IJAHSP
The Internet Journal of Allied Health Sciences and Practice
http://ijahsp.nova.edu

A Peer Reviewed Publication of the College of Allied Health & Nursing at Nova Southeastern University
Dedicated to allied health professional practice and education
http://ijahsp.nova.edu Vol. 9 No. 4 ISSN 1540-580X

A Quantitative Correlational Study on the Impact of Patient Satisfaction on a Rural Hospital

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CITATION: Ellis-Jacobs K. A Quantitative Correlational Study on the Impact of Patient Satisfaction on a Rural Hospital. *The Internet Journal of Allied Health Sciences and Practice.* Oct 2011. Volume 9 Number 4.

ABSTRACT

The purpose of the quantitative, ex post facto, correlational research study was to describe a relationship between rural allied health care mean customer satisfaction scores and allied health care departments' generation of revenue for a hospital. The research method for the study was appropriate because it identified a relationship between two variables: the customer service skills of allied health care practitioners and a hospital's gross revenue. The study involved analyzing historical patient satisfaction surveys and corresponding hospital revenue statements from a rural hospital in northeastern Oklahoma for a 25-month period. The study revealed a correlation and impact of the allied health care practitioner on hospital survival. Revenue was positively significantly correlated with three of the satisfaction ratings from the Emergency Department. These correlations were for STD tests (r = .41, p < .05), courtesy of the person drawing blood (r = .40, p = .05), and concern of radiology personnel (r = .45, p < .05). None of the correlations between revenue and Inpatient ratings achieved significance. The trend tended to be in the same direction as the Emergency Department ratings, such that all of the correlations were positive with the exception of the Waiting rating (r = -.14, p > .05). The correlation was negative, but was rather small and insignificant.

INTRODUCTION

Allied health care practitioners are a key factor in improving the quality of life of patients and increasing the satisfaction of patients' health care experiences.[1] Allied health care departments in hospitals typically generate 75-80% of hospital revenue; therefore, the customer satisfaction skills of allied health care practitioners impact the satisfaction of a patient's visit to a hospital. Health care leaders must ensure that patients that use the health facility are satisfied with the health care services received. Patients assume that health care workers employed in a hospital are technically competent.[1] A patient's quality of life requires both technical excellence and compassionate health care.[2]

In a rural health care facility, patients hold power in the financial success of a hospital by using the facility for health care needs. Even though many rural areas have only one hospital within a 50 mile or greater radius, health care consumers will influence hospital reimbursement from Medicare because patient satisfaction will be considered a quality mandate beginning October 2012.[3] This mandate will allow Medicare to pay hospitals for services based on patient satisfaction scores.[3] Allied health care practitioners are trained to perform technical analysis with competence; however, many rural allied practitioners lack adequate customer service skills.[4] Patients visiting a health care facility for services expect a certain level of quality and satisfaction, but health care practitioners often do not deliver on the expectation with incidents of long waits for service, rude staff, and uncompassionate practitioners.[5] This lack of customer satisfaction will be reflected in government mandated patient satisfaction surveys and impact the amount of hospital reimbursement for Medicare patients.[5] The general problem was excellent customer service is no longer a choice for allied health care practitioners but an expectation from health care consumers.[5] Recent trends in health care and changes in government and private payers allow health care consumers to choose where to obtain health care.[6] The specific problem is that rural hospitals face closure because of decreased reimbursement from government and private

payers. Recent trends in health care reimbursement base future payment for services on allied health care practitioners' customer satisfaction scores, which leads to less accessible and more expensive health care. Health care leaders must increase patient satisfaction scores through training and education to emphasize the importance of a positive patient experience to the survival of health care facilities.[5]

In 2008, The Centers for Medicare and Medicaid Services (CMS) and many private insurers included patient satisfaction as a quality mandate[3]. Hospitals that receive Medicare payments were required to participate in patient satisfaction surveys and report these results to CMS. In October 2012, Medicare reimbursements to health care facilities could decrease by as much as 2%, if hospitals do not meet the benchmark patient satisfaction goals determined by CMS.[3] Rural hospitals face closing because of these possible decreased Medicare reimbursements.[7] Over 500 rural hospitals have closed since 1990 because health care consumers chose to travel farther to receive health care and pay more for services to receive excellent customer services based on the public reporting of hospital satisfaction scores initiated in 2008.[8]

