



EXPLORING PERSPECTIVES OF SAUDI HEALTH ASSISTANTS ON ELECTRONIC HEALTH RECORD USE: A QUALITATIVE STUDY

Ahmed Farhan T Alharbi, Saad Fahad M Alshammari, Faisal Helail Aldhafeeri, Salman Shalal Alshammari, Salman Ayed Alhurayji, Sulaiman Mohammad Alshammari

Abstract

Electronic health records (EHRs) are being widely adopted throughout Saudi Arabian healthcare, yet little is known about the experiences and perspectives of health assistants as frequent EHR users. This exploratory qualitative study aimed to understand the views of Saudi health assistants regarding EHR use through focus group interviews. 12 health assistants from wards at a major hospital discussed EHR benefits, challenges, impacts on clinical workflow, and recommendations for optimization. Results revealed perceived benefits of EHRs including improved legibility and access to patient information compared to paper records, along with key barriers like insufficient initial and ongoing EHR training, disruptions to workflow, increased documentation burden, and suboptimal system design and technical issues. Participants emphasized needs for enhanced skills training on EHR use, greater user-centered system design tailored to the assistant role, and increased involvement of assistants in EHR selection and optimization initiatives at their facilities. Findings provide valuable insights from the Saudi health assistant perspective to inform organizational and system-wide initiatives aimed at improving EHR usability, utility and acceptance among this user group.

Introduction

Healthcare organizations across Saudi Arabia have been rapidly adopting technologies like electronic health records (EHRs) with national support and incentives, yet adoption has brought both opportunities and challenges (Aldosari, 2014). Transitioning from paper to electronic systems significantly impacts clinical workflows, documentation, communication, and information use for all member roles of the healthcare team (Carrington, 2018).

Frontline providers like health assistants are frequent hands-on users of EHR systems for vital documentation duties, but there has been limited investigation into their perspectives and experiences with EHR use in Saudi healthcare settings (Aldosari, 2014; Hasanain et al., 2014). Qualitative inquiry through methods like focus groups can develop rich, contextualized insights into a phenomenon like EHR adoption from the user viewpoint (Sutton et al., 2015). This approach was applied in the current study to provide an in-depth understanding of Saudi health assistants' perspectives regarding using EHR systems, including benefits, challenges, impacts on their role, and suggestions for improvement. Findings can inform organizational and system-



wide initiatives aimed at enhancing EHR training, utility, usability and acceptance for this user group.

Background

Electronic Health Records

Electronic health records (EHRs) are digital documentation systems storing individual patients' health information including medical history, exam findings, test results, medications, immunizations, and other clinical data (Menachemi & Collum, 2011). Benefits of EHRs over traditional paper records include legible information, remote access, easier sharing across providers, clinical decision support, and data for analytics (Aldosari, 2014). However, EHR adoption brings challenges like cost, training needs, workflow changes, documentation burdens, privacy concerns, and suboptimal design issues (Carrington, 2018). Understanding user perspectives is vital for successful implementation.

Nursing Literature

Among nurses internationally, studies show EHR adoption increased information access and legibility, yet also created productivity and workflow challenges (Carrington, 2018). Satisfaction has been mixed, highlighting needs to strengthen design, training, and user engagement (Gephart et al., 2015). This literature provides valuable context, but minimal research exists exploring Saudi nursing staff experiences specifically.

Health Assistants in Saudi Arabia

Health assistants provide fundamental services in Saudi hospitals including patient intake, vital signs, specimen collection, hygiene care, distribution of medications, paperwork, and EHR documentation (MOH, 2016). Their perspectives are important to study given their central EHR user role, yet no studies were identified examining their views or experiences, representing a concerning knowledge gap.

Conceptual Model

The Unified Theory of Acceptance and Use of Technology model recognizes that adoption is influenced by performance expectancy, effort expectancy, social factors, and facilitating conditions like training (Venkatesh et al., 2003). This study explored these dimensions.

Study Aims and Objectives

This study aimed to:

1. Explore Saudi health assistants' perspectives on the benefits of using EHRs.
2. Understand the challenges and problems related to EHR use faced by health assistants.
3. Examine assistants' views on EHR impacts on clinical workflow and documentation.
4. Identify assistants' suggestions for improving EHR training, utility, and usability.

5. Inform initiatives at the organization and national level to enhance EHR optimization for health assistants.

Methods

Study Design

An exploratory qualitative focus group design was utilized. This approach allowed for open participant-guided discussion and sharing of perspectives.

Setting and Participants

The setting was the inpatient wards of a major 800-bed tertiary care hospital in Riyadh, Saudi Arabia. Participants were 12 health assistants working on wards that had transitioned to an Epic EHR system. They were recruited based on their direct experience using the EHR for minimum 6 months.

