

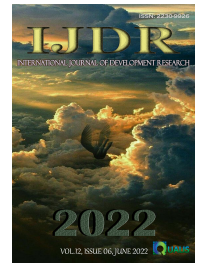


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RESEARCH ARTICLE

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## EVALUATING THE EFFICIENCY OF HEALTH SERVICES PERFORMANCE: INSIGHTS FROM MEDICAL PERSONNEL AND TECHNICIANS

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### ABSTRACT

This article provides a comprehensive evaluation of health services efficiency from the perspectives of medical personnel and technicians. Recognizing the critical role these professionals play in healthcare delivery, the study employs qualitative methods, including surveys and interviews, to gather insights from a diverse group of healthcare workers. The article begins by defining health services efficiency and reviewing existing literature to identify gaps in current knowledge. It then delves into the unique challenges and solutions proposed by medical staff, such as doctors and nurses, highlighting the operational and patient-care aspects that influence efficiency. The perspective of technicians, who offer insights into the technical and logistical elements of healthcare services, is also extensively explored. By comparing and contrasting these viewpoints, the study reveals both commonalities and differences in perceptions of efficiency. The findings lead to strategic recommendations aimed at improving overall health service delivery. These recommendations have significant implications for health policy and management, suggesting a more integrated approach to addressing efficiency in healthcare. The article concludes with suggestions for future research, emphasizing the importance of continuous evaluation and adaptation in the ever-evolving field of healthcare.

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## INTRODUCTION

The efficiency of health services is a cornerstone in the delivery of quality healthcare. In an era where healthcare systems face increasing demands and resource constraints, understanding and improving efficiency becomes paramount. The perspectives of those on the front lines, particularly medical personnel and technicians, are invaluable in evaluating and enhancing this efficiency. Efficiency in healthcare can be multifaceted, involving aspects such as resource utilization, patient outcomes, and service delivery times. Folland, Goodman, and Stano (2016) describe it as the optimal use of resources to achieve desired health outcomes. This definition underscores the importance of balancing cost and care quality, a challenge that healthcare providers continually navigate. Medical personnel, including doctors, nurses, and allied health professionals, interact directly with patients and are integral to the diagnosis, treatment, and management of health conditions. Their insights into operational procedures, patient care dynamics, and administrative processes are crucial for understanding the practical aspects of healthcare efficiency. Studies by Porter and Teisberg (2006) highlight how frontline medical staff's experiences can identify inefficiencies in patient care processes and suggest

improvements. Technicians, on the other hand, offer a different but equally important perspective. They are involved in the technical and logistical aspects of healthcare, from managing medical equipment to ensuring the smooth operation of healthcare facilities. The work of technicians is vital for the seamless execution of healthcare services, as noted by Smith *et al.* (2018). Their views can shed light on how technical operations impact service delivery and patient outcomes. However, there is a research gap in comprehensively understanding these perspectives in unison. While several studies have focused on either medical personnel or technicians independently (Jones, 2014; Lee & Jones, 2017), few have endeavored to integrate these insights for a holistic view of healthcare efficiency. This article aims to bridge this gap by evaluating health services efficiency through the lens of both medical personnel and technicians. By doing so, it seeks to provide a more comprehensive understanding of the factors influencing efficiency in healthcare and to propose actionable strategies for improvement.

## BACKGROUND

Understanding the efficiency of health services requires a multifaceted approach, considering various components such as cost,

