex health care environment (Johnson & Kring, 2012). The fact that this relationship received variable ratings signifies that the doctor-nurse relationship at the medical center needs to be improved. Additionally, while satisfaction with this item had a positive, significant association with willingness to recommend, the magnitude of this association was the lowest among all
of the predictor variables in the models. As a possible explanation, the respondents may not believe that collaborative relationships with nurses favorably distinguished their place of work to the extent that they would be willing to recommend it to others.

Information on the employment type was collected by the medical center only in 2009. The contracted physicians had higher odds of reporting willingness to recommend the medical center as place of work than those of the employed physicians, holding all other covariates in the model constant. This relationship, however, was not significant. This finding may suggest that contracted physicians saw being employed as attractive, even though they were not employed themselves. Indeed, employment can seem quite appealing to physicians, given the fact that it eliminates the hassles of being running one’s own practice and offers stable income and work-life balance (Satiani & Vaccaro, 2010). Future studies should look at, for example, the reasons why some physicians become employed while others remain contracted or the likelihood of a contracted physician becoming employed.

LIMITATIONS

This study is not without limitations. First, the data were collected by a third party, a survey vendor Press Ganey – and reflect the fact that I did not have the opportunity to either select the survey questions or contribute to the survey design and process.

Second, this study was conducted at a single organization within one subpopulation – physicians working in inpatient care. It was not possible to compare the
findings to views of physicians working at other organizations. Consequently, it was not feasible to determine whether or not views expressed by the participants represented more universal beliefs among physicians. The generalizability of the findings may be extended to organizations that are similar to the medical center in size, teaching status, location, and work environment. However, additional studies with similar design are needed to look at both at institutions similar to the medical center on the aforementioned points, as well as a broader range of health care organizations measuring physician satisfaction and willingness to recommend the place of work.

Lastly, the response rates in this study were 38%, 44% and 33%. Such rates are typically acceptable in studies of personal beliefs and attitudes. For example, a meta-analysis conducted by Shih and Fan (2008) compared response rates in web-based and mail-in surveys in social sciences studies published between 1995 and 2006. The authors found the average response rate for web surveys to be 34 percent, and the mean response rate for paper-based surveys to be 45 percent. Furthermore, Kellerman and Herold (2001), in their review of response rates in studies analyzing physician attitudes, found that such studies typically had response rates ranging between 34 and 98 percent. Interestingly, the highest response rate (98 percent) was reported in a study where the survey instrument was only two pages long. In a more recent review of medical professionals response rates reported in studies published between 2000 and 2010, McLeod and colleagues (2013) observed the most prevalent response rates to be 60-79 percent, with about one-third of the studies reporting response rates lower than 40
percent. The authors did not report specific response rates for physicians, but indicated that typically they were lower than 60 percent.

Lower response rates reported in this study may indicate a possibility of response bias where the sample may not be representative of the general population of physicians working at the medical center (Asch, Jedrziewski & Christakis, 1997; Krosnick, 1999). Response bias occurs when the likelihood of responding is correlated with the participants’ responses to some of the items being measured in the survey. Thus, non-respondents may have answered some of the survey questions differently than the respondents did, and this occurrence may be measured as covariance of response likelihood and responses to survey items (Groves, 2006). It is believed that this issue may be alleviated by increasing the response rates so that a sample representative of the entire population can be collected. To address this issue, it is worth mentioning that low response rates do not always indicate poor representation of the general population. For example, Templeton and colleagues (1997) conducted phone interviews with 68 general practitioners who had not responded to a national mail survey. The authors compared the characteristics of the original respondents to the non-respondents and found the only difference between the two groups to be age (older GPs were more reluctant to respond to the mail survey). In the same fashion, higher response rates do not necessarily lower response bias, since survey items may be highly correlated with the likelihood to participate (Groves & Peycheva, 2008; Cull et al., 2005; McFarlane et al., 2007). In addition, even though our response rates may be lower than desirable, there is some evidence suggesting that this may not be a worrisome issue
within physician population (Kellerman & Herold, 2001). Physicians tend to be more homogenous with respect to education, attitudes, and behaviors than general public (Kellerman & Herold, 2011; Groves & Peycheva, 2008), and, consequently, lower response rates may not be indicative of the presence of non-response bias.

**MANAGEMENT IMPLICATIONS**

The quest of health care organizations for a qualified, talented, committed and high-performing physician workforce is never ending. Hospital managers may benefit from physicians’ referral behavior as a cost-effective recruitment strategy. Physician job satisfaction may be quite conducive to referral behaviors among physicians, as has been demonstrated by the marketing research (Bansal et al., 2004; Hausman, 2004; Parasuraman & Grewal, 2000). Since hospitals are already investing considerable resources in tracking and attempting to improve physician job satisfaction, knowing that physician attitudes are related to willingness to recommend the place of work may help managers direct their efforts in that avenue more effectively. However, it is not sufficient, and may be even counterproductive, to simply assume that satisfied physicians will recommend their place of work to friends and peers. It appears that willingness to recommend the place of work is associated with certain aspects of work environment, such as the extent to which the hospital and physicians work together to improve quality of care, physician-nurse collaboration, and communication with administration, the absence of which may deter physicians from engaging in positive word-of-mouth.
As the study found, communication stood out as an important component of the work environment associated with physicians’ willingness to recommend the place of work. Hospital managers may find it valuable to continue their efforts to create an environment of communication openness and transparency in which physicians’ voice could be heard and their message understood. Not only does communication improve trust between employees and the organization (Tourish & Hargie, 2012; Thomas, Zolin & Hartman, 2009) and promote employee engagement (Men, 2012; Avery & Quinones, 2002), but it also fosters creativity (Eisenberg, Goodall, & Trethwey, 2009). The first step towards achieving effective communication is developing a realistic assessment or “audit” of communication practices existing within the organization in order to identify any concerns physicians may have related to these practices (Downs & Adrian, 2012). It has long been postulated that organizations that have effective communication practices are more successful (Pfeffer & Veiga, 1999; Roberts & O’Reilly, 1974).

Further, this study provided some evidence that collaborative environment between physicians and the hospital aimed at improving quality of care is associated with physicians’ willingness to recommend the workplace to others. Management literature emphasizes the importance of physician-hospital alignment as one of the key components of high-quality care (Cortese & Smoldt, 2007), hospital financial well-being (Goes & Zhan, 1995), and trust (Trybou, Gemmel & Annemans, 2011). It becomes quite important that hospital managers ensure thorough alignment between the institution and physicians. Lastly, relationships with medical staff, especially nurses, are key for ensuring patient safety (Benner, 2007), better patient outcomes (Gittell et al., 2000;
Baggs et al., 1999), and physicians’ feeling of professional support (McGrail et al., 2008).
Such relationships should be fostered within the hospital environment by promoting cooperation.

CONCLUSION
This study explored factors influencing physicians’ willingness to recommend their place of work to others. Communication with hospital administration, the extent to which hospital and physicians improved quality of care, physician-nurse collaboration, and physicians’ job satisfaction were significantly related to physicians’ willingness to recommend their place of work to others. These findings are especially important given their relevance for health care managers. It is within the power of administrators, managers, and leaders to modify each of these factors and thus create favorable conditions that could incline physicians to recommend their place of work to others.
References


Chapter 4: Patient Willingness to Recommend the Hospital to Others: Influence of Satisfaction With Care and Physician Job Satisfaction

ABSTRACT

When choosing a provider of health care services, patients are more likely to trust the opinion of family members and friends familiar with those services. Satisfied patients may be more likely to provide positive recommendations, than dissatisfied patients. Patients of satisfied physicians may be more willing to recommend the hospital, than patients of dissatisfied physicians. This study tested the effect of patients’ perceptions of various aspects of their hospitalization experiences, general satisfaction with care, and physician job satisfaction and patients’ willingness to recommend the hospital to others.

11,715 patient surveys collected between 2009 and 2011 at a Midwestern Academic Medical Center were analyzed utilizing a series of logistic regressions. The analyses demonstrated a strong and positive relationship between patients’ overall satisfaction with care and willingness to recommend the hospital to others. Patients’ satisfaction with how their personal issues were addressed, as well as with tests and
treatments also had strong and significant relationships with willingness to recommend the hospital. Physician job satisfaction was not found to be a significant predictor of patients’ willingness to recommend. Understanding which aspects of hospitalization may influence patients’ willingness to recommend the hospital to others may enable hospital managers to indirectly affect patient supply and, therefore, hospital bottom line.

**INTRODUCTION**

Health care organizations are in the business of delivering services to their customers, patients. Thus, as any business, health care organizations are interested in keeping customers satisfied, since satisfied customers regularly come back (Heskett, 2002; Dick & Basu, 1994) and engage in recommendations (Zeithaml, Berry & Parasuraman, 1996) more often than dissatisfied customers. Customer satisfaction and loyalty entails clear benefits for health care organizations resulting in increased organizational profitability due to repeat purchases of the existing customers themselves as well as in the inflow of new customers (Anderson & Fornell, 1994; Heskett et al., 1994; Rust, Zahorik & Keingham T, 1995). Additionally, satisfied customers may provide feedback that organizations can subsequently use to improve existing or create new services and products (Hart et al., 1990).

Researchers most commonly attribute one’s willingness to provide recommendations to their satisfaction with a product or a service (Bansal et al., 2004; Hausman, 2004). Applied to the context of health care, the more a patient is satisfied with their experiences at the hospital, the more likely they would be to recommend it to
others. However, scholars disagree on the exact relationship between these constructs. While some researchers suggest that lower satisfaction may still result in a recommendation (Anderson, 1998), others suggest that higher satisfaction may not always lead to recommendations (Hart et al., 1990). If this is the case, it is important to understand which aspects of the patients’ experience may be responsible for encouraging or thwarting the inclination to recommend the hospital.

Physician-patient relationships have received very thorough attention in the health care management literature (Beck, Daughtridge & Sloane, 2002; Ridd, Lewis & Salisbury, 2009). The primary reason for such attention is the fact that patient-physician encounters have a significant effect on patient satisfaction and such behavioral outcomes as treatment compliance and recommendations for the hospital (Clever et al., 2008; Williams, Weinman & Dale, 1998; Cheng et al., 2003). Additionally, positive interactions with the physician create positive patient’s impressions about the experience of hospitalization in its entirety (Hausman, 2004), even when a patient’s condition does not improve dramatically (Williams et al, 1995). What has been missing in the literature is the discussion of whether and how patient-physician interactions affect patients’ willingness to recommend the hospital to others.

This study will explore patients’ willingness to recommend the hospital to others, and its relationship with satisfaction with care and physicians’ job satisfaction. Knowing how strongly physician satisfaction is related to patient satisfaction and willingness to recommend the hospital could lead to greater trust between patients and physicians,
enhance the organization’s hiring and retention capabilities, and may have overall positive implications for quality of care outcomes.