In many rural health care facilities, gross revenues result primarily from inpatient stays and allied departments, particularly laboratory and radiology services.[5] As allied health care practitioners understand patients' needs and satisfy those needs customer satisfaction increases.[5] Health care practitioners once considered patients an intrusion on their time, but in the near future these practitioners will depend on customers for reimbursement because of satisfaction survey responses mandated by the federal government.[5]

The relationship between these two variables could provide health care leaders with a patient service model that demonstrates a cycle of revenue generation and hospital survival that will help health care remain accessible and less expensive for rural residents. Patient-centered health care quality models currently exist; however, these models do not recognize impact of allied health care practitioners on hospital revenue generation.[9]

METHOD

The purpose of the current quantitative, ex post facto, correlational research study was to describe a correlation between allied personnel customer satisfaction scores and a hospital's gross revenue. The study involved analyzing 25 months of historical patient satisfaction survey mean scores and revenue statements from a rural hospital in northeastern Oklahoma. The current study involved identifying a relationship between two variables: the customer service skills of allied health care practitioners and a hospital's financial success. The current study included data in the form of statistical figures and tables. Revenue reports and patient satisfaction surveys for the same period were analyzed.

The research question for the current study integrated leadership, customer satisfaction, and allied health care professionals' training:

R1: What is the relationship, if any, between allied health care practitioners' customer service skills and a hospital's gross revenue?

In consideration of the customer satisfaction–profitability relationship and the research question, the study included the following hypotheses:

$H_0$1: No correlation exists between the hospital's allied health care department's revenue and various measures of allied health care customer satisfaction from April 2008 to April 2010.

H1: A correlation exists between the hospital's allied health care department's revenue and various measures of allied health care customer satisfaction from April 2008 to April 2010.

Data were analyzed by Pearson correlations that assumed the two variables were measured on at least interval scales, and Pearson correlations determine the extent to which values of the two variables are proportional to each other.[10] The value of correlation or a correlation coefficient does not depend on the specific measurement units used. Proportional means linearly related; that is, the correlation is high if it can be summarized by a straight line sloped upward or downward. The line is called the regression line because it is determined such that the sum of the squared distances of all the data points from the line is the lowest possible.[10]

Pearson correlations were computed between the monthly measures of revenue and the various satisfaction ratings for the Emergency Department and Inpatient areas separately to test the hypothesis. Correlations were flagged as significant if the *p* value was less than or equal to .05. The correlations that pertained to the hypothesis are in the first column under revenue for each table. These are the correlations between hospital revenue profit and each satisfaction rating. The rest of the correlations represent correlations among the ratings. These do not pertain to the hypothesis, but are shown for interest.

RESULTS

The findings indicated the null hypothesis was rejected in the Emergency Department setting, but the null hypothesis was not rejected in the Inpatient setting. Several possible correlations between allied health care customer satisfaction and a hospital's gross revenue were identified but not significant. Patient satisfaction scores for health care practitioner performance were divided into two categories: Emergency Department visits and Inpatient admissions. Table 1 presents descriptive statistics consisting of the mean, standard deviation, and range (minimum score to maximum score) for hospital gross revenue and for each of the satisfaction ratings for the Emergency Department and Inpatient categories. Measures of skewness and kurtosis were also computed to assess normality of the measures. Skewness and kurtosis values of zero are indicative of a normal distribution, and values between -2 and +2 signify no problematic deviations from normality.[11] The measures of skewness and kurtosis were all between the values of -2 and +2. Thus, the variables were deemed sufficiently and normally distributed that parametric statistics (i.e., Pearson correlations) could be appropriately applied in analyzing these variables.