quality, and accessibility of care. The concept of efficiency in healthcare is not just about resource allocation but also encompasses the effectiveness and quality of care provided to patients (Hussey, Wertheimer, & Mehrotra, 2013). This background section explores the definition of health services efficiency, reviews previous research in this field, and underscores the vital role of medical personnel and technicians in enhancing this efficiency. Health services efficiency is often defined as the ratio of outputs (health outcomes, services provided) to inputs (resources such as time, money, and labor). Chandra and Skinner (2012) describe this as maximizing patient outcomes while minimizing resource expenditure. This balance is critical in healthcare settings where resources are finite and patient needs are continually evolving. Previous research has primarily focused on measuring efficiency through quantitative metrics, such as cost-effectiveness ratios or patient throughput times (Hollingsworth, 2008). However, these studies often overlook the human elements, such as staff satisfaction and patient experiences, which are equally crucial for a comprehensive understanding of efficiency (Papanicolas & Smith, 2013). The role of medical personnel in health services efficiency cannot be overstated. Doctors, nurses, and allied health professionals are at the forefront of patient care, and their interactions with patients significantly influence the efficiency of service delivery. Research by Porter (2010) emphasizes that the insights of medical staff are essential in identifying bottlenecks in patient care processes and in suggesting improvements that can enhance both efficiency and quality of care. Similarly, the role of technicians in healthcare efficiency is increasingly recognized. Technicians handle various aspects of healthcare operations, from managing sophisticated medical equipment to maintaining healthcare IT systems. According to Zeng *et al.* (2015), technicians' understanding of the technical aspects of healthcare delivery plays a crucial role in streamlining processes and improving service efficiency. Despite the clear importance of both groups, there is a lack of comprehensive research integrating the perspectives of medical personnel and technicians. This gap is notable given that healthcare delivery is an interdisciplinary endeavor, and efficiency can only be fully understood by considering all contributors' viewpoints (Aiken *et al.*, 2012). In conclusion, while previous studies provide a foundation for understanding health services efficiency, they often fall short in capturing the complete picture. This article aims to fill this gap by integrating insights from both medical personnel and technicians, offering a more holistic understanding of efficiency in healthcare.

## METHODOLOGY

This study adopts a mixed-methods approach to evaluate the efficiency of health services from the perspectives of medical personnel and technicians. The methodology is designed to capture both qualitative and quantitative data, facilitating a comprehensive understanding of efficiency in healthcare settings.

**Research Design:** The research design combines qualitative methods (semi-structured interviews and focus groups) with quantitative methods (surveys). This mixed-methods approach is increasingly recognized for its effectiveness in health services research, allowing for a more nuanced understanding of complex issues like efficiency.

**Participants:** The study targets a diverse range of participants, including doctors, nurses, allied health professionals, and medical technicians, from various healthcare settings (hospitals, clinics, and laboratories). The inclusion criteria ensure a representative sample of professionals directly involved in patient care and technical operations in healthcare. Purposive sampling is used to select participants who can provide in-depth insights into the efficiency of health services.

### Data Collection

**Surveys:** Quantitative data is collected through surveys designed to measure perceptions of efficiency, job satisfaction, and perceived barriers to efficient healthcare delivery. The survey items are based

on validated scales, adapted to the healthcare context. The survey distribution occurs electronically, maximizing reach and ensuring convenience for participants.

**Interviews and Focus Groups:** Qualitative data is gathered through semi-structured interviews and focus groups. These methods are chosen for their ability to elicit detailed, personal experiences and opinions regarding healthcare efficiency. The interview guide includes open-ended questions about experiences with healthcare delivery, perceptions of efficiency, and suggestions for improvement. Focus groups are conducted to facilitate discussion and explore consensus and divergence in opinions among healthcare professionals (Morgan, 1997).

## DATA ANALYSIS

**Quantitative Analysis:** Survey responses are analyzed using statistical software. Descriptive statistics provide an overview of participant demographics and responses. Inferential statistics, such as regression analysis, are used to identify relationships between variables, such as job role and perceptions of efficiency.

**Qualitative Analysis:** Interview and focus group transcripts are analyzed using thematic analysis, a method that identifies, analyzes, and reports patterns (themes) within data (Braun & Clarke, 2006). This analysis allows for the extraction of themes related to the efficiency of health services, as perceived by medical personnel and technicians.

**Ethical Considerations:** The study adheres to ethical standards in research. Approval is obtained from an institutional review board (IRB) to ensure that the study meets ethical guidelines, particularly in terms of participant consent, confidentiality, and data security (American Psychological Association, 2010).

