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Relationship Between Patient Satisfaction and Hospital Financial Performance Among U.S. Acute Care For-Profit Hospitals

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
2023

Abstract

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MS, University of Maryland University College, 2002

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

As patients increasingly have access to various options for healthcare services, improving patient experience is considered a contributor to hospital performance since it may strengthen customer loyalty, build brand reputation, and increase hospital utilization through referrals to family, friends, and community members. Given the healthcare market shift towards patient-centered care and renewed emphasis on patient experience as a core element of quality, for-profit hospitals need to focus on this relationship. Secondary, self-reported patient experience and hospital financial performance (operationalized as total profit margin) data were used to test the relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals. The Donabedian model was the theoretical framework for the study. Results of the simple linear regression indicated a statistically significant association between patient satisfaction and hospital financial performance (p <.003). Implications for positive social change include informing practitioners of healthcare administration on improvement and quality of policies and practices in the healthcare industry overall. Hospital administrators could develop strategies that focus on and improve patient-centered care while increasing margins; reinvestment of profits can lead to enhanced patient experience and improved care and health outcomes.

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Section 1: Foundation of the Study and Literature Review

Introduction

For decades, healthcare reform in the United States has been a topic of debate among policymakers driven in large part by concerns of their constituents surrounding access, cost, quality, and the economic burden placed on patients, employers, and payers compared to other countries (Warner et al., 2020). These concerns led to the passage of the federal Patient Protection and Affordable Care Act (PPACA) on March 23, 2010, amended by the Health Care and Education Reconciliation Act on March 31, 2010, and fully implemented on January 1, 2014, which brought significant change in the U.S. health care system, including the most significant expansion of medical care coverage since the passage of Medicare and Medicaid in 1965 (Rosenbaum, 2011).

PPACA has three primary goals, which include (a) to make insurance affordable, (b) accessible, and (c) to increase the number of people covered by health insurance. This legislation changed how health insurance is regulated. It sparked a shift from volume-based to value-based care delivery models. The passage of PPACA introduced a new policy that allows the Department of Health and Human Services (DHHS) Centers for Medicare & Medicaid Services (CMS) to link hospital reimbursements to patient satisfaction scores obtained from the Hospital Consumer Assessment of Healthcare Providers & Systems (HCAHPS; Rosenbaum, 2011). Due to its relationship to CMS value-based care reimbursement models, HCAHPS scores have become the benchmark for patient satisfaction in the U.S. hospital industry. The results inform quality

improvement strategies for hospital administrators, making these metrics even more of a priority.

Unlike nonprofit hospitals, which account for 57% of all hospitals in the United States; for-profit hospitals, such as the Hospital Corporations of America (HCA) and Tenet Healthcare, account for 24% of all hospitals in the United States whose aim is to provide medical services to consumers and to generate profits for their shareholders (American Hospital Association [AHA], 2022). Enhancing patient experience can be a potential driver to improve hospital performance. Given the healthcare market shift towards patient-centered care and renewed emphasis on patient experience as a core element of quality, researchers need more attention on this relationship, specifically among for-profit hospitals.

I investigated the relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals. The impact of patient satisfaction on for-profit hospital operations is essential for hospital administrators to understand and develop strategies that focus on and improve patient-centered care, increase margins, and reinvest resources to enhance the patient experience, leading to better patient care and health outcomes.

For the research design of this study, I used secondary data obtained from the CMS HCAHPS survey and the American Hospital Directory that report acute care hospitals' patient experience and financial performance. Data from these sources supported the study's conceptual model using hypothesis testing. In addition, the HCAHPS survey is considered the gold standard for measuring adult inpatient experience

of care in the United States (Ahmed et al., 2020). Empirical research on patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals is essential. The research findings may be relevant to practitioners of healthcare administration for quality improvement, policy, theory, or practice in the healthcare industry overall.

The rationalization and focus of this study are in the problem statement and purpose. The theoretical framework and nature of the study provide the independent and dependent variables and describe the approach to answer the research question. The literature search strategy and literature review provide a historical perspective associated with the research study and summarize recent findings related to the study. The study's scope, limitations, and significance are in subsequent sections.

Background

Before the Coronavirus 2019 (COVID-19) pandemic that imposed an unprecedented stress test on the healthcare and public health systems, roughly 17.8% of the United States gross domestic product (GDP) represented healthcare in comparison to six of the world's advanced economies (i.e., Canada, France, Germany, Italy, Japan, and the United Kingdom; The Commonwealth Fund, 2023). Despite medical and technological advances, the United States trails behind its counterparts in other high-income countries on health outcomes. Americans are more likely to die at a younger age due to illnesses caused by chronic diseases (i.e., cancer, stroke, obesity, and diabetes; (Avendano & Kawachi, 2014). As a result of these findings, government entities, providers, healthcare administrators, policymakers, and other leaders developed

initiatives to become more patient-centered, improve patient safety and experience, and transform care financing to improve the U.S. healthcare system.

In 2001, the concept of patient satisfaction gained importance when the Institutes of Medicine (IOM) released a comprehensive report which identified six objectives to achieve a quality healthcare system: (a) safe, (b) effective, (c) patient-centered, (d) timely, (e) efficient, (f) equitable (Institute for Healthcare Improvement, n.d.). The latter three objectives influence patient satisfaction, which means that judgment is formed by the patient's perspective of their hospital experience across a continuum of care (Institute for Healthcare Improvement, n.d.). Six years prior to the release of IOM's report, Press Ganey, which provides data collection, analysis, and reporting instruments for patient care safety, quality, and experience, was established (Institute for Healthcare Improvement, n.d.).

Over the next decade, healthcare providers focused on redesigning their services and structures to focus on patient-centered care (individuals and families) and population health (Institute for Healthcare Improvement, n.d.). More U.S. hospitals saw the value of tracking their patients' experiences and comparing the results with those of similar organizations. As a result, data collection and reporting sophistication began to evolve. Other survey companies entered the market, creating a standard for hospitals to assess their quality and rate performance against other hospitals. Press Ganey and other survey companies began to expand their services by analyzing results from the patient satisfaction survey to provide data that hospitals use for quality improvement (North & Tulledge-Scheitel, 2019).

As hospitals continued to collect information on patient satisfaction for their internal use, the national healthcare landscape began to shift. During this time, there were no standardized or scientifically rigorous metrics for collecting, evaluating, and publicly reporting information about patient experience of care. In 2002, CMS partnered with the Agency for Healthcare Research and Quality (AHRQ), another agency in the federal DHHS, to fill a much-needed gap by developing a national, standardized, publicly reported survey of patient's perspectives of hospital care; thus, HCAHPS survey was created (CMS, n.d.-a).

AHRQ (n.d.) conducted a rigorous scientific process, including a public call for measures, literature review, cognitive interviews, consumer focus groups, stakeholder input, a three-state pilot test, extensive psychometric analyses, consumer testing, and numerous small-scale field tests. Three years later, the National Quality Forum endorsed the HCAHPS survey. Later that year, the Office of Management and Budget approved the national implementation of HCAHPS for public reporting purposes to motivate hospital administrators to improve the quality of care and to publicly provide easily accessible information regarding patient satisfaction scores to all consumers in a way that is simple to interpret (Kennedy et al., 2014). Meanwhile, the enactment of the Deficit Reduction Act of 2005 produced an incentive for acute care hospitals to participate in HCAHPS as a requirement for financial reimbursement of Medicare patients through the Hospital Value-Based Purchasing (VBP) Program, Inpatient Prospective Payment System (IPPS) payment model, which rewards acute care hospitals with incentive payments for the quality of care provided to Medicare patients during inpatient hospital stays by reducing

adverse events, adopting evidence-based care practices to achieve the best outcome, improve patient experience and publicly share quality metrics (CMS, n.d.-a). The following year, CMS implemented the HCAHPS survey, and in 2008, the first public reporting of HCAHPS results was received.

Policymakers passed PPACA in 2010, fully implemented in 2014, significantly changing the U.S. healthcare system. Healthcare reforms brought upon by PPACA forced U.S. acute care hospitals and health systems to change patient reimbursement models to link federal payments to hospitals' performance according to quality measures and clinical practices during hospital stays (The Commonwealth Fund, 2020). This new paradigm shifts control and power from the traditional provider and third-party payers to patient-centered care and meeting consumer clinical needs, wants, and expectations. Healthcare reform also challenges hospitals to thrive financially in a changing reimbursement environment. For-profit hospitals generate financial returns for investors while maintaining operating margins, greater efficiencies, and costs (Jeurissen et al., 2021). The need for effective and efficient financial management by hospital administrators is paramount.

Problem Statement

Given their mission to provide acute medical services, hospitals have long been considered central to the welfare of a community as they serve as prominent public health partners and make significant contributions to bolster population health and improve economic conditions (Cronin et al., 2021). For instance, hospitals are often ranked as the largest employer in their communities and are less likely than corporations and other

entities to move their business elsewhere. These community investments are critical to bolstering economic development, addressing health disparities, and increasing well-being by reducing preventable deaths.

