An-Najah National University
Faculty of Graduate Studies

PATIENTS' SATISFACTION WITH ELECTRONIC HEALTH RECORD SYSTEM AND ITS EFFECT ON THE WAY OF THEIR COMMUNICATION WITH THE NURSES

By
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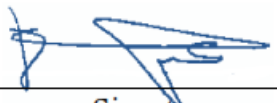
Dr. Adnan Sarhan	
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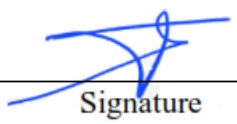
Dr. Ahmed Hanani	
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Dedication

(وآخر دعواهم أن الحمد لله رب العالمين)

أهدي هذا البحث إلى:

إلى العظيمة فلسطين، إلى قطاع غزة الصامد، وإلى مخيماتنا الصامدة، إلى فخر الأمة ودرعها الحامي، إلى اللذين سطّروا بدمائهم وقيودهم حدود الوطن من النهر إلى البحر، إلى شهدائنا الأبرار، إلى أسرانا وأسيراتنا البواسل، وإلى كل من كان الوطن قضيته وحياته معاً.

إلى من شجعني على المثابرة طوال عمري، إلى الرجل الأبرز في حياتي (والدي العزيز)..

إلى أمي الحنون، من علمتني العطاء، وسقتني الحب والحنان منذ خلقت..

إلى إخوتي وأخواتي جميعا فأنتم السند والعضد، ومن يشاطرني أفراحي وأحزاني.

إلى جميع الأصدقاء والزملاء والأساتذة، وكل من يحبني بصدق وإخلاص.

إلى كل من خذلونا فكانوا حافزنا الأول لهذا النجاح.

إلى كل من ساهم وشارك في إنجاز هذا البحث.

وأسأل الله أن يتقبل هذا العمل مني وان يكون في ميزان حسناتي.

Acknowledgments

I want to sincerely thank everyone who has supported me in this attempt. Had it not been for their persistent direction, encouragement, and support, I would not have completed the task successfully. I want to thank my family for their support in my profession. I also want to thank my coworkers, who have been my second family throughout this journey, for their unwavering support. My research adviser, Dr. Adnan Sarhan, has provided attentive supervision and direction throughout this entire process, for which I am grateful.

Declaration

I, the undersigned, declare that I submitted the thesis entitled:

PATIENTS' SATISFACTION WITH ELECTRONIC HEALTH RECORD SYSTEM AND ITS EFFECT ON THE WAY OF THEIR COMMUNICATION WITH THE NURSES

I hereby certify that, unless otherwise noted, the work presented in this thesis is original to the researcher and has not been submitted for consideration for any other degree or certification.

Student's Name: Aseel Abdul Hameed Mahmoud Qaissi

Signature: 

Date: 12/09/2024

Table of Contents

List of Tables

List of Figures

List of Appendices

PATIENTS' SATISFACTION WITH ELECTRONIC HEALTH RECORD SYSTEM AND ITS EFFECT ON THE WAY OF THEIR COMMUNICATION WITH THE NURSES

By
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Abstract

Background: Health Information Technology, particularly Electronic Medical Records, is crucial for improving patient care quality and safety. In today's complex hospital environment, Electronic Medical Records help institutions meet government objectives and improve operational efficiency by reducing errors and increasing accuracy. This leads to a safer environment for patients and fewer medical mistakes.

Aim: The aim of the study is comparing between hospitals that use EMRs and hospitals that use paper medical record in terms of patients' satisfaction with the provided healthcare and patients' communication with nurses.

Methods: A comparative and descriptive study was conducted in hospitals in the West Bank of Palestine, comparing electronic medical records with paper medical records medical records. A random sample of 370 patients was selected from both types of hospitals. Data were collected using a questionnaire adapted from previous research, including the Patient Satisfaction Questionnaire (PSQ-18) for overall care satisfaction and the Consultation and Relational Empathy measure for evaluating patient-nurse communication.

Results: The study's patient population had a median age of 41, with a nearly equal distribution across hospitals. Data were analyzed using non-parametric tests due to non-normal distribution. The cohort consisted of 53.2% males and 46.8% females, with 71.6% being married and 54.6% having higher education. Income was reported as less than USD 500 per month by 52.4% of patients, with 47.6% living in cities and 45.9% in rural areas. Satisfaction levels showed variability but were generally higher in hospitals using Electronic Medical Records (EMRs), though not significantly different. Lower education levels were associated with higher communication scores ($p = 0.008$), and EMR usage also correlated with better communication scores ($p = 0.038$). Enhanced

nurse communication was positively correlated with higher patient satisfaction ($r = 0.261$, $p = 0.018$).

Conclusion: Patient satisfaction was generally high, with strong agreement on the Patient Satisfaction Questionnaire items and effective communication with nurses. Satisfaction did not vary significantly with sociodemographic factors or documentation type, though better communication was notably linked to lower educational levels and hospitals using EMRs. Improved communication positively correlated with higher satisfaction. Enhancing patient-nurse communication is essential, and policymakers should focus on improving both verbal and non-verbal communication methods. Further research in this area within Palestine is recommended.

Keywords: Nursing Care, Electronic Medical Record System, Patient Satisfaction, Patients Direct Communication.

Chapter One
Introduction and Theoretical Background

1.1 Theoretical basis

Communication is the process by which information, ideas, thoughts, and emotions are exchanged between individuals or groups through various channels such as verbal, non-verbal, written, or digital media. Effective communication involves both the transmission and reception of messages, ensuring mutual understanding and shared meaning. In a healthcare context, communication serves as a critical component in the delivery of care, facilitating collaboration, coordination, and the establishment of trust between patients and healthcare providers, Effective communication between patients and nurses is fundamental to providing high-quality care and ensuring patient satisfaction. According to a study by (Ali, 2017).

Clear, empathetic communication helps in building trust, improving patient outcomes, and reducing anxiety, particularly in hospitalized patients. Nurses play a pivotal role in interpreting patient needs and conveying important information about their treatment, while also advocating on behalf of the patient. Ineffective communication, on the other hand, can lead to misunderstandings, decreased patient adherence to treatment, and potentially adverse outcomes (O'Hagan,, et al., 2014).