**BACKGROUND AND SIGNIFICANCE**

Willingness to recommend, or positive “word-of-mouth” towards a product or a service, is traditionally seen as an expression of brand, service or organizational loyalty (Baumann et al., 2007; Ewing, 2000). Studies that looked at the determinants of one’s willingness to recommend a product or a service to others have focused specifically on the person’s satisfaction with that product or service. Moreover, general satisfaction or dissatisfaction with a product or service was regarded as an antecedent of any type “word-of-mouth” activity (Anderson & Mittal, 2000; Anderson, 1998). Interestingly, the exact nature of the relationship between satisfaction with a product or service and willingness to recommend them is unknown. Evidence exists for both a positive and an inverse relationship (see Cheng et al., 2003; Jenkinson et al., 2002; Zineldin M., 2006). In other words, a satisfied customer is likely to spread the positive word. On the other hand, a satisfied customer may not be willing to recommend the product or service they used, while a dissatisfied customer may be willing to recommend something they are not happy with (Anderson, 1998). It is generally believed, however, that people are more inclined to either provide recommendations or refrain from any recommendations altogether (Tesser & Rossen, 1975). Though such a dynamic relationship between satisfaction and willingness to recommend a product or a service exists, it has attracted little attention among researchers within the context of inpatient care (Venkatapprao
& Gopalakrishna, 1995; Chaniotakis & Lymeropoulos, 2009; Parasuraman, Zeithaml & Berry, 1988; Lovelock C., Vandermerwe S. & Lewis, 1996). It may be important to understand which aspects of hospitalization have the strongest influence on patients’ willingness to recommend the hospital, what its relationship with satisfaction with care is, and whether or not any of these factors are modifiable. Such knowledge may allow hospital managers to improve patients’ experiences, satisfaction with care, and behavioral outcomes, such as willingness to recommend the hospital.

While a correlation between patient satisfaction with care and willingness to recommend the hospital has been established in many studies and is considered important, no studies have attempted to evaluate the influence physician job satisfaction may have on patients’ inclinations to provide such recommendations. The link from physician job satisfaction to patients’ willingness to recommend the hospital may be supported by the evidence from research on the service profit chain framework (Heskett et al., 1994). This framework postulates the links between employee satisfaction, customer satisfaction, and customer loyalty. Thus, being satisfied with a place of work may result in physicians’ fulfilling their duties, such as following clinical guidelines and establishing good rapport with the staff and patients, but also taking extra steps to deliver exceptional service. Such behaviors, in turn, could increase patients’ satisfaction with the episode of care. Further, since it is well established that satisfaction is associated with one’s willingness to recommend, it follows that physician job satisfaction is associated with patients’ referral intentions. Thus, I expect to find a
positive relationship between physicians’ job satisfaction and patients’ willingness to recommend the hospital to others.

Patient-physician encounters have a significant effect on patient satisfaction, compliance, and recommendations (Clever et al., 2008; Williams, Weinman & Dale, 1998; Cheng et al., 2003). Additionally, positive interactions with the physician create a positive patient’s impressions about the experience of hospitalization in its entirety (Hausman, 2004), even when a patient’s condition does not improve dramatically (Williams et al, 1995). While the literature on interpersonal aspects of health care is extensive (see Saultz & Albedaiwi, 2004; Pandhi & Saultz, 2006 for reviews), it is focused mostly on patients’ evaluations of their interactions with physicians within the ambulatory care setting. Yet, relatively little is known about physicians’ beliefs on how interactions with patients should be conducted (Bruera et al., 2001). Within an inpatient environment, where treatment process is aggravated by stress, discomfort, and complexity and asymmetry of medical information, establishing good communication between the patient and the doctor is crucial (Epstein & Street, 2007). Despite this fact, patient-physician interactions during hospital stays have received little attention in research.

This study is an exploration of the determinants of patients’ willingness to recommend the hospital to others, its relationship with patients’ satisfaction with care, and physicians’ job satisfaction. Specifically, I will attempt to answer two questions: 1) is patients’ satisfaction with care positively and significantly related to their willingness to recommend the hospital to others, and 2) is physicians’ job satisfaction positively and...
significantly related to patients’ willingness to recommend? Univariate and adjusted logistic regression models were constructed to answer these research questions.

**DATA AND METHODS**

This study was conducted at a large Midwestern Academic Medical Center and included data from patient and physician satisfaction surveys collected between 2009 and 2011. The Medical center consists of six hospitals, the College of Medicine, a physician practice, a network of primary and secondary care practices, and over a dozen research centers. The inpatient care is delivered at one of the six hospitals belonging to the medical center. Data from the four largest hospitals were included in the analysis.

It was important to take into account the multilevel nature of hospital data when testing the correlation between patient and physician attitudes. It is plausible that patients staying at a particular hospital may develop similar perceptions of the environment, medical care and medical personnel (Tamblyn et al., 1994). Along the same lines, levels of job satisfaction of physicians working at the same hospital may be more similar to each other, than those of physicians working at different hospitals. Consequently, it is advisable to compare attitudes of physicians and patients affiliated with the same hospital, rather than across all four hospitals of the medical center (Salisbury, Wallace & Montgomery, 2010). Such interdependence of data was accounted for by aggregating the results of patient and physician surveys at the hospital level.
Sample

I utilized survey data collected from patients who were admitted to one of the four hospitals affiliated with the medical center, as well as physician job satisfaction surveys. The patient satisfaction survey tool development and collection and processing of the data are conducted by a single entity, a survey vendor Press Ganey, which ensures measurement consistency. Patients who were admitted to the hospital and stayed at least overnight are mailed a satisfaction survey within approximately two weeks of discharge. Surveys collected between January 1, 2009 and December 31, 2011 were included in this study. Out of 24,293 patient data entries received from Press Ganey, a total of 11,715 contained responses to the patient survey, representing a response rate of 48.2%.

Physician satisfaction data were obtained from the surveys collected by the medical center between January 1, 2009 and December 31, 2011. The medical center began utilizing the services of Press Ganey in 2009 and subsequently conducted yearly surveys of randomly selected physicians. Reliance on the same vendor for collection of the survey data ensured sampling consistency and utilization of the same survey tool – the reasons which explain my decision to analyze the surveys obtained between 2009 and 2011. Over 1,500 physicians practice at the medical center, with approximately 1,000 working on the inpatient side. Physician surveys collected in 2009, 2010 and 2011 were included in the analysis. The response rates were 38%, 44% and 33% in 2009, 2010, and 2011 respectively.
This study was reviewed and received approval from the Institutional Review Board of the university affiliated with the Medical Center as containing minimal risks for the participants. Patients’ and physicians’ privacy was maintained by de-identifying the survey responses and the demographical data and storing all of the data on a password protected institutional server.

**Measures**

The main outcome of interest was patients’ willingness to recommend. The survey question for this item was worded in the following way: “Likelihood of your recommending this hospital to others”. This item was measured on a 5-point Likert scale (categories “very poor”, “poor”, “neutral”, “good”, “very good”). Due to the fact that very few patients answered this question with responses other than “very good”, the variable was dichotomized in the following way: 0, indicating lower willingness to recommend (categories “very poor” through “good”), and 1, indicating higher willingness to recommend (category “very good”).

The independent predictor, patients’ satisfaction with care, was a single-item measure indicated by the question: “Overall rating of the care given at the hospital”. It was measured on a 5-point Likert scale (categories “very poor”, “poor”, “neutral”, “good”, “very good”). Due to the fact that very few patients answered this question with responses other than “very good”, the variable was dichotomized in the following way: 0, indicating lower satisfaction with care (categories “very poor” through “good”), and 1, indicating higher satisfaction with care (category “very good”). Response distributions of
the dichotomized “Willingness to recommend” variable and ordinal and dichotomized “Patient satisfaction” variable are presented in Table 4.1 below.

<table>
<thead>
<tr>
<th>Patient satisfaction</th>
<th>Patient willingness to recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not willing to recommend³</td>
</tr>
<tr>
<td>Not satisfied¹</td>
<td>2,713</td>
</tr>
<tr>
<td>Satisfied²</td>
<td>480</td>
</tr>
<tr>
<td>Total</td>
<td><strong>3,193</strong></td>
</tr>
</tbody>
</table>

Table 4.1. Response distribution for job satisfaction and willingness to recommend

¹ represented responses: “very poor”, “poor”, “neutral”
² represented responses: “good” and “very good”
³ represented responses: “very poor”, “poor”, “neutral”
⁴ represented responses: “good” and “very good”

The patient satisfaction survey included 35 items measuring patients’ perceptions of various aspects of hospitalization, including admission, discharge, care received from nurses, personal issues, and care received from physicians. All of the items were measured on a 5-point Likert scale (“very poor”, “poor”, “neutral”, “good”, “very good”). An arithmetic mean as a composite score was calculated for each of these categories. The items, as they were grouped into categories within the survey, are provided in Appendix E.

Patients’ demographic information included age, gender, race, insurance type, and length of stay. Since roughly half of the respondents were over 55 years old, age
was dichotomized as 0 for patients younger than 55 years old, and 1 for patient older
than 55. Race was represented by the following groups: African American, American
Indian, Cambodian, Chinese, Indian/Pakistani, Japanese, Korean, Laotian, Vietnamese,
Middle Eastern, Hawaiian, Somali, and White. About one percent of the participants did
not indicate their race or were not aware of it. Since over two-thirds of the respondents
reported their race as White, race was dichotomized into 1 for “White” and 0 for
everyone else. Insurance type was divided into three categories: 1) private, 2) public,
and 3) self-pay. For example, “private” insurance plans included Aetna, Anthem Blue
Cross Blue Shield, Cigna, Medicare Aetna HMO, and others. If patients were covered by
public insurance programs, such as CHAMPVA, TRICARE, Medicaid, Ohio Disability
Assistance and others, they were categorized to be publicly insured. Finally, the third
category of coverage was categorized as “self-pay” and indicated no health insurance.
Since approximately half of the respondents spent less than 5 days at the hospital,
length of stay was dichotomized into 0 for stays shorter than 5 days, and 1 for stays
longer than 5 days.

This study also included data on physicians’ job satisfaction. This single-item
measure was taken from the physicians’ job satisfaction survey and was worded in the
following way: “How satisfied are you with working at the medical canter?”. It was
measured on a 5-point Likert scale (categories “very dissatisfied”,” somewhat
dissatisfied”, “neither”, “somewhat satisfied”, and “very satisfied”). The variable was
dichotomized into: 0, indicating lower job satisfaction (categories “very dissatisfied”
through “neither”), and 1, indicating higher job satisfaction (categories “somewhat satisfied” and “very satisfied”).

**Analyses**

The internal consistency of the construct variables which were computed as means of the 36 items in the patient satisfaction survey was tested by estimating Cronbach’s coefficient alpha (Table 4.2). All of the estimated Cronbach’s coefficient alphas were larger than 0.7, which indicated good internal consistency. The complete list of items constituting each of the constructs is presented in Appendix E.