Approximately 81.5% of the American hospital market comprises nonprofit and for-profit hospitals, compared to 18.5% comprising government-funded public hospitals (American Hospital Association, 2022; Jeurissen et al., 2021). Of the 81.5% of the American hospital market, for-profit hospitals continue to grow in number and compose a quarter of hospitals (Cronin et al., 2021). For-profit hospitals are investor-owned entities designed to provide medical services to the community and garner a profit for their shareholders. Due to regulatory and market changes, such as the introduction of the Medicare and Medicaid Prospective Payment System (PPS) in 1983 and ensuing changes to state and federal policies governing for-profits on a state-by-state basis, the healthcare industry witnessed a vast expansion of for-profit hospitals and hospital systems that created a mixed medical market in the United States (Cronin et al., 2021). Most theoretic philosophies assume that due to its ownership structure and focus on profitable services instead of unprofitable services, and lean operations, for-profit hospitals are more efficient than nonprofit and government hospitals (Cronin et al., 2021). Its inclusion in mainstream healthcare is to yield lower costs and increase efficiency. There is an ongoing debate that for-profit hospitals restrict healthcare access for those less fortunate to pay for services rendered, provide a lower quality of care, are very risk-averse, and excessively interfere in clinical matters from a management perspective (Jeurissen et al., 2021).

Meeting patients' needs and earning better margins has a significant focus area for providers, payers, and hospital administrators as each faces payment pressure. Since 2012, under the hospital VBP model of reimbursement, hospital payments have been adjusted based on performance in three domains of care: (a) improving the individual experience of care, (b) improving the health of populations, and (c) reducing the per capita costs of care for populations, which patient experience currently accounts for 25% (CMS, n.d.-a). Hospital reimbursements from CMS and private insurers (e.g., 2%) link to quality performance metrics and value-based contracts that capture the patients' experience and clinical outcomes. Given the market shift towards patient-centered care and renewed emphasis on patient experience as a core element of quality, there is a gap in information about this relationship, specifically among for-profit hospitals, as prior researchers did not investigate hospital type of relationship between patient satisfaction and financial performance of U.S. acute care for-profit hospitals affiliated with the HCA and Tenet Healthcare.

Prior empirical research focuses on the association between quality improvement, safety of patient care, and patient satisfaction within public and government hospitals. Hussin et al. (2018) studied an approach to identify factors that enhance patient satisfaction in public hospitals in two areas (i.e., emergency department and medical wards) from a strategic perspective. Barnes et al. (2018) explored the association between quality and financial performance in U.S. hospitals from a systematic viewpoint. van Den Berg and Akingbola (2019) examined the financial management impact of patient experiences of care and clinical outcomes of U.S. acute care hospitals across ownership

types and regions. Though prior research revealed some aspects of financial performance, quality of care, and patient experience, none studied the relationship between patient experience, hospital ownership type, and financial performance in one setting.

Purpose of the Study

In this quantitative study, I aimed to determine if there was a relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals. The target population for this study was acute care for-profit hospitals associated with HCA and Tenet Healthcare. I analyzed secondary data submissions of patient satisfaction scores reported by CMS and financial data provided by the American Hospital Directory.

Research Question and Hypotheses

To provide a framework for investigation and guide the research process, I addressed the research problem by answering one clear, concise, and specific research question about patient satisfaction and the financial performance of U.S. acute-care for-profit hospitals.

RQ: Is there a relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals?

H_0: There is no statistically significant relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals.

H_1: There is a statistically significant relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals.

Conceptual Framework

I used the Donabedian model, a structure-process-outcomes conceptual framework, to assess the relationship between patient satisfaction and hospital financial performance. The model describes the structure as characteristics of the space where care occurs (e.g., hospitals), process measures include delivery of care to patients and the workflows encompassed therein (e.g., patient satisfaction scores), and outcomes describe the effects of health care on populations measures, each important to the evaluation of health care quality (e.g., financial performance; Binder et al., 2021). This widely recognized and applied conceptual model has provided a framework for examining healthcare quality and services in many healthcare-related fields since 1966 and allows the researcher and other stakeholders to use this framework as a guide to improve quality and outcomes for a population.

The Donabedian model was used as a theoretical framework in previous studies where researchers examined the relationship between patient satisfaction and patient-centered care within a healthcare setting. Santana et al. (2017) used the Donabedian model as their conceptual framework to classify patient-centered care domains into structure-process-outcome categories for healthcare quality improvement. Kelly and McCorkle (2018) also used the Donabedian model to examine consumers' healthcare experiences, improve employee health, and increase access to care. Binder et al. (2021) used this model to examine the clinical outcomes of the emergency department staff safety and engagement. Using the Donabedian model as a theoretical framework for my

current study was consistent with other research. It builds upon understanding how the theory applies to analyzing factors and relationships in a healthcare setting.

Nature of the Study

The quantitative research design included a retrospective descriptive study. I used secondary datasets from CMS and the American Hospital Directory. To analyze the relationship between patient satisfaction (independent variable), I used self-reported results of the HCAHPS Survey–administered to random samples of discharged adult patients to enable valid comparisons across all hospitals to support consumer choice. The variable from the HCAHPS Survey is the patient overall hospital star rating with the level of service received during the hospital stay.

The American Hospital Directory provides financial performance (dependent variable) data that total profit margin (TPM)–measures the control of expenses relative to revenues and expresses the profit a hospital makes as a proportion of revenue brought in - among United States for-profit hospitals. The TPM indicates the financial viability of a hospital and will be used to evaluate hospital performance. By linking HCAHPS scores to reimbursement, CMS is fostering competition among hospitals. Based on patient satisfaction scores, I determined if financial performance increases or decreases.

Literature Search Strategy

This conceptual research study was focused on patient satisfaction scores and the financial performance of U.S. acute care for-profit hospitals. Publicly reporting HCAHPS Surveys are available on Hospital Compare to incentivize hospitals to create competition and better patient experiences through the transparency initiatives of the PPACA. It is

also possible that the publicly reported HCAHPS experience ratings influence potential patients to bring business to a hospital without previous experience at the facility, and external ratings drive revenues and profitability (Richter & Muhlestein, 2017).

The strategy applied to the literature search consisted of defining keywords related to *patient satisfaction*, *patient experience*, *HCAHPS*, *HCAHPS and financial performance*, *acute care hospitals*, *acute care for-profit hospitals*, *hospital profitability*, and *hospital financial performance.* I entered keywords into several databases, such as the Cumulative Index to Nursing & Allied Health Literature (CINAHL), Medline/PubMed, Thoreau-Multi-Database, APA PsycInfo, SocIndex, ScienceDirect, ProQuest One Academic, and ABI/Inform Collection. I applied filters to the search criteria to optimize the chances of identifying relevant sources: (a) published between 2017-2022, (b) entered keywords related to for-profit acute care hospitals, patient satisfaction (e.g., *patient experience*, *the relationship between patient experience and hospital performance*, *patient perceptions*, *patient opinions*, and *patient attitudes*) and financial performance, (c) peer-reviewed journal.

Using the CINAHL and Medline databases, I narrowed the search by applying another filter using patient experience and acute care for-profit hospital financial profitability, HCAHPS, HCAHPS hospitalist, patient satisfaction predictors, survey data instrument, PPACA, patient financial performance, PPACA and patient financial performance, patient satisfaction with hospital inpatient care to eliminate duplicates and yield more relevant resources. I entered keywords into the ProQuest database to obtain additional resources to apply to the study. Further review and application of additional

criteria resulted in 46 relevant resources for abstraction. In this research, I evaluated the relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals.

Literature Review

Since 2012, HCAHPS patient satisfaction scores have been linked to hospital reimbursements and have become an integral part of the triple aim in healthcare (i.e., focusing on improving the patient experience, population health, and reducing healthcare costs). The higher a hospital's HCAHPS score, among other vital factors, the higher their reimbursements from CMS. In contrast, hospitals with low-quality scores are financially penalized, hindering their reputation among consumers.

Data from the HCAHPS survey is available on Hospital Compare, allowing consumers to make objective and meaningful comparisons regarding hospital quality and performance measures. Researchers have shown that patient-centered care, as measured by patient satisfaction surveys, has become top of mind for healthcare leaders (Bokhour et al., 2018). Patient satisfaction HCAHPS survey results comprise 25% of the total performance score of Hospital VBP (CMS, n.d-b; Kennedy et al., 2014). Understanding the relationship between patient satisfaction and hospital financial performance among acute care hospitals is paramount for the healthcare administrator to identify interventions to improve patient experience and ensure ongoing hospital financial viability.

Patient Satisfaction

Based on the literature review, patient satisfaction is a multidimensional paradigm. In contrast, the increased emphasis on patient-focused care and the shift from

volume-based to VBP models have shed new light on the importance of measuring patients' perception of the quality of care and services they receive. Researchers examined the relationship between performance characteristics and patient satisfaction as a measure of quality provided in a hospital setting (Khomami et al., 2018; Tsai et al., 2015). The data collected from patient satisfaction surveys can inform quality improvement strategies or communication between patients, providers, and staff. Hussin et al. (2018) studied an approach to identify factors that enhance patient satisfaction and quality in public hospitals in two areas (i.e., emergency department and medical wards) from a strategic perspective. Hussin et al. revealed that patients in different hospital service areas prefer specific preferences and require segmenting questions on the survey to enhance specificity regarding their experience rather than a blanket approach. The study results will benefit hospital staff to pursue future investigations on patient preferences contributing to quality services.