Research conducted by Williams, Irvine, McGinnis, & Whyte (2016) highlights that patients who perceive high levels of nurse-patient communication report better health outcomes and greater satisfaction with their care. Furthermore, the study emphasizes the importance of active listening and the personalization of communication, which helps to meet the emotional and informational needs of patients. Ensuring that nurses are equipped with both the technical and interpersonal communication skills enhances patient-centered care and overall healthcare efficiency (O'Hagan,, et al., 2014).

Health Information Technology (HIT) is widely recognized as a valuable tool for improving the safety and quality of patient care. One of the most effective technologies in this field is Electronic Medical Records (EMRs) (Zhang, 2010).

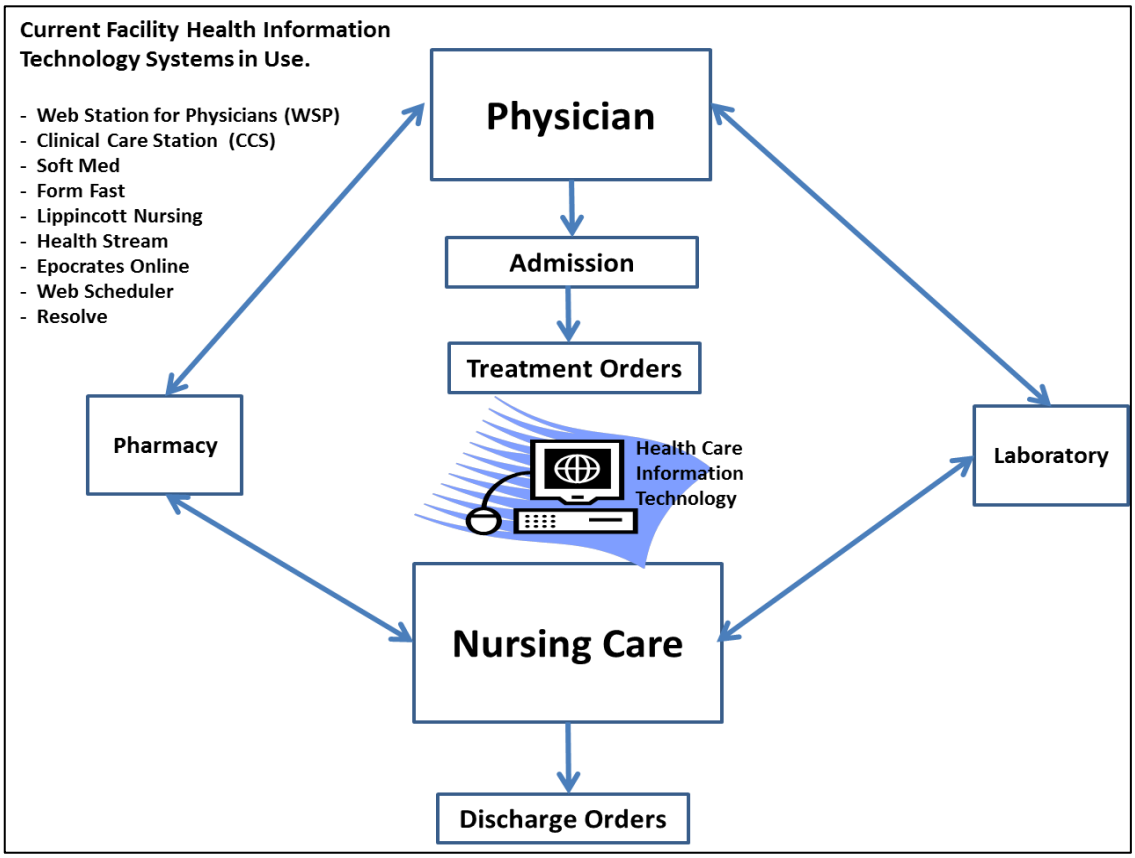
Many nations worldwide have begun to adopt and utilize domestic EMRs to take advantage of the functionalities these systems offer. These records store, utilize, and transfer information. Electronic Health Records or (EHRs), are often used synonymously with Electronic Medical Records (EMRs) by many individuals (Alotaibi & Federico, 2017).

An Electronic Medical Records (EMRs) is a digitized representation of the medical history of a patient that has been generated, utilized, and saved in place of the paper medical records. The EMRs is created, regulated, and upheld by a healthcare organization. Only healthcare practitioners who are actively involved in a patient's treatment are allowed to access and use an EMRs. A Personal Health Record (PHR) is a confidential medical document that may only be accessed and utilized by the patient or an authorized individual (Zhang, 2010).

The Electronic Medical Record (EMRs) system has been in operation since 1972. However, in Palestine, the adoption of EMRs did not begin until 2011. The majority of government medical facilities in Palestine currently utilize EMRs.

Figure 1

Current Facility Health Information Technology System in use



Source: Handbook of Data Science Approaches for Biomedical Engineering, 2020.

Figure 1 shows how EMRs used and transmitted from the physician by admission, treatment orders, and nursing care, and the treatment has been finished and discharged. The figure also demonstrates how to communicate easily from the physician to the laboratory or the pharmacy and also from nursing care, the laboratory, and the pharmacy as needed for the medical condition.

There is a wide range of perspectives on the utilization of Electronic Medical Records (EMRs) among nurses and patients. Therefore, it may be observed from many perspectives. Stronge & Brodt (1985) identified six primary variables that may be utilized to characterize nurses' attitudes regarding the adoption of cutting-edge technology. The factors include job security, legal consequences, patient care quality, employee adoption of new technologies for routine tasks, technical capabilities, and the benefits offered by a specific technology to an organization.

The hospital environment of today is complex and influenced by several factors, necessitating collaboration for effective management (Barg-Walkow, 2017).

Collaboration is required across several departments and among various experts. For instance, a patient seeking chemotherapy treatment at the hospital is usually moved between several departments, beginning with the reception area and progressing through the various stages of therapy. Meanwhile, the patient interacts with many specialists who administer various tests and document the outcomes while offering the necessary care for the patient. In such conditions, minimizing the likelihood of mistakes is a crucial aspect of the healthcare industry. Utilizing EMRs presents professionals with a significant potential to minimize mistakes and enhance coordination (Misser, Jaspers, Zaane, Gooszen, & Versendaal, 2020).