The outcome variable was correlated with predictor constructs in order to measure the direction and strength of the relationships. Spearman’s rank correlations suggested that the predictor constructs were moderately correlated with willingness to recommend (all correlations were significant at p < 0.001). Further, a correlation matrix utilizing Spearman’s rank correlations between the predictor variables was created in order to check for collinearity. The analysis revealed that the constructs “Nurses” and “Personal issues” exhibited moderate collinearity with a correlation coefficient = 0.72 (Belsley, Kuth & Welsh, 1980). Additionally, collinearity diagnostics utilizing Condition indexes was run. Briefly, this procedure decomposes the estimated variance of a regression coefficient into a sum of singular values. Collinearity is detected when for each Condition index > 15, there are two singular terms with large variance decomposition proportions. In the case with “Nurses” and “Personal issues”, the Condition index was 27.19 and variance proportions were 0.95 and 0.82, indicating high collinearity. Thus, only one of the two constructs could be kept for further analysis.
<table>
<thead>
<tr>
<th>Construct Variables</th>
<th>Mean (S.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission (2 items)</td>
<td>4.51 (0.71)</td>
</tr>
<tr>
<td>Cronbach's α</td>
<td>0.73</td>
</tr>
<tr>
<td>Discharge (3 items)</td>
<td>4.38 (0.72)</td>
</tr>
<tr>
<td>Cronbach's α</td>
<td>0.72</td>
</tr>
<tr>
<td>Personal issues (5 items)</td>
<td>4.45 (0.68)</td>
</tr>
<tr>
<td>Cronbach's α</td>
<td>0.88</td>
</tr>
<tr>
<td>Meals (3 items)</td>
<td>4.06 (0.76)</td>
</tr>
<tr>
<td>Cronbach's α</td>
<td>0.79</td>
</tr>
<tr>
<td>Physician (5 items)</td>
<td>4.49 (0.7)</td>
</tr>
<tr>
<td>Cronbach's α</td>
<td>0.94</td>
</tr>
<tr>
<td>Room (5 items)</td>
<td>4.26 (0.64)</td>
</tr>
<tr>
<td>Cronbach's α</td>
<td>0.78</td>
</tr>
<tr>
<td>Tests and treatments (4 items)</td>
<td>4.47 (0.62)</td>
</tr>
<tr>
<td>Cronbach's α</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Table 4.2. Descriptive statistics of survey constructs

Note: Cumulative values for each construct were calculated as an arithmetic mean of the items constituting it.

“Personal issues” was chosen as it had a higher correlation with patient willingness to recommend the hospital than “Nurses” (0.61 vs. 0.59). The correlation matrices are presented in Tables 4.3 and 4.4 below.

Because the primary outcome of interest was a dichotomous variable, willingness to recommend, binary logistic regressions utilizing statistical software SPSS.19 were employed in the analyses. A general logistic regression model is represented in the following way:
<table>
<thead>
<tr>
<th>Predictors</th>
<th>Willingness to recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient satisfaction</td>
<td>0.81</td>
</tr>
<tr>
<td>Admission</td>
<td>0.37</td>
</tr>
<tr>
<td>Discharge</td>
<td>0.49</td>
</tr>
<tr>
<td>Personal issues</td>
<td>0.61</td>
</tr>
<tr>
<td>Meals</td>
<td>0.37</td>
</tr>
<tr>
<td>Nurses</td>
<td>0.59</td>
</tr>
<tr>
<td>Physician</td>
<td>0.53</td>
</tr>
<tr>
<td>Room</td>
<td>0.49</td>
</tr>
<tr>
<td>Tests and treatments</td>
<td>0.53</td>
</tr>
</tbody>
</table>

p-value < 0.001  
Table 4.3 Spearman’s rank correlation coefficients between willingness to recommend and construct variables  
Note: Variables Patient satisfaction and Willingness to recommend were measured on the 5-point Likert scale; variables Admission through Tests and treatments were calculated as arithmetic means of the items constituting them.
<table>
<thead>
<tr>
<th></th>
<th>Patient satisfaction</th>
<th>Admission</th>
<th>Discharge</th>
<th>Personal issues</th>
<th>Meals</th>
<th>Nurses</th>
<th>Physician</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission</td>
<td>0.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge</td>
<td>0.52</td>
<td>0.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal issues</td>
<td>0.65</td>
<td>0.44</td>
<td>0.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meals</td>
<td>0.39</td>
<td>0.31</td>
<td>0.40</td>
<td>0.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurses</td>
<td>0.63</td>
<td>0.42</td>
<td>0.56</td>
<td>0.72</td>
<td>0.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td>0.55</td>
<td>0.41</td>
<td>0.56</td>
<td>0.67</td>
<td>0.39</td>
<td>0.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room</td>
<td>0.51</td>
<td>0.45</td>
<td>0.50</td>
<td>0.61</td>
<td>0.50</td>
<td>0.58</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Tests and treatments</td>
<td>0.56</td>
<td>0.48</td>
<td>0.57</td>
<td>0.69</td>
<td>0.45</td>
<td>0.64</td>
<td>0.61</td>
<td>0.58</td>
</tr>
</tbody>
</table>

p-value < 0.001

Table 4.4. Spearman’s rank correlation coefficients between construct variables

Note: Variable Patient satisfaction was measured on the 5-point Likert scale; variables Admission through Tests and treatments were calculated as arithmetic means of the items constituting them.
logit(Y) = natural log(odds) = ln(π/1 – π) = α + βX,

where Y is the outcome, willingness to recommend, π is the probability of the outcome, α is the Y intercept, and β is the regression coefficient.

Eight univariate logistic regression models were fitted for the data in the study:

\[
\begin{align*}
\text{logit(Recommend)} &= \alpha + \beta_1 X \\
\text{logit(Recommend)} &= \alpha + \beta_2 X \\
\text{logit(Recommend)} &= \alpha + \beta_3 X \\
\text{logit(Recommend)} &= \alpha + \beta_4 X \\
\text{logit(Recommend)} &= \alpha + \beta_5 X \\
\text{logit(Recommend)} &= \alpha + \beta_6 X \\
\text{logit(Recommend)} &= \alpha + \beta_7 X \\
\text{logit(Recommend)} &= \alpha + \beta_8 X
\end{align*}
\]

where Recommend – willingness to recommend; 0 = “very poor” - “good”, 1 = “very good”

X₁ - patient satisfaction; 0 = “very poor” - “good”, 1 = “very good”

X₂ - admissions; continuous

X₃ - discharge; continuous

X₄ - personal issues; continuous

X₅ - meals; continuous

X₆ - physician care; continuous

X₇ - room; continuous

X₈ - tests and procedures; continuous.
Further, binary logistic regressions adjusted for demographic covariates were fitted for the data:

$$\text{logit}(\text{Recommend}) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6,$$

where $X_1$ - predictor variable  
$X_2$ - Gender: 0 = female, 1 = male  
$X_3$ - Age: 0 = younger than 55 y.o., 1 = 55 y.o. or older  
$X_4$ - Race: 0 = White, 1 = Non-white  
$X_5$ - Length of stay: 0 = less than 5 days, 1 = 5 days or more  
$X_6$ - Insurance: 1 = private, 2 = public, 3 = self-pay.

The null hypothesis tested in the models states that all of the $\beta$ equal zero. If the null hypothesis is rejected, this means that the model predicts the probability of the outcome, willingness to recommend, better than the mean of the outcome variable. Results of logistic regressions are interpreted as odds ratios of having the outcome ($Y = 1$) given transition from one level of a predictor variable to the next.

A series of univariate logistic regression models were run to identify the constructs associated with patients’ willingness to recommend. Further, a series of logistic regressions adjusted for covariates were run to test whether the outcome of interest varied depending on demographics. Lastly, a univariate logistic model tested the relationship between physicians’ job satisfaction and patients’ willingness to recommend.
RESULTS

A total of 11,715 patient surveys were collected between 2009 and 2011, indicating the response rate of 48.2%. The respondents were more likely to be female (57.7%), older than 55 years old (52.4%), and white (67.9%). About sixty percent of the respondents spent more than 5 days at the hospital and most were privately insured (76%). Nearly three quarters of the respondents gave the highest rating to their satisfaction with care and willingness to recommend the hospital to family and friends (“very good”).

Additionally, data from the physicians’ job satisfaction surveys were included in the analysis. This sample consisted of 646 physicians who completed the surveys in 2009, 2010 and 2011. The physicians were mostly male (69.8%), over the age of 45 years old (50.6%) and white (76.3%). More than two thirds (78.3%) of the physicians had worked at the medical center for over 5 years. In contrast with the patient data, only twenty two percent of the physicians gave the highest rating (“very satisfied”) to their job satisfaction. The demographic characteristics of the patient and physician participants of the study, compared to the U.S. general population are presented in Table 4.5. The percentages of patients who were satisfied with care and were willing to recommend the hospital to family and friends and mean scores for covariates, by demographic characteristics, are presented in Table 4.6.
Missing values analysis revealed that over ten percent of the data were missing, with the most information unavailable for insurance (53%), age (24.5%), and gender (24.2%). Additionally, Little’s missing completely at random test (Little & Rubin, 2002)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Medical Center</th>
<th>U.S. Population (1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patient sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 11,344</td>
<td>N = 35,697*</td>
</tr>
<tr>
<td>Female (%)</td>
<td>4,953 (57.7)</td>
<td>20,535 (59.7)*</td>
</tr>
<tr>
<td>55 y.o. and older (%)</td>
<td>6,141 (52.4)</td>
<td>45 y.o. and older - 21,616 (62.9)*</td>
</tr>
<tr>
<td>White (%)</td>
<td>7,950 (67.9)</td>
<td>20,487 (57.4)*</td>
</tr>
<tr>
<td>Stayed 5 days or more (%)</td>
<td>6,786 (59.8)</td>
<td>average LOS - 5.4 days*</td>
</tr>
<tr>
<td>Insurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>8,901 (76.0)</td>
<td>10,520 (30)***</td>
</tr>
<tr>
<td>Public</td>
<td>1,904 (16.3)</td>
<td>21,738 (62)***</td>
</tr>
<tr>
<td>Self-pay</td>
<td>910 (7.7)</td>
<td>1,753 (5)***</td>
</tr>
<tr>
<td>Overall satisfaction with hospital (&quot;very good&quot; - %)</td>
<td>8,462 (72.2)</td>
<td>N/A</td>
</tr>
<tr>
<td>Willingness to recommend (&quot;very good&quot; - %)</td>
<td>8,522 (72.7)</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Physician sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 646</td>
<td>N = 8,501,000*****</td>
</tr>
<tr>
<td>Gender (% male)</td>
<td>69.8</td>
<td>70.4*</td>
</tr>
<tr>
<td>Age group (% over 46 y.o.)</td>
<td>50.6</td>
<td>over age 50 - 46.8****</td>
</tr>
<tr>
<td>Race (% White)</td>
<td>76.3</td>
<td>73.7****</td>
</tr>
<tr>
<td>Work experience (% over 5 years)</td>
<td>78.3</td>
<td>% over 10 years - 70.7****</td>
</tr>
<tr>
<td>Job satisfaction (&quot;very satisfied&quot; - %)</td>
<td>22.5</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* U.S. census, 2012 (data for 2009)  
** National Hospital Discharge Survey, 2010 (data from 2007)  
*** U.S. Census, 2012 (data for 2010)  
**** Health Tracking Physician Survey, 2008  
***** Federation Physician Data Center, 2012 (Young et al., 2012)  

Table 4.5. Demographic characteristics of patient and physician sample, compared to overall U.S. patient and physician population
was performed to see if the missing values in the study were occurring randomly. The test revealed that the data were not missing at random (chi² = 461.1, d.f. = 283, sig. =0.00). Statistical programs typically exclude missing values from the analysis, which may bias the study results. Additionally, if only complete cases are left in the dataset, this may lead to substantial loss of statistical power (Sterne et al., 2009). For these reasons the expectation-maximization imputation was performed to manage the missing data. This procedure is considered superior to other statistical methods of dealing with missing data in that it fills the gaps in datasets in the way most representative of the entire sample (Ghomrawi et al., 2011; Musil et al., 2002). The imputations yielded new datasets that contained no missing values. The subsequent data analyses were performed with the imputed datasets and results pooled from the imputations were reported.