New York City was the international epicenter of the COVID-19 pandemic, where health care providers responded by rapidly transitioning from in-person visits to telehealth video consultations to reduce the demand on strained health care infrastructure and enabling health care needs to be met at home while reducing exposure for patients and medical staff (Ramaswamy et al., 2020). This modality became widely available, and patients often expressed their preference for either the convenience of telehealth video visits or their discontent with new barriers related to technology usage or unmet expectations of what can and should be achieved during a medical encounter (Chen et al., 2022). Ramaswamy et al. (2020) conducted a retrospective cohort study to determine if

patient satisfaction differs between video and in-person visits. The analysis of the study revealed that video visits were associated with higher patient satisfaction than in-person visits. The study results have relevance to determining how the COVID-19 pandemic influences patients' perceptions of quality due to the unprecedented public health crisis that has necessitated the widespread adoption of telehealth video visits for patient safety and may offer insights into the future use of this modality as a new paradigm for health care delivery in times of public crisis (Ramaswamy et al., 2020).

Traiki et al.'s (2020) use of the strategic framework to evaluate the impact of the Coronavirus 2019 (COVID-19) pandemic on patient satisfaction and surgical outcomes at King Khalid Hospital emphasized the relationship between patient satisfaction and quality outcomes. The results revealed that the satisfaction level of patients was high for all the studied domains, and there were a small number of complications with overall good surgical outcomes, which validated that all the actions and policies implemented during the COVID-19 pandemic were proven beneficial for the patients (Traiki et al., 2020). Although adverse surgical outcomes were low, the researchers could sustain positive patient experience and satisfaction rates. Furthermore, the patient satisfaction results could provide a pathway for the hospital authorities to improve their services and meet patients' demands by promptly giving quality care.

To further analyze the impact of patient experience, there is empirical evidence that patient experience relates to several attributes, including delivery of care, communication with healthcare providers, care coordination, admission process, hospital characteristics, the environment, and patients' demographic characteristics to health

status. Park et al. (2020) conducted a study to investigate the determinants of patient experience at the patient and hospital levels. The findings show the significance of understanding the patients' perspectives on their overall hospital experience, as these factors help drive patient-focused initiatives. Anderson et al. (2020) examined whether patient satisfaction scores were associated with the patient outcome of a cardiac event 6 months postdischarge. The researchers found that patient satisfaction negatively correlated to several adverse outcomes up to 6 months postdischarge. This quantitative research study will add to the expanding body of knowledge on the relationship between patient satisfaction and inpatient care to inform areas for health system improvement.

HCAHPS Survey

The HCAHPS Survey is a tool designed to produce comparable data on patients' perspectives of care (CMS, n.d.-a). The HCAHPS survey is composed of 32 items that include aspects of the patient's hospital experience (i.e., communication with nurses, communication with doctors, cleanliness of the hospital environment, experiences in the hospital, communication about medicines and discharge information, and overall rating of the hospital); three items to skip patients to appropriate questions; five items to adjust for the mix of patients across hospitals; and two items to support congressionally-mandated reports (CMS, n.d.-b). Discharged patients aged 18 and over are randomly sampled (monthly), and hospital staff collect data within a 12-month reporting period. Once CMS receives hospital data, an aggregate process assigns all patient responses a linear value, and the responses are averaged for a given hospital to form the hospital-level

mean for each measure (Hospital Consumer Assessment of Healthcare Providers and Systems, n.d.).

After adjusting for hospital patient mix and survey mode, the linear mean score is transformed into a 0–100 linear-scaled score (comprised of the adjusted hospital-level measure minus the lowest possible response to the measure divided by the highest possible response to the measure minus the lowest response) to calculate a four-quarter average composite score to determine a hospitals HCAHPS Summary Star Rating (Hospital Consumer Assessment of Healthcare Providers and Systems, n.d.). The star rating scores range from 1–5. A breakdown of the star ratings is as follows:

- 5 Stars–Denotes the highest category of hospital performance. The composite score is greater than or equal to 94.
- 4 Stars–Denotes a higher category of hospital performance. The composite score is greater than or equal to 90 to less than or equal to 94.
- 3 Stars– Denotes an average category of hospital performance. The composite score is greater than or equal to 86 to less than or equal to 90.
- 2 Stars– Denotes a below-average category of hospital performance. The composite score is greater than or equal to 81 to less than or equal to 86.
- 1 Star - Denote a low category of hospital performance. The composite score is less than or equal to 81.

Due to its legitimacy, multiple researchers have used HCAHPS Surveys in studies to analyze the relationship between patient satisfaction and hospital characteristics. Okuda et al. (2021) used HCAHPS Survey scores and their structural measures from the

Hospital Compare website to explore whether hospital structural measures influence similarities among patient-satisfaction domains by distance-based analysis. Results of the correlational study concluded that high-value ratings for communication and low-value ratings for medication explanation, quietness, and staff responsiveness did not influence the hospital structural measures; however, the varied rating domain group similarities, including items such as global evaluation and pain management, were affected by hospital structural measures (Okuda et al., 2021).

Patient experience has been a fundamental component of value-based reimbursement by hospital chief executive officers (CEOs) and even more so by physician CEOs (Slonim et al., 2021). Given the critical contribution of patient satisfaction scores to a healthcare organization's clinical and financial well-being, the demand to hire physicians as CEOs has increased. The importance of understanding a physician CEO's contribution to the organization's outcomes also increases. Using HCAHPS Survey scores as a research tool, Slonim et al. (2021) sought to understand if having a physician CEO leading a hospital was associated with higher patient experience scores than having a non-physician CEO and used secondary data from the AHA Annual Survey Database and the CMS HCAHPS survey data. Results are for a significance level of less than 0.05. Survey results found that a physician CEO, when controlling for bed size, was associated with higher HCAHPS scores for care transitions, discharge information rating, overall hospital rating, pain management, and recommended hospital rating (Slonim et al., 2021).

Recent research studies have also used HCAHPS Survey scores to measure a patient's assessment of clinician compassion in hospitals. Compassion is the emotional response to another's pain or suffering involving an authentic desire to help (Roberts et al., 2021). Given that a lack of compassion is associated with increased resource utilization, healthcare spending, and malpractice expense, the objectives of this study were to (a) psychometrically validate the 5-item compassion measure when administered with the HCAHPS survey for inpatient hospital care and (b) test if the 5-item compassion measure is a valid and reliable tool to quantify two distinct constructs (i.e., physician compassion and nurse compassion) for hospitalized patients of U.S. acute care hospitals (Roberts et al., 2021). Results of the research suggest that the compassion measures trend in the same direction as the HCAHPS Survey communication questions but do not simply reflect a redundant measure of patient experience already captured by the HCAHPS Survey questions (Roberts et al., 2021).

HCAHPS Survey scores were used in a quantitative study to measure whether implementing the CMS global payment model in the State of Maryland impacted patient satisfaction pre- and post-implementation of Maryland's global payment model (Blanco-Topping, 2021). CMS and the State of Maryland partnered to modernize Maryland's unique all-payer rate-setting system for hospital services to improve patients' health and reduce costs, as encouraged by the Affordable Care Act (CMS, n.d.-c). A one-way analysis of variance applies to compare the effect of Maryland's global payment model on patient perception of care (CMS, n.d.-c). U.S. officials organized the HCAHPS Survey data for each period and stored in spreadsheets (Blanco-Topping, 2021). The results of

the study revealed that the alternative hypothesis supported Maryland's global payment model (Blanco-Topping, 2021).

Researchers used HCAHPS Survey scores to test a hypothesis of the association between hospital readmission rates and patients' perceptions of their relationship with the hospital staff regarding responsiveness and communication (Yang et al., 2018). The study included 4,535 acute care and critical access hospitals. These Medicare-certified U.S. hospitals were reported on in the December 2014 Hospital Compare CMS web-based report card, representing 79.8% of all hospitals in the United States (Yang et al., 2018). Multivariate regression analyses in which the unit of analyses was the hospital, estimated separate linear regression models for each of the six clinical conditions for readmissions, and included the staff responsiveness, communication with doctors, and communications with nurse variables (Yang et al., 2018). CMS has imposed incentives, or penalties, on hospitals based on HCAHPS Survey scores. Although prior research has found associations between aspects of the HCAHPS Survey, in this quantitative research study, I used data obtained from the overall hospital star rating of the HCAHPS Survey to investigate the impact of patient satisfaction reported in the HCAHPS Survey on hospital performance.