Inclusion Criteria:

- Currently employed as a health assistant at the study hospital
- Minimum 6 months experience using the Epic EHR system

Sampling and Recruitment

Purposeful sampling was used given the need for participants meeting the inclusion criteria. Department managers helped identify eligible assistants. Recruitment occurred through informational emails and flyers stating the study objectives. Participation was voluntary. The first 12 respondents were enrolled.

****Data Collection ****

Two focus group sessions were conducted in Arabic, one with 6 participants and the second with 6 participants. This group size helped ensure rich discussion. Sessions lasted 60-90 minutes and took place in a private hospital meeting room during participant breaks. A bilingual researcher acted as facilitator using a semi-structured interview guide focused on:

- EHR benefits and advantages
- Challenges, frustrations, and disadvantages
- Impacts to workflow and documentation
- Recommendations for improvements

Prompts encouraged examples and storytelling. Discussions were audio recorded and transcribed verbatim in Arabic, then translated to English for analysis. Names were anonymized.

Qualitative Analysis

Transcripts were analyzed using inductive thematic analysis involving detailed reading, open coding, categorizing codes, and extracting major themes related to participants' EHR perspectives (Braun & Clarke, 2006). NVivo 12 software assisted in organizing the data.

Trustworthiness

Strategies included member checking of themes with participants, peer debriefing, maintaining an audit trail, and providing rich description of settings and representative quotations in findings (Nowell et al., 2017).

Ethical Considerations

Institutional review board approval was obtained prior to recruitment. All participants provided written informed consent and could withdraw at any time. Confidentiality was maintained.

Results

Participant Characteristics

The focus groups included 12 health assistants with 6 months to 5 years of experience using the Epic EHR at the study hospital. Their mean age was 28 years and 9 were female. Characteristics are further summarized in Table 1.

Table 1. Focus Group Participant Characteristics

	Focus Group 1	Focus Group 2	Total
Participants	6	6	12
Mean Age	29 years	27 years	28 years
Gender	4 females, 2 males	5 females, 1 male	9 females, 3 males
Mean Years Experience with Epic EHR	2.8	1.5	2.1

Thematic Findings

Four major themes emerged relating to assistants' perspectives: 1) EHR benefits; 2) EHR challenges and barriers; 3) Impacts of EHR use on clinical workflow and documentation; and 4) Recommendations for improvement.

Theme 1: Perceived Benefits of the EHR

When discussing advantages of the EHR, the most commonly cited benefit was enhanced ability to locate and access patient information rapidly compared to paper records:

“It’s easier to find the information I need faster on the computer without having to search through a thick folder.” (P5)

“I can pull up test results quickly right on the computer instead of waiting for results to come to the paper chart.” (P8)

Additionally, participants noted EHR documentation was more legible and complete versus handwritten notes in paper charts:

“I can actually read all the information in the EHR. Some doctors’ handwriting is impossible to figure out.” (P7)

“The records are more complete since everything is supposed to be entered in the computer.” (P2)

However, some felt reliance on technology also posed risks:

“If there is a computer outage you cannot see any patient information at all.” (P4)

Theme 2: Challenges and Barriers with EHR Use

Participants cited numerous challenges with the EHR, including insufficient initial training on the system and a lack of ongoing support:

“We only got a basic 2-day class on Epic when it was first put in. No extra training.” (P1)

“There is no one to ask questions to when you get stuck. We have to figure it out on our own.” (P5)

Entering documentation was seen as time-consuming due to the system design:

“It takes forever to enter vital signs and physical assessment findings with all the clicks and drop-down boxes.” (P3)

“There are so many tabs and screens, it's not intuitive. Too hard to document.” (P6)

Participants also voiced frustration regarding system glitches, errors, and inefficient workflows:

“The system crashes a lot when you're trying to enter patient data.” (P9)

“You can make mistakes easier on Epic than paper since you just click without thinking.” (P2)

“Why do I have to document the same thing in 5 different places?” (P7)

This contributed to dissatisfaction and perceived unpreparedness among some assistants:

“I don’t feel fully competent or comfortable using Epic.” (P10)

Theme 3: Impacts on Clinical Workflow and Documentation

The EHR was described as substantially changing assistants' workflow patterns and documentation approaches:

"My workflow is so different now because of the computers. I used to organize my daily tasks based on visiting each patient but now I have to document at a workstation." (P8)

"It breaks up how I do my physical checks on patients because I have to stop and enter findings right away or I'll forget." (P11)

The EHR was seen as increasing documentation demands and time away from patients:

"We spend more time charting in front of computers than doing patient care." (P3)

"The EHR makes you document every minor thing in detail since it's electronic." (P6)

However, the remote access enabled new efficiencies:

"I can update records from anywhere instead of just the chart at the patient's bedside." (P2)

Theme 4: Recommendations for Improvement

In discussing ways to enhance EHR use, assistants strongly recommended additional on-the-job training:

"We need refreshers and reminders, not just at the beginning." (P5)

They also voiced a desire to have more input into design and implementation decisions:

"The people who use Epic everyday should help choose what it looks like and how it works." (P7)

"Decision makers don't understand how we actually use the system." (P3)

Additional suggestions included:

- Creating Epic user forums to share tips and tricks
- Designating EHR super-users as on-site resources
- Improving technical support availability
- Reducing documentation requirements
- Modifying design for workflow efficiency

Discussion

This qualitative study provides valuable insights into the perspectives of Saudi health assistants regarding EHR use. Participants noted both benefits of improved information access and legibility compared to paper records, consistent with literature (Aldosari, 2014). However, they also expressed frustrations around inadequate EHR training, increased documentation burdens, lack of design customization to their workflows, and various usability challenges that have hindered optimal adoption.

The emphasis on needing expanded user-centered training and on-the-job support echoes studies showing educational gaps during EHR implementation (Boonstra & Broekhuis, 2010). Participants voiced a strong desire to have greater input into EHR selection and customization decisions, contrary to typical top-down approaches (Gephart et al., 2015). Enabling user engagement in design and enhancements can improve fit and ease of use, as can providing ongoing training opportunities and forums for knowledge sharing and troubleshooting (Samadbeik et al., 2017).

As a small qualitative study in one hospital, findings may not generalize widely but provide rich, contextualized insights that are transferable to other settings (Korstjens & Moser, 2018). Further research across multiple sites could build on these results. Nonetheless, this study makes an important contribution in documenting Saudi health assistants' EHR perspectives, given previous knowledge gaps.

Conclusion

This exploratory investigation provided understanding of Saudi health assistants' experiences with EHR use. Key benefits like enhanced information access and legibility were voiced, yet numerous challenges and barriers to optimal adoption exist, including insufficient training and poor EHR system usability. Participants highlighted needs for greater engagement of end-users in EHR selection, design, training, and ongoing optimization. Study findings can inform initiatives at the organization and national level aimed at improving the utility and usability of EHR systems for health assistants through targeted training programs, enhanced technical support, modifications of documentation requirements, and increased user input into system redesign. Addressing adoption barriers can help ensure this vital user group is equipped to leverage EHRs effectively for quality, evidence-based patient care.

References

- Aldosari, B. (2014). Rates, levels, and determinants of electronic health record system adoption: A study of hospitals in Riyadh, Saudi Arabia. *International Journal of Medical Informatics*, 83(5), 330–342. <https://doi.org/10.1016/j.ijmedinf.2014.01.006>
- Boonstra, A., & Broekhuis, M. (2010). Barriers to the acceptance of electronic medical records by physicians from systematic review to taxonomy and interventions. *BMC Health Services Research*, 10, 231. <https://doi.org/10.1186/1472-6963-10-231>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Carrington, J. M. (2018). The nursing profession and electronic health records: How nurses are capitalizing on EHR functionality. *Health Care Manager*, 37(1), 4–10. <https://doi.org/10.1097/HCM.000000000000193>

- Gephart, S. M., Carrington, J. M., & Finley, B. (2015). A systematic review of nurses' experiences with unintended consequences when using the electronic health record. *Nursing Administration Quarterly*, 39(4), 345–356. <https://doi.org/10.1097/NAQ.0000000000000119>
- Hasanain, R. A., Cooper, H. P., Al-Jasser, S., Almuwaqqat, Z. M., Mullins, A. C., & Ali, Z. (2014). Electronic medical record systems in Saudi Arabia: Knowledge and preferences of healthcare professionals. *Journal of Health Informatics in Developing Countries*, 8(1).
- Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: trustworthiness and publishing. *European Journal of General Practice*, 24(1), 120-124.
- Menachemi, N., & Collum, T. H. (2011). Benefits and drawbacks of electronic health record systems. *Risk Management and Healthcare Policy*, 4, 47–55. <https://doi.org/10.2147/RMHP.S12985>
- Ministry of Health, Kingdom of Saudi Arabia (MOH). (2016). *Health assistants profession practice manual for Saudi nursing*. <https://www.moh.gov.sa/>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1-13.
- Samadbeik, M., Ahmadi, M., Sadoughi, F., Hosseini, A., & Garavand, A. (2017). The Applications of Virtual Reality Technology in Medical Groups Teaching. *Journal of Advances in Medical Education & Professionalism*, 5(3), 103–109.
- Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian Journal of Hospital Pharmacy*, 68(3), 226–231.
- Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>