Implementing EMRs has also enabled other institutions to fulfill the government mandates and enhance operational effectiveness. Implementing EMRs enhances the likelihood of delivering higher quality care due to its ability to minimize mistakes and enhance precision. Consequently, patients can benefit from a more secure environment with a notable reduction in medical errors. This is of utmost significance as a considerable number of individuals perish annually as a result of drug mistakes (Grasso, McDowell, Goldhammer, & Keuroghlian, 2019).

This technology would also reduce the burden on physicians, nurses, and other staff members. Consequently, their attention may be redirected towards the diagnosis and treatment of patients, rather than administrative tasks, diagnostic tests, medical procedures, or medications. Essentially, healthcare personnel will have an increased amount of time to dedicate to providing care for patients. It will enable clinicians to obtain up-to-date information on their patients regardless of their location. When patients are provided with adequate health information about themselves, they will be able to better monitor their health condition and make important and more informed decisions. From the patient's standpoint, EMRs enable a decrease in hospital visits and a lower likelihood of experiencing negative treatment outcomes. Electronic Medical Records (EMRs) have become integral in modern healthcare systems, improving the accuracy and availability of patient data. However, their impact on nurse-patient

communication has raised concerns about how technology might alter the traditional nurse-patient relationship (Jamil, Ahmad, Iqbal, & Kim, 2020).

Despite these challenges, several studies suggest solutions to mitigate the negative effects of EHRs on nurse-patient communication. Flynn, O'Donoghue, & Hughe (2020) propose integrating more intuitive EHR systems that are designed with user experience in mind, allowing nurses to navigate records more efficiently while maintaining patient interaction. Their study found that user-friendly EHR interfaces reduced documentation time, enabling nurses to dedicate more time to face-to-face communication (Flynn, O'Donoghue, & Hughes, 2020).

Furthermore, Murphy, Samuel, & Litwin (2019) recommend using portable devices, such as tablets, which allow nurses to input data while maintaining visual contact with patients. In their study, nurses who used portable devices reported better communication experiences, as they were able to document patient information in real-time without breaking the flow of conversation. This approach helps balance the need for accurate documentation with the importance of maintaining a personal connection during patient interactions.

Research has demonstrated that effective communication between patients and healthcare providers is the primary factor influencing the quality of a medical consultation (Shachak, Randhawa, & Crampton, 2019). The interaction between patients and healthcare professionals has a significant impact on patient satisfaction, compliance with recommended therapy, resolution of conflicts between providers and patients, and clinical outcomes. Studies have shown a link between the communication between physicians and patients and the interpersonal skills of healthcare professionals in a broader understanding of the quality of medical treatment and patient outcomes (Fatima, Malik, & Shabbir, 2018).

According to a study by Shachak, Randhawa, & Crampton (2019) that examines the level of patient satisfaction with EMRs in relation to their interaction with nurses, EMRs might potentially improve communication between physicians and patients on illness management, educate and empower individuals to promote their health, and increase the efficiency of medical visits. Recent research emphasizes the importance of

patient satisfaction in hospitals as a key determinant of healthcare quality and effectiveness.

A study by Alharbi, Bafakeeh, & Almalki (2023) found that effective communication, timely care, and the physical environment significantly influence patient satisfaction levels. Patients who feel heard and valued are more likely to report higher satisfaction, which can lead to improved health outcomes and lower readmission rates. This underscores the necessity for hospitals to focus on patient-centered approaches to enhance overall care experiences, A study by Hellesø, Melby, & Gjevjon (2022) stressed the importance of training nurses not only in the technical aspects of EHR systems but also in communication strategies that incorporate technology. Nurses who received comprehensive training on how to integrate EHR use into patient interactions reported fewer communication difficulties and demonstrated better engagement with patients (Hellesø, Melby, & Gjevjon, 2022).

Additionally, Robertson, Cresswell, & Sheikh (2018) advocate for "EHR communication training" that teaches nurses to explain to patients how the use of electronic records improves care quality. This strategy was shown to alleviate concerns patients had about the nurse's attention being diverted to the screen, fostering a more collaborative and open dialogue during consultations.

Patient satisfaction is a critical metric in evaluating the quality of healthcare services, particularly nursing care, as it directly influences patient outcomes, adherence to treatment plans, and overall well-being. Nursing professionals play a pivotal role in shaping patients' healthcare experiences due to their continuous and close interaction with patients. Research suggests that patient satisfaction with nursing care is significantly influenced by factors such as communication, empathy, competence, and responsiveness. A study by Alasad, Tabar, & AbuRuz (2020) highlights that effective communication between nurses and patients fosters trust and satisfaction, ultimately leading to better health outcomes. The ability of nurses to convey empathy and understanding, coupled with their technical competence, is seen as essential in enhancing the overall patient experience.

Moreover, nurses' responsiveness to patients' needs, including timely administration of care and addressing concerns, has been identified as a crucial determinant of patient satisfaction. According to a systematic review by Aiken et al. (2018) patients reported higher satisfaction levels when nurses were able to promptly attend to their needs, reduce waiting times, and demonstrate personalized care. The review emphasized the importance of sufficient nurse staffing and manageable workloads, which allow nurses to spend adequate time with patients, resulting in higher satisfaction scores (Aiken, et al., 2018). On the contrary, high nurse-to-patient ratios and excessive workloads can lead to burnout and negatively impact the quality of care, which, in turn, reduces patient satisfaction.

Another significant factor is the perception of nurse competence, which encompasses not only clinical skills but also the ability to make informed decisions and act with confidence. Papastavrou, Andreou, & Efstathiou (2019) found that patients who perceived their nurses as competent and confident were more likely to report positive healthcare experiences. Competence extends beyond clinical abilities to include the emotional intelligence required to manage diverse patient populations and complex healthcare scenarios. In light of these findings, it is clear that patient satisfaction with nursing care is multi-faceted, driven by a combination of technical skills, emotional intelligence, and effective nurse-patient communication.