Hospital Financial Performance

A systematic review by Barnes et al. (2018) provided a comprehensive set of figures and descriptions synthesizing the characteristics and results of all researchers who attempt to explain the relationship between patient satisfaction, quality, and hospital financial performance. Between 2007 and 2011, 62 studies averaged at least one

published study yearly (Barnes et al., 2018). Less than 15 studies investigating the association between financial performance, patient satisfaction, and quality in U.S. hospitals within the last two decades confirm a need for attention among researchers for additional studies concerned with the relationship between patients, quality, and hospital financial performance.

van Den Berg and Akingbola (2019) analyzed the relationship between patient satisfaction and financial performance indicators (i.e., profitability, revenue, and asset returns). The researchers suggested that hospital management has short-term flexibility in meeting good financial performance targets without adversely affecting patient satisfaction. Previously published research studies revealed several factors associated with hospital profitability was a multidimensional model based on five financial indicators (i.e., operating profit margin, non-operating profit margin, cash flow margin, return on assets, and return on equity) and hospitals with higher scores yield better outcomes and performance (Asagbra et al., 2019; Chakraborty, 2020; Dubas-Jakobczyk et al., 2022; Jamalabadi et al., 2020). Researchers Richter and Muhlestein (2017) aimed to assess whether a more positive patient experience is associated with increased profitability independent of a direct financial impact, and whether a more negative patient experience is associated with decreased profitability. The findings identified that a positive patient experience is associated with increased profitability, and a negative patient experience is associated with decreased profitability (Richter & Muhlestein, 2017).

Akinleye et al. (2019) investigated a correlation between hospital financial condition and hospital quality and safety of patient care at New York State acute care hospitals. The study findings revealed a clear relationship between hospital financial performance and quality and safety performance scores. The researchers suggested that financially stable hospitals can better maintain reliable systems and provide ongoing resources for quality improvement (Akinleye et al., 2019).

In addition to the shift in the healthcare industry from a volume-based industry to a VBP model, a new network-affiliation network comprises a sponsor, and affiliated hospitals who apply to be members of the sponsor's affiliation network are on the rise. Jin and Nembhard (2021) examined whether membership improves affiliates' clinical outcomes, patient experiences, and financial performance compared to non-affiliated hospitals. Results of the research study revealed despite quality-focused missions, affiliation networks still need to improve public quality measures in affiliated hospitals (Jin & Nembhard, 2021).

In this current research, I examined hospital financial performance data obtained from the American Hospital Directory, which includes five financial indicators (a) total gross patient revenues, (b) non-patient revenue, (c) total revenue (total gross patient revenues + non-patient revenue), (d) net income (total revenue–total gross patient revenues), and (e) TPM (net income / total gross patient revenues). I used the TPM to measure financial performance. The outcomes of this study will enhance existing literature related to factors that impact hospital financial performance.

Acute Care For-Profit Hospitals

The literature review indicated there are three categories of U.S. hospitals including (a) nonprofit, (b) for-profit, and (c) governmental entities. I analyzed for-profit hospitals affiliated with the HCA and Tenet Healthcare. For-profit hospitals are investor-owned entities in rural, urban, or suburban communities that provide the public with medical care, surgery, and other related services. Prior empirical research reveals that for-profit hospital ownership is naturally more efficient (i.e., outsourcing non-physician staff to minimize the number of employed staff to benefit from lower personnel costs) because, in theory, these institutions must continuously strive to outperform nonprofit or public organizations to maximize profit margins by charging higher prices than public and nonprofit hospitals to satisfy their shareholders (Jeurissen et al., 2021). Regarding capital, for-profit hospitals are perceived to readily attract capital from venture capitalists and private equity firms who seek to benefit from earnings, bank loans, or bonds.

Although nonprofit and for-profit hospitals are similar in structure, for-profit hospitals use higher portions of their budget for marketing initiatives than nonprofit hospitals. The additional funds earmarked for marketing can be reinvested in the facility to improve patient safety, quality of care, and health outcomes. For-profit hospitals are typically located in southern states where there are few competing hospitals from which to choose and serve low-income populations with higher bad debt (uncompensated care) to net patient revenue - in contrast to non-profit hospitals that are typically located in northern and western states and serve higher average incomes and lower uninsured patients.

In 2011, the CMS (n.d.-a) issued a final rule stating that for the first time in history, hospitals nationwide would receive payment for inpatient acute care services based on the quality of services rendered to patients rather than the number of services rendered. Establishing a VBP model of reimbursement for acute care hospitals paid under the Medicare IPPS, where hospitals receive more than 40% of patient revenue from Medicare, will be financially penalized if services such as patient satisfaction, patient safety, efficiency, cost reduction, mortality, and complications associated with readmission rates (i.e., patients may be prematurely discharge and subject to readmission) do not meet specific performance measures of care quality (CMS, 2022). There have been debates among policymakers regarding the overstatement of the readmission rates associated with hospitals before implementing the VBP model of reimbursement, and other studies reflect limited evidence that the VBP program has delivered meaningful quality improvement. Ryan et al. (2017) and Figueroa et al. (2016) found that the hospital VBP program was not associated with any change in 30-day mortality and compared mortality changes in IPPS hospitals with those in non-IPPS hospitals.

Researchers have examined the impact of the VBP program on patient satisfaction in acute care and non-acute care hospitals. Chiu et al. (2022) evaluated whether the VBP program was associated with changes in measures of patient-reported experience at safety-net hospitals compared with non-safety-net hospitals between 2008 and 2019. Chiu et al. also reported that safety-net hospitals consistently had lower patient experience scores than non-safety-net hospitals across all measures. The results of this

study found that the VBP program was not associated with improved patient experience at safety-net hospitals versus safety-net hospitals for 8 years (Chiu et al., 2022).

Kynoch et al. (2022) sought to investigate the use of collected patient-reported data used within acute hospitals for improvement to care or processes, reveal challenges with the collection of data related to patient-reported satisfaction surveys and its findings may not always translate to changes in practice or service delivery. Due to the broad nature of this research and inconsistent terminology variations, the review identified a broad range of measurement tools used, with less than half of the studies measuring the implementation of a specific intervention or a quality improvement program following data collection.

Definitions

Several key terms are fundamental to this research study. Definitions of the terms are as follows:

Acute care hospital: An organization that provides inpatient medical care and other related services for surgery, acute medical conditions, or injuries, usually for a short-term illness or condition (CMS, n.d.-a).

American Hospital Directory: A database that provides claims data, cost reports, statistics, and analytics from more than 7,000 public and private hospitals nationwide (American Hospital Directory, n.d.).

Donabedian model: Measures to assess and compare the quality of healthcare organizations as either a structure, process, or outcome measure (AHRQ, n.d.).

For-profit hospital: An investor-owned entity designed to make profits for their shareholders (e.g., HCA and Tenet).

HCAHPS survey: A national, standardized, publicly reported survey instrument and data collection methodology for measuring patients' perceptions of their hospital care and experience (CMS, n.d.-a).

Hospital financial performance: Measures that involve the hospital's ability to make a return, such as profit margin and return on assets, liquidity, capital structure and revenue measures, net revenue, net patient revenue per adjusted discharge and revenue per admission, and utilization measures (Barnes et al., 2018).

Inpatient Prospective Payment System (IPPS) Program: A program that encourages hospital administrators to improve the safety, efficiency, quality, and patient experience of care that Medicare patients receive during inpatient stays by eliminating or reducing adverse events, adopting evidence-based care standards to provide the best outcomes, changing hospital processes to improve the patient experience, and publicly sharing care quality metrics with consumers and clinicians (CMS, n.d.-a).

Net patient revenue: Calculated as total patient revenues minus patient discounts.

Statistical Package for Social Sciences (SPSS): A statistical software suite developed by IBM for data management, advanced analytics, multivariate analysis, business intelligence, and criminal investigation by researchers for quantitative analysis of complex data (IBM, n.d.).

Assumptions

I assumed the self-reported data from healthcare entities provided to CMS HCAHPS Surveys and the financial information reported to the American Hospital Directory were collected consistently and accurately across all entities and reported results based on their policy to provide accurate data for public use. I assumed the patients were randomly selected to review, complete, and submit the HCAHPS Survey without coercion or incentives.

Scope and Delimitations

The scope of this research study consisted of secondary data provided by CMS and the American Hospital Directory. It was limited to a subset of U.S. acute for-profit hospitals affiliated with the HCA and Tenet Healthcare. The data analysis was specifically for for-profit hospitals reporting information based on all categories in the data table. There was a total of 182 hospitals included in the dataset.

Limitations

Secondary data available on the CMS Hospital Compare and American Hospital Directory websites from April 1, 2021, to March 31, 2022, were used for this study. This period was significant due to the availability of the data. More recent data may become available; however, the most current information available at the time of this study was used. During the analysis phase, I anticipated identifying for-profit hospitals that lack data for 2 consecutive years.

Significance

Traditionally, patient engagement has focused on the relationship between patients and providers in making care decisions on how to improve patient efforts to manage their own care (Bombard et al., 2018). However, as patients increasingly have access to various options for healthcare services coupled with the recognition and acceptance that patients have a rightful role, the requisite expertise, and an important contribution in the design and delivery of services, there are growing efforts to integrate patients in broader ways, including efforts to improve or redesign service delivery by incorporating patient experience to improve the quality of care (Bombard et al., 2018).. Within the last decade, CMS began to manage programs that encourage improvement of quality through payment incentives, payment reductions, and quality reporting (Centers for Medicare and Medicaid Services, n.d.-e). I determined if there was a relationship between patient experience and hospital financial performance among U.S. acute care for-profit hospitals. The results of this research study may inform hospital administrators of for-profit hospitals to help them determine best practices by considering patient satisfaction in their delivery of service model.