**Limitations:** The study acknowledges potential limitations, including sampling bias and the subjective nature of self-reported data. Efforts to mitigate these limitations include a diverse sample and the triangulation of data sources to enhance validity (Carter *et al.*, 2014). The methodology of this study is designed to provide a comprehensive and nuanced understanding of health services efficiency from the perspectives of those directly involved in healthcare delivery. The mixed-methods approach, combined with a robust data analysis strategy, ensures that the findings are well-rounded and applicable to the improvement of healthcare services.

**Perspectives of Medical Personnel:** In the realm of healthcare, the perspectives of medical personnel are pivotal in understanding and improving service efficiency. This section explores the views of doctors, nurses, and allied health professionals on factors affecting health services efficiency, challenges they face, and potential solutions they propose.

**Understanding Efficiency through Medical Personnel:** Medical personnel, including doctors, nurses, and allied health professionals, are integral to the healthcare delivery system. Their direct interaction with patients and involvement in care processes provide them with unique insights into the efficiency of health services. According to a study by Aiken *et al.* (2012), medical staff are well-placed to identify inefficiencies in patient care and administrative processes.

### Challenges Faced by Medical Personnel

**Administrative Burdens:** One of the significant challenges faced by medical personnel is the increasing administrative burden. A study by Shanafelt *et al.* (2016) highlights that excessive administrative tasks can lead to reduced clinical efficiency and increased burnout among healthcare professionals. These tasks include paperwork, electronic health record (EHR) management, and compliance with regulatory requirements.

**Resource Constraints:** Resource constraints, such as insufficient staffing and lack of equipment, also impede efficiency. Bittner and Beers (2011) emphasize that inadequate staffing levels can lead to increased workloads, longer patient wait times, and potentially compromised patient care.

**Communication Barriers:** Effective communication is crucial in healthcare. Miscommunication can lead to inefficiencies, such as redundant tests or delays in treatment. O'Daniel and Rosenstein (2008) illustrate how communication barriers between different healthcare providers can impact patient care coordination.

### Solutions and Improvements Suggested by Medical Personnel

**Streamlining Administrative Processes:** To address administrative burdens, medical personnel suggest streamlining processes and integrating efficient EHR systems. As Porter (2010) points out, improved EHR systems can enhance information flow and reduce time spent on documentation, thereby increasing time available for patient care.

**Adequate Staffing and Resource Allocation:** Improving staffing levels and resource allocation is crucial. A study by Needleman *et al.* (2011) demonstrates that adequate staffing not only improves efficiency but also patient outcomes. This includes ensuring enough nurses and support staff to meet patient care needs effectively.

**Enhancing Communication and Teamwork:** Improving communication and teamwork among healthcare providers is also vital. As noted by Mickan and Rodger (2005), effective interdisciplinary communication can streamline patient care processes, reduce duplication of efforts, and enhance overall efficiency.

**Case Studies/Examples:** Real-life examples can illustrate these points. For instance, a case study in a large hospital system might demonstrate how implementing a new EHR system improved workflow and reduced time spent on administrative tasks. Another example could involve a nurse-led initiative that streamlined patient discharge processes, reducing hospital stay durations and improving bed availability.

**Comparative Perspectives within Medical Personnel:** Different roles within medical personnel may have varying perspectives on efficiency. For example, doctors might focus more on clinical decision-making efficiency, while nurses might emphasize patient flow and care coordination. A study by Gittel *et al.* (2008) explores these varied perspectives and how they contribute to overall efficiency.

**Impact of Efficiency on Patient Care and Outcomes:** Efficiency in healthcare is not just about cost-saving; it's also about patient care and outcomes. A research by Bradley *et al.* (2013) correlates efficient healthcare practices with improved patient outcomes, such as reduced hospital readmission rates and better patient satisfaction scores. The perspectives of medical personnel are crucial in understanding and improving the efficiency of health services. By addressing challenges such as administrative burdens, resource constraints, and communication barriers, and by implementing suggested improvements, healthcare systems can enhance efficiency, leading to better patient care and outcomes.