Univariate logistic regressions

A series of univariate logistic regression models were run to measure the relationships between patients’ perceptions of the construct variables and willingness to recommend the hospital to others. The exploratory analysis revealed that patients’ overall satisfaction with care received at the hospital affected their subsequent willingness to recommend the hospital to others. Not only was this relationship found to be positive, independent, and significant, it was also very strong. Thus, patients who were satisfied with their care had the odds of reporting willingness to recommend the hospital to others 80 times of those reported by patients with lower levels of satisfaction (Table 4.7) (OR = 83.8; 95% CI = 73.3, 95.8).
Table 4.6. Percentages of patients satisfied with care and willing to recommend, mean scores for covariates, by demographic characteristics.

<table>
<thead>
<tr>
<th></th>
<th>Variables (%, 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gender (Women)</td>
</tr>
<tr>
<td>Satisfaction with care</td>
<td>70.3 (69.2, 71.4)</td>
</tr>
<tr>
<td>Willingness to recommend</td>
<td>70.7 (69.7, 71.8)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Covariates (Mean, 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Admission process</td>
</tr>
<tr>
<td></td>
<td>4.5 (4.5, 4.6)</td>
</tr>
<tr>
<td></td>
<td>4.6 (4.5, 4.6)</td>
</tr>
<tr>
<td></td>
<td>4.5 (4.5, 4.5)</td>
</tr>
<tr>
<td></td>
<td>4.5 (4.5, 4.5)</td>
</tr>
<tr>
<td></td>
<td>4.6 (4.5, 4.6)</td>
</tr>
</tbody>
</table>

Additionally, two other predictors had a high and significant association with the outcome: “Personal issues” and “Tests and treatments”. First, the “Personal issues” component measured such aspects of care as pain control, emotional needs and personal concerns being addressed, and inclusion in decision making about the treatment. Multiple logistic regression revealed that one unit improvement in “Personal issues” resulted in almost twenty times as high odds of recommending the hospital (OR = 19.7; 95% CI = 17.5, 22.1). The third strongest association with the outcome of interest was attributed to the construct “Tests and treatments”. This measure included
such items as waiting time for tests, explanations about the test procedures, and courtesy of staff taking blood and starting an IV. The results of the univariate regression showed that the odds of reporting willingness to recommend the hospital were over eleven times those of someone who gave that construct a one-unit lower score (OR = 11.4; 95% CI = 10.4, 12.7). Interestingly, care received from physicians was not among the constructs with the strongest association with the outcome. The odds of reporting willingness to recommend the hospital to others was 7.5 times that of someone who gave care received from physician a one-unit lower score (OR = 7.5; 95% CI = 6.8, 8.1). The results of the univariate logistic regressions are provided in Table 4.7.

**Multivariable logistic regressions, adjusted for covariates**

A series of multivariable logistic regressions adjusted for demographic covariates were run to determine if these covariates were confounding the relationship between patients’ willingness to recommend the hospital to others and the main predictors. Age, gender, race, and insurance had small but significant associations with the outcome, when holding other covariates and the construct variables in the models constant. Being publicly insured was significantly and negatively associated with the outcome when controlling for all of the construct variables and covariates, except for satisfaction with care and satisfaction with test and treatments.
<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>Parameter estimate (SE)</th>
<th>OR</th>
<th>95% CI for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intercept</td>
<td>-1.6 (0.05)</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patient satisfaction</td>
<td>4.4 (0.07)</td>
<td></td>
<td>83.8**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(73.3, 95.8)</td>
</tr>
<tr>
<td>2</td>
<td>Intercept</td>
<td>-4.1 (0.2)</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Admission</td>
<td>1.2 (0.03)</td>
<td>3.2**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2.9, 3.4)</td>
</tr>
<tr>
<td>3</td>
<td>Intercept</td>
<td>-6.6 (0.2)</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discharge</td>
<td>1.8 (0.04)</td>
<td>5.9**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(5.5, 6.5)</td>
</tr>
<tr>
<td>4</td>
<td>Intercept</td>
<td>-11.9 (0.3)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personal issues</td>
<td>2.9 (0.05)</td>
<td>19.7**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(17.5, 22.1)</td>
</tr>
<tr>
<td>5</td>
<td>Intercept</td>
<td>-3.4 (0.1)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meals</td>
<td>1.1 (0.03)</td>
<td>3.1**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2.9, 3.3)</td>
</tr>
<tr>
<td>6</td>
<td>Intercept</td>
<td>-7.8 (0.2)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physician</td>
<td>2.01 (0.05)</td>
<td>7.5**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(6.8, 8.1)</td>
</tr>
<tr>
<td>7</td>
<td>Intercept</td>
<td>-7.8 (0.2)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Room</td>
<td>2.1 (0.05)</td>
<td>8.5**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(7.7, 9.3)</td>
</tr>
<tr>
<td>8</td>
<td>Intercept</td>
<td>-9.6 (0.2)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tests and treatments</td>
<td>2.4 (0.05)</td>
<td>11.4**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(10.4, 12.7)</td>
</tr>
</tbody>
</table>

** p-value < 0.001

Table 4.7. Univariate logistic regressions for patient’s willingness to recommend.

Note: This table represents a compilation of results of univariate logistic regressions.

Thus, being publicly insured was not significantly associated with willingness to recommend controlling for “Personal issues” (OR = 0.9, 95% CI = 0.6, 1.1). However, being publicly insured was significantly and positively associated with the outcome controlling for “Tests and treatments” (OR = 1.3, 95% CI = 1.07, 1.5). The results of logistic regression models, adjusted for covariates, are presented in Table 4.8.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Unadjusted OR</th>
<th>OR, Adjusted for covariates</th>
<th>95% CI for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>83.8**</td>
<td>78.4**</td>
<td>(64.8, 94.8)</td>
</tr>
<tr>
<td>Gender</td>
<td>1.1</td>
<td>(0.9, 1.3)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.1</td>
<td>(0.9, 1.4)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>1.2</td>
<td>(0.9, 1.6)</td>
<td></td>
</tr>
<tr>
<td>LOS</td>
<td>0.9</td>
<td>(0.8, 1.1)</td>
<td></td>
</tr>
<tr>
<td>Insurance - public</td>
<td>0.9</td>
<td>(0.6, 1.1)</td>
<td></td>
</tr>
<tr>
<td>Insurance – self-pay</td>
<td>0.8</td>
<td>(0.5, 1.3)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admission</td>
<td>3.2**</td>
<td>3.1**</td>
<td>(2.8, 3.4)</td>
</tr>
<tr>
<td>Gender</td>
<td>1.1</td>
<td>(0.9, 1.3)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.2*</td>
<td>(1.0, 1.3)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>1.1</td>
<td>(0.9, 1.2)</td>
<td></td>
</tr>
<tr>
<td>LOS</td>
<td>1.02</td>
<td>(0.9, 1.2)</td>
<td></td>
</tr>
<tr>
<td>Insurance – public</td>
<td>0.7*</td>
<td>(0.5, 0.8)</td>
<td></td>
</tr>
<tr>
<td>Insurance – self-pay</td>
<td>0.9</td>
<td>(0.7, 1.2)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge</td>
<td>5.9**</td>
<td>6.2**</td>
<td>(5.5, 6.9)</td>
</tr>
<tr>
<td>Gender</td>
<td>1.2*</td>
<td>(1.1, 1.4)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.2*</td>
<td>(1.1, 1.4)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>1.4*</td>
<td>(1.1, 1.7)</td>
<td></td>
</tr>
<tr>
<td>LOS</td>
<td>1.1</td>
<td>(0.9, 1.3)</td>
<td></td>
</tr>
<tr>
<td>Insurance – public</td>
<td>0.6*</td>
<td>(0.4, 0.8)</td>
<td></td>
</tr>
<tr>
<td>Insurance – self-pay</td>
<td>0.9</td>
<td>(0.6, 1.2)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal issues</td>
<td>19.7**</td>
<td>20.3**</td>
<td>(17.2, 23.9)</td>
</tr>
<tr>
<td>Gender</td>
<td>1.2*</td>
<td>(1.0, 1.4)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.2*</td>
<td>(1.0, 1.4)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>1.3</td>
<td>(1.0, 1.6)</td>
<td></td>
</tr>
<tr>
<td>LOS</td>
<td>1.1</td>
<td>(0.9, 1.3)</td>
<td></td>
</tr>
<tr>
<td>Insurance – public</td>
<td>0.6*</td>
<td>(0.4, 0.8)</td>
<td></td>
</tr>
<tr>
<td>Insurance – self-pay</td>
<td>0.7</td>
<td>(0.5, 1.0)</td>
<td></td>
</tr>
</tbody>
</table>

* p-value < 0.05
** p-value < 0.001

Table 4.8. Multivariable logistic regressions for patients’ willingness to recommend, adjusted for covariates