Summary and Conclusions

There is a growing consensus among healthcare administrators, policymakers, and government entities that improving hospital performance is critical to enhancing the delivery of services for patients and consumers, leading to reduced healthcare costs and improved access to healthcare services. Some theoretical philosophies assume that, due to its ownership structure, focus on profitable services instead of unprofitable services and

lean operations, for-profit hospitals are more efficient than nonprofit and government hospitals (Cronin et al., 2021). Its inclusion in mainstream healthcare will yield lower costs and increase efficiency. Healthcare practitioners and researchers have repeatedly pointed to how the link between financial performance and patient satisfaction influences the focus of policies, especially on accountability. The relationship between these two critical indicators is top of mind for practitioners, managers, and policymakers in the healthcare sector and serves as the basis of this research study.

Section 2: Research Design and Data Collection

Introduction

In this quantitative research study, I determined if there was a relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals, specifically those affiliated with the HCA and Tenet Healthcare. Although prior researchers revealed some aspects of financial performance, quality of care, and patient experience, none studied the relationship between patient experience, hospital ownership type, and financial performance in one setting. In subsequent sections, I identify the research design and rationale, describe the methodology (i.e., target population, sampling, constructs, and data plan analysis), and identify the threats to validity and ethical procedures for the study.

Research Design and Rationale

Throughout this quantitative study, I examined if patient satisfaction (independent variable) predicts hospital financial performance (dependent variable). I used the TPM to measure financial performance. I selected this key measure for the analysis because it reflects the financial viability of an organization, contains direct and indirect costs, and is on an income statement as a hospital's profit or loss over a period. The TPM, expressed as a percentage, reflected a positive if the hospital has a profit, a zero if the hospital has a break-even, and a negative if the hospital has a loss. The results determined the financial resources available to invest in replacing assets, improving technology, and meeting consumer demands for healthcare services.

I used a simple linear regression model to examine the relationship between the dependent and independent variables. This study included 182 acute care for-profit hospitals owned and operated by the HCA and Tenet Healthcare–two of the nation's largest for-profit providers of healthcare in the United States. Acute care for-profit hospitals included in this study are in the Southeastern, Southern, and Western areas of the United States (i.e., Texas and Florida), serve a diverse population located in urban, rural, and suburban communities, and range in size from fewer than 125 to more than 900 total staff beds, with the average size being 250 beds. The acute care for-profit hospitals selected for this analysis include information from two separate databases - one includes responses to overall patient experiences in the HCAHPS Survey, and the other includes financial performance data from the American Hospital Directory. Both databases consist of information from the calendar years 2021–2022.

This approach provided a methodical process to answer the research question.

RQ: Is there a relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals? The hypotheses are:

H_0. There is no statistically significant relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals.

H_1. There is a statistically significant relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals.

Measurable secondary data of patient satisfaction scores reported by CMS and financial data provided by the American Hospital Directory were collected to perform the analysis. Based on patient satisfaction scores, I determined if there was an increase or

decrease in financial performance. Based on the findings, I measured the significance of the impact between the independent and dependent variables and determined if the null hypothesis can be accepted or rejected.

Methodology

Sampling

The HCAHPS Survey data collected to conduct this research included information from over 3,500 U.S. hospitals that report on specific quality outcome measures. The sample for this study included 182 acute care for-profit hospitals affiliated with the HCA and Tenet Healthcare, which reported over 100 HCAHPS patient satisfaction scores from adult patients, ages 18 years or older, whose principal diagnosis is medical, surgical, or maternity care between 48 hours to 6 weeks after discharge to CMS on all categories reflected in the survey data table and financial directory data table for the collection period April 1, 2021–March 31, 2022.

The HCAHPS Survey intends to produce comparable data on patients' perspectives of inpatient hospital care (CMS, n.d.-b). A random sample of adult patients, 18 years or older, recently discharged from the hospital based on medical, surgical, or maternal care (nonpsychiatric) between 48 hours to 6 weeks postdischarge, can participate in the HCAHPS survey. There are four HCAHPS survey modes (i.e., mail only, telephone only, mixed mail with telephone follow-up, or active, interactive voice response) - and hospital staff must survey patients throughout each month of the year (CMS, n.d.-c). CMS requires hospitals to have a minimum of 100 completed HCAHPS Surveys to achieve statistical reliability. For this study, I used a linear mean composite

star rating score range from 1–5 (i.e., patient overall hospital star rating). I used the TPM to measure the hospital's financial performance.

For-profit hospital characteristics, specifically HCA and Tenet Healthcare, were compiled from the HCAHPS database to match the hospital financial performance data characteristics (i.e., facility ID, facility name, address, city, state, zip code, county name, and phone number) obtained from the American Hospital Directory. After identifying identical characteristics, I merged the HCAHPS survey data and the data from the American Hospital Directory into a Microsoft Excel spreadsheet. The results of the merged data became the dataset for analysis. After that, the data were extracted and combined in a Microsoft Excel spreadsheet, allowing for alignment for the reporting period. Additional fields in the Microsoft Excel spreadsheet representing the HCAHPS and financial data (i.e., HCAHPS Measure ID, HCAHPS question, HCAHPS answer description, patient survey rating, number of completed surveys, total staff beds, total gross patient revenue, nonpatient revenue, total revenue, net income, TPM), which comprised the current sample size of the study.

I imported the data into SPSS software to perform analysis. A simple linear regression model was applied to the dependent (ratio scaled) and independent (ordinal) variables to determine the statistical significance (i.e., $p \leq 0.05$) that the independent variable (patient satisfaction) had on the dependent variable (financial performance). A series of correlation tests were applied to reflect the statistical significance of the linear regression model and the effect size to determine how much the independent variable affects the dependent variable.

Power Analysis

I used a simple linear regression computation analysis for the independent variables (patient satisfaction) and the dependent (hospital financial performance) variables. The secondary dataset initially comprised 182 for-profit acute care hospitals that submitted self-reported HCAHPS Survey data and hospital financial performance between April 1, 2021–March 31, 2022. I used G*Power (Faul et al., 2007), a stand-alone power analysis program for statistical tests commonly used in social and behavioral research, analysis software to determine a minimum sample size of hospitals to be used to determine the significance size in the study (power = 0.95, alpha = 0.05, and effect size F2 = 0.02). Of the 182 hospitals included in the dataset, the minimum number of hospitals needed in this study was 55.

Data Plan Analysis

I entered data from CMS and the American Hospital Directory into SPSS software (Version 27). A total of 182 for-profit acute care hospitals that reported HCAHPS Survey data and hospital financial performance for the data collection period of April 1, 2021–March 31, 2022, were used in the study. I extracted data on overall hospital rating - star ratings in the HCAHPS survey from the dataset.

I addressed the research problem by answering one question about patient satisfaction and the financial performance of U.S. acute-care for-profit hospitals.

RQ: Is there a relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals?

H_0: There is no statistically significant relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals.

H_1: There is a statistically significant relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals.

A simple linear regression model determines if the independent variable can predict the dependent variable. Statistical significance is $p \leq 0.05$.

Threats to Validity

I used secondary data provided by reputable organizations, CMS, and the American Hospital Directory. The statistical findings are unbiased, with unexpected errors in measurement or selection of participants. According to Patino and Ferreira (2018), internal validity is the extent to which the observed results represent the truth in the population being studied and, thus, are not due to methodological errors. I relied on the accuracy of self-reported HCAHPS Survey data submissions to CMS and financial data submissions to the American Hospital Directory from hospitals.

Ethical Procedures

I used secondary data made available to the public from CMS and the American Hospital Directory. The secondary data used in this research study do not contain personal patient identification information. Personal information was not compromised.

Summary

I used quantitative research methodology and a systematic statistical approach in this research study to better understand the social world. The systematic approach begins with a gap in research followed by research questions, collection of measurable data,

analysis of the data, and presentation of findings. This research study seeks to determine if there was a statistically significant relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals. This topic sparked an interest as enhancing the patient's experience is a potential driver of hospital performance. Given the healthcare market shift towards patient-centered care and renewed emphasis on patient experience as a core element of quality, hospital administrators must develop strategies focusing on patient-centered care and increase margins to reinvest resources that improve patient care. Although prior research conducted by Hussin et al. (2018), Barnes et al. (2018), and van Den Berg and Akingbola (2019) revealed some aspects of financial performance, quality of care, and patient experience; none had studied the relationship between patient experience, hospital ownership type, and financial performance in one setting.

Section 3: Presentation of the Results and Findings

Introduction

The healthcare market shift from volume-based care to value-based care delivery models that occurred following the passage of the PPACA sparked a new policy that allows CMS to link hospital reimbursements to patient satisfaction scores obtained from the HCAHPS survey (HCAHPS; Rosenbaum, 2011). Results of the HCAHPS survey are designed to provide a comparison of performance and can be used as a benchmark to assess drivers of inpatient satisfaction (Hospital Consumer Assessment of Healthcare Providers and Systems, n.d.). The survey results can be used to inform quality improvement strategies for hospital administrators to focus on patient-centered care, increasing margins, and reinvesting resources that improve patient care. Additionally, this paradigm shift in healthcare delivery towards patient-centered care has restructured the dynamics of the relationship between the patient and the provider and is allowing patients to play a vigorous role in safeguarding their own health (Al Muammar et al., 2017).