Table 1. Descriptive Statistics for Revenue and Satisfaction Ratings: April 2008 to April 2010

			Range			
	M	*SD*	Min.	Max	Skewness	Kurtosis
Revenue (in millions)	$3.08	$2.96	2.48	$3.74	0.21	-0.17
Emergency Department ratings						
STD tests	77.45	10.87	57.2	92.9	-0.44	-0.57
Courtesy (blood)	76.51	12.13	57.2	95.8	-0.31	-1.23
Concern (blood)	76.38	12.72	57.2	96.4	-0.05	-1.21
Wait (radiology)	70.90	18.97	25	100	-0.91	1.04
Courtesy (radiology)	81.12	10.04	65	100	0.34	-0.78
Concern (radiology)	77.93	11.24	50	100	-0.02	0.81
Inpatient ratings						
STD tests	81.81	4.65	70.8	93.0	-0.31	1.49
Wait	77.91	4.21	69.3	87.5	0.15	0.21
Explanations	80.16	6.53	65.0	90.6	-0.68	0.34
Courtesy (blood)	84.44	4.74	75.0	96.9	0.31	0.98
Courtesy (IV)	84.61	4.51	77.3	96.9	0.78	0.65

Correlations

To test the hypothesis, Pearson correlations were computed between the monthly measures of revenue and the various satisfaction ratings for the Emergency Department and Inpatient areas separately. Table 2 displays the correlations for the Emergency Department ratings, and Table 3 displays the correlations for the Inpatient ratings. Correlations were flagged as significant if the *p* value was less than or equal to .05. The correlations that pertain to the hypothesis are in the first column under revenue for each table. These are the correlations between hospital gross profit and each satisfaction rating. The rest of the correlations represent correlations among the ratings. These do not pertain to the hypothesis, but are shown for interest.

As displayed in Table 2, revenue was positively significantly correlated with three of the satisfaction ratings from the Emergency Department. These correlations were for STD tests ($r = .41$, $p < .05$), courtesy of the person drawing blood ($r = .40$, $p = .05$), and concern of radiology personnel ($r = .45$, $p < .05$).

Table 3 contains the correlations for the Inpatient satisfaction ratings. None of the correlations between revenue and Inpatient ratings achieved significance. The trend tended to be in the same direction as the Emergency Department ratings, such that all of the correlations were positive with the exception of the Waiting rating ($r = -.14$, $p > .05$). The correlation was negative, but was rather small and non-significant.

Table 2. Pearson Correlations Between Revenue and Emergency Department Ratings (N=25)

	1	2	3	4	5	6
1. Revenue	--					
2. STD tests	.41*	--				
3. Courtesy (blood)	.40*	.85***	--			
4. Concern (blood)	.37	.86***	.96***	--		
5. Wait (radiology)	.14	.38	.19	.22	--	
6. Courtesy (radiology)	.38	.76***	.52**	.55**	.73***	--
7. Concern (radiology)	.45*	.57**	.41*	.43*	.57**	.84***

Table 3. Pearson Correlations Between Revenue and Inpatient Ratings (N=25)

	1	2	3	4	5	6
1. Revenue	--					
2. STD tests	.13	--				
3. Wait	-.14	.76***	--			
4. Explanations	.16	.86***	.77***	--		
5. Courtesy (blood)	.14	.86***	.52**	.75***	--	
6. Courtesy (IV)	.10	.86***	.55**	.62***	.86***	--

