

The Impact of Health Information on Health Care Workers

ALANIZI.SABAH JARRAH^{1*}, Eman Olayan Almutairi², Salma ebrahim alquhaidan³,
Bandar Aziz Al Anazi⁴

^{1*} Corresponding Author, HEALTH INFORMATION TECHNICIAN I, KSA

²Health information Technician, KSA

³Health informatics, KSA

⁴ Neurosurgery, KSA

DOI: <https://doi.org/10.5281/zenodo.10111973>

Published Date: 11-November-2023

Abstract: The use of health information is critical in providing efficient and effective healthcare services. It is a crucial public health component in the ministry of health that guides healthcare decisions for efficiency and effectiveness. It entails the development, collecting, and analysis of data for the purpose of detecting deficiencies in health-care systems and prompting proper planning.

Health interventions are acts or interventions that enhance health. It is used for budgeting and organizing health projects and priority tasks. allocations, research, monitoring and evaluation, Education and health policy development .

Aim: was to determine utilization of health information among healthcare workers, and Assessing the relationship between health information utilization and job satisfaction/performance of healthcare workers.

Methods: A mixed-methods approach was employed, combining qualitative interviews and surveys to A diverse sample of 300 healthcare workers, including 100 physicians, 100 nurses, and 100 allied health professionals to ensure gathering data from healthcare professionals across different specialties and settings

Results: There is a strong positive correlation observed between information utilization and job satisfaction aligns, Physicians, in particular, exhibited a noteworthy correlation ($r = 0.75$, $p < 0.001$), emphasizing the pivotal role of health information in shaping their job satisfaction levels.

Keywords: health information, Health Care Workers, healthcare services, health-care systems.

I. INTRODUCTION

In contemporary healthcare, the rapid digitization of health information has ushered in a new era of possibilities and challenges for healthcare workers. The advent of electronic health records (EHRs), telehealth platforms, and other health information technologies has revolutionized the way healthcare professionals access, manage, and utilize patient data, creating a paradigm shift in healthcare delivery (Greenhalgh et al., 2018; Kruse et al., 2016).

The integration of health information technology into healthcare settings has become an integral aspect of modern medical practice. Access to real-time and comprehensive health information is seen as a cornerstone for informed decision-making and improved patient outcomes (Jones et al., 2017). Electronic health records, in particular, have evolved to play a central role in capturing, organizing, and disseminating patient data, creating a robust information ecosystem within healthcare organizations (Roberts & Johnson, 2016; Kuhn et al., 2014).

The Influence of Health Information on Decision-Making

The availability of timely and accurate health information has been identified as a critical factor influencing healthcare professionals' decision-making processes. Studies have demonstrated that effective utilization of health information positively correlates with diagnostic accuracy, treatment planning, and overall clinical decision-making (Smith et al., 2018; Cresswell et al., 2013). However, the assimilation of these technologies into the daily workflow of healthcare professionals is not without its challenges. Issues such as information overload, data security concerns, and the usability of health information systems necessitate a comprehensive examination of the impact of these technologies on healthcare workers (Roberts et al., 2019; Ammenwerth et al., 2020).

Job Satisfaction and Performance Implications

Beyond the immediate clinical realm, the integration of health information technology also holds implications for the job satisfaction and overall performance of healthcare workers. Job satisfaction is a multifaceted construct influenced by various factors, and the accessibility of relevant health information is considered a significant contributor (Clark et al., 2019; Dyrbye et al., 2017). Previous research has indicated a positive correlation between access to health information and the job satisfaction levels among healthcare professionals (Jones et al., 2017). Moreover, the relationship between effective information utilization and job performance is a critical consideration, with potential ramifications for patient outcomes (Lopez & Green, 2021; Shanafelt et al., 2016).

Objectives of the Study

This research aims to build upon this evolving landscape by investigating the nuanced interplay between health information and healthcare workers. The specific objectives are:

- Critically analyze the impact of health information on decision-making processes among healthcare professionals.
- Assess the relationship between health information utilization and job satisfaction/performance of healthcare workers.
- Explore challenges and opportunities associated with the integration of health information into healthcare practice.

Significance of the Study

Understanding the nuanced interplay between health information and healthcare workers is crucial for optimizing patient care, improving workflow efficiency, and enhancing the overall quality of healthcare services. This study aims to contribute to the existing body of knowledge by providing a comprehensive analysis that combines both qualitative and quantitative insights.

In the subsequent sections, we present the methodology employed in gathering and analyzing data, followed by a detailed presentation and discussion of the study's results. The implications of the findings for healthcare organizations, as well as future research directions and study limitations, are also addressed.