In recent years, a growing body of research has explored various dimensions of patient satisfaction with nursing care, often emphasizing the relational aspects between nurses and patients. One of the key findings is that patient satisfaction is strongly associated with the quality of interpersonal relationships and communication. For instance, a study by McFarland, Roth, Goldman, & Ledford (2021) found that patients who experienced effective communication from nurses reported higher levels of satisfaction. This includes not only verbal communication but also non-verbal cues, such as active listening, maintaining eye contact, and providing reassurance. McFarland, Roth, Goldman, & Ledford (2021) emphasized that these communication skills are essential in fostering a therapeutic nurse-patient relationship, which is critical for patient satisfaction. In addition, the study pointed out that when patients feel respected and heard, their overall perception of care improves, leading to higher satisfaction scores.

Another critical aspect influencing patient satisfaction is the emotional support provided by nurses. A study by Shouhed, Gewertz, Wiegmann, & Catchpole (2020) explored the relationship between emotional support from nurses and patient satisfaction in surgical settings. The researchers found that patients who received consistent emotional support, such as reassurance, empathy, and attentiveness to emotional needs, were more likely to report positive experiences. Emotional support is particularly important for patients undergoing invasive procedures or dealing with chronic conditions, where anxiety and stress levels are often elevated (Shouhed, Gewertz, Wiegmann, & Catchpole, 2020). The study further highlighted that nurses who take time to address patients' emotional concerns, in addition to their physical needs, contribute significantly to patient satisfaction.

Nurse competence and professionalism also play a pivotal role in shaping patient satisfaction. A study conducted by Tzeng, Ketefian, Redman, & Ronis (2018) demonstrated that patients are more likely to be satisfied when they perceive nurses as competent and professional. Competence in this context refers to not only clinical expertise but also the ability to make sound clinical judgments, provide accurate information, and effectively manage patient care. Tzeng, Ketefian, Redman, & Ronis (2018) found that patients' confidence in their nurses' abilities was directly linked to their overall satisfaction with care. The study also suggested that continuous professional development and education for nurses are essential for maintaining high standards of care and, consequently, higher patient satisfaction levels.

The physical environment and organizational aspects of healthcare also influence patient satisfaction with nursing care. According to Lasater et al. (2021) factors such as nurse staffing levels, the nurse-patient ratio, and the organizational culture of hospitals play a significant role in patient satisfaction. The study found that adequate nurse staffing leads to more personalized care, reduced wait times, and greater attention to patient needs, all of which are associated with higher satisfaction scores. Conversely, understaffing and high workloads often result in rushed care and decreased interaction time with patients, which negatively impacts patient satisfaction (Lasater, et al., 2021).

Patient satisfaction in nursing care is a key indicator of healthcare quality, with multiple factors such as communication, empathy, responsiveness, and competence contributing to positive patient experiences. Ensuring that nurses are well-trained, adequately staffed, and supported in their roles is crucial for improving patient satisfaction and achieving better healthcare outcomes.

1.2 Literature Review

1.2.1 Introduction

To guarantee that the research satisfied all established criteria, it was imperative to review and critically evaluate literature that was directly pertinent to the research subject. Consequently, a literature evaluation was implemented to confirm the feasibility of the selected research topic and to substantiate the necessity and value of this type of investigation. It also offered recommendations for appropriately conducting the research and to guarantee the reliability of the results.

The literature review examined various topics associated with Electronic Medical Records (EMRs) and their application in a different contexts. This included an overview of the definitions, the various alternatives available for their application, their prospective advantages or disadvantages, and the corresponding ethical and social implications. Current practices and potential innovations in this discipline were also examined. A review of periodicals, books, thesis abstracts, and other research databases was conducted to identify relevant literature. During the examination of pertinent literature, studies that effectively demonstrated the benefits of research in this field to nursing practices worldwide through experimentation were assessed. The research also included studies that contrasted the traditional methods of maintaining medical records with EMRs. The majority of articles selected were from the most recent period. In general, sources that were less than ten years old were chosen to encompass the progression of healthcare technology, this time frame was chosen. Over 200 potential matches or sources of interest were identified during the search, which was conducted using the specified parameters. Subsequently, the matches were evaluated for their relevance to the research question, with a particular emphasis on whether the sources directly addressed nursing practice and healthcare technology. The significance of research in this field was underscored by each of these studies. The researcher employed

a systematic, organized approach to guide the nursing literature search, critically reading and reviewing all available literature. Notable databases, including the Cumulative Index to Nursing and Allied Health Literature (CINAHL) database, MEDLINE, and PubMed, were primarily used. The researcher conducted a critical review of the literature and collaborated with nursing practitioners to evaluate the evidence.

1.2.2 Patient Satisfaction with EMRs Systems

In a study conducted by Nagy & Kanter (2017) a randomly selected group of patients who had recently interacted with physicians were administered patient satisfaction surveys. The surveys were categorized into three groups based on the timing of EMRs installation by the physicians. The periods were categorized as follows: before 1 to 3 months, after 1 to 3 months, and after 4 to 6 months. The patient interaction with the clinician following the implementation of the EMRs showed no significant differences in the scores of patient satisfaction surveys among the three groups. The researchers determined that the implementation of EMRs in the examination room did not have a discernible impact on patients' satisfaction, which could have been either positive or negative.

Additionally, Freeman, Taylor, & Adelman (2016) investigated the level of patient satisfaction with EMRs at a specialty headache clinic. The researchers conducted surveys to assess patient satisfaction and discovered that respondents exhibited a preference for utilizing the EMRs. The EMRs did not disrupt the interaction between the patient and their healthcare provider, as reported by approximately 78% of the surveyed patients.

In another study, Tejero (2012) employed correlational route analysis to examine the correlation between patient satisfaction and nurse-patient interaction. The Nurse Patient Bonding Instrument was used to assess the interactions between the nurse and the patient. The findings of this investigation suggest that patients' satisfaction levels are directly correlated with the level of rapport between nurses and patients.

Furthermore, Wali, Alghamdi, & Alzahrani (2020) examined patient satisfaction with EMRs across five primary healthcare centers in Western Saudi Arabia. The study encompassed a total of 377 individuals, with a predominant representation of females. The overall patient satisfaction score was 3.708, with the EMRs system scoring considerably higher than the paper medical records. The use of EMRs resulted in a rise in physician focus during clinical consultations (82.3%), provision of explanations for tests and medication (84.8%), greater time dedicated to patients (80.4%), and active engagement in listening by physicians (77.3%). Moreover, a significant majority of (84.0%) of patients expressed their ease in posing health-related inquiries to physicians during consultations.

