

THE ACCEPTANCE LEVEL OF NURSES ON THE DIGITALIZATION OF HEALTHCARE MANAGEMENT OF A TERTIARY PRIVATE HOSPITAL IN MANILA

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Abstract

The rapid advancement of digital technologies has significantly transformed healthcare systems worldwide, particularly in response to increasing demands for accessible, efficient, and high-quality care. In the Philippines, the integration of digital healthcare solutions such as telemedicine and electronic medical records has accelerated, especially during the COVID-19 pandemic. Nurses, as primary healthcare providers, play a crucial role in adopting and utilizing these technologies. However, their level of acceptance and the barriers they encounter remain critical factors influencing the successful implementation of digital healthcare systems. This study aimed to determine the level of acceptance of nurses toward the digitalization of healthcare management in a tertiary private hospital in Manila. The study utilized a descriptive quantitative research design conducted in a tertiary private hospital in Manila, Philippines. The respondents were registered nurses selected through simple random sampling. Data were collected using a structured and validated questionnaire administered through an online survey platform. The instrument measured the nurses' profile, level of acceptance of digital healthcare in terms of patient-nurse communication, health provider performance, health assessment, and health delivery, as well as perceived barriers in terms of service, experience, data, and information. Data were analyzed using frequency, percentage, mean, standard deviation, t-test, ANOVA, and correlation analysis at a 0.05 level of significance. The findings revealed that nurses exhibited a high level of acceptance of digital healthcare systems across all dimensions, particularly in enhancing communication, improving healthcare performance, and facilitating efficient service delivery. However, moderate barriers were identified, including issues related to system reliability, user experience, data management, and information flow. Statistical analysis showed no significant difference in both acceptance and perceived barriers when respondents were grouped according to demographic variables. However, a significant relationship was found between the level of acceptance and perceived barriers, indicating that existing challenges influence the extent of digital healthcare utilization. The study concludes that nurses are generally receptive to the digitalization of healthcare and recognize its benefits in improving patient care and healthcare delivery. Nevertheless, the presence of operational and technological barriers highlights the need for continuous system enhancement, training, and institutional support. Addressing these challenges is essential to strengthen nurses' acceptance and maximize the effectiveness of digital healthcare systems. The successful integration of digital technologies in healthcare depends on both technological readiness and the capacity of healthcare professionals to adapt to ongoing innovations.

Keywords: Digitalization in Healthcare, Nurse Acceptance, Telemedicine, Healthcare Technology, Barriers to Digital Health, Philippines Healthcare System.

Introduction

Healthcare systems worldwide continue to face increasing challenges in delivering comprehensive, accessible, and high-quality care, largely due to demographic transitions such as the growing aging population and the rising complexity of health conditions. These challenges are further compounded by structural inequalities, particularly in densely populated and underserved areas, where access to healthcare services remains limited. As noted, disparities in healthcare distribution often discourage healthcare professionals from practicing in rural or less developed regions, thereby exacerbating inequities in service delivery (Adarkwah, 2019).

In response to these systemic issues, the healthcare sector has undergone significant transformations, particularly in the field of nursing. Advances in nursing education and training have enhanced nurses' competencies, autonomy, and preparedness, enabling them to respond more effectively to evolving healthcare demands. The integration of digital health technologies has further revolutionized clinical practice, improving communication, patient monitoring, and overall healthcare delivery (Broermann et al., 2018). Despite these advancements, the healthcare system continues to adapt to rapid technological changes and increasing patient needs.

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The digitalization of healthcare has emerged as a critical strategy in addressing these challenges. Technologies such as telemedicine, electronic medical records, and mobile health applications have transformed traditional healthcare delivery into more patient-centered and accessible systems. Nurses, as frontline healthcare providers, play a pivotal role in facilitating the adoption and utilization of these technologies. They are responsible not only for delivering care but also for guiding patients and caregivers in navigating digital health platforms (Mueller, 2020).

The COVID-19 pandemic further accelerated the adoption of digital healthcare systems, highlighting both their potential and the challenges associated with their implementation. In the Philippines, the pandemic exposed gaps in healthcare infrastructure while simultaneously driving the rapid expansion of teleconsultation and other digital services. These innovations allowed patients to access healthcare remotely, ensuring continuity of care despite restrictions on physical interaction (Cordero, 2022; UP Manila, 2023). However, issues such as technological limitations, lack of standardization, and varying levels of digital literacy among healthcare providers remain significant barriers.