The purpose of this study was to determine if there was a relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals. This study used the TPM as the indicator to evaluate hospital financial performance. Data from 182 for-profit acute care hospitals (HCA and Tenet Healthcare) that reported HCAHPS Survey data and hospital financial performance (TPM) for the data collection period of April 1, 2021–March 31, 2022, were used to analyze if patient satisfaction predicts hospital financial performance among U.S. acute care for-profit hospitals.

In this section, I identify the data collection period and describe the process used to procure, filter, and analyze data obtained from secondary datasets (CMS HCAHPS survey and the American Hospital Directory) that report acute care hospitals' patient experience and financial performance. Next, results of the simple linear regression statistical data analysis are presented, followed by the findings used to answer the research question. Finally, assumptions associated with the simple linear regression statistical data analysis are validated.

Data Collection of Secondary Data Set

Secondary data collected for this study were extracted from the CMS HCAHPS Survey database and the American Hospital Directory database. CMS collects data from over 3,500 U.S. hospitals that report on specific quality outcome measures. The sample for this study included 182 acute care for-profit hospitals affiliated with the HCA and Tenet Healthcare, which reported over 100 HCAHPS patient satisfaction scores from adult patients, ages 18 years or older, whose principal diagnosis is medical, surgical, or maternity care between 48 hours to 6 weeks after discharge to CMS on all categories reflected in the survey data table and financial directory data table for the collection period April 1, 2021–March 31, 2022. The American Hospital Directory provides data, statistics, and analytics to include claims data, hospital costs, and licensing about more than 7,000 hospitals in the United States (American Hospital Directory, n.d.). The sample for this study includes 182 acute care for-profit hospitals affiliated with the HCA and Tenet Healthcare for the reporting period April 1, 2021–March 31, 2022.

The hospitals referenced in the CMS HCAHPS survey and American Hospital Directory are assigned a unique and individual facility identification number (FIN) that is used for monitoring data submissions and ensuring the accuracy of data used across the data sets. The FIN was used as an indicator to filter the data in each database to determine which for-profit hospitals submitted information for the independent variable (patient satisfaction) and dependent variable (hospital financial performance). Therefore, if the FIN was present in the CMS HCAHPS survey dataset and the American Hospital Directory dataset for the HCA and Tenet Healthcare hospitals, the information was extracted for the analysis. Once all the data for the independent variable (patient satisfaction) and the dependent variable (hospital financial performance) were extracted, the information was filtered to include only those for-profit hospitals associated with HCA and Tenet Healthcare. The total number of for-profit hospitals reporting data for April 1, 2021–March 31, 2022, was 182.

Results

Descriptive Statistics

Geographically, the 182 U.S. for-profit hospitals in the sample are in the Southeastern, Southern, and Western areas of the United States (see Table 1).

Table 1

Locations of U.S. For-Profit Hospitals by State

State	Number of U.S. for-profit hospitals	Percent
AK	1	1%
AL	4	2%
AZ	3	2%
CA	18	10%
CO	6	3%
FL	44	23%
GA	9	5%
ID	2	1%
IN	1	1%
KS	3	2%
KY	2	1%
LA	2	1%
MA	1	1%
MI	5	3%
MO	5	3%
NC	5	3%
NH	2	1%
NV	3	2%
SC	6	3%
TN	9	5%
TX	34	18%
UT	8	4%
VA	9	5%

Note. N = 182. The number and percent of hospitals in the dataset.

The total number of valid records in the Patient Satisfaction Survey Star Ratings (independent variable) dataset was 172 with 10 records missing (see Table 2). Of the 172 valid acute care for-profit hospitals in the sample, 1.2% received 5 stars, 22.1% received 4 stars, 44.2% received 3 stars, 24.4% received 2 stars, and 8.1% received 1 star.

Table 2

Descriptive Statistics Data for Patient Satisfaction Survey Star Rating Characteristics

Patient Satisfaction Survey Star Rating	Frequency	Percent
1	14	8.1
2	42	24.4
3	76	44.2
4	38	22.1
5	2	1.2
Total	172	100.0

The total number of valid records included in the dataset for Hospital Financial Performance (TPM) is 132 with 50 records missing (see Table 3). Of the 132 hospitals that reported hospital financial performance (total profit margin), it ranged from -3.5 (the worst-performing hospital reported a profit margin) to 11.37 (the best performing hospital reported a profit margin), and the average performing hospital reporting a profit margin of 2.84. Missing data (or missing values) for the independent and dependent variables were defined as data values unavailable in the dataset for the collection period (April 1, 2021, to March 31, 2022).

Table 3

Descriptive Statistics Data for Hospital Financial Performance (TPM) Characteristics

Dependent variable	*N*	Minimum	Maximum	Mean	*SD*
Hospital financial performance (TPM)	132	-3.5194	11.3776	2.846600	2.7545871
Missing data (values)	50				

Note. SD = standard deviation

Additional statistical descriptive data for information related to the dependent and independent variables are reflected in Figures 1 and 2, respectively.

Figure 1

Distribution of Patient Satisfaction Survey Star Rating

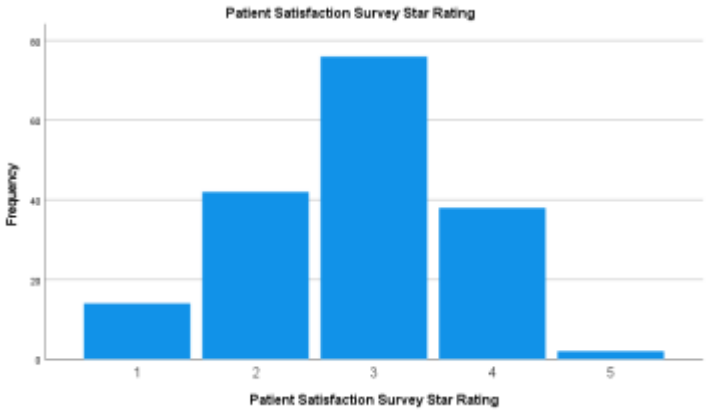
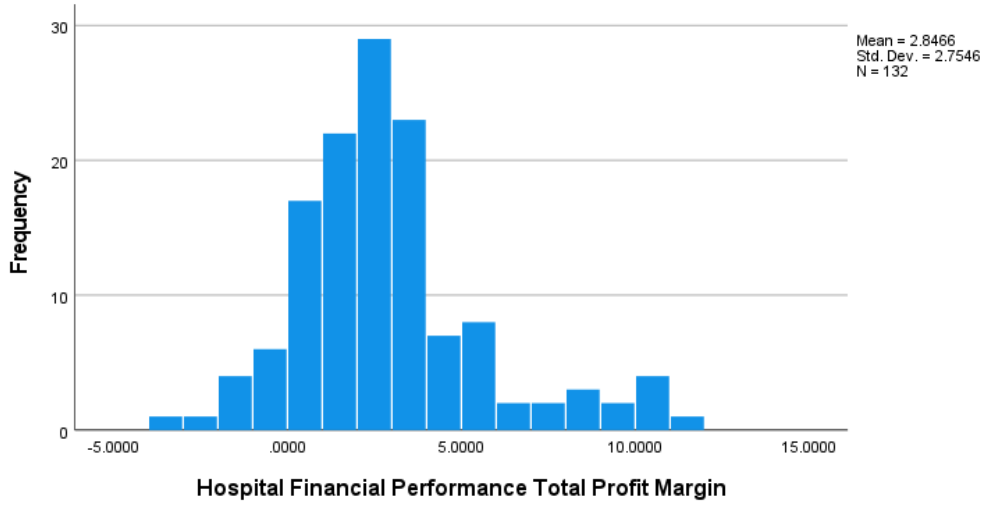


Figure 2

Distribution of Hospital Financial Performance (TPM)



Assumptions

There are four assumptions associated with the simple linear regression model:

- Linearity: The relationship between the independent variable and the mean of the dependent variable is linear. See Figure 3.
- Homoscedasticity: The variance of residual is equally distributed for any value of the independent variable. Figure 5 reflects homoscedasticity.
- Independence: Observations are independent of each other. The hospitals used in this study are unique as their facility identification and location are independent of each other.
- Normality: Fixed value of the independent variable and dependent valuable is normally distributed. See Figure 4.

Tables 3 and 4 reflect the dependent and independent variables that are normally distributed around the mean and statistical significance. Additionally, the findings shown in Table 5 demonstrates the linear relationship between the independent variable (patient satisfaction) and the dependent variable (hospital financial performance (TPM)) and are significant as the statistical analysis validates the linearity assumption (i.e., there is a linear relationship between the dependent variable (hospital financial performance) and independent variable (patient satisfaction)).

Another assumption, homoscedasticity, was that the variances across the independent variable (patient satisfaction) are similar and there is no pattern to their distribution.