RECOMMENDATIONS AND CONCLUSIONS

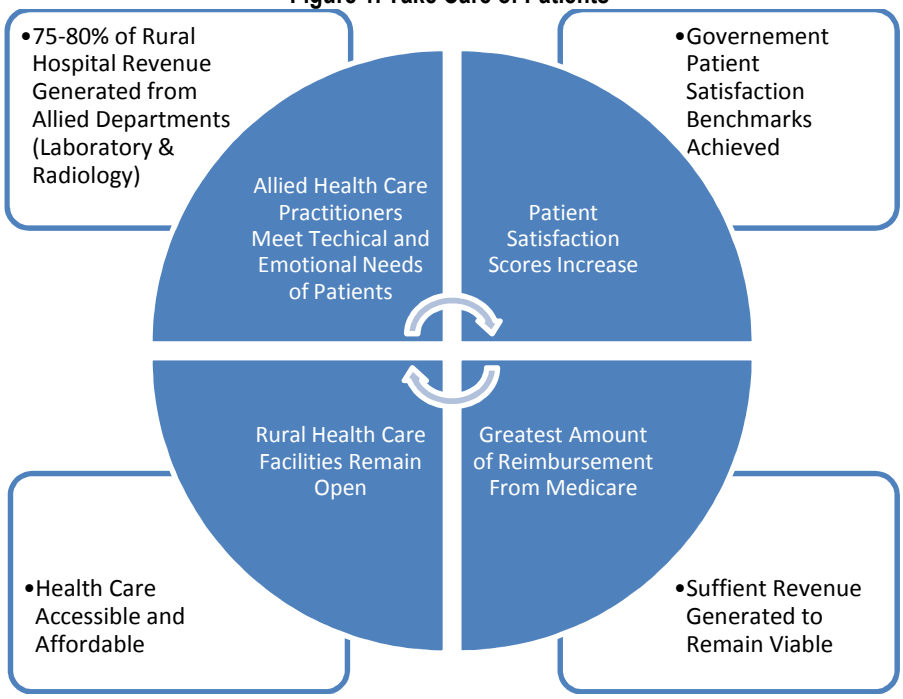
Health care institutions face closing due to decreased reimbursements based on poor satisfaction scores of allied health care practitioners.[6] Allied health care practitioners are not meeting the emotional needs of patients.[5] Current patient service models are not allowing health care institutions to remain viable in a consumer's market. Although revenue was positively significantly correlated with three of the satisfaction ratings from the Emergency Department, the current quantitative study did not indicate a significant relationship exists between allied health care practitioner customer service skills and a hospital's gross revenue in the inpatient setting.

In the current study, other trends and factors were identified that correlated revenue and patient satisfaction. Seasonal factors and trends were found to impact revenue in the rural hospital. Revenue for 2008 was highest in October, which is traditionally the beginning of flu season and which increases hospital revenue because the number of hospital visits increases. Hospital revenue was lowest in November for 2008. This occurrence is also expected due to the holidays and physician vacations that occur during this month. When physicians are out of their offices for holidays, hospital revenue frequently decreases because the number of patient visits to the hospital decreases. Revenue generated when physicians send patients to the hospital for diagnostic testing (i.e., laboratory or radiology) or for admission through the Emergency Department is temporarily lost.[1]

Recommendations

Health care leadership must implement this simple customer service model, Take Care of Patients (TCOP) for allied health care practitioners to test its validity in a health care setting.

Figure 1. Take Care of Patients



The focus of allied practitioners must be taking care of patients completely. An assessment of patients' total needs must be performed so patient satisfaction can be achieved and the greatest amount of revenue can be generated. Hospitals that receive the greatest government and private payer reimbursements will remain open to serve patients. Health care facilities will remain accessible and less expensive to patients when all organizational decisions are made to take both technical and emotional care of patients.

Conclusion

With respect to inpatient ratings, the null hypothesis was not rejected, and it could not be concluded that the hospital's gross revenue was related to mean inpatient satisfaction scores. However, Emergency Department mean patient satisfaction scores were correlated to revenue in three areas of allied health care practitioner skills: standard testing, courtesy of person performing blood collection, and courtesy of radiology personnel. Other factors that affect hospital gross revenue such as health care facility location and seasonal trends were identified. Rural health care facilities are a primary source of patient care for elderly and uninsured residents in rural areas; therefore, taking care of these patients will result in greater patient satisfaction scores and ultimately increased hospital revenue.

Based on the information gained from the study, a new model for patient care was developed for exploration. Take Care of Patients or TCOP is based on the premise that if rural health care facilities are taking care of patients, by meeting or exceeding the patients' expectations, all aspects of rural health care survival, including patient satisfaction, will work together to provide the greatest care for patients and greatest reimbursement for the health care facility.

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