Given this context, the role of nurses in adapting to and accepting digital healthcare systems becomes increasingly important. Their perceptions, competencies, and willingness to integrate technology into practice directly influence the effectiveness of digital health interventions. As healthcare systems continue to evolve, understanding nurses' acceptance of digitalization is essential in ensuring the successful implementation of innovative healthcare solutions. Thus, this study aims to examine the acceptance of digital healthcare management among nurses in a tertiary private hospital in Manila, providing insights into how digital transformation can enhance healthcare delivery and address existing system gaps.

Methods

Research Design

This study employed a descriptive quantitative research design to determine the level of acceptance of nurses toward the digitalization of healthcare management systems. This approach was appropriate as it allowed for the systematic collection, analysis, and interpretation of numerical data to describe nurses' perceptions, acceptance levels, and perceived barriers to digital healthcare integration. Moreover, the design enabled the identification of patterns and relationships among variables without manipulating the study environment, thereby ensuring objectivity and reliability of the findings.

Research Setting

The study was conducted in a tertiary private hospital in Manila, Philippines. The selected setting was considered suitable for the study because it utilizes digital healthcare technologies such as telemedicine, electronic medical records, and other health information systems. This environment provided a relevant context for examining nurses' experiences and acceptance of digitalization in actual clinical practice.

Population of the Study

The population of the study consisted of registered nurses currently employed in the selected tertiary private hospital. These nurses were directly involved in patient care and healthcare service delivery, making them appropriate respondents for assessing the implementation and acceptance of digital healthcare systems within the institution.

Sampling Technique and Sample Size

A simple random sampling technique was utilized in selecting the respondents of the study. This method ensured that each member of the population had an equal chance of being included, thereby minimizing selection bias and enhancing the representativeness of the sample. The sample size was determined based on the number of nurses who met the inclusion criteria and were available and willing to participate during the data collection period.

Inclusion and Exclusion Criteria

The study included registered nurses who were actively employed in the selected hospital, directly involved in patient care, and willing to participate by providing informed consent. Conversely, nurses who were on leave during the data collection period, those assigned to purely administrative roles, and respondents who submitted incomplete questionnaires were excluded from the study to ensure the accuracy and reliability of the data collected.

Research Instrument

Data were collected using a structured questionnaire developed by the researchers and validated by subject matter experts. The instrument consisted of three main parts: the demographic profile of the respondents, the level of acceptance of digital healthcare in terms of patient-nurse communication, health provider performance, health assessment, and health delivery, and the perceived barriers to digitalization in terms of service, experience, data, and information. A Likert scale was utilized to quantify responses, allowing for effective statistical analysis.

Validity and Reliability

To ensure the quality of the research instrument, content validation was conducted by experts to

assess the relevance, clarity, and appropriateness of each item. A pilot test was also carried out to evaluate the reliability of the instrument. Internal consistency was measured using Cronbach's alpha, with a minimum acceptable value of 0.70, indicating that the instrument was reliable for data collection.

Data Collection Procedure

The data collection process was conducted through an online survey questionnaire distributed via Google Forms. Prior to participation, respondents were provided with an electronic informed consent form detailing the purpose of the study, confidentiality measures, and voluntary nature of participation. The respondents completed the questionnaire at their convenience, typically during their free time or breaks, ensuring that their professional responsibilities were not disrupted.

Statistical Treatment of Data

The data collected were analyzed using appropriate statistical tools. Frequency and percentage were used to describe the demographic profile of the respondents, while mean and standard deviation were employed to determine the level of acceptance and perceived barriers. Inferential statistics such as t-test and one-way analysis of variance (ANOVA) were utilized to determine significant differences when respondents were grouped according to profile variables. Correlation analysis was also applied to examine the relationship between acceptance levels and perceived barriers. All statistical tests were conducted at a 0.05 level of significance.

Ethical Considerations

Ethical principles were strictly observed throughout the conduct of the study. Participation was voluntary, and respondents were given the right to withdraw at any time without penalty. Confidentiality and anonymity were ensured by not collecting personally identifiable information. All data gathered were used solely for academic purposes and were securely stored to protect the privacy and integrity of the respondents.

Results

Profile of the Respondents

The findings of the study revealed that the respondents were composed of registered nurses with varying demographic characteristics in terms of gender, age, length of service, and position. The distribution of respondents showed diversity across these variables, indicating that the data gathered represented a broad range of nursing experiences and professional backgrounds. This variability provided a comprehensive basis for examining differences in acceptance levels and perceived barriers to healthcare digitalization.