Figure 3

Dependent and Independent Variable Distribution on Scatterplot

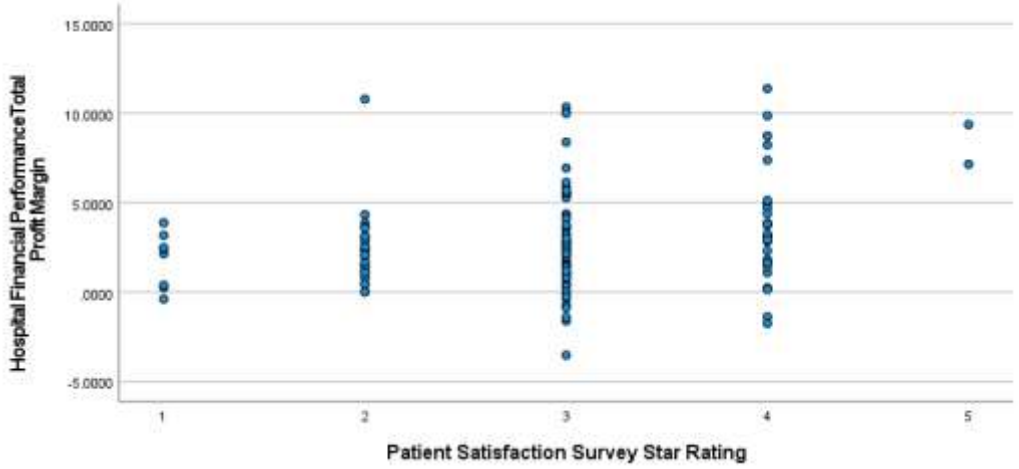


Figure 4

Dependent and Independent Variable Distribution of Normal Predicted Probability (P-P) Plot

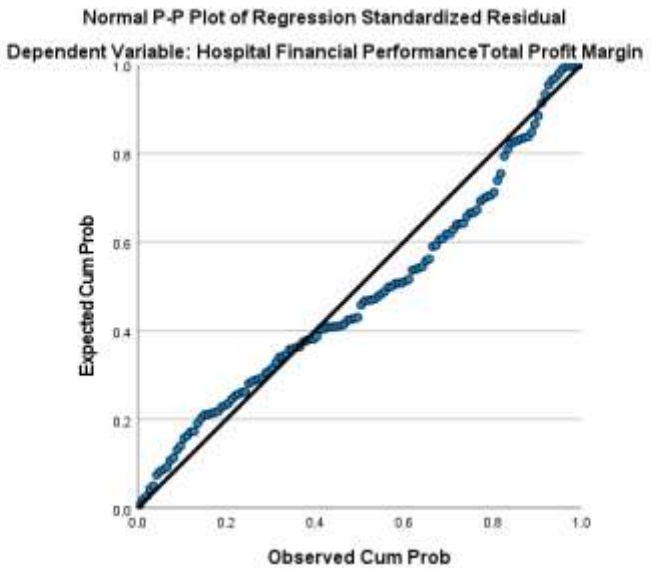
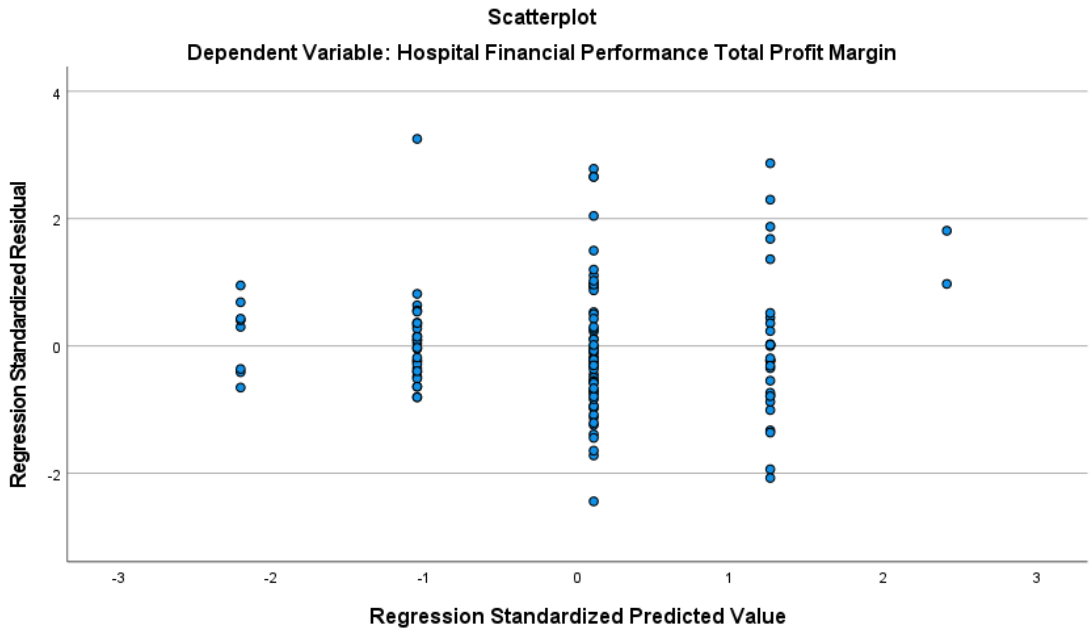


Figure 5 reflects values that are not ideal; however, some values are clustered together (-1 and 0) while others are more spread out at other values (1 and 2), thereby validating the assumption of homoscedasticity.

Figure 5

Standardized Residual in Regression Analysis



Statistical Analysis Findings

Upon extracting data from the CMS HCAHPS survey database and the American Hospital Directory, I filtered and entered the data into a Microsoft Excel spreadsheet, the data were then entered into the IBM SPSS (Version 27) software tool. A simple linear regression calculation was performed. A simple linear regression analysis model was selected to analyze the relationship between patient satisfaction and hospital financial performance and the ability of patient satisfaction to predict hospital financial performance. The result of the simple linear regression (see Table 4) indicates a statistically significant association between patient satisfaction and hospital financial performance (p <.003).

The output reflected a total of 182 U.S. for-profit hospitals in the dataset. Of the 182 hospitals, there were a total of 130 hospitals that included HCAHPS survey scores and hospital financial data (TPM). Next, a simple linear regression analysis was conducted to evaluate the relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals. The results of the simple linear regression analysis were statistically significant, $p<.003$, indicating that patient satisfaction can predict hospital financial performance.

The regression coefficient: B = .803, 95% C.I. [.269 (lower), 1.336 (upper)] associated with patient satisfaction survey star rating, that for every 1-star increase in patient satisfaction survey star rating, the hospital financial performance (TPM) changes by 0.8%. The R^2 value of 0.065 associated with this regression model suggests that approximately 6.5% variation in hospital financial performance (TPM) can be explained by differences in patient satisfaction, which means that 93.5% of the variance in hospital financial performance (TPM) is defined by other factors. Therefore, patient satisfaction scores are a significant predictor. The confidence interval associated with this regression analysis does not contain 0, which means the null hypothesis, there was no relationship between patient satisfaction and hospital financial performance, can be rejected.

Table 4

Results for the Simple Linear Regression Analysis Model Summary

Model	R	R square	Adjusted R square	Standard error of the estimate	Sig F. change
1	.254[a]	.065	.057	2.653541882146918	.003

a. Predictors: (Constant) Patient Survey Star Rating

Table 5

Linear Regression Coefficients

Model	B	Std. error	95% CI for B lower bound	95% CI for B upper bound
(Constant)	.551	.818	-1.067	2.169
Patient satisfaction survey star rating	.803	.270	.269	1.336

Note. Dependent variable: Total profit margin.

Summary

Data for 182 for-profit hospitals (HCA and Tenet Healthcare) for the collection period of April 1, 2021, through March 31, 2022, were extracted from the CMS HCAHPS Survey database and the American Hospital Directory database, filtered by the FIN, and extracted into a Microsoft Excel spreadsheet to be analyzed. A simple linear regression analysis identified statistically significant (p <.003) relationships between patient satisfaction and hospital financial performance characteristics. As a result, patient satisfaction can predict hospital financial performance. The analysis indicates that the null hypothesis for the research question can be rejected as the findings of the study

support there was a statistically significant relationship between hospital financial performance and patient satisfaction.

The next section summarizes the key findings of the study, interprets the findings in the context of the theoretical framework, identifies limitations of the study, makes recommendations for future research, and implications for professional practice and social change.

Section 4: Application to Professional Practice and Implications for Social Change

Introduction

The purpose of the quantitative research study was to determine if patient satisfaction could predict hospital financial performance of U.S. acute care for-profit hospitals owned and operated by HCA and Tenet Healthcare. The impact of patient satisfaction on for-profit hospital operations is essential for hospital administrators to understand and develop strategies that focus on and improve patient-centered care, increase margins, and reinvest resources that improve the patient experience, which leads to better patient care and health outcomes. Findings of the quantitative research study may lead to positive social change by contributing to practitioners of healthcare administration for quality improvement, theory, or practice in the healthcare industry overall.

Interpretation of the Findings

Secondary data submissions of patient satisfaction scores reported by CMS HCAHPS surveys and financial data provided by the American Hospital Directory were extracted to conduct a simple linear regression statistical data analysis. For-profit hospitals affiliated with HCA and Tenet Healthcare that reported data for the independent and dependent variables for the reporting period of April 1, 2021, through March 31, 2022, were included in the sample ($N = 182$). After entering the data into SPSS software (Version 27), the simple linear regression statistical data analysis model indicated that the independent variable (patient satisfaction) has a significant relationship ($p<.003$) with the dependent variable (hospital financial performance, total profit margin) and could be used

to predict hospital financial performance. For every 1-star increase in patient satisfaction survey star rating, the hospital financial performance (TPM) changes by 0.8%, which translates to a 6.5% variation in hospital financial performance (TPM). Further evaluation validated the assumptions for the simple linear regression analysis (i.e., linearity, homoscedasticity, independence, and normality).