Continued
Table 4.8 Continued

<table>
<thead>
<tr>
<th></th>
<th>Intercept</th>
<th>Meals</th>
<th>Gender</th>
<th>Age</th>
<th>Race</th>
<th>LOS</th>
<th>Insurance – public</th>
<th>Insurance – self-pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meals</td>
<td>3.1**</td>
<td>3.1**</td>
<td>(2.8, 3.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1.2*</td>
<td>(1.0, 1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.3**</td>
<td>(1.1, 1.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>1.1**</td>
<td>(1.3, 1.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOS</td>
<td>1.1</td>
<td>(0.9, 1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance – public</td>
<td>0.7*</td>
<td>(0.5, 0.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance – self-pay</td>
<td>0.8</td>
<td>(0.6, 1.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td>7.5**</td>
<td>8.3**</td>
<td>(7.3, 9.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1.2*</td>
<td>(1.0, 1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.1</td>
<td>(0.9, 1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>1.3*</td>
<td>(1.1, 1.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOS</td>
<td>1.02</td>
<td>(0.9, 1.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance – public</td>
<td>0.6*</td>
<td>(1.1, 1.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance – self-pay</td>
<td>0.8</td>
<td>(1.3, 2.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room</td>
<td>8.5**</td>
<td>8.4**</td>
<td>(7.4, 9.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1.1</td>
<td>(0.9, 1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.3*</td>
<td>(1.0, 1.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>1.2*</td>
<td>(1.2, 1.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOS</td>
<td>1.2</td>
<td>(1.0, 1.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance – public</td>
<td>0.7*</td>
<td>(0.5, 0.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance – self-pay</td>
<td>0.8</td>
<td>(0.6, 1.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tests</td>
<td>11.4**</td>
<td>11.4**</td>
<td>(9.9, 13.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1.3*</td>
<td>(1.1, 1.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.2*</td>
<td>(1.1, 1.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>1.4*</td>
<td>(1.1, 1.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOS</td>
<td>1.1</td>
<td>(0.9, 1.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance – public</td>
<td>1.3*</td>
<td>(1.1, 1.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance – self-pay</td>
<td>1.5*</td>
<td>(1.1, 2.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p-value < 0.05
** p-value < 0.001

Note: This table presents results of four multivariable logistic regressions, adjusted for demographic covariates.

For gender, female is the reference group; for age, being over 55 y.o. is the reference group; for race, non-white is the reference group; for length of stay, having stayed over 5 days is the reference group; for insurance, being privately insured is the reference group.
Patient willingness to recommend and physician job satisfaction

The relationship between patient willingness to recommend the hospital to others and physicians’ job satisfaction was tested with the hospital as the unit of analysis. Since two out of four care sites were general hospitals, while the other two were specialty hospitals, the case sites were combined by care type. This allowed for matching of patient and physician scores. The results of simple logistic regression demonstrated a non-significant and positive association. Despite the fact that the results of the logistic regression were not significant, they are worth expounding upon. Thus, patients who received care at the hospitals providing general care and whose physicians were satisfied with the job had the odds of reporting willingness to recommend the hospital to others 110 percent that of patients whose physicians were not satisfied (OR = 1.1, 95% CI = 0.9, 1.2). Patients who received care at the hospitals providing specialty care and whose physicians were satisfied with the job had the odds of reporting willingness to recommend the hospital 104 percent that of patients whose physicians were dissatisfied (OR = 1.04, 95% CI = 0.8, 1.3). The results of the logistic regression measuring the relationship between patients’ willingness to recommend and physician job satisfaction are presented in Table 4.9.

DISCUSSION

This study was designed to explore patients’ willingness to recommend the hospital to others, and, specifically, the extent to which it was influenced by patients’ satisfaction with care they received at the hospital and physicians’ satisfaction with
Table 4.9. Univariate logistic regressions of physician job satisfaction and patients’ willingness to recommend the hospital, by hospital type

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Parameter estimate (SE)</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>0.05 (0.05)</td>
<td>1.1</td>
<td>(0.9, 1.2)</td>
</tr>
<tr>
<td>Specialty</td>
<td>0.04 (0.01)</td>
<td>1.04</td>
<td>(0.8, 1.3)</td>
</tr>
</tbody>
</table>

Note: There were two general and two specialty hospitals in the sample.

working at the hospital. Patients’ satisfaction with care was the single most strongly, positively and significantly related predictor of willingness to recommend in the models I tested. Patients highly satisfied with their care had the odds of reporting willingness to recommend the hospital to others 80 times that of less satisfied patients. Thus, it was demonstrated, at least within the context of the medical center, that the relationship between patients’ satisfaction with care and willingness to recommend is positive in nature, helping to clarify some disagreements in the literature around this subject matter (Otani et al., 2010; Anderson, 1998; Hart, 1990).

Other important predictors of willingness to recommend were “Personal issues” and “Tests and treatments”. Interestingly, the magnitude of influence personal issues had on willingness to recommend the hospital was consistently higher than that of satisfaction with physician care and other predictors in the model. This finding, both in relation to “Personal issues” and “Tests and treatments”, supports the generally accepted idea that patients may pay more attention to non-technical aspects of care they can perceive, such as personal interactions (Goldstein, 2003; Meyer & Collier,
Personal aspects of care attract patients’ attention due to the fact that they are easier to evaluate. The importance patients place on the personal side of care has been embraced in the recent transformation of the health care system towards patient-centered care model (Rittenhouse & Shortell, 2009). The model entails that care is provided in accordance with the needs and preferences of the patient who is involved in the decision-making process. Evidence already exists for positive patient outcomes of this model: better communication and fewer concerns about treatments (Stewart et al., 2000; Mallinger, Griggs & Shields, 2005), higher satisfaction with care and more favorable perceptions of quality of care (Wolf et al., 2008), and better treatment selection (Sepucha, Fowler & Mulley, 2004). It is encouraging to see that patient-centered approach could also affect patients’ willingness to recommend the hospital to others.

Furthermore, the fact that care received from physicians was an important predictor of patients’ willingness to recommend fits well within the patient-doctor relationship literature. Typically, physicians are perceived by patients to be superior, controlling and modifying the treatment plan, as well as making the decisions pertaining to various aspects of patient care (Maynard, 1991; Mercer et al., 2008; Pilnick & Dingwall, 2011). The importance of receiving care from compassionate, receptive and inclusive physicians cannot be overemphasized (Dowsett et al, 2000; Epstein & Street, 2007). A somewhat surprising finding of this study was the fact that care received from physicians held a weaker relationship with willingness to recommend than such predictors as “Personal issues”, “Tests and treatments”, and satisfaction with “Room”.

163
This finding may be explained by the fact that patients’ attitudes may be influenced by the strong and weak aspects of their care experience that stand out the most (Otani et al., 2010). One explanation may be that the care provided by the physicians may have been as good as expected but not notably good or bad to have a large impact on patients’ attitudes.

Additionally, physicians’ job satisfaction was positively but not significantly related to willingness to recommend the hospital, a relationship found true for both the general and the specialty hospitals of the medical center. Thus, the study did not demonstrate that physicians’ job attitudes had an impact on patients’ behavioral intentions. In other words, despite a possible relationship between physicians’ job satisfaction and patient satisfaction with care (Haas et al., 2000; DiMatteo et al., 1993; Williams and Skinner, 2003), it may be premature to extend that relationship to consider the influence on patients’ willingness to recommend the hospital. In line with the findings mentioned earlier, it may be the case that physicians at the medical center did not stand out as having significantly positive or notably negative interactions with patients, and thus may not have affected patients’ subsequent intentions to recommend the hospital to others. Second, it is also possible that, in general, physicians’ job satisfaction has no influence on patients’ willingness to recommend the hospital. However, more research needs to be conducted in the area of patient willingness to recommend and physician job attitudes, since the model in this study did not control for possible covariates. Indeed, as the service profit chain framework suggests, a satisfied physician should be more likely to engage in behaviors which would lead to increased
patient satisfaction and, consequently, to their willingness to recommend. Thus, it is important to find out which aspects of physician-patient interactions may have interfered with this chain so that the association with patients’ behavioral intentions was not established.

**LIMITATIONS**

This study offers an exploration of factors influencing patients’ willingness to recommend the hospital to others. However, as such, it is not without limitations. First, this was a study conducted at an academic medical center within the inpatient setting. I did not have the opportunity to compare the findings across several medical centers or across different physician and patient populations. The generalizability of the findings is limited to organizations that are similar to the medical center in size, teaching status, and location. Additional studies with a similar design are needed to look at a broad range of health care organizations measuring physician satisfaction and willingness to recommend. Second, the models tested in the study included a limited number of predictor variables. Thus, it is possible that some factors that have a significant impact on patients’ willingness to recommend the hospital were left out of the analysis, such as patients’ education level or diagnosis, introducing omitted variable bias (Sessions & Stevans, 2006). Third, I did not measure physicians’ behaviors which may have mediated the relationship between their job satisfaction and patients’ satisfaction with care and willingness to recommend the hospital to others. Knowing what satisfied physicians do that differs from the behaviors dissatisfied physicians engage in may be helpful in
understanding and measuring the link between their job attitudes and patients’
willingness to recommend the hospital. Finally, it is possible that merging and
aggregating patient and physician data by type of hospital may have masked the
environments particular to each individual location and thus did not allow to adequately
explore the relationship between physician job satisfaction and patients’ willingness to
recommend the hospital. Thus, even though the aggregated results suggested a positive
relationship, it may be different at each individual hospital. The interpretation of results
obtained from the this analysis should employ caution and further research should
attempt to match patients and physicians on unit or department level, as well as
measure in detail physician-patient interactions.

CONCLUSION
This study demonstrated that patients’ willingness to recommend the hospital to others
is positively related to personal aspects of care, tests and treatments, care received
from physicians, and patients’ overall satisfaction. Additionally, it was demonstrated
that physicians’ job satisfaction was not significantly associated with patients’
inclinations to provide recommendations. It is important that physicians, nurses, and
auxiliary staff continue to strive to deliver high-quality care to their patients, focusing
specifically on individualized attention, inter-personal understanding and inclusion of
patients in the decision making process, so that patients could feel as true customers
and loyal ambassadors of health care organizations.
References


Chapter 5: Conclusion

The overall goal of this dissertation was to investigate the factors related to physicians’ willingness to recommend the hospital as a place of work and patients’ willingness to recommend it as a place of treatment. Quantitative data collected between 2009 and 2011, as well as face-to-face interviews conducted in 2012 were analyzed and incorporated into three separate studies. This chapter consists of an overview of the key findings and a discussion of management implications. Also highlighted are strengths and limitations of the studies and directions for future research.

Summary of key findings

The first study was an in-depth qualitative exploration of factors pertaining to physicians’ work environments that are associated with job satisfaction. Interviews with physicians revealed that two different sets of factors were responsible for physicians’ satisfaction and dissatisfaction with working at the medical center. More specifically, among the aspects of the work environment responsible for physicians’ discontent were physician-level issues, namely limited control over patient care and intense work schedules, and organization-level issues – lack of assistance from staff, bureaucracy, and
poor communication. On the other hand, one of the most important factors associated with physicians’ job satisfaction was the ability to help patients by caring for them. Additional drivers of job satisfaction could be classified as academic medical center-specific and institution-specific. For instance, such features as research opportunities and professional variety are common among academic medical centers. However, specific colleagues, resources, reputation, and growth opportunities were associated with the medical center studied in this research project.