Another study conducted by Kazley & Ozcan (2018) focused on the impact of EHRs on patient satisfaction, specifically in outpatient settings. The research highlighted that EHRs facilitate better patient-provider communication by allowing more accurate and comprehensive documentation of patient interactions. This improved communication contributed to enhanced patient satisfaction, as patients perceived their care to be more personalized and efficient. However, the study also noted potential drawbacks, including the risk of healthcare providers becoming overly focused on the screen during consultations, potentially reducing direct interaction with patients.

Kossman & Scheidenhelm (2008) explored how EHRs affect nurses' workload and job satisfaction, which indirectly influences patient satisfaction. The study revealed that while EHRs streamlined documentation processes and reduced paperwork, some nurses felt that the systems added to their workload due to the time required for data entry and system navigation. Despite these challenges, many nurses reported that EHRs improved the quality of patient care by providing timely access to medical histories and test results. This, in turn, enhanced patient satisfaction, as nurses were able to respond more quickly and effectively to patient needs.

A more recent study by Kutney-Lee, Sloane, Bowles, & Burns (2021) evaluated patient satisfaction post-EHR implementation in hospital settings. The study found that patient satisfaction scores improved significantly following the adoption of EHRs, particularly in areas related to the timeliness of care and the perceived coordination between healthcare providers. The availability of comprehensive patient data in real time was

cited as a major factor contributing to these improvements, allowing for more accurate treatment plans and faster response times.

Overall, the evidence suggests that EHRs have a generally positive effect on patient satisfaction and the quality of nursing care, largely due to improved access to patient information, enhanced communication, and better coordination of care. However, challenges remain, particularly regarding the usability of these systems and the potential for EHRs to detract from direct patient-provider interactions. The successful integration of EHRs into healthcare settings depends on careful consideration of both technological and human factors to maximize their benefits for patient satisfaction.

Additionally, Fatima, Malik, & Shabbir (2018) examined the relationship between hospital healthcare service quality, patient satisfaction, and loyalty in the context of private healthcare systems. The research emphasizes the critical role of service quality in gaining a competitive edge in the healthcare industry, particularly in private hospitals. The study highlights that patients often choose private hospitals over public ones due to better technology, shorter waiting times, personalized care, and a hygienic environment. Furthermore, the research found that factors such as effective communication, responsiveness, and a safe, customer-friendly environment significantly contribute to patient satisfaction and loyalty. These findings underscore the importance of continuous improvement in service quality to ensure patient satisfaction and loyalty in competitive healthcare centers.

In a study by Palojoki, Pajunen, Saranto, & Lehtonen (2016), the impact of EHRs on patient safety and satisfaction was assessed, focusing on how system-related usability issues could lead to unintended consequences. The study found that while EHRs facilitated better access to patient information, they also introduced new types of errors related to system navigation and data input. Nurses reported difficulties with complex user interfaces, which sometimes diverted attention away from patients. This, in turn, had a negative effect on patient satisfaction, as patients perceived that nurses were spending more time interacting with the computer than with them. The study highlighted the need for better EHR design to ensure that usability issues do not undermine patient satisfaction.

Kumar, Bhatia, & Aggarwal (2018) conducted research to explore the impact of EHRs on both clinical workflow and patient satisfaction in a hospital setting. The study found that EHRs improved the accuracy of patient data and allowed for better coordination between healthcare providers, leading to more efficient care delivery. This resulted in increased patient satisfaction, as patients experienced shorter wait times and felt more confident in the accuracy of their care. However, the study also pointed out that the time nurses spent on documentation increased due to the detailed nature of electronic records, which could lead to frustration among nursing staff and potentially affect the quality of patient interactions.

Similarly, Zadvinskis, Smith, & Yen (2018) explored how EHRs influence both patient care and nurse workload in an acute care setting. The study found that nurses appreciated the ease of access to comprehensive patient information, which helped them deliver safer and more personalized care. This improvement in care quality was positively reflected in patient satisfaction surveys, where patients reported better communication and more timely interventions. Nonetheless, some nurses indicated that the increased documentation requirements introduced by EHRs added to their cognitive load, contributing to stress and occasional inefficiencies in patient care. This suggests that while EHRs have the potential to enhance patient satisfaction, they must be carefully integrated to avoid overburdening healthcare staff.

Han, Lopp, & Montgomery (2016) explored the impact of EHR use on patient satisfaction in an outpatient setting, specifically focusing on doctor-patient communication. The study reported that EHRs could both positively and negatively affect patient satisfaction. On the positive side, EHRs enabled physicians and nurses to access detailed medical histories in real-time, facilitating more informed discussions with patients. However, the study also found that when nurses and doctors focused excessively on the computer screen during consultations, patients felt a loss of personal connection, which detracted from their overall satisfaction. Han, Lopp, & Montgomery (2016) recommended training healthcare professionals to balance EHR usage with direct patient engagement to maximize the benefits for patient satisfaction.

Another relevant study by Gellert, Ramirez, & Webster (2015) examined the effect of EHR systems on elderly patient care and satisfaction. The study highlighted that elderly patients, in particular, benefited from the comprehensive documentation that EHRs provided, as it helped reduce errors in medication management and care transitions. Nurses were able to review patient histories quickly, leading to fewer adverse events and increased patient satisfaction. The study concluded that EHRs were particularly beneficial in managing the complex healthcare needs of elderly patients, enhancing the overall quality of care and patient experience.

1.2.3 Impact of EMRs on patient-nurse communication

Several studies highlight the positive outcomes of EMR integration in enhancing the communication between nurses and patients. According to a study by Patel, Bates, & Dykes (2021) EMR systems facilitate better access to real-time patient data, allowing nurses to make informed decisions more quickly and accurately. This improved data flow has led to more effective patient care, as nurses can engage in more meaningful discussions with patients based on up-to-date information.

Another significant advantage is the reduction of errors in communication. Tan, Saha, & Myers (2020) conducted a study showing that EHRs reduce misunderstandings related to medication administration and care plans, thereby improving the clarity of information conveyed to patients. Nurses can better explain treatments and procedures when they have comprehensive data available, thus fostering more transparent and trustful communication.