Level of Acceptance of Digitalization in Healthcare

The results indicated that nurses generally demonstrated a high level of acceptance toward the digitalization of healthcare management systems. In terms of patient-nurse communication, respondents agreed that digital tools such as teleconsultation and electronic communication platforms improved accessibility and continuity of care. For health provider performance, nurses perceived that digitalization enhanced efficiency, documentation accuracy, and coordination among healthcare professionals. Similarly, in health assessment, digital tools were recognized as valuable in facilitating timely data collection and clinical decision-making. In terms of health delivery, nurses acknowledged that digitalization contributed to improved service delivery, particularly in remote monitoring and patient management. Overall, the computed mean scores across these domains fell within the "agree" to "strongly agree" range, indicating that digital healthcare systems were positively accepted and perceived as beneficial in clinical practice.

Perceived Barriers to Digitalization

Despite the positive acceptance, the study also identified several barriers to the effective implementation of digital healthcare systems. In terms of service, respondents noted challenges related to system reliability and accessibility. For experience, some nurses reported difficulties in adapting to new technologies due to varying levels of digital literacy and training. In the aspect of data, concerns were raised regarding data accuracy, security, and system integration. Lastly, in terms of information, respondents identified issues related to incomplete or delayed information flow within digital platforms. The overall findings suggest that while digitalization is accepted, these barriers remain moderate and require strategic interventions to ensure optimal utilization.

Difference in Acceptance When Grouped According to Profile

Statistical analysis revealed that there was no significant difference in the level of acceptance of digital healthcare when respondents were grouped according to their demographic profile, including gender, age, length of service, and position. This indicates that acceptance of digitalization is consistent across different groups of nurses, suggesting a generally uniform perception of the benefits of digital healthcare systems within the institution.

Difference in Perceived Barriers When Grouped According to Profile

Similarly, the results showed no significant difference in the perceived barriers to digitalization when respondents were grouped according to their profile variables. This implies that challenges

related to digital healthcare implementation are commonly experienced among nurses regardless of their demographic characteristics.

Relationship Between Acceptance and Barriers

The findings further revealed that there is a significant relationship between the level of acceptance and perceived barriers to digital healthcare. This suggests that while nurses generally accept digitalization, the presence of barriers influences the degree to which these technologies are effectively utilized. Addressing these barriers may therefore enhance acceptance and improve overall system performance.

The study found that nurses in the selected tertiary private hospital in Manila exhibit a high level of acceptance toward digital healthcare systems, recognizing their benefits in improving communication, performance, assessment, and service delivery. However, moderate barriers related to service, experience, data, and information persist. Furthermore, acceptance and perceived barriers do not significantly differ across demographic groups, but they are significantly related to each other, indicating that reducing barriers may further strengthen the adoption and effectiveness of digital healthcare management systems.

Conclusion

Based on the findings of the study, it can be concluded that nurses in the selected tertiary private hospital in Manila generally demonstrate a high level of acceptance toward the digitalization of healthcare management systems. Digital technologies are perceived as valuable tools that enhance patient-nurse communication, improve healthcare provider performance, support accurate health assessment, and facilitate efficient health service delivery. These findings indicate that nurses are adaptable and receptive to technological advancements, recognizing their role in improving the quality and accessibility of healthcare services.

Despite this positive acceptance, the study also concludes that several barriers continue to affect the optimal implementation of digital healthcare systems. Challenges related to service reliability, user experience, data management, and information flow remain evident among nurses. These barriers highlight the need for continuous system improvement, adequate technical support, and capacity-building initiatives to ensure that digital tools are utilized effectively in clinical practice.

The study revealed that there are no significant differences in both the level of acceptance and perceived barriers when nurses are grouped according to demographic variables such as gender, age, length of service, and position. This suggests

that perceptions toward digitalization are consistent across different groups of nurses, reflecting a shared understanding of its benefits and challenges within the institution.

Importantly, the study established a significant relationship between nurses' acceptance of digital healthcare and the barriers they encounter. This implies that the presence of challenges may influence how effectively digital systems are embraced and utilized. Therefore, addressing these barriers is essential to further strengthen acceptance and maximize the benefits of digital healthcare integration.

The study concludes that digitalization is a promising and necessary component of modern healthcare delivery. However, its success depends on the continuous support of healthcare institutions in addressing implementation challenges, enhancing nurses' competencies, and ensuring the availability of efficient, user-friendly, and secure digital systems. By doing so, healthcare organizations can fully harness the potential of digital transformation to improve patient outcomes and achieve a more responsive and sustainable healthcare system.

Conflict of Interest

There is no conflict of interest between the authors in this manuscript. Results have been deduced objectively; nothing influenced this result by any individual, monetary, or institutional interests. In effect, utmost endeavors were in order to conduct a bias-free operation of gathering and analyzing the data into interpretation and producing a study based on merit, away from research inconsistencies.

