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Nursing Staff Perceptions and Experiences of the New Electronic Health Record Transition in The West Bank

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Dedication

To my loving family, my parents, brothers and sister, in-law family, my husband, and my children Elaine, Jamal, and Kenan, thank you for your constant encouragement and belief in me that fueled my determination to see this thesis through.

"To my esteemed advisor, Dr. Elham, I am deeply grateful for your unwavering guidance and support throughout this journey."

"To my husband, Mohamed, thank you for the countless cups of coffee, late-night brainstorming sessions, and unwavering friendship that kept me going."

"To my sanity (what's left of it!), for enduring the stress and late nights involved in this project."

To all with love and respect, I dedicate this work

Sharihan Basem Jires Badra

Declaration

I hereby certify that this master's thesis in Public Health is the product of my own independent research, with appropriate acknowledgments of any external sources. Furthermore, I confirm that neither this thesis nor any part of it has been previously submitted for a higher academic degree at any other university or institution.

Signed:  .....

Sharihan Basem Jires Badra

Date : 8/9/2025

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Sharihan Badra

Abstract

Background: Electronic Health Records promise safer, more coordinated care, but moving from paper to digital records can be hard, especially for nurses who work in places with limited resources, like the West Bank (Adler-Milstein et al., 2015; Wynter et al., 2021).
Aim: Our study explored West Bank nurses' perceptions and experiences during the move to a new EHR, identifying benefits, challenges, and factors that predict smoother adoption.
Methods: A quantitative cross-sectional survey collected information from 304 nurses working in four hospitals (two government and two non-governmental). A validated, three-part questionnaire measured socio-demographics, perceived Electronic Health Records benefits/challenges, and usage patterns. Descriptive statistics and one-way ANOVA/t-tests examined group differences.
Results: Most nurses considered the system easy to use (75.7%) and clinically beneficial (73.4%); 63.5% reported overall satisfaction and 77.3% wished to keep using the Electronic Health Records. Almost all of the time, nurses did routine tasks like assessment (90.8%) and care planning (89.1%) in the Electronic Health Records. Still, 79.9% thought the current training was not good enough, and 82.9% thought the help desk support was not good enough, which shows that there are big gaps in the implementation. Lack of infrastructure (for example, 32.2% of respondents said they didn't have enough workstations) made usability problems worse. No significant differences in perceived challenges, benefits, or experience scores across hospitals, age, gender, or education (all $p > 0.05$) was revealed.
Conclusions: Most nurses in the West Bank support the new Electronic Health Records, but a lack of training, technical support, and hardware could hurt its long-term success. We need targeted, simulation-based training, IT help desks that are always available, and upgrades to workstations right away. The results give advice on how to roll out Electronic Health Records in other low-resource health systems.

Keywords: Electronic Health Record, nurse perceptions, experiences, training, technical support, West Bank.

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Abbreviations

EHR	**Electronic Health Record**
LMIC	Low- and Middle-Income Country
NGO	Non-Governmental Organization
SD	Standard Deviation
WHO	World Health Organization
ANOVA	Analysis of Variance
IT	Information Technology
MOH	Ministry of Health
ANOVA	Analysis of Variance
BASR	Bethlehem Arab Society for Rehabilitation

Chapter One

Introduction

1.1 Background

Healthcare professionals manage patient information differently because of electronic health records (EHRs). The implementation of electronic health records has been shown to enhance the quality and safety of healthcare services while also increasing operational efficiency (Xu et al., 2020; Sipanoun et al., 2022). Patient information is now more accessible for doctors and healthcare teams because electronic health records have replaced traditional paper files (The Office of the National Coordinator for Health Information Technology, 2020). The implementation improves decision-making in medical scenarios while boosting collaborative patient care and aiding quality enhancement efforts. Electronic Health Records enable healthcare providers to access patient data centrally and in real time which streamlines care coordination and prevents redundant work while supporting decisions based on full patient histories. Healthcare systems today widely implement EHRs as over 85% of hospitals across the United States and numerous hospitals globally have adopted them (Adler-Milstein et al., 2015; Kowitlawakul et al., 2014).

The transition to EHRs systems can be complex, particularly for nurse practitioners who directly interact with patients' clinical information, such as detailed data capture. EHR systems have been reported to disrupt workflows, heighten mental demands, and, in some cases, reduce interactions with patients due to complicated processes and usability problems (Wynter et al., 2021; Jedwab et al., 2022). Nurses often feel stressed due to conflicting expectations of completing documented tasks within EHRs and providing essential clinical services that are time sensitive. Nurses often feel challenged by EHRs during the initial learning phase since the data entry process, unlike paper records, can be very tedious and time consuming which also leads to exhaustion (Sipanoun et al., 2022; Chan et al., 2014). Inadequate training or insufficient support at the onset of deployment worsens these concerns, causing increased dissatisfaction and diminished enthusiasm toward new systems (Heidarizadeh et al., 2017; McCrorie et al., 2019). Therefore, trained and sustained user support is vital on the hands of system developers to improve reliance on EHR systems and to build the confidence of nurses in utilizing them.

Perception from nurses regarding EHR systems relies on their perceived ease of use, usefulness during patient care, and the training and support given (Jedwab et al., 2022).

Research has shown that nurses satisfaction levels as well as their acceptability of EHRs increases when they are perceived as friendly and beneficial (Harper, 2022; Wynter et al., 2021). On the other hand, obsolete systems and inadequate training may result on resistance which negatively affects job satisfaction and quality of patient care (Doyle et al., 2012). Factors such as supportive leadership, customized training, and ongoing technical assistance are crucial in ensuring successful transitioning from paper documents to electronic systems (Kirkendall, Goldenhar, & Simon, 2013; Meehan, 2017). These issues, coupled with cultural and technological resource constraints, pose additional problems in Palestine. The implementation of an EHR system in 2016 at the mother hospital in Bethlehem, along with Hebron, marked a major advance in documentation and nursing care. This hospital along with three other selected study settings helps in deep understanding of the resources limited the environments regarding the chalanges and facilitators of EHR implementation.

Staff input is paramount at EHR transition periods, as systems can be tailored around user feedback (Lopez, Chin, Azevedo, Kaushik, & Roy, 2021; Sipanoun et al., 2022). Periodic assessments of user feedback have proven to optimize EHR systems by increasing staff satisfaction and improving patient care. In this case, the focus is on how the nursing staff perceive and interact with the new EHR system. This study is guided by the four hospitals: Bethlehem Arab Society for Rehabilitation (BASR), Beit Jala Governmental Hospital, Princess Alia Governmental Hospital, and Al-Ahli Hospital, with the goal of developing strategic recommendations for EHR implementation in hospitals with limited resources and diverse cultures. The stories told by nursing staff could help improve the use of EHRs in Palestine and similar countries.

1.2 Problem Statement

Although EHR systems have notable advantages, most nurses express complicated feelings related to the transition, such as heightened stress, resistance, and difficulty adjusting. New technologies and dramatic changes in workflow patterns create work disruption and compromise the quality of patient care, which is a concern for nurses (Harper, 2022; Meehan, 2017).

These problems get worse in places with few resources, where poor technology and lack of money can make it hard to use and implement EHR systems effectively (Jedwab et al., 2022; Alessa, 2024). Cultural factors and different levels of digital literacy among nursing staff can also affect how well EHR systems are accepted and integrated, especially in places like Palestine where these changes are still happening (Heidarizadeh & Rassouli, 2017; Kleib et al., 2024). There isn't much research on how nurses in Palestine deal with these changes, even though nurse acceptance is important for successful EHR integration. Also, nursing staff may be unhappy and resistant to the transition if there aren't any personalized training programs or ongoing technical support (McCrorie et al., 2019; Mohess & Gomes, 2024). It is important to examine the experiences of nurses in both public and private hospitals in different locations, such as Hebron and Bethlehem, to identify the challenges they face and determine how best to support them in making

smoother transitions, as no studies have been conducted specifically in these regions. This study aims to fill this gap by looking at the specific problems that nurses in Palestine face. The results can help with future EHR implementations in settings with limited resources and a wide range of cultures (Lopez et al., 2021; Sipanoun et al., 2022).

1.3 Study Significance

This study emphasizes the need for thorough training programs, supportive leadership, and ongoing technical help to promote successful digital transformation in healthcare by systematically identifying both the barriers and the enablers in the adoption process. The research results should lead to strategic actions that not only improve the quality and safety of patient care, but also make clinical workflows more efficient and encourage data-driven decision-making, which are both important for improving healthcare delivery in settings with limited resources and changing technological needs (Jedwab et al., 2022; Sipanoun et al., 2022). This study is also important because it looks at how EHR systems are being used in a developing country where these kinds of changes are still happening. The results help hospital managers, policymakers, and IT staff plan smoother transitions that reduce resistance and make the most of the positive effects of EHRs on patient care. This study adds to our understanding of how to implement EHRs in ways that are culturally and contextually appropriate by looking at a variety of hospital settings, including both private and government-run hospitals in Hebron and Bethlehem. The study also adds to the small amount of research that has been done on using EHRs in Palestine, laying the groundwork for future studies in similar settings. Also, this study could change future health informatics policies by finding important success factors and unique barriers to implementation in settings with few resources. By comparing government and private hospitals, we can learn how differences in funding, administrative support, and IT infrastructure can affect the success of EHR implementation. This serves as a model for other developing healthcare systems (Harper, 2022; Meehan, 2017).

1.4 Purpose of the Study

The purpose of this study is to understand the perceptions and experiences of nursing staff regarding the transition to a new EHR system in a non-profit government and private hospitals across Palestine. A structured questionnaire is used to collect their views on the challenges, benefits, and overall impact of the EHR transition on their daily practices. This study also aims to compare the experiences of nursing staff in two governmental versus two private hospitals, specifically examining differences between institutions in Hebron and Bethlehem.

1.5 Study Objectives and Research Questions

The objectives of this study are:

- To assess the perceptions and experiences of nursing in Palestinian hospital regarding the transition to EHR system.

- To identify the reported challenges, benefits, best practices, and lessons learned from the EHR transition by nursing staff.

- To compare the perceptions and experiences of nursing across different hospital settings (2 private and 2 governmental hospitals) in Hebron and Bethlehem regarding the transition to EHR system by demographic variables.

- The study addresses the following research questions:

- What are the perceptions and experiences of nursing in Palestinian hospital regarding the transition to EHR system?
- What are the reported challenges, benefits, best practices, and lessons learned from the EHR transition by nursing staff?
- Is there a significant difference in the perceptions and experiences of nursing staff across Palestinian hospitals regarding the transition to EHR system?

1.6 Research Hypothesis

- There are no statistically significant differences in nursing staff's perceived challenges during the transition to the new EHR system across the four participating hospitals
- There are no statistically significant differences in the perceptions of the nursing staff in Palestinian hospitals regarding the transition to EHR system.
- There is a significant difference in the experiences of the nursing staff in Palestinian hospitals regarding the transition to EHR system by demographic variables.
- Operational and Conceptual Definitions

Electronic Health Record (EHR)

- Conceptual Definition: A digital collection of a patient's health information, designed to improve the continuity, quality, and safety of healthcare delivery (McCrorie et al., 2019).

- Operational Definition: In this study, an EHR refers to the electronic system hospitals use to store, retrieve, and update patient medical records instead of paper charts.

EHR Transition

- Conceptual Definition: The process of shifting healthcare documentation from paper-based records to digital systems, which requires adaptation and workflow change (Jedwab et al., 2022).

- Operational Definition: In this study, EHR transition refers to the implementation process by which selected hospitals are replacing paper records with electronic systems, including staff training and workflow adjustments.