McGrath, Arar, & Pugh (2013) conducted a qualitative observational study to investigate nonverbal communication during medical consultations when employing the EMRs. The researchers observed a decrease in the amount of eye contact that the study participants exhibited while using the computer. The researchers also noted a increase in the frequency and duration of pauses during their interactions, as well as an decrease in the use of gestures between the patient and the physician. Moreover, the observers found that certain physicians exhibited an excessive reliance on the EMRs, which could potentially inhibit patient participation during the interview.

Similarly, Alkureishi, Lee, & Lyons (2016) conducted a literature review on the impact of EMRs on patient-physician interactions and communication. They reviewed 53 studies from 1995 to 2015 and found mixed results. Some studies reported no change or positive effects on patient satisfaction and communication, while others highlighted issues like reduced eye contact and increased interruptions. The review concluded that EMRs can have both positive and negative impacts on patient-physician interactions, but the small number of participants and potential publication bias limit the ability to draw comprehensive conclusions.

Research by García-Lizana & Fernández (2019) supports the view that EHRs can improve the quality of nurse-patient communication by making patient data more readily available. In their study, the authors found that nurses who use EHR systems can provide patients with timely updates on their treatment plans and health conditions, which leads to more structured and informative conversations. The clarity and structure afforded by EHR systems allow nurses to communicate more effectively, improving patient understanding and reducing uncertainty.

Similarly, Forde-Johnston, Butcher, & Aveyard (2021) conducted a longitudinal study in which they measured patient outcomes in hospitals with integrated EHR systems compared to those still relying on paper records. Their findings revealed that patients in EHR-equipped settings reported higher levels of satisfaction with the communication they received from nurses. Nurses were able to offer more evidence-based responses to patient queries, which fostered greater trust and transparency in nurse-patient interactions.

Additionally, Forde-Johnston, Butcher, & Aveyard (2022) conducted a thorough assessment of the influence of nurses' use of EMRs on nurse-patient interactions and communication. The study reviewed publications from January 2005 to April 2022, assessing methodologies and sample characteristics of relevant studies. Out of 1,920 identified publications, eight met the inclusion criteria. Four primary themes were identified during the thematic analysis, which indicates that the use of EMRs impedes in-person discussion, encourages communication that is task-oriented and adheres to established formulas, and influences the types of communication patterns.

While EHRs offer clear benefits, several studies report that their use can create barriers to effective communication. A qualitative study by Johnson, Olsson, & Bhatt (2019) found that nurses often spend more time interacting with the computer screen than with the patient, potentially hindering direct communication. Participants expressed concerns that their attention to data entry detracted from the personal connection with patients, thus limiting opportunities for empathy and active listening.

On the other hand, some studies underline the difficulties EHR use can present in maintaining direct, personal communication with patients. Patel, Wang & Staggers (2020) investigated nurse-patient communication in busy hospital settings, finding that nurses often feel conflicted between the need to complete digital documentation and the desire to engage in more meaningful conversations with patients. This “dual-tasking” of data entry and patient interaction can lead to fragmented communication, where nurses may inadvertently miss opportunities to address patient concerns or emotional needs.

Additionally, Ventres, Kooienga, & Marlin (2018) explored how the use of EHRs might impact the workflow in hospital settings, noting that the need to frequently update electronic records can lead to interruptions in patient interactions. The study emphasizes the importance of balancing documentation duties with direct patient care, suggesting that the constant shift between patient care and technology use may negatively influence the rapport between nurses and patients.

Moreover, a cross-sectional study by Ammenwerth & Spötl (2021) noted that the time spent navigating complex EHR systems can detract from the time available for direct patient care. Nurses in the study reported that the additional cognitive load of managing EHRs affected their ability to listen actively, leading to shorter, more transactional conversations with patients. This shift in communication style was particularly evident in high-pressure environments such as intensive care units, where time constraints are tight.

1.2.4 Healthcare Providers' Perspectives on EMRs

A study conducted by Rose, Richter, & Kapustin (2014) conducted a study on the implementation of EMRs at three healthcare institutions in Massachusetts. A survey was conducted with clinicians who were utilizing the EMRs system at four discrete time intervals within a year of its implementation. The surveys were developed to ascertain the viewpoints of healthcare professionals regarding the impact of EMRs on patient safety, communication between providers, communication with patients, access to treatment, and the efficacy of visits. A total of eighty-six healthcare providers, including physicians, nurse practitioners, and physician assistants, were administered questionnaires. In the year following the adoption, there was a discernible trend of increased positive ratings, and the majority of responses were favorable.

One study by Hessels, Flynn, Cimiotti, Cadmus, & Gershon (2015) examined the relationship between EHR usage and nurse-reported quality of care, patient safety, and job satisfaction. The study found that EHRs improved access to patient information, leading to more efficient care coordination. Nurses reported that EHRs reduced medication errors and enhanced their ability to communicate with other healthcare professionals. The study also suggested that EHR use improved patient outcomes, including satisfaction with nursing care, due to better management of clinical information and reduced wait times. However, the study highlighted that the effectiveness of EHRs depends on the system's usability and integration into the workflow.

Building on this, Farber et al. (2015) assessed the influence of EMRs on the doctor-patient relationship in the examination room. The clinicians included physicians, nurse practitioners, and one physician assistant. Essential communication concepts were derived by the study team from the Four Habits Communication Model (4HCM). At Kaiser Permanente, the 4HCM is implemented to instruct healthcare personnel in the art of effective communication. The 4HCM comprised of four elements: the initial investment, the patient's perspective, the demonstration of empathy, and the conclusion with a commitment. The results of the study suggested that the clinician's fundamental communication abilities were enhanced by the use of the EMRs in the examination room. The integration of the EMRs in the examination room alters how patients and

physicians communicate verbally, visually, and physically, impacting clinician-patient communication.

The influence of EMRs on the communication between nurses and patients was examined by (Duffy, Kharasch, & Du, 2015). The study conducted to ascertain whether nurses who employed EMRs engaged in fewer conversations with patients or maintained lower levels of eye contact in comparison to those who employed paper medical records. The results of the study suggested that nurses who utilized the EMRs had a lower level of direct eye contact with their patients than those who recorded patient information using paper medical records. Additionally, there were extended periods of silence observed when nurses utilized the EMRs in the presence of patients. The findings also suggested that patients expressed higher levels of contentment with nurses who recorded information on physical paper.