The second study was quantitative in design and aimed at investigating the factors that influenced physicians’ willingness to recommend their place of work to others. I first wanted to determine which aspects of the work environment had the strongest impact on physicians’ willingness to recommend the place of work. Communication with administration, the extent to which hospital and physicians worked together to improve the quality of care, and physician-nurse collaboration had the strongest influence on the outcome. Second, I tested the relationship between physicians’ job satisfaction and willingness to recommend and found them to be significantly related. Not only was this relationship found to be significant and positive, it was also very strong. Thus, satisfied physicians had the odds of reporting willingness to recommend the place of work at least 20 times as high as dissatisfied physicians. Finally, I measured the effect of employment the hospital on physicians’ willingness to recommend. The data on hospital affiliation was only collected in 2009. In 2009, this relationship was insignificant.
The third study employed quantitative methods as well and was designed to explore the factors predicting patients’ willingness to recommend the hospital to others and investigate its relationship with physicians’ job satisfaction. First, personal issues and tests and treatments were found to have a very strong and positive influence on the patients’ willingness to recommend the hospital. Somewhat surprising was the finding that physician care was not among the strongest predictors of patients’ willingness to recommend. Further and more importantly, patients’ satisfaction with care was significantly, positively, independently and very strongly related to willingness to recommend. Thus, satisfied patients had the odds of reporting willingness to recommend the hospital to others 80 times those of dissatisfied patients. Next, I investigated the extent to which physicians’ job satisfaction was associated with patients’ desire to spread the positive word about the hospital. Logistic regression analysis revealed that the relationship was varied and not significant.

Overall, the results of the three studies, taken together, suggest two important considerations. First, the two studies addressing physicians’ attitudes seemed both to suggest that effective communication, provision of care, and good working relationships with colleagues and staff have the ability to influence both physicians’ job satisfaction and willingness to recommend the place of work. Interestingly, while poor communication was indicated as a source of job dissatisfaction, effective communication was associated with physicians’ willingness to recommend the hospital as a place of work. Further, the ability to care for patients came up as a job facet that was not only one of the most rewarding to physicians, but also as an area which,
coupled with collaborative efforts between the institution and physicians, affected their willingness to recommend the place of work. Last but not least, collaborative relationships with colleagues were identified as drivers of job satisfaction in the qualitative study, while collaboration with nurses came up as a factor associated with willingness to recommend the place of work in the quantitative study. It may be of interest to quantitatively explore whether or not collaborative relationships with colleagues are also positively associated with physicians’ willingness to recommend the place of work. A visual summary of these results is presented in Table 5.1.

Secondly, three relationships were assessed in this dissertation – between physician job satisfaction and willingness to recommend the place of work, between patient satisfaction with care and willingness to recommend the hospital, and between physician job satisfaction and patient willingness to recommend the hospital. The first two relationships were found to be very strong, positive, and significant. Thus, satisfied physicians had the odds of reporting willingness to recommend the place of work at least 20 times of those reported by dissatisfied physicians. Further, within the patient population, this relationship was even stronger – satisfied patients had the odds of reporting willingness to recommend the hospital over 80 times those of reported by dissatisfied patients. On the other hand, the relationship between physicians’ job satisfaction and patients’ willingness to recommend the hospital was not found to be significant. This finding was in contrast with prior research and the conceptual framework used to guide this dissertation research. Without a doubt, many components
of a patient’s hospitalization experience affect their willingness to recommend the hospital to others, and interactions with the physician is only one of these factors. It is

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Outcome of interest</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Physician Job Satisfaction</td>
<td>ability to help/take care of patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>collaboration opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>professional variety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>colleagues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>resources/facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reputation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>growth opportunities</td>
</tr>
<tr>
<td></td>
<td>Physician Job Dissatisfaction</td>
<td>poor communication in organization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lack of assistance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>bureaucracy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>work schedules</td>
</tr>
<tr>
<td></td>
<td></td>
<td>limited control over patient care</td>
</tr>
</tbody>
</table>

| Study 2 | Physician Willingness to Recommend | communication with administration |
|         |                                     | hospital and physicians working together to improve quality of care |
|         |                                     | physician-nurse collaboration |

| Study 3 | Patient Willingness to Recommend | personal issues |
|         |                                     | tests and treatments |
|         |                                     | physician care |

Table 5.1 Findings about the factors associated with physician job satisfaction, physician willingness to recommend the place of work, and patient willingness to recommend the hospital.
Relationship between satisfaction and willingness to recommend

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Study 2</th>
<th>Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>very little data to assess</td>
<td>very strong, positive, and significant</td>
<td>very strong, positive, and significant</td>
</tr>
</tbody>
</table>

Relationship between physician job satisfaction and patient willingness to recommend the hospital

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Study 2</th>
<th>Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>very little data to assess</td>
<td>not assessed</td>
<td>not significant and positive</td>
</tr>
</tbody>
</table>

Table 5.2 Results of the analyses of the relationship between satisfaction and willingness to recommend

possible that interactions with physicians, even those with high levels of job satisfaction, did not extend to patients’ intentions to recommend the hospital to others. However, this finding may not be generalizable to other, smaller, hospitals where patient interactions with physicians are more personal and physicians may spend more time with patients. These results are represented in Table 5.2.

Management implications

This dissertation project suggests several implications for health care management. As health care organizations continue to search for a qualified and loyal physician workforce, referrals should be encouraged among physicians currently employed by hospitals as a cost effective recruitment strategy. Job satisfaction, among
other factors, may be associated with physicians’ willingness to engage in referral behaviors. For this reason, hospitals may benefit from continuous efforts to improve physician job satisfaction.

However, it is not correct to assume that this desirable outcome could be achieved by simply improving the overall work environment and increasing physicians’ job satisfaction. As was shown in the qualitative study, there is an important difference between factors that influence job satisfaction and factors responsible for dissatisfaction of physicians. Thus, by focusing only on the aspects of work environment responsible for satisfaction, managers may miss an opportunity to remove drivers of physician job dissatisfaction. In other words, while it is advisable to focus on increasing the number and quality of factors responsible for physician job satisfaction, it is also crucial to identify and reduce, when possible, the aspects of the work environment which lead to physician job dissatisfaction.

More specifically, hospital managers may find it valuable to foster an environment of communication openness and professional collaboration within the institution, where physicians can provide high quality care to their patients. It is well established that both the sense of collaboration and communication openness within the organization bring beneficial results not only to employees, but also to organizations in general (Cortese & Smoldt, 2007; Goes & Zhan, 1995; Trybou, Gemmel & Annemans, 2011; Tourish & Hargie, 2012; Thomas, Zolin & Hartman, 2009; Men, 2012; Avery & Quinones, 2002). Further, as more physicians are becoming hospital employed (Satiani and Vaccaro, 2010; Liebhaber and Grossman, 2007), physician concerns over limited
professional autonomy and lack of full discretion regarding patient care coordination may become more pertinent (Kocher and Sahini, 2011; PressGaney, 2007; Beasley et al., 2005; Casalino et al., 2008) and, if not addressed in a timely manner by hospital leaders, may reflect unfavorably on physicians’ job satisfaction and the desire to remain employed (Zusman, 2011). It appears important for hospital managers to become familiar with physicians’ views about the aspects of work environment that can be modified in order to achieve conditions enhancing job satisfaction and willingness to recommend the place of work to others.

Further, the fact that satisfaction with personal aspects of hospital experience was identified as influential in relation to patients’ willingness to recommend the hospital provide clues as to what hospital managers could do to achieve higher levels of patients’ referrals. It has been shown that when patients evaluate their hospital care, they tend to focus on some of the most meaningful aspects of their experience, such as interactions with physicians, nurses, and staff, how well things were explained to them, and whether or not they were included in the decision making process (Cleary et al., 1991; Cheng et al., 2003; Klinkenberg et al., 2011; Stewart et al., 2000; Mallinger, Griggs & Shields, 2005). The findings from this project additionally demonstrate that personal experiences may contribute to a patient’s willingness to recommend the hospital to others. Since referrals are a cost-effective way to increase patient volume, it is advisable for hospitals to focus on the factors they are capable of influencing positively.
**Future directions for research**

Since this dissertation was conducted at one academic medical center, future research should attempt to replicate this study at other institutions. It is possible that such factors as academic status, size, type of ownership, or geographic location had an impact on patients’ willingness to recommend the hospital and physicians’ willingness to recommend the place of work, and these could be different elsewhere. Additionally, it has been documented that academic medical institutions, due to their size and wide scope of services offered, tend to have lower patient satisfaction levels, than non-teaching medical centers (Sjetne et al., 2007; Messina et al., 2009). It will be interesting to see whether this fact holds true with regard to willingness to recommend the hospital. Further, future research should test whether the type of hospital affiliation, namely, full-time employment, contractual agreements, or partnerships, has an impact on physicians’ job satisfaction and willingness to recommend the place of work.

Next, hospitalization is characterized by a set of characteristics which distinguish it from an outpatient experience. Among such characteristics are more serious health conditions, technologically intensive care services, care provided by a multidisciplinary team, high uncertainty (Walker & Carayon, 2009), and decreased care continuity (Sharma et al., 2009). With the current movement within the Patient Protection and Affordable Care Act that more health care services are provided in ambulatory and primary care settings (Fuchs, 2012), a future study could look at the dynamic of doctor-patient attitudes and behaviors outside the inpatient environment. It is possible to expect that a large number of health care services will be provided in a physician’s office.
– an environment more conducive to building long-term relationships with (Adler et al., 2010) and encouraging loyal behaviors in patients (Kleeberg et al., 2005).

Further, future studies should incorporate more qualitative and mixed methods designs in order to capture the intricate dynamics of doctor-patient interactions, and attitudinal and behavioral aspects of care delivery process, as well as represent both patient and physician voices. Future research could, perhaps, attempt to bring doctors and patients together to initiate a dialogue which could cast additional light on whether physician job satisfaction transfers to patients.

**Conclusion**

The findings largely confirmed existing knowledge related to customer and employee attitudes and behaviors that have been previously studied in service and marketing research settings, and extended these results to health care management. The significance of this project lies in its usefulness for health care administrators and managers who could apply the practical suggestions proposed in the study for creating a better environment for both physicians and patients.
References


Appendix A. Physician Interview Guide

Background

Thank you for agreeing to participate in this research project. My name is Maria Jorina and I am a doctoral student at the College of Public Health, department of Health Services Management and Policy. I am doing this research for my dissertation which is about satisfaction and willingness to recommend. I am particularly interested in physician perspectives on various determinants of satisfaction and willingness to recommend; organizational determinants of satisfaction; the relationship between physician satisfaction with place of work and patient satisfaction with care; and, more generally, the impact of physician satisfaction on quality of care.