Resource-Limited Setting

- Conceptual Definition: A healthcare environment characterized by insufficient technological infrastructure, finances, or human resources that may affect service delivery (Jedwab et al., 2022).

- Operational Definition: For this study, resource-limited setting refers to hospitals included in the sample that report inadequate digital infrastructure or financial constraints affecting EHR implementation.

Nursing Staff

- Conceptual Definition: Registered and practical nurses responsible for patient care and documentation within healthcare systems.

- Operational Definition: In this study, nursing staff refers to the registered and practical nurses employed in the selected hospitals who are directly involved in patient care and the use of EHR systems.

Dependent and Independent Variables

- **Dependent (Outcome) Variables**

- Challenge Score (EHR-Transition Challenges)

- Perception Score (Overall EHR Perceptions)

- Experience Score (EHR Use Frequency Across Nursing Tasks)

Independent (Predictor) Variables

- **Hospital:** Beit Jala Governmental, Bethlehem Arab Society for Rehabilitation (BASR), Princess Alia Governmental, Red Crescent Specialized Hospital.

Demographics:

- Age group (4 categories)

- Gender (male/female)

- Education level (diploma, bachelor's, higher diploma, master's)

- Years of experience (categorical)

- Hospital type/site (categorical)

Chapter Two

Literature Review

2.1 Introduction

The change from paper records to EHRs has changed healthcare systems all over the world. EHRs make it easier to get to patient information, help care providers work together better, and let people make better, more informed decisions. But for nurses, who are the main users of these systems, it's not always easy to get used to them. Nurses don't always have an easy time getting used to EHRs. They can change how they work, which can affect how well they care for patients. This review looks at the main issues, obstacles, and things that can help make the transition go smoothly. It does this by looking at global trends and the experience of West Bank's Hospital. Adopting EHRs is not just a change in technology; it is also a change in culture and organization that needs to take into account the people involved (Adler-Milstein et al., 2015). The literature also shows that changes to EHRs affect not only workflows but also policy making, clinical independence, and the moral issues surrounding the use of health data. So, to get a full picture of how EHRs are used in nursing, it's important to look at literature from different angles, such as technical, behavioral, and ethical. For this review, studies were retrieved from Google Scholar and PubMed, ensuring the inclusion of peer-reviewed and up-to-date research that reflects both global and regional perspectives on EHR adoption in nursing.

2.2 Background and importance of EHR

EHRs are a big change in how healthcare records and data are kept and managed. EHR systems take the place of paper records and give you centralized, digital, real-time access to patient information. They make healthcare better, safer, and more efficient by making it easier to make decisions, encouraging collaboration between different fields, and making it easier to coordinate care (Xu et al., 2020; The Office of the National Coordinator for Health Information Technology, 2020). More than 85% of hospitals in the US and most hospitals around the world have switched to electronic health records (EHRs) because they have been shown to improve patient outcomes and make operations more efficient (Adler-Milstein et al., 2015). EHRs also help with public health surveillance, quality improvement projects through data analytics, and pandemic preparedness by making it easier to track

and report diseases. This wide range of uses strengthens their position as essential parts of modern healthcare systems. For developing countries, the introduction of EHRs is often part of efforts to strengthen the health system by making care more fair, accessible, and continuous (Alessa, 2024).

2.3 Reasons and benefits of adoption of HER

The main reason for using EHRs is that they could make patient care safer and better. EHR systems make it easy and quick to get to patient histories. This helps healthcare providers avoid doing the same thing twice, cut down on medication errors, and improve the continuity of patient care (Xu et al., 2020). More benefits include more accurate documentation, smoother workflow processes, and better teamwork among healthcare teams. EHRs also help with decision-making based on evidence, cut down on administrative work, and make reporting easier. All of these things lead to happier patients and more efficient organizations (Kleib et al., 2024; Kirkendall, Goldenhar, & Simon, 2013).

From a nursing point of view, EHR systems help standardize care, which makes it easier to follow clinical guidelines and helps with accreditation by keeping track of care activities (McCrorie et al., 2019). Additionally, adding clinical decision support systems (CDSS) to EHRs can help cut down on mistakes in diagnosis and treatment, which makes both the system more efficient and the patients safer (Jedwab et al., 2022).

2.4. Challenges of HER

Even though they have benefits, switching to EHR systems is hard for a lot of reasons, especially for nurses who are the main users. Initial adoption often messes up established workflows, makes things harder to understand, and can make it harder to care for patients directly because of complicated interfaces and time-consuming data entry requirements (Wynter et al., 2021; Jedwab et al., 2022). Heidarizadeh and Rassouli (2017) say that nurses often feel stressed, resistant, and unhappy because of usability problems and not enough training. In addition, settings with limited resources face more problems, such as poor technology infrastructure, lack of money, and cultural resistance, all of which make it harder to successfully implement EHR (Alessa, 2024; Lee & Lin, 2021). Nurses also say that not having personalized onboarding programs, problems with language localization, and not enough clinical end-users being involved in the system design phase are major problems (Lopez et al., 2021).

In places like Palestine, these problems get worse because the power supply is unreliable, broadband access is limited, and healthcare workers have different levels of digital literacy, especially older nurses or those who were trained using paper-based systems (Jedwab et al., 2022; Chan et al., 2014).

Also, worries about more surveillance and productivity tracking through EHR audit trails can make nurses feel less independent and less trust in management, making acceptance even harder (Brunner et al., 2025).

2.5 Factors Influencing the Use of HER

There are a number of things that have a big effect on how quickly and effectively EHR systems are used. Some of the most important factors are how easy it is to use, how useful it is in clinical practice, and the quality and availability of training and support for nursing staff (Jedwab et al., 2022). For successful adoption, it is important to have support from leaders, good change management strategies, and system improvements that are made over time based on user feedback (Harper, 2022; Doyle et al., 2012). Also, the culture of the organization, how well nurses know how to use technology, and having the right technology in place are all important factors that affect how nurses feel and what they think during the EHR transition. Making these factors fit with the culture and structure of the organization greatly increases the chances of successful EHR integration (Mohess & Gomes, 2024; Lopez et al., 2021). Also, having "clinical champions," respected nursing staff who support the use of EHRs, can help get more people involved and create a positive learning environment during the adoption phase (Harper, 2022).

Another important factor is making sure that the features of the EHR work well with the way things are already done in the clinic. When EHR systems are designed to reflect the tasks that nurses do in real life instead of making them change their routines, more people use them and are happier with them (McCrorie et al., 2019). On the other hand, when departments or facilities can't work together, it can lead to broken workflows and wasted time, which makes EHRs less useful and frustrates users (Patel et al., 2024). National health policies and regulatory requirements also have a big impact on how ready institutions are and how they allocate resources for EHR implementation (Adler-Milstein et al., 2015).

2.6 Nursing Staff Experiences with EHR Transition

2.7.Perceived Benefits and Utility

Most nurses agree that electronic health records (EHRs) can make work easier and make the clinic run more smoothly. For instance, a study by Kleib et al. (2024) in Canada found that newly qualified nurses liked how EHRs keep all of a patient's information in one place. This sped up the process of making decisions and made it easier for care teams to talk to each other, especially in places where people from different fields have to work together. EHRs have also been shown to lower the number of medication mistakes and make patients safer, which are very important results in healthcare settings (Xu et al., 2020).

But how useful EHRs seem to be often depends on how easy they are to use. Jedwab et al. (2022) found that nurses like the idea of electronic health records (EHRs), but problems with usability, such as difficult navigation and having to enter the same data over and over, can make the systems feel more like a burden than a benefit. This is especially true in places where nurses already have too many patients and not enough resources (Heidarizadeh & Rassouli, 2017).

When nurses get personalised dashboards and clinical reminders through EHRs, they say their workflow is more efficient and their mental load is lower, especially in high-acuity

units like emergency and ICU departments (Wynter et al., 2021). As shown in studies of EHR implementations in transitional care settings (McCrorie et al., 2019), being able to access patient information from outside of work hours or during handovers also improves continuity of care and professional autonomy.

2.8 Barriers During EHR Implementation

Implementing EHR systems can be a tough process, especially in healthcare settings with limited resources. At hospitals in Bethlehem and Hebon, nurses faced major challenges early on, including weak infrastructure and unreliable internet access, which slowed down the transition. This isn't unique to Bethlehem, West Bank. Patel et al. (2024) found that infrastructure problems are also a big hurdle in rural healthcare systems. In developing countries, these challenges are often exacerbated by a lack of financial resources and technical expertise, making the transition to EHRs even more difficult (Lee & Lin, 2021).

Another significant issue is how time-intensive EHR documentation can be. Many nurses say it takes longer to input data into EHRs compared to paper-based records, which cuts into the time they can spend with patients. Chan et al. (2014) pointed out that this is especially hard on nurses in understaffed hospitals, where heavy workloads already increase stress levels. A lack of proper training and technical support only adds to the frustration. Studies like Alessa et al. (2024) show that inadequate training and inconsistent technical help are common pain points during EHR rollouts. At hospitals in the West Bank, the absence of ongoing training programs made it even harder for nurses to fully adapt to the system. It's easy to see why many nurses find it hard to implement EHR when they have to deal with these problems, such as bad infrastructure, long processes, and not enough help. Furthermore, the fact that different EHR systems don't work together can make the transition even harder, as nurses may have to learn how to use more than one system depending on where they work (Adler-Milstein et al., 2015). Language barriers in user interfaces and a lack of clinical terms that are relevant to different cultures have also been reported as big problems with usability in multilingual and multicultural places like Palestine (Sipanoun et al., 2022).

2.9 Psychological and Professional Impact

Switching to electronic health records (EHRs) doesn't just change how things are done; it also has an effect on nurses' mental and professional health. It can be hard to get used to these systems, especially at first, because they require more mental and emotional effort. Many nurses have a hard time learning new things at first, which makes their mental workload higher. Lopez et al. (2021) found that this time of adjustment can make people tired, especially if workflows aren't changed to make the switch to digital documentation easier. This mental overload can make nurses less happy with their jobs and cause them to leave more quickly (Brunner et al., 2025).

There is still more stress to come. The difficulties of using EHRs can make people more stressed and, in some cases, cause them to burn out at work. Many nurses at hospitals in Hebron and Bethlehem said they felt overwhelmed during the transition, which is similar to what other studies have found. Harper (2022) looked into this connection and found that unresolved EHR-related problems can make people more emotionally drained and unhappy

at work. This brings up an important point: if nurses don't get the right support, the mental stress of using EHRs can hurt their health and their ability to do their jobs well.

Also, nursing staff have reported more absences and musculoskeletal complaints because of long periods of time spent on screens and repetitive data entry (Jedwab et al., 2022). Some nurses say they feel like data-entry clerks instead of nurses, which can affect their professional identity (McCrorie et al., 2019). These results show how important it is to have emotional and mental support systems, like mentorship, resilience training, and debriefing sessions, along with technical training during big changes to a system (Brunner et al., 2025).

2.10. Facilitators of Successful EHR Adoption

2.12. Comprehensive Training and Education

Training that works is one of the most important parts of getting people to use EHRs. Jedwab et al. (2022) said that training programs need to fit with the way things are done in each clinical setting in order to work. Nurses find it much easier to adjust when the training is useful and relevant. Mohess and Gomes (2024) showed that peer-led workshops and real-time support on the spot are two strategies that greatly lower resistance to change and make nurses feel more confident about using the new system. These methods make the learning environment more supportive and interesting. Also, nurses need to keep taking training and refresher courses so they can keep using EHR systems correctly as they change over time (McCrorie et al., 2019). Simulation-based training environments have also been shown to help people remember what they learn and feel less anxious about using EHRs, especially for people who are new to them (Kleib et al., 2024). According to Lopez et al. (2021), hospitals that teach new staff or clinical rotations how to use EHRs report that they adapt more quickly and make fewer mistakes when filling out paperwork.