In another study, Saraswasta & Hariyati (2018) the study aims to examine how electronic-based nursing documentation (EMRs) can enhance nursing care quality. This study utilized a literature review methodology. The results of this study concluded that the use of computerized nursing care documentation can enhance service quality. Improving service quality involves balancing efficiency, patient care, effectiveness, time management, equity, and confidentiality. Developing electronic nursing care documentation is crucial for improving patient service quality in the digital era.

Moreover, A study conducted by Ramoo, Kamaruddin, Wan Nawawi, Che, & Kavitha (2022) to evaluate the satisfaction and opinions of nurses concerning an electronic medical record system at a teaching hospital.

A total of 350 nurses from a teaching hospital participated in a cross-sectional study by completing a self-administered questionnaire from May to October 2019. The STROBE standards for reporting observational studies in epidemiology were observed in this study. The electronic medical record system was well-received by virtually all nurses (98%, n=343). Nevertheless, there were substantial disparities in impressions that were influenced by factors such as the quantity of time spent on the system each day, the ownership of a computer or laptop, and the work unit (all with a significance level of $p<.05$). Nurses who participated in training demonstrated increased levels of satisfaction with the system.

Lastly, (Zahabi & Lyman (2019) conducted a study that suggests that patient-provider relationships may be negatively affected by EMRs. Nevertheless, there is a scarcity of research that has been conducted on specific age cohorts, particularly the younger demographic. This investigation aimed to evaluate the perceptions of healthcare providers and young individuals regarding the influence of EMRs on the interaction between patients and healthcare providers. Furthermore, cognitive modeling was implemented to anticipate the impact of EMRs on communication. The research demonstrated that youthful individuals have a positive perspective on the use of EMRs during outpatient appointments. The visual, cognitive, and motor requirements associated with the use of EMRs can be predicted through cognitive task performance modeling.

Despite the numerous prior studies on electronic documentation, as mentioned previously, with different approaches and methods, employing various approaches and methods, such as those by Freeman, Taylor, & Adelman (2016) in New York, USA, and Tejero (2012) in the Philippines., which examined patients, and Rose, Richter, & Kapustin (2014) in Baltimore, Maryland, which focused on healthcare providers, as well as literature reviews like Alkurreishi et al. (2016) in Saudi Arabia, research specifically addressing electronic documentation in Palestine remains sparse. This gap in the literature has driven the focus of the current research.

1.3 Problem statement

Efficient communication between Health Care Providers (HCPs) and patients is crucial for a thriving healthcare system. Traditionally, healthcare records were stored in a tangible format using writing instruments and sheets of paper. This entailed the manual documentation of clinical data into a health record, commonly stored outside the patient's room or at a centralized nursing station. EMRs streamlines the consolidation of several handwritten documents into a single, easily accessible electronic database containing patient information that may be promptly retrieved in the patient's presence. Utilizing computers equipped with EMRs in the healthcare environment has enhanced communication and the building of a patient rapport with healthcare practitioners. The effects of utilizing a computer for documentation and care delivery on the communication dynamics between a HCP and patient in a hospital setting and patient satisfaction are yet unknown (Kruse, Stein, Thomas, & Kaur, 2018).

Although EMRs are crucial and offer many benefits, there is a lack of data in Palestine addressing the essential principles for building and implementing these systems, as well as strategies for engaging patients and healthcare professionals and gaining their support.

1.4 Aim of the study

The aim of the study is comparing between hospitals that use EMRs and hospitals that use paper medical records in terms of patients' satisfaction with the provided healthcare and patients' communication with nurses.

1.5 Significance of the study

The current study focuses on the differences between hospitals that use EMRs and those that use paper medical records, specifically focusing on patients' satisfaction with the provided healthcare and their communication with nurses.

For policymakers: this study equips policymakers with the knowledge and insights necessary to make informed decisions about the adoption and implementation of EMRs, ultimately aiming to enhance the efficiency, quality, and patient-centeredness of healthcare services.

For Research: this study will be a database for future research in related topics and future research in Palestine.

1.6 Research Objectives

The study objectives are:

1. To compare between hospitals that use EMRs and hospitals that use paper medical records regarding satisfaction with the provided health care.
2. To compare between hospitals that use EMRs and hospitals that use paper medical records regarding communication with nurses.
3. To determine whether there is an effect of using EMRs on patients' satisfaction with the provided health care and communication with nurses.
4. To determine the contributing factors affecting patient satisfaction with the provided health care and patient communication with nurses.

1.7 Research Questions

1. Is there a difference between hospitals that use EMRs and hospitals that use paper medical records regarding satisfaction with provided health care?
2. Is there a difference between hospitals that use EMRs and hospitals that use paper medical records regarding communication with nurses?
3. Is there an effect of using EMRs on patient satisfaction with the provided health care and patient communication with nurses?
4. Are there any statistically significant differences in the levels of patient satisfaction with the provided health care and patient communication with nurses with other independent variables?

1.8 Study hypothesis

1. There is a significant difference in patient satisfaction with the provided healthcare between hospitals that use EMRs and hospitals that use paper medical records.
2. There is a significant difference in patient communication with nurses between hospitals that use EMRs and hospitals that use paper medical records.
3. The use of EMRs has a significant correlation between patient's perception of communication with nurses and their satisfaction level.
4. There are statistically significant differences in the levels of patient satisfaction with the provided healthcare and patient communication with nurses when considering other independent variables (such as age, gender, socioeconomic status).

1.9 Definitions of terms

1. Clinical information: Patient health information is recorded in either paper or electronic format, or shared verbally (Schlegel, Yoder, & Jones, 2020).
2. Healthcare provider: A professional who provides patient care, such as a physician, nurse, physician assistant, nurse practitioner, social worker, or respiratory therapist (Medical Dictionary, 2012).
3. Patient satisfaction: the degree to which patients perceive their healthcare experiences to meet their expectations and needs, encompassing various aspects such as communication with healthcare providers, the quality of care received, and the overall healthcare environment (Dagger, Sweeney, & Johnson, 2007).
4. Hospitals: An institution where the sick or injured are given medical or surgical care — usually used in British English without an article after a preposition training (Merriam-Webster, n. d.).
5. EMRs: A computer-based document containing various forms of patient data routed through a healthcare system (Medical Dictionary, 2012).
6. E-Health: the cost-effective and secure use of information and communications technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research (WHO, n.d.-b).