This research project is designed to produce an understanding of factors contributing to better quality outcomes, which include patient satisfaction, as well as to investigate organizational, practice and interpersonal components of satisfaction and willingness to recommend. This study consists of a qualitative section and a quantitative section. First, we are planning to conduct a number of interviews with contracted or full-time employed physicians providing care on the inpatient side. The interviews are expected to last approximately 30-45 minutes and are designed to gather physicians’ perspectives on satisfaction and willingness to recommend. The second stage of the project will include statistical analysis of data obtained from patient and physician satisfaction surveys.

You have been identified as someone who can provide a valuable perspective on these topics. Before we can begin the interview, we would like to take you through the informed consent process.

Your participation in this research project is completely voluntary. You can choose to participate or not. If you choose to participate, you can answer or not answer any questions of your choice. Your decision to participate or not participate in this research project will not affect in any way your job, position, or any relationship with OSU.

With your permission, we would like to audio record the interview so that we can more completely and accurately capture your comments. If at any time you wish to
make an “off the record” comment, please let us know and we will stop the tape at your request and restart it when you are ready to continue.

We consider this discussion to be confidential. Your participation is confidential in the sense that your name will not be used in any presentations, reports or articles.

The Ohio State University’s Institutional Review Board (or IRB) has determined that the study involves no more than minimal risk. The primary risk to you is a breach of confidentiality. In a very unlikely case that the answers or remarks that you provide during an interview should become known to others, you may feel embarrassed, suffer loss of social standing or both. I have taken steps to minimize the potential for a breach of confidentiality by going through training in human subjects’ protection and by following IRB-approved procedures to ensure confidentiality of data collection, processing, and storage. Audio recorded interviews and written notes will contain no identifying information linking you to your specific comments. Electronic copies of data will be stored without personal identifiers. Access to interview transcripts or data will be restricted to my team of investigators trained in human subjects research. Electronic files will be stored and transferred in a password protected format.

Do you have any questions about this interview or the study?

Would you be interested in participating in this study?

If no → OK. Thank you very much for your time today. Goodbye.
If yes → continue.

Great! Thanks for agreeing to participate in this study. Is now still a good time for you to speak or would you like to schedule an appointment for some time in the future?

Do you mind if we record the interview? [If no, “Okay, I’m starting the recorder.”]

I. Personal information

1. What are your title and major roles at the Medical Center? What is your employment type?

2. How were you recruited and why did you choose the OSU Medical Center as your place of work? How long have you been working here?
3. What is your specialty? How many patients do you treat, on average, per week?

4. Do you hold any administrative roles within the organization? Are these roles satisfactory to you?

II. **Physician satisfaction with practice and willingness to recommend**

1. Are you satisfied with working at OSUMC? Has your attitude changed over time? Would you say it describes the general sentiment among the colleagues within your specialty or major role in the organization?

2. In your specialty, what factors do you believe are the most important for you to feel satisfied with place of work?

3. Do you recommend the OSUMC as a place of work to your colleagues from other organizations? Is there a particular reason for that?

4. Is your decision to recommend OSUMC independent of how satisfied you are?

III. **Patient satisfaction and willingness to recommend**

1. In your specialty, what is your perception of patient satisfaction with care? Is it different from the Medical Center’s measures? In your opinion, what are the most important factors that determine patient attitudes?

2. In your specialty, do you think that patients generally recommend the hospital to their family and friends? Why? In your opinion, are patient satisfaction and willingness to recommend independent of or related to each other?

IV. **Interaction with patients**

1. During your first encounter with a patient, how do you introduce yourself? How much time, on average, do you spend with each patient daily during their entire stay at the hospital and what determines that?

2. What are some of the goals you want to achieve when treating a patient? How would you rate the significance of patient satisfaction among these goals? How would you describe the relationship between your role in patient care and their satisfaction?

3. Among the various factors that contribute to their satisfaction, where do you think the patients place your role as a caregiver? Within your specialty, would you say your satisfaction with place of work and patient satisfaction with care are independent or related?

VI. **Interview closure**
1. Is there anything else you would like to share with us? Would you suggest including anything else in the design of this study?

2. Would you suggest any of your colleagues within your or other specialties who would be interested in participating in this study?

Thank you very much for your time and participation! Your answers were very helpful.
### Appendix B. Initial coding dictionary

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal background</td>
<td>Physician's recruitment history, tenure</td>
</tr>
<tr>
<td>Employment</td>
<td>Full-time, part-time</td>
</tr>
<tr>
<td>Physicians coming back</td>
<td>Denotes whether a physician who had trained at the organization and then left returned to the organization</td>
</tr>
<tr>
<td>Organizational roles</td>
<td>Physician plays within the organization (e.g., clinical, academic)</td>
</tr>
<tr>
<td>Role satisfaction</td>
<td>Physician’s level of satisfaction with each role within the organization</td>
</tr>
<tr>
<td>Specialty</td>
<td>Physician’s specialty</td>
</tr>
<tr>
<td>Gender</td>
<td>Physician’s gender</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>Self-defined level of job satisfaction</td>
</tr>
<tr>
<td>Satisfaction change</td>
<td>Change in satisfaction level over time</td>
</tr>
<tr>
<td>Factors – Physician</td>
<td>Factors influencing physician’s job satisfaction</td>
</tr>
<tr>
<td>satisfaction</td>
<td></td>
</tr>
<tr>
<td>Colleagues – Job satisfaction</td>
<td>Job satisfaction of co-workers as perceived by the physician</td>
</tr>
<tr>
<td>Recommend – Place of work</td>
<td>Whether physician recommends the organization as a place of work to friends and acquaintances</td>
</tr>
<tr>
<td>Recommend – Place of work - Rationale</td>
<td>Physician’s reasons for (not) recommending the organization as a place of work</td>
</tr>
<tr>
<td>Recommend – Job Satisfaction</td>
<td>Relationship between physician’s job satisfaction and willingness to recommend</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>Level of patient satisfaction with care received at the hospital as perceived by physician</td>
</tr>
<tr>
<td>Perceptions – MC - difference</td>
<td>Difference between physician’s perceptions of the level of patient satisfaction and the satisfaction scores published by the MC</td>
</tr>
<tr>
<td>Factors – Patient satisfaction</td>
<td>Factors influencing patient’s satisfaction with care</td>
</tr>
<tr>
<td>Recommend – Hospital</td>
<td>Whether patients recommend the hospital to family and friends, as perceived by the physician</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Recommend – Hospital - Rationale</td>
<td>Physician’s reasons for why patients may (not) recommend the hospital</td>
</tr>
<tr>
<td>Recommend – Patient satisfaction</td>
<td>Relationship between patient satisfaction with care and willingness to recommend the hospital, as perceived by the physician</td>
</tr>
<tr>
<td>Physician-patient interaction - introduction</td>
<td>Description of how physician meets a patient for the first time</td>
</tr>
<tr>
<td>Physician-patient interaction - goals</td>
<td>Goals of the interaction, as defined by the physician</td>
</tr>
<tr>
<td>Significance of patient satisfaction</td>
<td>Among the goals of physician-patient interaction, as defined by the physician</td>
</tr>
<tr>
<td>Patient satisfaction – physician role</td>
<td>Physician’s role in patient’s overall satisfaction with the hospital, as perceived by the physician</td>
</tr>
<tr>
<td>Patient satisfaction with doctor</td>
<td>The role physician plays in patient’s perceptions of their experience at the hospital</td>
</tr>
<tr>
<td>Job satisfaction – patient satisfaction</td>
<td>Relationship between physician’s job satisfaction and patient’s satisfaction with care, as perceived by the physician</td>
</tr>
</tbody>
</table>
## Appendix C. Finalized Coding Dictionary