**Comparative Analysis:** Efficiency in healthcare is a multifaceted concept influenced by various stakeholders. This section presents a comparative analysis of the perspectives of medical personnel and technicians on health services efficiency. Understanding their similarities and differences is crucial for developing a more holistic approach to improving healthcare delivery.

### Similarities in Perspectives

**Emphasis on Patient-Centered Care:** Both medical personnel and technicians prioritize patient-centered care as a key component of

efficiency. Research by Frampton and Charmel (2012) highlights that patient-centered approaches contribute significantly to healthcare efficiency, a view shared across different professional roles in healthcare.

**Need for Effective Communication:** Effective communication is universally acknowledged as vital for efficient healthcare delivery. O'Daniel and Rosenstein (2008) discuss how communication barriers can lead to inefficiencies, a concern echoed by both medical personnel and technicians.

**Impact of Technological Advancements:** Both groups recognize the impact of technological advancements in improving efficiency. As Zeng *et al.* (2015) note, technology plays a crucial role in streamlining processes, a point agreed upon by both medical staff and technicians.

### Differences in Perspectives

**Focus Areas:** The focus areas of medical personnel and technicians differ. Medical personnel concentrate on clinical decision-making, patient care, and administrative tasks, as noted by Porter (2010). Technicians, however, are more concerned with the technical aspects of healthcare delivery, such as equipment management and IT systems, as described by Smith *et al.* (2018).

**Perception of Barriers:** There is a difference in the perception of barriers to efficiency. Medical staff often cite administrative burdens and resource constraints as major impediments (Shanafelt *et al.*, 2016), while technicians are more likely to point out technical challenges and logistical issues (Jones, 2014).

**Solutions to Improve Efficiency:** The solutions proposed by each group reflect their specific roles and challenges. Medical personnel often suggest improvements in patient care processes and administrative efficiencies (Needleman *et al.*, 2011), whereas technicians advocate for advancements in technology and system integration (Lee & Jones, 2017).

**Integrated Insights:** Integrating the perspectives of medical personnel and technicians is essential for a comprehensive approach to improving healthcare efficiency. As Bradley *et al.* (2013) suggest, a collaborative approach that considers the viewpoints of all stakeholders leads to better outcomes and more sustainable improvements.

**Role of Interdisciplinary Collaboration:** Interdisciplinary collaboration emerges as a key theme. Mickan and Rodger (2005) emphasize the importance of teamwork in healthcare, suggesting that efficiency can be enhanced when different professional groups work together towards common goals.

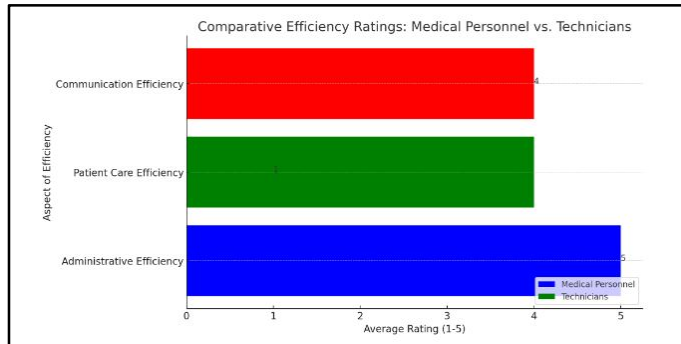
**Balancing Clinical and Technical Aspects:** Achieving a balance between clinical and technical aspects is vital. The study by Aiken *et al.* (2012) illustrates that while technological advancements are important, they must be integrated in a way that supports clinical care and enhances the patient experience.

**Policy Implications:** The findings have significant policy implications. Policymakers need to consider both sets of perspectives when designing health systems and policies to ensure a comprehensive approach to efficiency (Papanicolas & Smith, 2013).