II. METHODOLOGY

Sample Selection

For this study, we selected a diverse sample of 300 healthcare workers from different departments of a large urban hospital in Saudi Arabia from 1st April to 31st May during 2023. The participants included 100 physicians, 100 nurses, and 100 allied health professionals, ensuring representation from various specialties.

Demographic Characteristics

Physicians: Mean age of 38 years, 60% male, average of 10 years of clinical experience .

Nurses: Mean age of 32 years, 90% female, average of 8 years of nursing experience .

Allied Health Professionals: Mean age of 40 years, 50% male, average of 12 years of professional experience.

Study Design:

A mixed-methods design was employed, comprising quantitative surveys and qualitative interviews. This approach aimed to provide a comprehensive understanding of both the quantitative metrics and the subjective experiences of healthcare workers regarding health information.

Quantitative Data Collection:

A structured survey was developed to collect quantitative data. The survey included questions on:

- Frequency of health information utilization.
- Types of information accessed (e.g., patient records, research articles).
- Time spent utilizing health information.
- Job satisfaction levels using a Likert scale.
- Perceived job performance using a Likert scale.

Qualitative Data Collection

In-depth interviews were conducted with a subset of participants to gather qualitative insights into their experiences. Open-ended questions explored challenges faced, benefits observed, and suggestions for improving health information systems.

Hypothesis: There is a positive correlation between health information utilization and job satisfaction/performance.

Statistical Test: Pearson correlation coefficients were calculated to assess the strength and significance of these relationships.

Qualitative Data Integration:

Qualitative data were thematically analyzed to identify common themes related to information utilization, job satisfaction, and performance. These themes were then compared and contrasted with quantitative findings to provide a comprehensive picture.

III. RESULTS

The research endeavored into a sophisticated exploration of the interplay between information utilization, job satisfaction, and perceived job performance among distinct healthcare professional groups. A meticulously curated sample of 300 participants, inclusive of 100 physicians, 100 nurses, and 100 allied health professionals, laid the foundation for an in-depth examination of demographic characteristics and subsequent inferential statistical analyses.

Demographic Overview

Before delving into inferential statistics, a nuanced depiction of each professional group's demographic attributes was meticulously undertaken. This detailed scrutiny aimed at establishing a comprehensive contextual framework for the ensuing statistical analyses.

Inferential Statistics

Table 1* showcases the correlation coefficients, a measure of the strength and direction of relationships, elucidating the intricate connections between information utilization, job satisfaction, and perceived job performance across professional groups.

Table 1* Advanced Correlation Coefficients between Information Utilization, Job Satisfaction, and Perceived Job Performance

	Physicians	Nurses	Allied Health Professionals
Information Utilization	0.75* (p < 0.001)	0.68* (p < 0.001)	0.62* (p < 0.001)
Job Satisfaction	0.63* (p < 0.001)	0.55* (p < 0.001)	0.50* (p < 0.001)
Perceived Job Performance	0.58* (p < 0.001)	0.52* (p < 0.001)	0.45* (p < 0.001)

The correlation coefficients, denoted by the symbols '*', signify the robust statistical significance of these associations (*p < 0.001*). Notably, the correlation between information utilization and job satisfaction/perceived job performance is consistently positive across all professional groups, substantiating the hypothesis of a positive relationship.

IV. DISCUSSION

Discussion of Correlation Findings

The correlation coefficients indicate a strong positive relationship between information utilization and job satisfaction across all professional groups. For physicians, the correlation is particularly noteworthy ($r = 0.75$, $p < 0.001$), suggesting that as information utilization increases, physicians report higher levels of job satisfaction.

Nurses also exhibit a positive correlation between information utilization and both job satisfaction ($r = 0.55$, $p < 0.001$) and perceived job performance ($r = 0.52$, $p < 0.001$). Similarly, allied health professionals show positive correlations with job satisfaction ($r = 0.50$, $p < 0.001$) and perceived job performance ($r = 0.45$, $p < 0.001$).

These findings transcend mere associations, delving into the intricate dynamics of information utilization and its profound implications on job satisfaction and perceived job performance. The advanced statistical rigor applied to this study enhances the credibility of the observed relationships, offering nuanced insights for both theoretical and practical considerations in the realm of healthcare professionals.

The strong positive correlation observed between information utilization and job satisfaction aligns with existing research emphasizing the role of technology in shaping healthcare worker experiences (Smith et al., 2018; Johnson & Brown, 2020). Physicians, in particular, exhibited a noteworthy correlation ($r = 0.75$, $p < 0.001$), emphasizing the pivotal role of health information in shaping their job satisfaction levels (Roberts & Johnson, 2016). Nurses and allied health professionals also demonstrated positive correlations, highlighting the cross-disciplinary relevance of information utilization in influencing job satisfaction (Clark et al., 2019). These results resonate with previous studies indicating that improved access to health information positively affects healthcare workers' overall job satisfaction (Jones et al., 2017).

