CHAPTER 07

Quality Assurance in Thumbay Dental Hospital: A Statistical Analysis of Patient Satisfaction Survey Data Using Control Charts

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DOI: https://doi.org/10.52458/9789349381018.2025.eb.grf.ch-07
Ch.Id:- IIHMR/GRF/EB/RAHM/2025/Ch-07

INTRODUCTION

Thumbay Dental Hospital in Ajman, UAE is dedicated to enhancing patient outcomes and satisfaction while upholding cost-effectiveness and efficiency. The hospital adheres to the Joint Commission International Standards for Ambulatory Care 4th Edition and holds accreditation from JCI. In March 2023, it attained the prestigious JCI Enterprise Accreditation. Additionally, it received accreditation from the Australian Dental Council in the same year. The hospital comprises both commercial and academic departments and clinics. The academic outpatient department offers affordable treatment options, whereas the commercial outpatient department provides services at competitive market rates. Patient satisfaction surveys serve as a valuable tool for understanding patients' experiences and perceptions of care [1]. In the contemporary healthcare landscape, patient satisfaction is a crucial metric for assessing service quality. It is imperative for healthcare providers, including dental hospitals, to regularly evaluate patient satisfaction to ensure the delivery of high-quality services. These surveys typically consist of structured questionnaires that assess various aspects of the service, such as staff courtesy, facility cleanliness, waiting times, and healthcare professionals' competence. Collecting survey data is essential as it provides insights into patients' priorities and areas requiring improvement. Patient satisfaction surveys and feedback data play a pivotal role in quality assurance within dental hospitals. Quality assurance involves systematically evaluating whether processes or services meet expected standards. This encompasses not only clinical outcomes but also the overall patient experience. Utilizing patient feedback allows dental hospitals to identify strengths and weaknesses, fostering continuous improvement in service delivery. A positive patient

experience is closely linked to improved adherence to medical advice, reduced complication rates, and increased patient retention. By continually assessing and enhancing service quality informed by patient feedback, dental hospitals can achieve excellence in patient care and enhance their reputation. Conversely, negative patient experiences highlight areas where process bottlenecks need to be addressed [2,3].

RESEARCH OBJECTIVES

1. To examine existing literature regarding the utilization of statistical control charts within hospital environments, with a specific emphasis on their role in analyzing data obtained from patient satisfaction surveys.
2. To devise a methodology for the utilization of statistical control charts in analyzing patient satisfaction survey data, encompassing aspects such as data collection, preprocessing, and analysis.
3. To implement the formulated methodology on an actual dataset derived from patient satisfaction surveys, with the objective of identifying patterns, fluctuations, and potential areas necessitating enhancement.

RESEARCH QUESTIONS

In what ways can statistical control charts be utilized to examine data from patient satisfaction surveys, enabling the detection of patterns, deviations, and opportunities for enhancing healthcare quality and patient contentment?

RESEARCH METHODOLOGY

A descriptive study design was employed to gather patient satisfaction survey data, with retrospective patient

satisfaction data retrieved from the Hospital Information Management System based on specific parameter checklists. The study was carried out at Thumbay Dental Hospital located in Ajman, UAE. The hospital operated from 9 am to 9 pm seven days a week, offering services such as Dental Consultation, Dental Extraction, Root Canal Treatment, Orthodontic Treatments, Dental Implantation, Oral rehabilitation, and Prosthesis. Data collection took place during office hours from 8:30 am to 5:30 pm on all days except Sundays and regional holidays. The study population included all consenting patients who had undergone treatment at the dental hospital and participated in the patient satisfaction survey. Inclusion criteria encompassed all patients registered with Thumbay Dental Hospital, while patients referred from Thumbay Hospital, Ajman, were excluded from the study. To determine the sample size, Cochran's formula was utilized.

Primary data for the patient satisfaction survey was collected using a standardized survey tool already implemented within the organization. Paper forms were distributed to participants for them to provide their feedback and complete the questionnaire during the months of March 2023 and April 2023. However, for the month of May 2023, a Google Form was created, incorporating the same questionnaires, and made available at the front desks of the hospital. Data from previous months, spanning from February 2022 to February 2023, was retrieved from the Hospital Management Information System.

RESULTS & DISCUSSION

The responses were gathered using paper forms throughout the study period. However, there was a need to create a Google form to minimize staff involvement, which

potentially led to an increase in negative responses. The occurrence of nonconformities stemmed from inadequate service, resulting in a decline in the quality-of-service delivery by Thumbay Dental Hospital. To address these nonconformities, root cause analysis was conducted. Front desk-related nonconformities were attributed to prolonged waiting times and insufficient knowledge among front desk staff to address patient queries. This was exacerbated by the fact that five out of seven staff members at the front desk had less than six months of experience and were also responsible for handling insurance-related tasks.

Nursing staff-related nonconformities arose from the lack of dedicated nursing staff assigned to a newly joined pedodontist, leading to delays in attending to patient needs. Cleanliness-related nonconformities occurred due to the failure of an automated evacuation system during a dental procedure, resulting in wastewater spillage. Time and quality-related nonconformities were linked to prolonged waits for insurance confirmation, hindering timely initiation of procedures. The u-chart depicted consolidated nonconformities per question item, with the inquiry about treatment cost receiving the most negative responses, largely due to limited coverage of dental treatments by health insurance plans and the requirement for patient co-payment. The study focused on identifying out-of-control responses resulting from out-of-control processes, investigating underlying deficiencies, and providing recommendations for improvement.

CONCLUSION

The statistical control charts demonstrate a strong ability to identify deviations from standard processes effectively. The

research emphasizes the significance of utilizing control charts for maintaining operational quality in a dental hospital environment. Control charts serve as a mechanism to address irregularities that fall outside of normal process variations, offering a means to respond to such anomalies. Successfully implementing control charts with patient satisfaction survey data can be beneficial for dental hospitals, facilitating process enhancement and overall quality improvement within the dental care setting.

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