The findings from the current study align with the outcomes from preceding research studies related to a relationship between patient satisfaction scores and hospital performance characteristics. Trzeciak et al. (2017) used CMS Hospital Compare data set to analyze data for CMS patient experience star ratings and the hospital Medicare Spending per Beneficiary (MSPB) Measure, which assess price-standardized, risk-adjusted payments for services provided to Medicare beneficiaries for an episode of care from 3 days before hospital admission to 30 days following discharge. Trzeciak et al. (2017) found that the MSPB decreased with increasing hospital patient experience and, adjusting for Case Mix Index (b–0.041, p <.001), a 1-star rise in patient experience was associated with a 1.4% decrease in spending, which translates to a 5.6% decrease in hospital spending over the range of values from the lowest to highest patient experience star rating.

Lim et al. (2018) examined a conceptual model of the links between service quality, patient satisfaction, the hospital operational measure of utilization, and hospital financial performance. Lim et al. (2018) found that patient satisfaction has a significant positive effect on hospital financial performance with a path coefficient of 0.24 but shows no significant effect on hospital utilization. As a result, the study found that increased

patient satisfaction leads to better hospital financial performance, however it does not necessarily increase hospital utilization.

Prabhu et al. (2017), Wang et al. (2016), and Stein et al. (2014) identified a statistically significant relationship between surgical outcomes, hospital financial performance characteristics, and patient satisfaction scores, whereby patient satisfaction scores were higher if patients rated satisfaction a score of 4–5, and 95% said they would recommend the hospital. In contrast, patient satisfaction scores were lower in patients who experienced complications and 30-day readmission.

Though prior research revealed some aspects of financial performance, quality of care, and patient experience, none studied the relationship between patient experience, hospital ownership type, and financial performance in one setting. The aim of the current study is to fill the gap in previous research by investigating the relationship between patient satisfaction and hospital financial performance, specifically among for-profit hospitals owned and operated by the HCA and Tenet Healthcare – two of the nation's largest for-profit providers of healthcare in the United States. The impact of patient satisfaction on for-profit hospital operations is essential for hospital administrators to develop strategies that focus on and improve patient-centered care, increase margins, and reinvest resources to enhance the patient experience, leading to better patient care and health outcomes.

The theoretical framework I used for the study was the Donabedian model. This widely recognized and applied conceptual model has provided a framework for health care quality since 1966 (Binder et al., 2021). The Donabedian model theoretical

framework was used in previous studies where researchers examined the relationship between patient satisfaction and patient-centered care within a healthcare setting. The current study affirms the Donabedian theory in that the findings support the concept that patient satisfaction can predict hospital financial performance. The significant (p <.003) statistical findings suggest that for every 1-star increase in patient satisfaction survey star rating, the hospital financial performance (TPM) changes by 0.8%, which translates to a 6.5% variation in hospital financial performance (TPM).

Limitations of the Study

While the findings were significant, there were limitations associated with the study. One of the study's limitations was that I restricted the sample size to include acute care for-profit hospitals owned and operated by HCA and Tenet Healthcare in the United States' Southeastern, Southern, and Western areas. In general, hospitals in this area likely have few competing hospitals from which to choose. Hospital administrators who reported complete HCAHPS survey data and financial performance in other locations for the reporting period used for the study may have led to the exclusion of hospitals.

Second, based on the descriptive statistics of the patient satisfaction survey star rating results reflected in Table 2, 132 hospitals (76.7%) reported 3 stars and below. Whether this reflects the quality of care is similar in these hospitals or an impact on the experiences (i.e., policy restrictions related to visitation from family members, communication with providers, or limitation of treatment possibilities offered due to contact restrictions) of hospitalized patients during the COVID-19 pandemic is unclear.

Additionally, missing data in Tables 2 and 3 of the descriptive statistics for patient satisfaction survey star ratings and hospital financial performance (TPM) is a limitation. Another limitation is the secondary analysis of existing data obtained from the CMS Hospital Compare and American Hospital Directory websites used for this study. It could have led to the exclusion of hospitals still needing to submit data for the reporting period.

Finally, although I affirm that the study's results are compelling and underscore that patient satisfaction predicts hospital financial performance, the secondary analysis is at the hospital level rather than the patient level due to CMS requirements for HCAHPS data collection and reporting, whereby patients remain anonymous. Survey responses are converted into a linear mean score that produces the hospital star rating (1–5) available for public review.

Recommendations

I analyzed the relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals. Further research, including additional predictors such as revenue cycle management, healthcare quality outcomes, and the financial performance of for-profit hospitals, would further enhance the body of knowledge. In addition, expanding the reporting period beyond 2 years may allow more hospitals to be included in the sample size. Lastly, it is proposed that the future research expands the research design model to have a causal research design (build a cause-and-effect link between two variables). The new research design model is also recommended to include data from a national sample.

Implications for Professional Practice and Social Change

The study's findings affirm that patient satisfaction scores impact hospital financial performance. The effect of patient satisfaction on for-profit hospital operations is essential for hospital administrators to understand and develop strategies that focus on and improve patient-centered care, increase margins, and reinvest resources to enhance the patient experience, leading to better patient care and health outcomes. Healthcare administrators can use the results from this study to inform interventions that can improve the patients' experience and ensure ongoing hospital financial viability. This can be achieved by engaging hospital boards (i.e., shareholders) to establish a clear organizational mission, vision, and quantified targets of quality improvement strategies to shape a healthy culture of continuous improvement of patient experiences and to ensure accountability. In undertaking these roles, hospital governing boards make decisions about annual plans and budgets that impact directly on the quality of care (Lee et al., 2018).

As patients increasingly have access to various options for healthcare services, improving patient experience may impact a patient's perspective regarding the care received from a hospital. The impact of patient satisfaction on for-profit hospital operations is essential for hospital administrators to understand. They may prioritize quality improvement initiatives that focus on improving patient-centered care, leading to effective and efficient communication, reduced wait times, better resource allocation, retention of staff, and increasing margins to reinvest resources that improve the patient experience.

Patient satisfaction is one of healthcare quality's "triple aims" (Leep Hunderfund et al., 2018; North & Tulledge-Scheitel, 2019; Whittington et al., 2015). It is common for patients to expect polite behavior from providers who appear to be technically competent about their illness and, in most instances, provide adequate information to support their illness and inquiries. Patients with unmet needs are less likely to comply with their medical regimen, return for appointments, or cooperate in their treatment (Manzoor et al., 2019). Given the healthcare market shift towards patient-centered care and renewed emphasis on patient experience as a core element of quality that affects the patients' attitude and expectations, healthcare providers can also use the results of this study to help guide improvement in provider behavior, as in some instances, moderates the effect of healthcare services rendered on the satisfaction of patients. Moreover, providers may adopt patient-driven care models that involve patients in the decision-making process to contribute to a more positive patient experience.

Health policymakers and their professional health advisors strive for an efficient health system to improve the population's health, and policymakers must analyze patients' perceptions of it (Grasso et al., 2021). Hospital financial performance is dependent on how satisfied patients are with their experience is critical. The study's findings can help policymakers develop and implement policies that incentivize hospitals to prioritize patient satisfaction and fiscal responsibility to inform the healthcare industry's overall policy, theory, or practice.

The study findings can inform practitioners of healthcare administration on the improvement and quality of policies and practice in the healthcare industry overall by

investing in improving systems that directly impact patient satisfaction. For example, a thorough assessment of a provider's practice and a hospital facility of the services a patient receives when a patient schedules their first appointment through follow-up care services. Understanding each aspect of one's practice, including investments in current technology systems, may improve a patient's overall experience. In addition, this approach may lead to long-term cost-reducing effects, specifically in areas such as staff engagement and patient retention.

Finally, findings of the quantitative research study can contribute to positive social change for consumers in ways that could lead to improved healthcare quality, increased transparency in healthcare allowing consumers to make more informed decisions about their healthcare, and, perhaps, shed light on disparities among different demographic groups to drive interventions that promote health equity. Improving patients' satisfaction scores and decreasing healthcare expenditures allow greater access to needed healthcare services for families and the global community by promoting preventative care, increasing primary care physicians' options, and reducing hospital readmission rates to promote better healthcare outcomes. These factors contribute to positive social change, leading to a better quality of life for all.

Conclusion

The purpose of this quantitative study was to determine if there was a relationship between patient satisfaction and hospital financial performance among U.S. acute care for-profit hospitals. The findings support the hypothesis that patient satisfaction predicts hospital financial performance, and health care leaders can develop and identify relevant

intervention to improve patient satisfaction scores and may contribute to positive social change for consumers that could lead to improved healthcare quality and transparency. As a result, these efforts may lead to improved access to healthcare services and health outcomes for underserved communities. Ultimately, the information from the study findings can be used to inform future study that can lead to positive social change.

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