The qualitative data provided valuable insights into the challenges faced by healthcare workers. Concerns about data accuracy and system usability were recurrent themes, resonating with studies that have identified issues related to the reliability and usability of health information systems (Roberts et al., 2019). Addressing these concerns is critical for optimizing the positive impact of health information on decision-making and overall job satisfaction.

Practical Implications for Healthcare Organizations:

The practical implications of this study underscore the need for healthcare organizations to prioritize the enhancement of health information systems. Tailoring these systems to meet the specific needs of different professional groups can contribute significantly to job satisfaction and overall performance (Lopez & Green, 2021).

Additionally, interventions aimed at improving data accuracy, ensuring system usability, and providing training on effective information utilization may yield substantial benefits (Smith et al., 2018). These interventions could be informed by the specific challenges identified in the qualitative analysis, ensuring a targeted and holistic approach.

Future Research Directions:

While this study provides valuable insights, future research should delve deeper into the nuanced relationships between health information, healthcare workers, and patient outcomes. Longitudinal studies could explore the sustained impact of information utilization on job satisfaction and performance over time. Furthermore, examining the role of organizational support and culture in facilitating effective health information utilization could provide a more comprehensive understanding of the contextual factors influencing healthcare workers' experiences (Roberts et al., 2019). Such research can inform evidence-based strategies for healthcare organizations seeking to optimize the benefits of digital health information systems.

Limitations:

It is essential to acknowledge the limitations of this study. The cross-sectional design limits our ability to establish causation, and self-report measures may introduce response bias. Additionally, the study's generalizability may be constrained by the specific characteristics of the sampled healthcare workers and the unique context of the healthcare institution.

V. CONCLUSION

In conclusion, this study sheds light on the intricate relationship between health information, healthcare workers, and job satisfaction. The positive correlations observed indicate the potential for health information systems to positively influence the experiences of healthcare professionals. However, addressing challenges related to data accuracy and system usability is paramount for realizing these benefits. This study contributes to the ongoing discourse on the optimization of health information systems in healthcare organizations.

REFERENCES

- [1] Ammenwerth, E., Iller, C., Mahler, C., & Werder, K. (2020). A longitudinal analysis of EHR data usability with undergraduate nursing students. **International Journal of Medical Informatics**, 134, 104049.
- [2] Clark, K., Jones, A., & Smith, J. (2019). The impact of health information technology on healthcare worker job satisfaction: A literature review. **Journal of Health Informatics Research**, 3(1), 45-58.
- [3] Cresswell, K., Morrison, Z., Crowe, S., Robertson, A., Sheikh, A., & Clark, D. (2013). Anything but engaged: User involvement in the context of a national electronic health record implementation. **Informatics in Primary Care**, 21(1), 13-19.
- [4] Dyrbye, L. N., Shanafelt, T. D., Sinsky, C. A., Cipriano, P. F., Bhatt, J., Ommaya, A., ... & Meyers, D. (2017). Burnout among health care professionals: A call to explore and address this underrecognized threat to safe, high-quality care. **NAM Perspectives**, 7(7), 1-15.
- [5] Greenhalgh, T., Wherton, J., Papoutsis, C., Lynch, J., Hughes, G., A'Court, C., ... & Procter, R. (2018). Beyond adoption: A new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. **Journal of Medical Internet Research**, 20(5), e177.
- [6] Jones, R., Brown, C., & Johnson, M. (2017). Information utilization in healthcare: A systematic review of current trends. **Health Data Journal**, 21(2), 112-130.
- [7] Kruse, C. S., Stein, A., Thomas, H., Kaur, H., & Theaker, R. (2016). The use of electronic health records to support population health: A systematic review of the literature. **Journal of Medical Systems**, 40(12), 256.
- [8] Lopez, A., & Green, T. (2021). Enhancing healthcare worker performance through effective health information utilization. **Journal of Healthcare Technology**, 14(3), 189-205.
- [9] Roberts, E., & Johnson, S. (2016). Job satisfaction and information utilization: A cross-disciplinary perspective. **Health Information Management Journal**, 44(2), 87-103.
- [10] Roberts, E., Brown, C., & Smith, J. (2019). Challenges in health information system usability: A qualitative analysis. **International Journal of Medical Informatics**, 126, 90-97.
- [11] Shanafelt, T. D., Hasan, O., Dyrbye, L. N., Sinsky, C., Satele, D., Sloan, J., & West, C. P. (2016). Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. **Mayo Clinic Proceedings**, 91(12), 1600-1613.
- [12] Smith, J., Brown, C., & Johnson, M. (2018). The impact of health information technology on healthcare worker job performance: A systematic review. **Journal of Health Information Management**, 22(4), 30-45.