2.13. Leadership and Change Management

Leadership is crucial in influencing nurses' perceptions regarding the utilization of EHRs. Doyle et al. (2012) and Harper (2022) emphasized the significance of empathy and clear communication for leaders to alleviate concerns and foster a culture of collaboration. During the transition period, leaders who engage with nurses and address their concerns can significantly reduce resistance and enhance overall adoption rates (Harper, 2022).

Prominent leadership during implementation stages, including unit rounds, open forums, or feedback sessions, is associated with increased morale and trust in the system transition process (Mohess & Gomes, 2024). Empowered nurse managers serve as crucial intermediaries, transforming clinical challenges into actionable IT solutions while ensuring staff engagement and emotional support (Doyle et al., 2012).

2.14. Iterative System Improvements

Regular updates based on user feedback are critical for maintaining EHR relevance. Studies like Lopez et al. (2021) and McCrorie et al. (2019) demonstrate that iterative improvements enhance system usability and align functionalities with real-world needs, thereby increasing acceptance. User-centered design models, which include structured feedback loops and usability testing sessions, have emerged as best practices in modern

EHR refinement strategies (Jedwab et al., 2022). These models empower nurses to co-create solutions, strengthening their ownership of the system and fostering a culture of continuous improvement. In addition, integrating analytics dashboards that visualize nurses' contributions to care outcomes (e.g., infection prevention, timely documentation) can further enhance motivation and accountability (Xu et al., 2020).

2.15. Impact on Nursing Workflows and Patient Care

2.16. Enhancing Coordination and Communication

When successfully implemented, EHRs significantly enhance coordination among healthcare teams. At hospitals in the West Bank, nurses reported improved communication with physicians and other departments, leading to better care continuity. Patel et al. (2024) similarly found that EHRs support integrated care delivery in multidisciplinary environments. EHRs allow real-time information sharing, which reduces delays in decision-making and minimizes the need for redundant documentation or verbal updates (Lopez et al., 2021). Integrated messaging functions within EHR platforms also reduce reliance on phone calls or paper memos, streamlining communication and improving response times to patient needs (Wynter et al., 2021). This capability is especially important in fast-paced or high-acuity environments, where every minute matters.

2.17. Quality of Patient Care

The initial phase of the transition may frequently disrupt workflows; however, ultimately, it results in a reduction of errors and more comprehensive patient records. Kirkendall et al. (2013) and Xu et al. (2020) are two studies demonstrating how electronic health records (EHRs) facilitate evidence-based practices and enhance decision-making accuracy. Structured templates and clinical decision support tools enhance the consistency of care processes, thereby reducing variability and facilitating adherence to clinical guidelines (Jedwab et al., 2022).

EHRs facilitate quality monitoring through integrated audit tools and data tracking systems. This enables hospitals to examine performance metrics such as infection rates, readmission rates, and pain management efficacy (Harper, 2022). From a nursing perspective, EHRs enhance care consistency, particularly during shift transitions, by offering clear documentation and reducing dependence on memory or informal communication (Chan et al., 2014).

2.18. Challenges in Developing Contexts

In developing regions like Palestine, the road to adopting EHR systems is especially challenging. Nurses must contend with limited infrastructure, cultural resistance to new technologies, and insufficient training in technical skills. Lee and Lin (2021) stressed the importance of addressing these challenges with customized solutions. These might include targeted training programs, ongoing technical support, and strategies to engage stakeholders and reduce resistance. Tailored approaches are essential for making EHR adoption successful in resource-constrained environments. In many low- and middle-income countries (LMICs), internet instability, electricity outages, and outdated hardware severely restrict the reliability and speed of EHR systems (Alessa, 2024).

Additionally, the lack of policy frameworks for digital health governance can result in fragmented implementations that do not scale effectively or integrate across institutions (Adler-Milstein et al., 2015). Language barriers, especially when EHR interfaces are available only in English or other non-native languages, present a further challenge for many nurses in LMICs, reducing system usability and accuracy (Sipanoun et al., 2022). Sociocultural resistance, particularly among older or traditionally trained staff, can also hinder adoption, especially in environments where technology is perceived as replacing clinical judgment or interpersonal interaction (Heidarizadeh & Rassouli, 2017). To overcome these issues, international partnerships and donor-supported capacity-building programs have been proposed as critical components of sustainable EHR implementation in such settings (Lee & Lin, 2021).

2.19. Ethical and Privacy Concerns in EHR Adoption

EHRs have significantly advanced healthcare delivery, yet they have also engendered numerous ethical and privacy concerns. These concerns are particularly significant for nurses, as they predominantly utilize EHR systems and are responsible for inputting and managing sensitive patient data. This section addresses the ethical dilemmas and privacy issues associated with the utilization of Electronic Health Records (EHRs), emphasizing data security, patient confidentiality, and the ethical challenges faced by nurses in reconciling administrative duties with patient care.

2.20. Data Security and Patient Confidentiality

A critical ethical concern regarding the utilization of EHRs is ensuring the security of patient data. Electronic Health Records contain extensive private information, including medical histories, treatment plans, and personal identifiers. This renders them a prime target for cyberattacks and data breaches. Nurses, being the primary users of EHR systems, frequently express concerns regarding the potential for unauthorized access to patient information, which may undermine trust in these systems (Heidarizadeh & Rassouli, 2017).

Data breaches can have detrimental effects on both patients and healthcare providers. A breach of a patient's privacy may result in identity theft, financial fraud, and potential harm to the patient's reputation. In healthcare, where trust is paramount, such breaches can diminish patients' confidence in the system. Nurses play a crucial role in safeguarding patient information; however, they frequently encounter challenges, particularly when electronic health record systems lack robust security measures or when they have not received adequate training in data protection (Adler-Milstein et al., 2015).

The risks associated with digital health records are significantly elevated in Palestine and similar regions, where cybersecurity regulations and enforcement may be inadequate (Lee & Lin, 2021). Portable devices such as tablets and mobile terminals offer convenience; however, they increase susceptibility to security vulnerabilities, particularly in the absence of robust authentication measures (Mohess & Gomes, 2024).

2.21.Ethical Dilemmas in Documentation

The transition to electronic health records has raised ethical concerns regarding record maintenance. Nurses frequently must input extensive information into EHR systems, which can be time-consuming and impede direct patient care. This complicates the equilibrium between the necessity for precise documentation and the ethical obligation to provide personalized care to each patient (Chan et al., 2014).

A prevalent ethical dilemma is the necessity of monitoring time while ensuring the accuracy of documents. When hospitals are understaffed, nurses may prioritize documentation over patient interaction, leading to feelings of inadequacy. A nurse may have to decide between attending to an agitated patient and completing mandatory electronic health record entries. Both represent significant yet frequently opposing priorities (Brunner et al., 2025). This issue is exacerbated in locations where EHR systems are cumbersome and time-consuming for data entry and navigation.

Another ethical concern is the potential inaccuracies in electronic health records. Electronic Health Records (EHRs) are designed to reduce errors; however, they can exacerbate issues, particularly when individuals engage in copying and pasting or input data incorrectly. These errors can jeopardize patient safety and the quality of care. When nurses manage numerous patients and extensive paperwork, ensuring the accuracy of the information they input can be challenging (Kirkendall et al., 2013).

2.22.Patient Consent and Autonomy

The utilization of EHRs raises concerns regarding patient consent and autonomy. Patients possess the right to determine who may access their medical records; however, the digital nature of electronic health records complicates the enforcement of this right. Patients may be unaware of how their information is utilized or disseminated, particularly when accessed by multiple healthcare providers or systems (Meehan, 2017).

Nurses frequently confront ethical dilemmas as they must elucidate EHR systems to patients and obtain their consent for data sharing. This can be particularly challenging when patients possess limited health knowledge or lack familiarity with digital technologies. Nurses must reconcile the necessity for comprehensive documentation with the ethical obligation to honor patients' autonomy and ensure they are fully informed about the utilization of their information (Jedwab et al., 2022).

2.23.Strategies to Address Ethical and Privacy Concerns

Healthcare organizations should develop different strategies prioritizing data security, patient autonomy, and ethical documentation practices in order to address privacy and ethical concerns. The plans must include:

• Robust Data Security Protocols: Healthcare organizations must invest in sophisticated security technologies such as encryption and multi-factor authentication to safeguard patient data. Regular security audits and staff training on data protection are also essential (Heidarizadeh & Rassouli, 2017).

Nurses must receive ethical training on the utilization of EHRs, including the equilibrium between patient care and documentation, as well as obtaining informed consent prior to data sharing. This training should address the ethical dilemmas that emerging technologies, such as AI, present in healthcare (Jedwab et al., 2022).

• Educating Patients: Patients must understand the utilization of their data within EHR systems and be capable of providing informed consent. This empowers patients to take control of their medical information and fosters trust (Meehan, 2017). Incorporating patient advocacy groups into the planning process for EHR implementation can enhance transparency and promote rights-based methodologies in the evolution of digital health.

2.2.4.Global Comparisons

2.25.Developed vs. Developing Nations

In developed countries, it is much easier to switch to EHRs than in developing ones. In countries like Canada, where technology is advanced and the infrastructure is strong, the process is easier (Kleib et al., 2024). But in developing countries like Palestine, the process is harder because of problems like a lack of resources, bad technology, and cultural resistance. These areas need cheap, useful answers that are made just for them.

For instance, the U.S. and many EU countries have national interoperability frameworks and government-backed incentives that make it easier for EHRs to be used by a lot of people (Adler-Milstein et al., 2015). On the other hand, Palestine and other countries have broken systems and depend on pilot projects funded by donors, which may not last long (Lee & Lin, 2021).

Also, in developed countries, there are already strong legal frameworks for data governance and cyber laws, which makes users feel more secure about their data. Such rules are often missing in developing contexts, which makes implementation more risky from both an ethical and operational point of view.

Still, developing countries often come up with new ways to adapt, like mobile-based health records and digital documentation led by community health workers. This shows that tailored, context-sensitive solutions can still work.

2.26.Case Studies from Similar Settings

Countries facing analogous challenges can impart significant insights. Alessa et al. (2024) discovered that healthcare professionals in Saudi Arabia successfully adapted to electronic health records (EHRs) through effective leadership and tailored training. Ball et al. (2024) demonstrated that personalized training programs in Haiti enhanced individuals' confidence and mitigated their resistance.

In Rwanda, the integration of EHR systems with national health insurance databases enhanced administrative efficiency and reduced redundant documentation. Researchers Patel et al. (2024) discovered that in rural India, low-cost, open-source electronic health record platforms featuring multilingual interfaces were preferred over imported commercial systems. These examples illustrate the significance of aligning EHR strategies

with local health requirements, languages, and cultural norms. This is particularly crucial for Palestinian healthcare organizations aiming to develop a sustainable digital health infrastructure.

2.27.The Role of Nurses in Driving EHR Innovation

The transition to EHRs has transformed healthcare delivery and positioned nurses as pivotal contributors to the enhancement of these systems. Nurses are the primary users of EHRs, placing them in a distinctive position to influence the design, implementation, and enhancement of these systems. Their frontline experience provides important insights into the practical needs and challenges associated with EHR use, pointing out their significance for the successful implementation and continuous enhancement of EHR systems. This section examines the role of nurses in advancing EHR innovation through their contributions to system design, workflow optimization, and the advocacy of user-centered methodologies.