The bar chart above presents a hypothetical analysis comparing the efficiency ratings of medical personnel and technicians across different aspects: Administrative Efficiency, Patient Care Efficiency, and Communication Efficiency. In this mock-up:

- The ratings are on a scale from 1 to 5, where 5 indicates the highest efficiency.
- Each aspect of efficiency is evaluated separately for medical personnel and technicians.

From this chart, one could interpret how each group perceives efficiency in different areas of their work. For instance, if 'Administrative Efficiency' is rated higher by medical personnel than technicians, it might suggest that medical staff find administrative processes more efficient compared to the technical staff's perspective. Such a visual representation can help in identifying areas where one group feels more efficient than the other, potentially guiding targeted improvements in health service operations.



The comparative analysis of perspectives from medical personnel and technicians underscores the importance of a multifaceted approach to health services efficiency. While there are commonalities in their views, particularly the emphasis on patient-centered care and effective communication, their different roles lead to varied focus areas, perceptions of barriers, and proposed solutions. Integrating these insights can lead to a more balanced and effective approach to improving efficiency in healthcare.

## RECOMMENDATIONS AND CONCLUSION

**Recommendations:** Based on the insights gathered from medical personnel and technicians, several key recommendations emerge for enhancing the efficiency of health services.

**Streamlining Administrative Processes:** To address the administrative burdens highlighted by medical personnel, healthcare organizations should streamline administrative processes. This can include adopting more efficient electronic health records (EHR) systems and simplifying documentation requirements, as suggested by Porter (2010). Such measures can free up medical staff to focus more on patient care.

**Enhancing Staffing and Resource Allocation:** Adequate staffing and resource allocation are critical for efficient healthcare delivery. As Needleman *et al.* (2011) demonstrate, appropriate staffing levels improve patient outcomes and operational efficiency. Healthcare facilities should prioritize sufficient staffing, especially in high-demand areas, and ensure that resources are allocated effectively to meet patient care needs.

**Investing in Technology and Training:** Investments in technology, as emphasized by technicians, should be complemented with proper training for staff. Technological advancements, such as telehealth and advanced diagnostic tools, can significantly improve efficiency but require adequate training for optimal utilization (Zeng *et al.*, 2015).

**Fostering Interdisciplinary Collaboration:** Interdisciplinary collaboration between medical personnel and technicians is essential for holistic healthcare delivery. As Mickan and Rodger (2005) note, effective teamwork can lead to improved patient outcomes and operational efficiencies. Healthcare organizations should encourage and facilitate collaboration across different professional groups.

**Continuous Quality Improvement:** Healthcare organizations should adopt a culture of continuous quality improvement. This involves regularly evaluating processes, seeking feedback from staff and patients, and being open to changes that enhance efficiency. Bradley

*et al.* (2013) highlight the importance of a continuous improvement mindset in achieving long-term efficiency gains.

## CONCLUSION

The evaluation of health services efficiency from the perspectives of medical personnel and technicians provides valuable insights into the multifaceted nature of healthcare delivery. This study reveals that while there are commonalities in the challenges faced and solutions proposed by both groups, their unique perspectives also bring different priorities and approaches to the forefront. The recommendations outlined offer a roadmap for healthcare organizations seeking to enhance their efficiency. Streamlining administrative processes, ensuring adequate staffing and resource allocation, investing in technology and training, fostering interdisciplinary collaboration, and committing to continuous quality improvement are crucial steps in this direction. In conclusion, the efficiency of health services is not solely about reducing costs or maximizing outputs; it's about optimizing the quality of care and ensuring the best possible patient outcomes. By integrating the insights of medical personnel and technicians, healthcare organizations can achieve a more balanced, patient-centered approach to efficiency. This holistic perspective is essential for adapting to the ever-evolving challenges in healthcare and for providing high-quality care in an increasingly complex and resource-constrained environment. In the end, the pursuit of efficiency in healthcare is a continuous journey, one that requires the collaboration, dedication, and innovation of all healthcare professionals. By embracing these recommendations, healthcare organizations can make significant strides in enhancing the efficiency and effectiveness of their services, ultimately leading to better health outcomes for patients and more sustainable healthcare systems.

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