References

1. Adarkwah, M. A. (2019). The healthcare system and access disparities in underserved populations. *International Journal of Health Planning and Management*, 34(1), e123–e131.
2. Almathami, H. K. Y., Win, K. T., & Vlahu-Gjorgievska, E. (2020). Barriers and facilitators that influence telemedicine-based, real-time, online consultation at patients' homes: Systematic literature review. *Journal of Medical Internet Research*, 22(2), e16407.
3. Amnesty International. (2021). *Philippines: COVID-19 response and its impact on vulnerable populations*. Amnesty International Report.
4. Ayouni, I., Maatoug, J., Dhouib, W., Zammit, N., Fredj, S. B., Ghammam, R., & Ghannem, H. (2021). Effective public health measures to mitigate the spread of COVID-19: A systematic review. *BMC Public Health*, 21, 1015.

5. Broermann, M., et al. (2018). Advancements in nursing education and digital health integration. *Journal of Nursing Practice*, 24(3), 215–222.
6. Bruneir, M., & Harris, M. (2020). Disruption of essential health services during the COVID-19 pandemic. *The Lancet Global Health*, 8(12), e1500–e1501.
7. Care and Counseling. (2021). Digital health adoption and patient diversity challenges. *Health Technology Insights Journal*, 15(2), 45–52.
8. Cision PR Newswire. (2018). Philippines healthcare sector overview and growth trends. *Cision Reports*.
9. Cordero, D. A. (2022). COVID-19 and healthcare management challenges in the Philippines. *Philippine Journal of Health Research and Development*, 26(2), 45–52.
10. Department of Health (DOH). (2021). *COVID-19 response and public health strategies in the Philippines*. Government of the Philippines.
11. Eliassen, A., Harriet, A., & Vrihenhoek, M. (2021). Healthcare delivery transformation during pandemic crises. *Health Policy Journal*, 125(4), 567–575.
12. EMU (Eastern Mediterranean University). (2022). The role of nurses in digital healthcare systems. *Nursing Informatics Review*, 18(1), 33–40.
13. Gai, Y., & Tobe, R. G. (2020). Managing healthcare capacity during COVID-19: Lessons learned. *Health Services Research*, 55(5), 1–8.
14. George Washington University. (2021). Healthcare delivery systems and policy evolution. *GWU Health Policy Report*.
15. Henderson, J. (2022). Patient-centered care and healthcare transformation. *Journal of Healthcare Management*, 67(2), 85–93.
16. International Trade Administration (ITA). (2023). *Philippines healthcare and e-health market overview*. U.S. Department of Commerce.
17. Kamulegeya, L. H., Bwanika, J. M., Musinguzi, D., & Bakibinga, P. (2020). Continuity of health service delivery during COVID-19 pandemic. *BMC Health Services Research*, 20, 1–10.
18. Lim, J. (2020). Healthcare workforce shortages in the Philippines. *Philippine Medical Journal*, 44(1), 10–15.
19. Mizumoto, K., & Chowell, G. (2020). Estimating risk and mortality during COVID-19 outbreaks. *Journal of Clinical Medicine*, 9(4), 1–10.
20. Mueller, B. (2020). Technology integration in nursing education and practice. *Nursing Informatics Journal*, 35(4), 289–295.
21. NursingAns. (2022). Overview of the Philippine healthcare delivery system. *NursingAns Publications*.
22. Peter, J. (2021). Digital transformation challenges in healthcare systems. *Health Informatics Journal*, 27(3), 1–12.
23. Richardson, E., et al. (2020). Telehealth and healthcare access during COVID-19. *Health Policy*, 124(12), 1331–1336.
24. Ronquillo, C. (2019). Nursing roles in virtual healthcare environments. *Journal of Advanced Nursing Practice*, 75(9), 1900–1908.
25. Schäfer, I., et al. (2021). Changes in healthcare utilization during the COVID-19 pandemic. *BMC Health Services Research*, 21, 1–9.
26. Seuren, L. M., et al. (2020). Digital healthcare communication and patient engagement. *Social Science & Medicine*, 258, 113–119.
27. Tracei, L. (2021). Impact of community mitigation strategies on healthcare systems. *Public Health Reports*, 136(3), 1–7.
28. University of the Philippines Manila. (2023). Telemedicine and patient-centered care in the Philippines. *UP Manila Health Systems Report*.
29. Velavan, T. P., & Meyer, C. G. (2020). The COVID-19 epidemic. *Tropical Medicine & International Health*, 25(3), 278–280.
30. World Health Organization (WHO). (2020). *Maintaining essential health services: Operational guidance for the COVID-19 context*. WHO.
31. YCP (YCP Solidiance). (2019). *Philippines healthcare industry report*. YCP Solidiance.