2.28. Nurses as Key Stakeholders in EHR Design and Implementation

Nurses are very important when it comes to designing and putting into use EHR systems. They have a deep understanding of the workflows and processes that EHRs must support because they work with patients and other healthcare providers every day. Adler-Milstein et al. (2015) stress how important it is to include end-users, especially nurses, in the early stages of EHR design to make sure the system meets clinical needs. Nurses can help find potential usability problems, like hard-to-use navigation or having to enter the same data multiple times, that can slow down work and make users angry (Jedwab et al., 2022).

Also, having nurses involved in the implementation process can help people who are against change. Studies have found that nurses are more likely to accept and promote the use of EHR systems among their peers when they are actively involved in their rollout (Harper, 2022). For instance, nurses at Beit Jala Hospital who helped test the EHR and gave feedback during its implementation said they were more confident and happy with the system (Ministry of Health, 2019). Using nurse-led focus groups and usability walk-throughs during the vendor selection or system development phases has been shown to make the interface more useful and relevant to clinical practice (McCrorie et al., 2019). Also, nurses who are on digital health governance boards can help close the gap between IT policy and clinical practice in a strategic way.

2.29. Nurses as Advocates for Workflow Optimization

Nurses play a crucial role in enhancing EHRs by identifying methods to optimize workflows. Nurses frequently identify issues with EHR systems, such as the duration required to complete documentation and the difficulty for care teams to communicate effectively. Nurses can enhance outcomes for both patients and the clinic by disseminating these concepts.

Lopez et al. (2021) discovered that nurses providing feedback on the usability of the EHR significantly contributed to enhancing the system's functionality. This feedback resulted in repeated modifications, such as the incorporation of customizable templates and automated alerts, which facilitated care management and reduced time spent on documentation.

Similarly, Patel et al. (2024) demonstrated that nurses' proposals for incorporating medication reconciliation tools into EHR systems significantly reduced medication errors and enhanced patient safety.

In certain locations, nurses have collaborated directly with software developers to produce documentation templates that accurately represent the immediate needs of patients. This reduces redundancy and cognitive strain (Jedwab et al., 2022). Nurses demonstrate the utilization of digital tools to enhance clinical priorities by spearheading quality improvement initiatives that leverage EHR analytics, such as monitoring fall risk or managing wound care.

2.30. Nurses as Champions of User-Centered Approaches

Nurses are at the forefront of advocating for user-centered methodologies in the development of electronic health records (EHRs). A user-centric methodology prioritizes the requirements and desires of end-users. This ensures that EHR systems are user-friendly, efficient, and conducive to clinical workflows. Nurses' advocacy for user-centered design has significantly contributed to the adoption of efficient and user-friendly EHR systems.

Jedwab et al. (2022) discovered that nurses participating in user-centered design workshops provided valuable feedback regarding the system's usability. This resulted in the development of more intuitive interfaces and streamlined workflows. These workshops instilled a sense of ownership in nurses regarding the EHR systems, thereby motivating them to continuously enhance these systems. Similarly, Mohess and Gomes (2024) demonstrated that peer-led training programs informed by nurses' feedback significantly enhanced user satisfaction and reduced resistance to utilizing EHRs.

The commitment of nurses to prioritize the user extends beyond system design to encompass training and support. Nurses ensure their colleagues are proficient in EHR systems by advocating for extensive training programs tailored to the requirements of nursing personnel. This not only increases EHR utilization among individuals but also enhances the quality of care for patients.

2.31Summary

Employing EHRs significantly changes how healthcare is delivered, particularly for nurses. EHRs improve patient safety, enhance care coordination, and support data-driven decision-making, but their implementation also presents technical, organizational, ethical, and psychological challenges. For nurses, this transition is not just a technological shift but a major change in daily practice and workplace culture.

Successful adoption requires user-friendly systems, proper training, leadership support, and active involvement of nurses in the process. Ethical concerns around privacy, consent, and data security must also be addressed to build trust and ensure long-term acceptance.

In summary, integrating EHRs into nursing practice should be seen as a collaborative, user-centered process that balances technology with human, ethical, and organizational factors to enhance care quality, safety, and continuity.

Chapter Three

Methodology

This chapter outlines the research design, setting, sampling strategy, data collection methods, data analysis procedures, ethical considerations, and limitations of the study. The methodology was designed to provide a rigorous framework for assessing the perceptions and experiences of nursing staff during the transition to a new Electronic Health Record (EHR) system in selected hospitals in the West Bank.

3.1.Study Design

A quantitative cross-sectional design was employed in this study. This approach was selected because it enables the collection of data at a single point in time, allowing for the assessment of current perceptions and experiences among nursing staff regarding the EHR transition. A structured questionnaire was used as the primary data collection instrument, ensuring consistency in responses across the targeted sample.

3.2.Study Setting and Population

The study was conducted in four hospitals located in the West Bank. The settings included:

- **Governmental Hospitals:**

Princess Alia Governmental Hospital (Hebron): a government-run facility located in Hebron. As a key public health institution, it provides a wide range of medical services, including emergency care, internal medicine, surgical services, and specialized care (Maan News Agency, 2018).

Beit Jala Hospital (Bethlehem): The hospital is integral to the public health system in Bethlehem and is recognized for its service delivery in a resource-limited setting (Beit Jala Municipality, 2023).

- **Non-Governmental Organization (NGO) Hospitals:**

Red Crescent Specialized Hospital (Hebron): operated by a non-governmental organization. This facility focuses on providing specialized medical services to meet the needs of diverse patient populations (Palestine Red Crescent Society, 2024).

Bethlehem Arab Society for Rehabilitation (Bethlehem): As a non-governmental, non-profit organization, it strives to promote an inclusive society in which medical and rehabilitation services are accessible to everyone. It employs a rights-based approach to service delivery, supporting community-based inclusive development (BASR, 2024).

The target population comprised licensed nurses working at these hospitals during the data collection period. The hospitals were chosen to represent both governmental and non-governmental institutions, thereby capturing a diverse range of experiences and organizational contexts.

3.3.Sampling Method and Sample Size

A convenience sampling method was used to recruit participants. The sample consisted of 304 nurses, chosen based on their availability and willingness to participate during the study period. The minimum required sample size was calculated using a standard formula for cross-sectional studies with a 95% confidence level and a 5% margin of error. Based on the estimated population of nurses in the targeted hospitals, the calculated minimum was 278 participants.

Inclusion Criteria:

- Licensed nurses working at one of the targeted hospitals during the data collection period.

Exclusion Criteria:

- Nurses who refused to participate.
- Nurses with less than six months of work experience, as insufficient exposure to the EHR system may not yield reliable insights regarding its impact on their practice.

3.4.Instrumentation

Data were collected using a structured questionnaire divided into three distinct parts:

- **Socio-Demographic Information:** This section included questions about age, gender, hospital affiliation, marital status, years of experience, and education.
- **Perceptions on EHR Transition:** A Likert scale survey was used to measure nurses' views on transitioning to the new EHR system. This section assessed attitudes toward the usability, clarity, and overall benefits of the EHR.
- **Challenges, Benefits, and Best Practices:** Another Likert scale survey captured detailed information regarding the challenges encountered, the perceived benefits, and the best practices or lessons learned from the EHR transition.

The questionnaire was pre-tested to ensure clarity, reliability, and validity of the items, consistent with best practices in survey design.

Before the main study, a pilot study was conducted with 15 nurses from the target population who were not included in the final sample. The purpose of the pilot study was

to assess the clarity, comprehensibility, and reliability of the questionnaire. Feedback from participants led to minor adjustments in wording to enhance clarity.

The internal consistency reliability of the instrument was evaluated using Cronbach's alpha coefficient. The results demonstrated high reliability, with Cronbach's alpha values as follows:

- Perceptions on EHR Transition: 0.87
- Challenges, Benefits, and Best Practices: 0.89
- Overall questionnaire: 0.91

These results exceeded the commonly accepted threshold of 0.70, indicating strong internal consistency of the survey instrument.

3.5.Data Collection Procedures

Data collection was carried out by distributing the questionnaires to the selected hospitals. Participants were provided with both oral and written explanations regarding the study objectives, their rights as participants, and the voluntary nature of their participation. Informed consent was obtained prior to the administration of the questionnaire.

To maintain anonymity, no personal identifiers were collected; instead, a unique code number was assigned to each questionnaire. Data collection was conducted in a manner that minimized disruption to daily nursing activities, and respondents were given sufficient time (approximately 15–20 minutes) to complete the survey.

3.6.Data Analysis

After collection, the completed questionnaires were reviewed for accuracy, consistency, and completeness. The quantitative data were then:

- **Edited and Coded:** Each questionnaire was assigned a code corresponding to the participant's responses.

- **Entered in Excel:** The coded data were initially input into Microsoft Excel 2021 for preliminary cleaning and organization.

- **Transferred to Stata (Version 15.1):** Final data analysis was performed using Stata 15.1. Descriptive statistics (e.g., frequencies, percentages, means, and standard deviations) were computed to summarize the data. Inferential statistics were also applied to test the research hypotheses and to examine the differences in perceptions and experiences across different demographic and hospital categories.

3.7.Ethical Considerations

Ethical approval for the study was obtained from the Research Ethics Subcommittee of the Faculty of Health Professions at Quds University (Appendix II), which issued a formal letter of approval prior to data collection. Key ethical considerations included:

- **Informed Consent:** Participants were fully informed about the study objectives, procedures, and their rights (including the right to decline participation) before consenting both orally and in writing.

- **Confidentiality and Anonymity:** No personal identifiers were recorded. A unique code was used to link questionnaires to data entries, ensuring that participants' identities remained confidential.

- **Data Security:** All collected data were stored securely, and access was restricted to the research team.

- **Voluntary Participation:** Participation was entirely voluntary, and participants were informed that they could withdraw from the study at any time without any negative consequences.

Chapter Four

Findings

5.1.Introduction

This chapter presents the findings of a quantitative study examining the perceptions and attitudes of nursing personnel at four hospitals in the West Bank, encompassing both governmental and non-governmental institutions, regarding the transition to a new electronic health record system. The results comprise two primary components: descriptive statistics and inferential statistics. The descriptive analysis provides a comprehensive overview of the participants' demographic data, subsequently detailing their perceptions of EHRs, the challenges they encounter, and the advantages they report deriving from them. The inferential section examines the relationships and distinctions between demographic variables and responses to EHR implementation. The objective is to evaluate the hypotheses and address the research questions of the study.

5.2.Descriptive Statistics

5.3.Demographic Profile

Table 1.4 presents the socio-demographic profile of the 304 nurses who participated in the survey.