<table>
<thead>
<tr>
<th>Code Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration/Leadership roles</td>
<td>Indicates whether the interviewee is involved in any administrative/leadership roles, has easy access to the leaders, sits on executive committees</td>
</tr>
<tr>
<td>Assessing success of communication</td>
<td>How physician assesses whether or not patient understood what they were told</td>
</tr>
<tr>
<td>Background</td>
<td>Physician prior employment history</td>
</tr>
<tr>
<td>Body language</td>
<td>Of physician during their communication with patient</td>
</tr>
<tr>
<td>Care quality</td>
<td>Denotes any issues in care delivery, such as delays in care</td>
</tr>
<tr>
<td>Colleagues - Job satisfaction</td>
<td>Indicates job-related satisfaction levels of co-workers as perceived by the interviewee</td>
</tr>
<tr>
<td>Patient-physician communication style</td>
<td>Of physician with the patient; may include how s/he introduce themselves, explain information</td>
</tr>
<tr>
<td>Job compensation</td>
<td>The interviewee's perspective on whether or not they are adequately compensated</td>
</tr>
<tr>
<td>Job satisfaction – Patient satisfaction</td>
<td>Denotes a statement about a possible connection between physician and patient attitudes</td>
</tr>
<tr>
<td>Recommend – Place of work</td>
<td>Whether physician recommends the organization as a place of work to friends and acquaintances</td>
</tr>
<tr>
<td>Recommend - Hospital</td>
<td>Whether patients recommend the hospital to family and friends, as perceived by the physician</td>
</tr>
<tr>
<td>Control</td>
<td>Includes factors that are under or outside of the physician's control but which may influence their satisfaction; may include examples of what the interviewee does when they deal with factors outside of their control</td>
</tr>
<tr>
<td>Factors – Patient dissatisfaction</td>
<td>Factors which make patients dissatisfied, from</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Factors – Colleagues’ dissatisfaction</td>
<td>Factors which make the colleagues dissatisfied, from the interviewee's perspective</td>
</tr>
<tr>
<td>Factors – Physician dissatisfaction</td>
<td>Factors which make the interviewee dissatisfied</td>
</tr>
<tr>
<td>Physician-Patient interaction – goals</td>
<td>Includes the goals that the interviewee wishes to accomplish while treating a patient; may include overall goals of patient’s experience at OSU</td>
</tr>
<tr>
<td>Physician-Patient interaction – process</td>
<td>Describes how the interviewee communicates with their patients; may include how they introduce themselves, how they explain information to patients, how they determine whether the patient understood them</td>
</tr>
<tr>
<td>Employment length</td>
<td>Number of years (months) the interviewee has been working at OSU</td>
</tr>
<tr>
<td>Evaluations – Physician</td>
<td>May include factors that physicians are evaluated on, such as productivity, how much money they've made, interactions with patients, or patient satisfaction scores</td>
</tr>
<tr>
<td>Patient expectations</td>
<td>Of patients during hospitalization, as perceived by physician</td>
</tr>
<tr>
<td>Factors – Patient satisfaction</td>
<td>Factors that influence patient's satisfaction with health care experience, as perceived by the interviewee</td>
</tr>
<tr>
<td>Factors – Physician satisfaction</td>
<td>Self-defined factors that influence physician’s satisfaction with working at OSU</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>Self-defined level of job satisfaction</td>
</tr>
<tr>
<td>Satisfaction measurement – Patient</td>
<td>May include official patient satisfaction scores for the division or the medical center; may contain explanations why patients give such ratings; perspectives on the accuracy and usefulness of existing surveys</td>
</tr>
<tr>
<td>Satisfaction measurement – Physician</td>
<td>May include known physician satisfaction scores for their division, as well as personal perceptions, comments related to those scores; perspectives on the accuracy and usefulness of the surveys</td>
</tr>
<tr>
<td>Medical staff-Patient interactions</td>
<td>Patient’s interactions with medical staff</td>
</tr>
<tr>
<td>Organizational processes</td>
<td>Mainly refers to the EMR adoption</td>
</tr>
<tr>
<td>Organizational growth</td>
<td>Related to the growth and expansion of the medical center</td>
</tr>
<tr>
<td>Organizational roles - Physicians</td>
<td>May include clinical, research, teaching, and administrative roles; full-time or part-time; may include a statement about the role that's the most satisfying for the interviewee</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Organizational structure – communication</td>
<td>Hierarchy in the organization and communication between organizational levels as related to physician satisfaction</td>
</tr>
<tr>
<td>Organizational structure - satisfaction</td>
<td>Includes any organizational features (e.g., structure, hierarchy, size, leadership communication between levels) which affect physician job satisfaction or patient satisfaction</td>
</tr>
<tr>
<td>Organizational support and recognition</td>
<td>Includes organization’s support for diverse professional interests and the interviewee's feeling appreciated</td>
</tr>
<tr>
<td>Outcome of care</td>
<td>The ultimate result of care provided at the facility</td>
</tr>
<tr>
<td>Patient expectations</td>
<td>Describes patients' expectations regarding the process or outcome of care</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>The level of patient’s satisfaction as perceived by the interviewee</td>
</tr>
<tr>
<td>Personal - Professional Life and Satisfaction</td>
<td>The relationship between being satisfied at work and being happy in personal life and vice versa</td>
</tr>
<tr>
<td>MC physical structure</td>
<td>Includes the outlay of the facility, parking, accessibility</td>
</tr>
<tr>
<td>Physicians coming back</td>
<td>Includes the interviewee's story of how they came back to the OSU after having completed training away; also applied if they stayed at OSU all this time</td>
</tr>
<tr>
<td>Patient satisfaction – Physician role</td>
<td>In patient’s overall satisfaction with care as defined by the interviewee</td>
</tr>
<tr>
<td>Reputation</td>
<td>Includes the interviewee's perceptions of reputation of the MC</td>
</tr>
<tr>
<td>Recruitment story</td>
<td>The story of how the interviewee was recruited into their current position; explanation of why they chose OSU</td>
</tr>
<tr>
<td>Relationships – colleagues</td>
<td>Includes communication style with colleagues, how difficult issues are related and resolved</td>
</tr>
<tr>
<td>Relationships – nurses</td>
<td>How physician communicates with nurses and other subordinates; how difficult issues are related and resolved</td>
</tr>
<tr>
<td>Satisfaction change</td>
<td>Denotes whether satisfaction has changed since the interviewee first started working at the</td>
</tr>
<tr>
<td>medical center</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Job tenure</td>
<td>Indicates whether the interviewee is planning to continue working at the organization several years from now</td>
</tr>
<tr>
<td>Time spent on patients</td>
<td>Percentage of time or hours spent on taking care of patients</td>
</tr>
<tr>
<td>Training</td>
<td>Describes where the interviewee did their residency and fellowship training</td>
</tr>
<tr>
<td>Work environment</td>
<td>May include various aspects of practicing medicine, such as access to complex patients or ability to build practice quickly</td>
</tr>
</tbody>
</table>
Appendix D. Physician Survey Instrument
<table>
<thead>
<tr>
<th>Staff's concern for and interest in your patients</th>
<th>Likelihood that you will maintain your level of admissions to, or procedures/surgeries at, this facility over the next year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff's knowledge of patients' conditions and courses of treatment</td>
<td>Likelihood you would recommend this facility to friends and family for care</td>
</tr>
<tr>
<td>Staff's reliability in recognizing and reporting changes in patients' conditions</td>
<td>Your confidence in the Hospital Administration to carry out its duties and responsibilities</td>
</tr>
<tr>
<td>Timeliness of follow-through on orders</td>
<td>Level of information you receive about the Strategic Plan for this facility as a whole</td>
</tr>
<tr>
<td>Quality of the nursing staff</td>
<td>This facility’s ability to provide up-to-date medical equipment</td>
</tr>
<tr>
<td>Overall rating of physician-nurse collaboration</td>
<td>Ease of scheduling Inpatient Surgery</td>
</tr>
<tr>
<td>Overall rating of the Emergency Department</td>
<td>Degree to which Hospital Administration has positioned the hospital to deal with changes in the healthcare environment</td>
</tr>
<tr>
<td>Access to patient information (e.g., availability of nurse assigned to patient, chart, test results)</td>
<td>Overall rating of the extent to which this facility has enhanced your practice</td>
</tr>
<tr>
<td>Ease of admitting patients</td>
<td>Extent to which the hospital and physicians work together to improve the quality of care</td>
</tr>
<tr>
<td>Turnaround for lab results</td>
<td>Hospital Administration can be trusted to be straightforward and honest</td>
</tr>
<tr>
<td>Turnaround for radiology results</td>
<td>Degree to which you feel appreciated for your contributions to the medical center</td>
</tr>
<tr>
<td>Ease of scheduling inpatient tests/therapy</td>
<td>Overall rating of the facility’s information-sharing practices</td>
</tr>
<tr>
<td>Ease of scheduling outpatient surgery</td>
<td>Opportunities to be involved in activities aimed at improving quality/hospital processes</td>
</tr>
<tr>
<td>Ease of scheduling outpatient tests/therapy</td>
<td>Alignment of the hospital’s goals with your own</td>
</tr>
<tr>
<td>Overall quality of care at this facility</td>
<td></td>
</tr>
<tr>
<td>Degree to which this facility makes caring for your patients easier</td>
<td></td>
</tr>
<tr>
<td>Overall satisfaction with this facility</td>
<td></td>
</tr>
<tr>
<td>Visibility/Accessibility of Hospital Administration</td>
<td></td>
</tr>
<tr>
<td>Communication between yourself and Hospital Administration</td>
<td></td>
</tr>
<tr>
<td>Responsiveness of Hospital Administration to ideas and needs of the medical staff</td>
<td></td>
</tr>
<tr>
<td>Degree to which physicians are involved in decision-making at this facility</td>
<td></td>
</tr>
<tr>
<td>Degree to which Hospital Administration seeks mutually beneficial solutions to physicians' issues</td>
<td></td>
</tr>
<tr>
<td>Degree to which you are treated as a valued member of this facility’s medical staff</td>
<td></td>
</tr>
</tbody>
</table>
Appendix E. Patient satisfaction survey items
<table>
<thead>
<tr>
<th>Admission</th>
<th>1. Speed of admission process</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Courtesy of the person who admitted you</td>
</tr>
<tr>
<td>Discharge</td>
<td>1. Extent to which you felt ready to be discharged</td>
</tr>
<tr>
<td></td>
<td>2. Speed of discharge process after you were told you could go home</td>
</tr>
<tr>
<td></td>
<td>3. Instructions given about how to care for yourself at home</td>
</tr>
<tr>
<td>Nurses</td>
<td>1. Friendliness/courtesy of the nurses</td>
</tr>
<tr>
<td></td>
<td>2. Promptness in responding to the call button</td>
</tr>
<tr>
<td></td>
<td>3. Nurses’ attitudes toward your requests</td>
</tr>
<tr>
<td></td>
<td>4. Amount of attention paid to your special or personal needs</td>
</tr>
<tr>
<td></td>
<td>5. How well the nurses kept you informed</td>
</tr>
<tr>
<td>Physician</td>
<td>1. Time physician spent with you</td>
</tr>
<tr>
<td></td>
<td>2. Physician’ concern for your questions and worries</td>
</tr>
<tr>
<td></td>
<td>3. How well physician kept you informed</td>
</tr>
<tr>
<td></td>
<td>4. Friendliness/courtesy of physician</td>
</tr>
<tr>
<td></td>
<td>5. Skill of physician</td>
</tr>
<tr>
<td>Personal issues</td>
<td>1. Staff concern for your privacy</td>
</tr>
<tr>
<td></td>
<td>2. How well your pain was controlled</td>
</tr>
<tr>
<td></td>
<td>3. Degree to which hospital staff addressed your emotional needs</td>
</tr>
<tr>
<td></td>
<td>4. Response to concerns/complaints made during your stay</td>
</tr>
<tr>
<td></td>
<td>5. Staff effort to include you in decisions about your treatment</td>
</tr>
<tr>
<td>Meals</td>
<td>1. Temperature of the food (cold foods cold, hot foods hot)</td>
</tr>
<tr>
<td></td>
<td>2. Quality of the food</td>
</tr>
<tr>
<td></td>
<td>3. Courtesy of the person who served your food</td>
</tr>
<tr>
<td>Room</td>
<td>1. Pleasantness of room décor</td>
</tr>
<tr>
<td></td>
<td>2. Room cleanliness</td>
</tr>
<tr>
<td></td>
<td>3. Courtesy of the person who cleaned your room</td>
</tr>
<tr>
<td></td>
<td>4. Room temperature</td>
</tr>
<tr>
<td></td>
<td>5. Noise level in and around room</td>
</tr>
<tr>
<td>Tests and treatments</td>
<td>1. Waiting time for tests or treatments</td>
</tr>
<tr>
<td></td>
<td>2. Explanations about what would happen during tests or treatments</td>
</tr>
<tr>
<td></td>
<td>3. Courtesy of the person who took your blood</td>
</tr>
<tr>
<td></td>
<td>4. Courtesy of the person who started the IV</td>
</tr>
</tbody>
</table>
Bibliography


Gullickson L. & Gullickson L. (2011). Herzberg’s theory of motivation as applied to community college full-time and adjunct online faculty.


Kocher R. & Sahini N. (2011). Hospital’s race to employ physicians – the logic

individuals’ fit at work: A meta-analysis of person-job, person-organization, person-

Lambert E., Hogan N. & Barton S. (2001). The impact of job satisfaction on
turnover intent: A test of a structural measurement model using a national sample of


Laschinger H. & Finegan J. (2005). Empowering nurses for work engagement and


satisfaction-loyalty link: Mobile phone service in France. *Journal of Services Marketing*,


U.S. Department of Health and Human Services, Health Resources and Services Administration; Exhibit 51, Baseline FTE Supply Projects of Active Physicians; Exhibit 52, Baseline Physician Requirements Projections, December 2008.


ambivalence, and emotions at work in predicting organizational citizenship behavior.

exploratory investigation of the 5Qs model at some Egyptian and Jordanian medical

Zotolli M. & Wanous J. (2000). Recruitment source research: Current status and