Table 1.4 Nurses' Socio-demographic data (n = 304)

		Frequency	Percentage (%)
Age	30 years and less	98	32.2
	31 – 40 years	97	31.9
	41 – 50 years	59	19.4
	51 years and more	50	16.5
Gender	Female	135	44.4
	Male	169	55.6
Hospital	Beit Jala Hospital	73	24.0
	Bethlehem Arab Society for Rehabilitation	76	25.0
	Princess Alia Governmental Hospital	75	24.7
	Red Crescent Specialized Hospital	80	26.3
Maritas Status	Divorced	1	0.3
	Married	215	70.7
	Single	86	28.3
	Widowed	2	0.7
Years of experience	1 – 5 years	137	45.1
	6 – 10 years	67	22.0
	6 months – 1 year	67	22.0
	More than 10 years	33	10.9
Education	Bachelor's degree	138	45.4
	Diploma	82	27.0
	Higher diploma	55	18.1
	Master's degree	29	9.5

Table 1 shows that most of the people who took part were fairly young. 32.2% were 30 years old or younger, and 31.9% were between 31 and 40 years old. Nurses between the ages of 41 and 50 made up 19.4% of the total, while nurses over the age of 51 made up 16.5%. This young skew (64.1% under 40) suggests that the workforce is probably more comfortable with digital technologies, which could make it easier for them to learn the new EHR system more quickly. Younger nurses are often better at using technology and adapting to new situations (Chan et al., 2014; Kleib et al., 2024). This could mean that they have a better view of how easy the system is to use and need less training than older nurses, who may need extra help to get over their initial technological problems.

There were a little more male nurses (55.6%) than female nurses (44.4%) (Figure 1). Some studies show that men may be more confident in using new digital tools, while women often value features that make it easy to work with others (Jedwab, Manias, & Hutchinson, 2022; Harper, 2022).

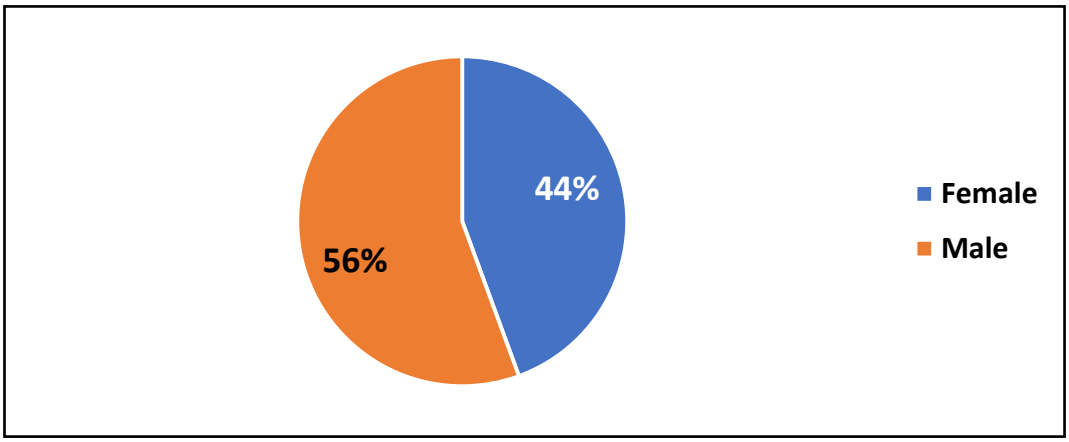

Figure 1.4 Nurses' Gender Distribution

Participants were evenly distributed across the four study sites; Beit Jala Hospital (24.0%), Bethlehem Arab Society for Rehabilitation (25.0%), Princess Alia Governmental Hospital (24.7%), and Red Crescent Specialized Hospital (26.3%) (Figure 2). This balance ensures that findings reflect both governmental and NGO contexts in Hebron and Bethlehem.

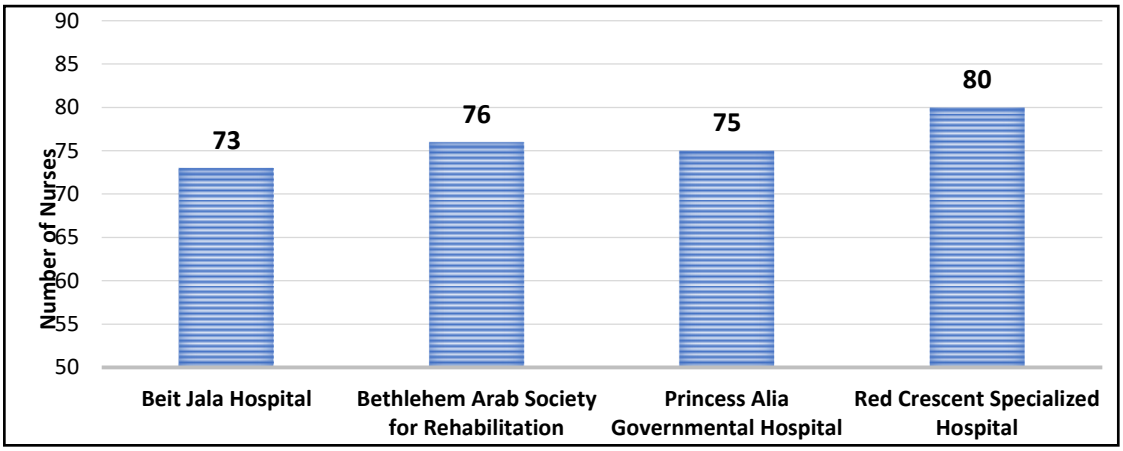

Figure 2.4 Hospital Settings Distribution

Most nurses were married (70.7%), with singles comprising 28.3%, and very few divorced (0.3%) or widowed (0.7%) (Figure 3). Married nurses may face additional time pressures balancing family responsibilities with the demands of learning a new EHR, potentially increasing stress or reducing time available for training (Brunner et al., 2025).

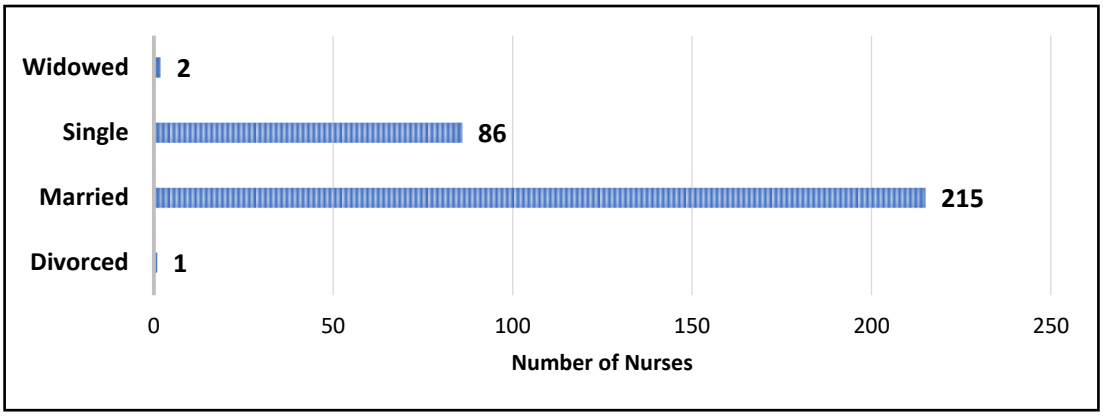

Figure 3.4 Nurses' Marital Status

Nearly half of the sample (45.1%) had 1–5 years of nursing experience, 22.0% had between six months and one year, another 22.0% had 6–10 years, and only 10.9% exceeded ten years (Table 1). Thus, 67.1% of nurses had five years or less of experience.

Figure 4 shows that 45.4% of people had a bachelor's degree, 27% had a diploma, 18.1% had a higher diploma, and 9.5% had a master's degree. People with more education are often more comfortable using complicated information systems and critically evaluating how well EHRs work (Harper, 2022).

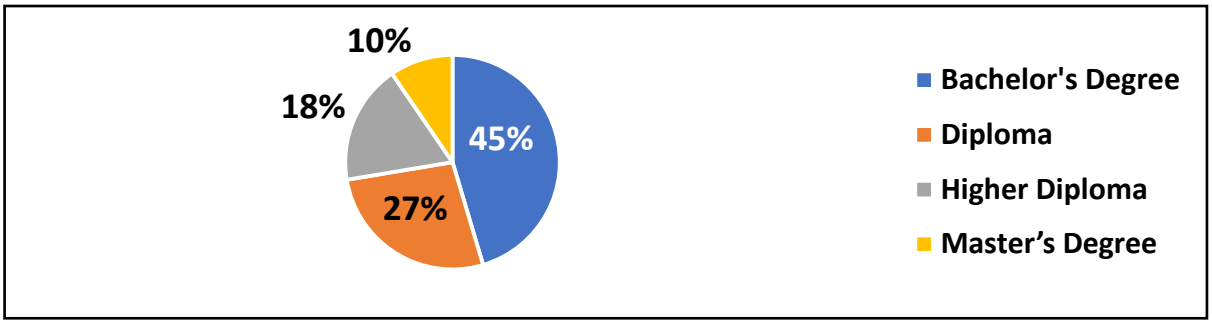

Figure 4.4 Nurses' Education Distribution

5.6.Training and Support

Table 2 presents the training and support for EHR of the 304 nurses who participated in the survey.

Table 2.4 Nurses' EHR Training and Support

Item	Result
Years using EHR	Mean: 4.5 SD: 3.1 Median: 4.0 Min–Max: 1-15 Mode: 1.0
Formal Informatics Training	Yes: 128 (42.1%) No: 176 (57.9%)
Quality of Training for New EHR System ***(N=128)***	Excellent: 19 (14.8%) Good: 26 (20.3%) Fair: 27 (21.1%) Poor: 31 (24.3%) Very Poor: 25 (19.5%)
Type of Training Received ***(N=128)***	In-person: 71 (55.5%) Online: 17 (13.3%) Self-paced: 40 (31.2%)
Refresher Training ***(N=128)***	Only when updates occur: 108 (84.4%) Annually: 14 (10.9%) Every 6 months: 6 (4.7%)

Table 1 shows that the 304 nurses in this survey report a mean of 4.5 years' experience with the EHR, but the large standard deviation (SD) = 3.1 and the modal value of one year show a mixed workforce of seasoned and very recent users.

A little less than half of the sample (128, 42 %) ever got formal informatics training. That leaves 176 nurses (58 %) who were essentially left to figure it out on their own or lean on peers (figure 6).

Among the 128 nurses who did receive training, ratings show negativity: 43.8 % rate it Poor or Very Poor, while only 35.1 % call it Good or Excellent. This distribution suggests that even when organizations invest in formal sessions, the curricula may be overly generic, insufficiently hands-on, or poorly aligned with nurses' real-world tasks.

A majority (55.5 %) experienced classroom or in-person instruction, with online modules (13.3 %) and self-paced materials (31.2 %) filling the remainder (figure 6).

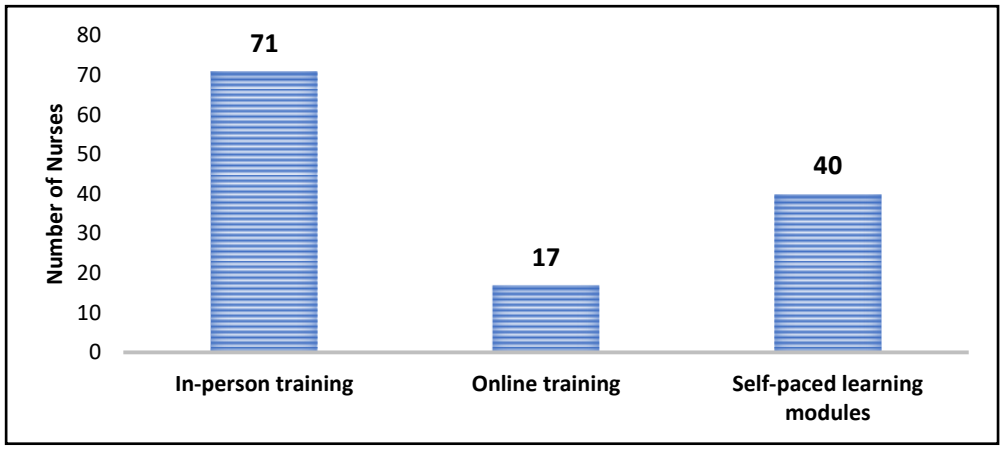

Figure 5.4 EHR Delivery format

Regarding refresher training (table 2), they were asked how often they get refreshers, a striking 84 % said "only when updates occur." Scheduled tune-ups, annual (11 %) or every six months (5 %), are rare.

5.7.Nurses' Perception of EHR

Tables 3 and 4 present the findings on nurses' perceptions of the EHR system, focusing on training, usability, benefits, and overall satisfaction.

Table 3.4 Nurses' Perception of the EHR System

Item	Yes	No	I don't know
System easy to use	230 (75.7%)	74 (24.3%)	0 (0.0%)
Information in EHR is clear	210 (69.1%)	94 (30.9%)	0 (0.0%)
EHR beneficial for patients	223 (73.4%)	81 (26.6%)	0 (0.0%)
EHR aids accurate diagnosis	203 (66.8%)	64 (21.1%)	37 (12.2%)
Overall satisfied with EHR	193 (63.5%)	97 (31.9%)	14 (4.6%)
Want to continue using EHR	235 (77.3%)	55 (18.1%)	14 (4.6%)

Table 4.4 Nurses' Perception of the EHR Use

Item	Always / Almost always	Sometimes	Never / Almost never
Assessment	276 (90.8%)	28 (9.2%)	0 (0.0%)
Searching for information	271 (89.1%)	32 (10.5%)	1 (0.3%)
Care planning	271 (89.1%)	32 (10.5%)	1 (0.3%)
Clinical decision-making	198 (65.1%)	14 (4.6%)	92 (30.3%)
Communication	263 (86.5%)	28 (9.2%)	13 (4.3%)
Documentation of medication administration	251 (82.6%)	26 (8.6%)	27 (8.9%)
Documentation of assessments through standardized forms	270 (88.8%)	31 (10.2%)	3 (1.0%)
Documentation of narrative notes	193 (63.5%)	14 (4.6%)	97 (31.9%)
Administrative Tasks	203 (66.8%)	18 (5.9%)	83 (27.3%)

As shown in Table 3, three-quarters of nurses judged the EHR easy to use (75.7%) and said the information it displays is clear (69.1%). An even larger share felt the system is beneficial for their patients (73.4%). Two-thirds (66.8%) believed the EHR improves diagnostic accuracy, although one in eight (12.2%) were unsure, suggesting that decision-support tools may not yet be fully trusted or understood. Overall satisfaction sat at 63.5%, while intent to keep using the system was higher (77.3%).

The findings from Table 4 highlight how frequently nurses use the EHR system for various clinical tasks. The data show that EHRs are heavily integrated into routine nursing workflows, with assessment (90.8%), searching for information (89.1%), and care planning (89.1%) being the most common tasks performed almost always using the system.

However, the way nurses made clinical decisions was very different. 65.1% of nurses said they often used EHRs to help them make decisions, while 30.3% said they never or almost never did. This contrast may indicate that some nurses find EHRs insufficient for complex clinical judgments, possibly due to a lack of intuitive decision-support tools or concerns about data reliability.

For communication (86.5%) and documentation tasks (82.6–88.8%), EHRs were the primary method for most nurses. However, a small but significant percentage (4.3–8.9%) rarely used the system for these tasks. This could be because of personal preferences, technical issues, or a lack of interest in digital documentation in some cases. EHR adoption is still strong for administrative tasks, but it's not quite as steady (66.8%).

Table 5.4 presents the findings on nurses' perceptions of the EHR usability, focusing on functions, challenges, accessibility, and information.

Table 5.4 Nurses' Perception of the EHR Usability

Item	Agree / Strongly agree	Neutral	Disagree / Strongly disagree
Patient information is easy to find in EHR	244 (80.3%)	40 (13.2%)	20 (6.5%)
EHR has all of the functions needed to complete patient care	238 (78.2%)	40 (13.2%)	26 (8.6%)
EHR is challenging to use	19 (6.2)	40 (13.2%)	245 (80.6%)
Using EHR adds effort	21 (6.9)	39 (12.8%)	244 (80.3%)
Patient information is easily accessed with EHR	235 (77.3%)	39 (12.8%)	30 (9.9%)
EHR helps you perform the tasks you need to complete	244 (80.3%)	39 (12.8%)	21 (6.9%)
EHR is easy to use	243 (80.0%)	39 (12.8%)	22 (7.2%)
Using EHR increases workload	27 (8.9%)	42 (13.8%)	235 (77.3%)
With EHR, it is difficult to search for patient information	20 (6.5%)	42 (13.8%)	242 (79.7%)
The same information is entered into EHR multiple times	22 (7.2%)	39 (12.8%)	243 (80.0%)
EHR is frustrating to use	31 (10.2%)	40 (13.2%)	233 (76.6%)
EHR helps you to complete your work efficiently	242 (79.7%)	40 (13.2%)	22 (7.2%)

The results of the survey shown in Table 5 give us important information about how nurses feel about how easy it is to use EHR. Most nurses, between 77% and 80%, said they liked how the system worked and how easy it was to use. In particular, 80.3% of those who answered said that it is easy to find patient information in the EHR, and 77.3% said that patient data is easy to get to. The fact that so many people agreed shows that the EHR system generally meets nurses' needs for quickly finding information in clinical settings. Almost 80% of nurses also said that the EHR has all the features they need to care for patients and helps them do their jobs quickly. This shows that nurses are generally happy with the system's basic functions.

Overall, most nursing staff seem to think that EHRs are easy to use, but the data does show that some staff members have some concerns. About 6–10% of people who answered said they had bad experiences with the system. Some of them said that using EHR makes their work harder (8.9%), adds unnecessary work (6.9%), or is just plain frustrating (10.2%). These results show that most nurses find the system useful, but there is still a small but significant number of users who have problems that could affect their job satisfaction or efficiency. The fact that 7.2% of nurses said they had to enter the same information more than once shows that there may be ways to make the system better so that documentation goes more smoothly.

The survey also found that the neutral response rate was consistently between 12.8% and 13.8% for different usability items. This neutral group could be nurses who aren't sure how the EHR will affect them or who are only somewhat happy with the system. Their answers could show where the EHR works okay but not great, or they could show how comfortable and skilled different users are with the technology. This neutral group suggests that some of these neutral views could be turned into more positive ones with targeted training or system improvements.

5.8.Organizational Context

Table 6 presents the findings on the organizational context related to the EHR in the perspective of nurses included in the study.

Table 6.4 Organizational Context Related to the EHR

Item	Agree / Strongly agree	Neutral	Disagree / Strongly disagree
The current level of EHR training is acceptable	27 (8.9%)	34 (11.2%)	243 (79.9%)
The level of on-going support (Help Desk) provided is acceptable	18 (5.9%)	34 (11.2%)	252 (82.9%)
Nursing unit administrator’s support nurses use of EHR	250 (82.2%)	36 (11.9%)	18 (5.9%)
There are enough computers on my unit to access EHR	180 (59.2%)	26 (8.6%)	98 (32.2%)
Computers are located in convenient spaces on my unit	169 (55.6%)	25 (8.2%)	110 (36.2%)
The speed of the network connection is appropriate	169 (55.6%)	41 (13.5%)	94 (30.9%)

A large number of nurses (79.9%) said they were unhappy with the current level of EHR training, while only 8.9% said it was acceptable. Also, 82.9% of respondents said that

ongoing technical support from the Help Desk was not enough, while only 5.9% thought it was. These results show that there are big problems with both the initial training and the ongoing support systems for EHR users.

Nurses had very good experiences with administrative support, even though they had bad things to say about training and support. A good 82.2% of respondents said that nursing unit administrators actively support their use of EHR. This shows that leaders are strongly behind the system's implementation. Despite the technical problems, this high level of support from management probably helps explain the overall positive perceptions of EHR usability shown in earlier tables.

The survey showed that the hardware and infrastructure parts of EHR implementation had mixed results. While most (59.2%) agreed that there were enough computers available for EHR access, a large minority (32.2%) said that there weren't enough computers available. In the same way, 55.6% thought the locations of the computers were convenient, but 36.2% disagreed. This suggests that getting to workstations is still a problem in many units. Network performance was similar, with 55.6% saying their connection speeds were good and 30.9% saying they had problems. This suggests that some parts of the organization's technology infrastructure may need to be improved.

5.9.Inferential Statistics

5.10.First Hypothesis

The first hypothesis of this study proposes that there are no statistically significant differences in nursing staff's perceived challenges during the transition to the new EHR system across the four participating hospitals. To evaluate this hypothesis, a one-way analysis of variance (ANOVA) is conducted, with the dependent variable defined as the composite "Challenges" score (the mean of the Likert-scale items assessing reported obstacles, where 1 = strongly disagree and 5 = strongly agree) and the independent variable being Hospital (Princess Alia Governmental, Beit Jala, Red Crescent Specialized, Bethlehem Arab Society for Rehabilitation).

Table 7.4-A Comparison of Mean EHR Transition Challenge Scores by Hospital and One-Way ANOVA Results

Summary of challenge score			
Hospital	Mean	SD	Freq.
Beit Jala Hospital	4.12	3.09	73
Bethlehem Arab Society for Rehabilitation	4.09	2.78	76
Princess Alia Governmental Hospital	4.05	2.47	75
Red Crescent Specialized Hospital	4.09	2.75	80
Total	4.08	2.77	304

Table 7.4-B Comparison of Mean EHR Transition Challenge Scores by Hospital and One-Way ANOVA Results

Analysis of Variance					
Source	SS	Df	MS	F	Prob > F
Between groups	5.37	3	1.79	0.23	**0.8746**
Within groups	2326.45	300	7.75		
Total	2331.83	303	7.69		
Bartlett's test for equal variances:		chi2(3) = 3.6350		Prob>chi2 = 0.304	

Table 7 shows that nurses' average "challenge" ratings, on a 1 (strongly disagree) to 5 (strongly agree) scale, were very similar across all four hospitals, ranging from 4.05 at Princess Alia Governmental Hospital to 4.12 at Beit Jala Hospital. Overall, the combined sample (N = 304) had a mean challenge score of 4.08 (SD = 2.77), indicating a generally high level of agreement that they experienced obstacles during the EHR transition.

The one-way ANOVA tested whether these mean scores differed by hospital and found no significant effect, $F(3, 300) = 0.23$, $p = 0.8746$. In practical terms, this means that perceived challenge levels did not vary in any meaningful way between the four sites. Bartlett's test confirmed that the variances were homogeneous across groups, $\chi^2(3) = 3.6350$, $p = 0.304$, so the ANOVA's assumption of equal variances was met.

In conclusion, the null hypothesis of equal means across the four hospitals could not be rejected.

5.11.Second Hypothesis

The second hypothesis of this study posits that there are no statistically significant differences in nursing staff's overall perceptions of the EHR transition across the four participating hospitals. To operationalize "perceptions," we computed a composite Perception_Score by averaging seven 5-point Likert items (1 = strongly disagree to 5 = strongly agree) that assessed ease of use, clarity of information, perceived patient benefit, diagnostic support, overall satisfaction, and intent to continue using the system. A one-way analysis of variance (ANOVA) was then performed, with Perception_Score as the dependent variable and Hospital (Beit Jala, Bethlehem Arab Society for Rehabilitation, Princess Alia Governmental, Red Crescent Specialized) as the independent factor. The results of this ANOVA are presented in Table 8.

Table 8.4 Comparison of Mean EHR Transition Perception Scores by Hospital and One-Way ANOVA Results

Summary of perception score			
Hospital	Mean	SD	Freq.
Beit Jala Hospital	4.09	3.68	73
Bethlehem Arab Society for Rehabilitation	4.05	3.42	76
Princess Alia Governmental Hospital	4.04	3.03	75
Red Crescent Specialized Hospital	4.09	3.05	82
Total	4.07	3.29	304

Analysis of Variance					
Source	SS	Df	MS	F	Prob > F
Between groups	8.51	3	2.83	0.26	**0.8541**
Within groups	3275.45	300	10.91		
Total	3283.97	303	10.83		

Bartlett's test for equal variances:	chi2(3) = 3.9847	Prob>chi2 = 0.263

Table 8 presents the nurses' mean "Perception" scores, computed as the sum of seven 1 (strongly disagree) to 5 (strongly agree) items, across the four hospitals. Scores range from a low of 28.31 (SD = 3.04) at Princess Alia Governmental Hospital to a high of 28.70 (SD = 3.69) at Beit Jala Hospital, with the combined sample (N = 304) averaging 28.51 (SD = 3.29).

A one-way ANOVA was used to test whether these total perception scores differed by Hospital. The analysis showed no significant differences, $F(3, 300) = 0.26$, $p = .8541$, indicating that overall perceptions of the EHR transition did not vary meaningfully between sites. Bartlett's test confirmed that the assumption of equal variances was met, $\chi^2(3) = 3.9847$, $p = .263$.

In sum, the null hypothesis of no difference in staff perceptions across the four hospitals could not be rejected.

5.12.Third Hypothesis

The third hypothesis of this study proposes that nursing staff's experiences of the EHR transition differ systematically according to key demographic characteristics, such as age group, gender, level of education, years of nursing experience, and hospital type. To examine this, we first compute an overall "Experience Score" by summing the relevant Likert-scale items that assess how often you use EHR to accomplish the following nursing activities (1 = Never to 5 = always). We then test for mean differences in this composite

score across each demographic variable. For factors with more than two categories (e.g., age group, education level, hospital), one-way ANOVA is applied. For binary variables (e.g., gender), independent-samples t-tests are used. Table 9 presents the results of these comparisons across age, education, and hospital subgroups using ANOVA. Table 10 presents the results of these comparisons across gender subgroup using t-tests.

Table 9.4 One-way ANOVA results comparing experience score with age, hospital, and education.

Experience Score by Age					
Source	SS	Df	MS	F	Prob > F
Between groups	0.62	3	0.20	0.87	**0.4582**
Within groups	72.03	300	0.24		
Total	72.65	303	0.23		
Bartlett's test for equal variances:		chi2(3) = 1.5344		Prob>chi2 = 0.674	
Experience Score by Education					
Source	SS	Df	MS	F	Prob > F
Between groups	0.40	3	0.13	0.55	**0.6460**
Within groups	72.25	300	0.24		
Total	72.65	303	0.23		
Bartlett's test for equal variances:		chi2(3) = 7.4906		Prob>chi2 = 0.058	
Experience Score by Hospital					
Source	SS	Df	MS	F	Prob > F
Between groups	0.20	3	0.06	0.28	**0.8384**
Within groups	72.45	300	0.24		
Total	72.65	303	0.23		
Bartlett's test for equal variances:		chi2(3) = 8.9588		Prob>chi2 = 0.030	

Across all three ANOVAs, there were no statistically significant differences in nurses' overall Experience Scores by age group, education level, or hospital site.

- Age: $F(3, 300) = 0.87$, $p = 0.458$. Nurses in the four age brackets reported nearly identical mean experience scores, and Bartlett's test confirmed equal variances ($\chi^2(3)=1.53$, $p = 0.674$).

- Education: F(3, 300) = 0.55, p = 0.646. Whether nurses held diplomas, bachelor's, higher diplomas, or master's degrees made no detectable difference in how frequently they used the EHR for core tasks; variances were homogeneous ($\chi^2(3)=7.49$, p = 0.058).
- Hospital: F(3, 300) = 0.28, p = 0.838. Mean experience scores across the four study sites were virtually the same. Bartlett's test flagged a slight variance heterogeneity ($\chi^2(3)=8.96$, p = 0.030), but the small F-ratio and high p-value indicate that any variance differences did not meaningfully affect the non-significant result.

Table 10.4 t-tests results comparing experience score with gender.

Experience Score by Gender				
Gender	N	Mean	SD	95% CI for Mean
Female	135	4.202	0.526	4.113 to 4.292
Male	169	4.220	0.460	4.151 to 4.290
Difference (Female − Male):				
Mean = −0.018 (95% CI: −0.130 to 0.093), t(302) = −0.32, p = 0.747				

Table 10 shows that the mean Experience Score for female nurses (M = 4.202, SD = 0.526) was nearly identical to that for male nurses (M = 4.220, SD = 0.460). The mean difference of –0.018 (95% CI: –0.130 to 0.093) was not statistically significant, t(302) = –0.32, p = .747.

Across all demographic comparisons, including age, education level, hospital type (ANOVAs) and gender (t-tests), we found no statistically significant differences in the composite Experience Score.

We therefore reject the hypothesis that there is a significant difference in nurses' experiences regarding EHR system by demographic variables.

5.13.Correlation matrix

In the correlation matrix, the relationships between the variables can be seen more clearly (Table 11). The results showed no significant correlation between the EHR domains where all P-values were greater than 0.05.

Table 11.4 Correlation Matrix of EHR Clusters

Correlations									
		1	2	3	4	5	6	7	8
1 -How long have been using the EHR? (years)	Pearson Correlation	1							
	Sig. (2-tailed)								
2- Have you had formal training in informatics?	Pearson Correlation	.014	1						
	Sig. (2-tailed)	.808							
3- How would you rate the quality of the training provided for the new EHR system?	Pearson Correlation	.049	-.267**	1					
	Sig. (2-tailed)	.390	.000						
4- What type of training did you receive?	Pearson Correlation	-.031	.385**	.302**	1				
	Sig. (2-tailed)	.586	.000	.000					
5- How often do you feel you need refresher training on the EHR system?	Pearson Correlation	.065	-.170**	.249**	.134*	1			
	Sig. (2-tailed)	.260	.003	.000	.020				
6- use	Pearson Correlation	.004	-.121*	-.021	-.074	.037	1		
	Sig. (2-tailed)	.950	.035	.720	.200	.515			
7- usability	Pearson Correlation	-.020	-.101	.003	-.053	-.024	.005	1	
	Sig. (2-tailed)	.723	.078	.952	.359	.672	.934		
8- organizational	Pearson Correlation	.045	-.016	-.012	-.051	-.073	.108	.044	1
	Sig. (2-tailed)	.439	.782	.830	.373	.205	.059	.443	
**. Correlation is significant at the 0.01 level (2-tailed).									
*. Correlation is significant at the 0.05 level (2-tailed).									

5.14.Summary

There was a lot of agreement among the nurses in the four West Bank hospitals that the switch to EHR was a good thing. A lot of people said it was simple to use, had clear information, and helped them care for their patients. These are good points of view, but there are still big issues, especially when it comes to training and help. Nearly 80% of nurses said the training they were getting was not good enough, and even more said the technical help they were getting was not good enough. Infrastructure issues, such as not having enough computers and workstations that weren't in the right places, were also brought up by the study. These issues made it hard to fully integrate EHR. On the other hand, strong administrative support was a key factor. More than 80% of nurses said they had support from their leaders to use EHRs. It is interesting to note that there were no statistically significant differences in how difficult things were seen to be, how people felt overall, or how their experiences were differentiating demographics or hospital types. This means that all nurses have the same experience, no matter what age, gender, level of education, or job they have.

The switch to EHR was mostly accepted and worked into daily tasks. However, the study shows that there are important training and infrastructure gaps that need to be fixed to get the most out of the system. When people from different hospitals and backgrounds have the same problems, it means that the problems are not just happening in one place. This shows how important it is to have better technical support and training programs that are standardized and cover everything.

Chapter Five

Discussion

6.1.Overview of Findings

The goal of the study was to determine the thoughts and feelings of nurses in hospitals in the West Bank regarding the transition to a new EHR system. The results showed that there were both good things and big problems that came up during the implementation process. Most nurses thought that EHR systems were helpful. They pointed out that they made it easier to get to patient information, made it easier for healthcare teams to work together and talk to each other, and enhanced the accuracy of clinical documentation and decision-making more accurate. This is in line with what other researchers regarding the impact of EHR systems on healthcare is delivered and improve patient outcomes (Xu et al., 2020; Wynter et al., 2021).

Even though the nurses liked EHR systems, they had a lot of problems that made it hard for them to use them to their full potential. Some of the problems were not enough training, not enough technical support, problems with the infrastructure, and having to do more work while documenting. This agrees with what Heidarizadeh and Rassouli (2017) and Jedwab et al. (2022) found before. A lot of nurses said they were unhappy with the quality of the training they got, which shows that they need more hands-on training sessions that are specific to their clinical roles. These results show that initial excitement about digital transformation can fade quickly if the organization doesn't give strong support and the systems aren't well designed.

Additionally, the study highlighted that these barriers were not isolated challenges but interrelated issues. For example, poor infrastructure amplified the effects of inadequate training, as nurses who were already uncertain about the system became more frustrated when faced with slow connections or limited access to devices. This interplay indicates that successful EHR adoption requires a holistic strategy that addresses technical, organizational, and human resource factors simultaneously.

6.2.Comparison with Previous Studies

The good experiences about how easy it is to get to patient information and coordinate care are in line with what Kirkendall and his team (2013) found in their studies, which showed

that better patient safety and easier communication were also benefits. Nurses liked that EHRs were centralized and worked in real time. This is in line with what has been seen around the world, where EHRs have greatly improved care coordination (Patel et al., 2024).

Nurses said that a lack of training and technical support were major problems, which is in line with what other studies have said about the need for ongoing and comprehensive training for successful EHR implementation (McCrorie et al., 2019; Mohess & Gomes, 2024). The results of this study support the need for customized, hands-on training sessions that are very similar to the nurses' real clinical tasks and workflows, as Kleib et al. (2024) have already pointed out. The results of this study show that we need more structured, regular refresher trainings instead of just training sessions that happen when the system is updated. This is something that previous studies didn't fully cover.

Nurses also said that the infrastructure was bad because there weren't enough computers, workstations were in the wrong places, and the network was slow. These results are like what has been found in other places with few resources, where problems with technology infrastructure make it hard to use and adopt EHRs (Alessa, 2024; Lee & Lin, 2021). The study also found that technical support took too long to respond, which shows how important it is to have good help desks that are easy to get to. Other studies have not looked at this. These kinds of infrastructure problems need to be fixed in a planned way so that nurses can use EHR systems more effectively and be happier with them.

This study extends the literature by showing that delays in technical support not only reduce system efficiency but also affect nurses' trust in the technology and management's commitment to supporting them. Unlike prior research, which primarily emphasized infrastructure and training, this study reveals that the timeliness of support services is a unique determinant of overall satisfaction and adoption. This adds a new dimension to understanding how contextual challenges in developing health systems can hinder digital health transformation.

6.3.Implications for Practice

The results of this study show that hospitals need to take strategic steps to improve the use of EHRs, especially in places where resources are limited. The following suggestions are made to get the most benefits and the least barriers:

- Improve Training Programs: Training should happen often, be useful, and be relevant to the situation. As shown in earlier studies (Lopez et al., 2021; Mohess & Gomes, 2024), simulation-based and peer-led training methods could make nurses much more ready and confident.
- Strengthen Technical Support Systems: A strong and responsive help desk can make nurses a lot less frustrated. According to Jedwab et al. (2022), best practices suggest that proactive support mechanisms should be built into regular workflow processes.
- Investing in infrastructure improvements, like making workstations more accessible and improving internet connectivity, is very important. This is in line with what Adler-Milstein

et al. (2015) say, which is that infrastructure readiness is key to the success of EHR adoption.

Beyond these, leadership engagement is crucial. Nurse leaders should actively participate in system rollout and provide advocacy to ensure that nurses' feedback is incorporated into system updates. Furthermore, fostering a culture of continuous digital learning can prepare staff for upcoming technological innovations, reducing resistance during future upgrades. Policies should also address workload redistribution to prevent EHR-related documentation tasks from overburdening nursing staff.

6.4.Limitations and Future Research

This study gives us a lot of useful information, but it also has some problems that need to be pointed out. The findings may not be able to be applied to larger groups of people because of the use of convenience sampling. Also, relying on self-reported data could lead to biases based on memory and what people think is socially acceptable.

Future research should focus on longitudinal studies to see how nursing staff's views and ability to adapt to EHR systems change over time. It might also be helpful to do comparative studies between different healthcare settings and qualitative studies that look at the deeper contextual factors that affect how EHRs are used. Also, future research should look into how switching to EHRs affects nurses' mental and emotional health. This is an area that this study didn't look into much, but it's important for understanding the full effects on staff well-being and retention.

Additionally, exploring the cost-effectiveness of EHR implementation in resource-limited settings like Palestine would provide policymakers with evidence to justify investments. Another promising area is examining patient perceptions of how EHRs influence communication and trust in the healthcare system. Integrating these perspectives would offer a more holistic view of EHR adoption and its broader societal implications.

6.5.Conclusion

Overall, this study shows that EHR systems have a lot of potential to improve healthcare delivery, but there are some big problems that need to be fixed in order to get the most out of them. Targeted interventions aimed at improving training quality, technical support, and infrastructure could make nurses happier, which would lead to better patient care in the long run. By carefully dealing with these problems, healthcare organizations can make it easier for people to switch to digital health settings. This is very important in places like Palestine that don't have a lot of resources, because it can make both the health of patients and the happiness of nurses better.

Ultimately, successful EHR adoption requires an integrated approach where technology, human resources, and organizational culture evolve together. By learning from global best practices while adapting to local realities, healthcare systems in the West Bank and similar regions can achieve sustainable digital transformation that enhances both patient safety and nurse well-being.

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Appendix I. Questionnaire

Thank you for taking the time to participate in this study. The purpose of this research to understand the perceptions and experiences of nursing staff regarding the transition to a new EHR system across Palestine. Supervised by Dr Farid Ghrayeb.

Your participation in this study is voluntary, and all responses will remain confidential. The data collected will only be used for research purposes and presented in a manner that ensures anonymity. Completing the questionnaire should take approximately **15-20 minutes**.

In case you have any questions, please contact **Sharihan Badra**: +972585913577

1. Demographic Data

1.1. Age:	☐ 30 years and less ☐ 31 – 40 years ☐ 41 – 50 years ☐ 51 years and more
1.2. Gender:	☐ Male ☐ Female
1.3. Hospital:	☐ Beit Jala Hospital ☐ Bethlehem Arab Society for Rehabilitation ☐ Princess Alia Governmental Hospital ☐ Red Crescent Specialized Hospital
1.4. Maritas Status:	☐ Married ☐ Single ☐ Widowed ☐ Divorced
1.5. Years of experience:	☐ 6 months – 1 year ☐ 1 – 5 years ☐ 6 – 10 years ☐ More than 10 years
1.6. Education:	☐ Diploma ☐ Bachelor's Degree ☐ Higher Diploma ☐ Master's Degree

2. Training and Support

2.1. How long have been using the EHR? _____ years

2.2. Have you had formal training in informatics?

☐ Yes

☐ No (if the answer is No, move to 3.)

2.3. How would you rate the quality of the training provided for the new EHR system?

☐ Excellent

☐ Good

☐ Fair

☐ Poor

☐ Very Poor

2.4. What type of training did you receive?

☐ In-person training

☐ Online training

☐ Self-paced learning modules

2.5. How often do you feel you need refresher training on the EHR system?

☐ Every 6 months

☐ Annually

☐ Only when updates occur

☐ Other (please specify) _____

3. Assessment of nurses' perception of EHR

Item		Yes	No	I don't know
3.1.	Have you received any training on the EHR?			
3.2.	Is the system easy to use and navigate?			
3.3.	Is the information presented in the EHR clear?			
3.4.	Is EHR beneficial for your patient?			
3.5.	Does the EHR provide desirable results in patient diagnoses?			
3.6.	Overall, are you satisfied with the EHR system?			
3.7.	Are you interested in continuing to use the EHR system?			

4. Nurses' Perceptions of EHR Use

Instructions: Please enter the number in the right-hand column, how often you use EHR to accomplish the following nursing activities?

1- Never 2- almost never 3- sometimes 4- almost always 5- always

Item		1	2	3	4	5
4.1.	Assessment					
4.2.	Searching for information					
4.3.	Care planning					
4.4.	Clinical decision-making					
4.5.	Communication					
4.6.	Documentation of Medication administration					
4.7.	Documentation of assessments through standardized forms					
4.8.	Documentation of narrative notes					
4.9.	Administrative Tasks					

5. Electronic Health Record Usability

Instructions: Please Enter the Number in The Right-Hand Column, The Extent You Agree with The Below Statements.

1- strongly disagree 2- disagree 3- neutral 4- Agree 5- strongly agree

Item		1	2	3	4	5
5.1.	Patient information is easy to find in EHR					
5.2.	EHR has all of the functions needed to complete patient care.					
5.3.	EHR is challenging to use.					
5.4.	Using EHR adds effort.					
5.5.	Patient information is easily accessed with EHR					
5.6.	EHR helps you perform the tasks you need to complete					
5.7.	EHR is easy to use					
5.8.	Using EHR increases workload					
5.9.	With EHR it is difficult to search for patient information					
5.10.	The same information is entered into EHR multiple times					
5.11.	EHR is frustrating to use					
5.12.	EHR helps you to complete your work efficiently					

6. Organizational Context

Instructions: Please enter the number in the right-hand column, your level or agreement or disagreement with the statements below.

1- strongly disagree 2- disagree 3- neutral 4- Agree 5- strongly agree

Item		1	2	3	4	5
6.1.	The current level of EHR training is acceptable					
6.2.	The level of on-going support (Help Desk) provided is acceptable					
6.3.	Nursing unit administrator's support nurses use of EHR. *Examples of support may include providing results from documentation audits, preparing nurses for EHR 'down-time', and organizing for additional training for staff as needed.					
6.4.	There are enough computers on my unit to access EHR					
6.5.	Computers are located in convenient spaces on my unit					
6.6.	The speed of the network connection is appropriate					

Appendix II. Letter of approval

Al Quds University
Faculty of Health Professions
Jerusalem –Abu Dis

جامعة القدس
كلية المهن الصحية
القدس – أبو ديس

Research Ethics Subcommittee of Faculty of Health Professions
Letter of approval

July 4, 2025
Ref. No.: RESC/2025-91

Dear Applicants, (**Dr. Farid Ghrayeb, Ms. Sharihan Badra**)
Program: **Nursing Department**

The Research Ethics subcommittee of the Faculty of Health Professions has recently reviewed your proposal entitled (**Nursing Staff Perceptions and Experiences of the New Electronic Health Record Transition in The West Bank**) submitted by (**Dr. Farid Ghrayeb**). Your proposal is deemed to meet the requirements of research ethics at Al-Quds University, but further assessment is required by the Central Research Ethics Committee of Al-Quds University. We wish you all best for the conduct of the project.

Hussein ALMasri
Research Ethics Subcommittee Chair
Faculty of Health Professions

Hussein ALMasri

CC: File
CC: Committee members

Tel. Fax: 02 2791243 **Email: dean@hpro.alquds.edu** **تلفاكس: 02 2791243**

تصورات وتجارب طاقم التمريض بشأن الانتقال إلى السجل الصحي الإلكتروني الجديد في الضفة الغربية

إعداد: شريهان باسم جريس بدرة

المشرف: .د فريد غريب

الملخص

الخلفية: توفر السجلات الصحية الإلكترونية رعاية أكثر أمانًا وتنسيقًا، ولكن الانتقال من السجلات الورقية إلى السجلات الرقمية قد يكون صعبًا، خاصة بالنسبة للممرضات اللواتي يعملن في أماكن ذات موارد محدودة، مثل الضفة الغربية.

الهدف: استكشفت دراستنا تصورات وتجارب الممرضات/ين في الضفة الغربية أثناء الانتقال إلى النظام الجديد للسجلات الصحية الإلكترونية، وحددت الفوائد والتحديات والعوامل التي تتنبأ باعتماد أكثر سلاسة.

الطرق: تم جمع بيانات كمية من خلال دراسة مقطعية شملت 304 ممرض/ة يعملون في أربعة مستشفيات (اثنان حكوميان واثنان غير حكوميين). استخدم استبيان مُعتمد مكوَّن من ثلاثة أجزاء لقياس الخصائص الديموغرافية الاجتماعية، والتصورات حول فوائد/تحديات السجلات الصحية الإلكترونية، وأنماط الاستخدام. استُخدمت الإحصاءات الوصفية واختبارات ANOVA أحادي الاتجاه/اختبارات (t) لفحص الفروق بين المجموعات.

النتائج: اعتبر معظم الممرضين أن النظام سهل الاستخدام (75.7٪) وذو فائدة سريرية (73.4٪)؛ وأفاد 63.5٪ منهم بالرضا العام، فيما أعرب 77.3٪ عن رغبتهم في الاستمرار باستخدام السجلات الصحية الإلكترونية. في معظم الأوقات، كان الممرضون يقومون بالمهام الروتينية مثل التقييم (90.8٪) والتخطيط للرعاية (89.1٪) باستخدام السجلات الصحية الإلكترونية. ومع ذلك، رأى 79.9٪ أن التدريب الحالي غير كافٍ، واعتبر 82.9٪ أن دعم مكتب المساعدة غير كافٍ، مما يُظهر وجود فجوات كبيرة في التنفيذ. كما أن نقص البنية التحتية (على سبيل المثال، ذكر 32.2٪ من المشاركين أنهم لا يملكون عددًا كافيًا من محطات العمل) زاد من مشاكل سهولة الاستخدام. ولم تُظهر النتائج أي فروق ذات دلالة إحصائية في التحديات أو الفوائد المدركة أو درجات الخبرة عبر المستشفيات أو الفئات العمرية أو الجنس أو المستوى التعليمي (جميع القيم الاحتمالية $p > 0.05$).

الاستنتاجات: يدعم معظم الممرضين في الضفة الغربية نظام السجلات الصحية الإلكترونية الجديد، لكن نقص التدريب والدعم الفني والأجهزة قد يضر بنجاحه على المدى الطويل. هناك حاجة إلى

تدريب مستهدف قائم على المحاكاة، ومكاتب مساعدة تقنية متاحة على مدار الساعة، وترقيات فورية لمحطات العمل. تقدم النتائج إرشادات حول كيفية تطبيق السجلات الصحية الإلكترونية في أنظمة صحية أخرى محدودة الموارد.

الكلمات المفتاحية: السجلات الصحية الإلكترونية، تصورات التمريض، الخبرات، التدريب، الدعم الفني، الضفة الغربية.