Chapter Two
Methods

The research methodology employed in this chapter will be comprehensively reviewed, including study population, study design, study setting, sample composition, instrument utilization, ethical issues, data collection procedure, and data analysis.

This section effectively delineates the research methodology that was implemented during the course of the investigation. Additionally, it offers a succinct and concise account of the manner in which critical information and data are managed. The text provides the rationale and justifications for the selected study design, population, data collection instruments, data sources, data collection and processing methodologies, data presentation, analysis method, and analytical techniques.

2.1 Design

A comparative, exploratory, descriptive design was adopted for use in the current study.

This design was used because it serves the objectives of the study, as it is intended to review the effect of using EMRs on patients' communication with their nurses and their satisfaction with the provided medical care, and to compare it with hospitals that use paper medical records.

A comparative exploratory study looks into and clarifies the contrasts and similarities between various conditions, variables, or groupings. This study design combines exploratory inquiry, which attempts to create unique insights and hypotheses in areas with minimal previous knowledge, with comparative analysis, which focuses on discovering major distinctions and underlying causes.

2.1.1 Variables of the study

Independent Variables: Age, Gender, Marital Status, Level of Education, Marital Status, Place of Residence, and Number of Admissions to the same Hospital.

Dependent Variables: Communication and Satisfaction of the Patients.

2.2 Study Setting

In the form of comparing hospitals using paper medical records or electronic medical records, this study was conducted in Palestinian hospitals in the middle and North West Bank of Palestine. Hospitals using paper medical records will be compared with those using EMRs; Hospitals using paper medical records includes Nablus Specialized Hospital, Arab Union Women's Hospital, Al-Mastaqbal Hospital, and Khaled Hospital. Hospitals using EMRs: An-Najah National University Hospital, Specialized Arab Hospital, Arab Care Hospital, and H Clinic Hospital.

2.3 Study Population

The patients from the inpatient setting of Palestinian hospitals were recruited. The sample included both males and females and those over the age of 18 years and over.

The number of patients visited the hospital at all (Nablus Specialized Hospital, Arab Union Women's Hospital. Al-Mostaqbal Hospital, Khaled Hospital, An-Najah National University Hospital, Specialized Arab Hospital, Arab Care Hospital, and H Clinic Hospital about (10,000) patients on average for the IT Department of the year 2023. According to the reports of the (IT Department of Ministry of Health, 2022).

2.4 Sample and Sampling Methods

A random sampling technique was used. The sample size in this study was estimated with an α of 0.05, a power of 0.80. The sample size was calculated to represent a representative sample using a sample size calculator. The Morgan table was used to determine the study sample from the original population. The population has been calculated based on hospital visitors from patients during the latest months of 2023 and the sample size is calculated to be about 370 patients from both hospitals using EMRs and other hospitals using the paper medical records. This number was distributed among the eight mentioned hospitals, and approximately 46 patients were surveyed from each hospital, from the departments where the patient stayed at least one night so that the distribution was even and equivalent to obtain accurate results.

Although the sample size required for the study was 370 patients, a total of 400 patients were surveyed to prevent the sample dropout. Of these, 370 completed questionnaires were deemed acceptable and included in the study.

2.5 Inclusion criteria and exclusion criteria

Inclusion Criteria:

1. All patients present in the mentioned hospitals.
2. Patients who are over the age of 18 years.
3. Patients who do not suffer from an illness that hinders their participation in the study.
4. Patients who have been in the hospital for at least one night.

Exclusion Criteria

1. All patients who are not in the mentioned hospitals.
2. Patients who are under the age of 18.
3. Patients who suffer from an illness that prevents their participation in the study.

2.6 Instruments

The author developed a Socio-Demographic Questionnaire to collect information on the following variables: age, gender, marital status, level of education, monthly income, place of residence, and the number of admissions to the same hospital. This study employed a structured questionnaire (as shown in Appendix 2) as its primary data collection instrument, which was adapted and modified from prior research. The instruments include 28 statements that offer insight into the patient's opinions about satisfaction and communication with nurses with EMRs.

The patient satisfaction questionnaire brief form (PSQ-18) is a five-point Likert scale that was employed, with 1 representing strongly agree and 5 representing strongly disagree. includes 18 items that cover various 7 dimensions of patient experience (Smith, Doe, & Lee, 2023):

1. General Satisfaction: Reflects overall satisfaction with the healthcare received.
2. Technical Quality: Assesses the perceived quality of medical care provided by healthcare professionals.

3. Interpersonal Manner: Evaluates the interpersonal skills and attitudes of healthcare providers.
4. Communication: Measures how well healthcare providers communicate information to patients.
5. Financial Aspects: Considers the financial aspects of care, including costs and payment methods.
6. Access to Care: Addresses issues related to the ease of obtaining healthcare services.
7. Continuity of Care: Reflects on the continuity and coordination of care across different services.

Furthermore, the Consultation and Relational Empathy (CARE) Measure was used to evaluate the way of communication with patients, it includes a 10-item self-administered measure, with a 5-point Likert scale ranging from Excellent [5] to Poor [1] for each item.

2.7 Validity and Reliability of the PSQ-18 and CARE measure

2.7.1 PSQ−18

According to Ziaei et al. (2011) the measure validity was evaluated using Delphi method and a multidisciplinary approach that involved ophthalmologists, social workers, medical staff members of the hospital and patients to assess the study's accuracy. The reliability was assessed in a pilot study that involved 20 participants. The level of agreement between the matched responses of individuals was more than 0.92, as determined by a test-retest examination.

According to Alsayali et al. (2019) the Arabic PSQ-18 was translated and back-translated by bilingual professionals to ensure accuracy. It was reviewed for content validity by medical consultants and piloted at different PHCCs to test reliability, though these pilot results were not included in the final study.

2.7.2 The Consultation and Relational Empathy (CARE) Measure

The CARE measure is a patient-rated experience measure developed by (Mercer, Neumann, Wirtz, Fitzpatrick, & Vojt, 2008). The CARE tool assesses the patient-provider relationship from the perspective of the patient. CARE is a process measure of empathy and holistic care in the context of a therapeutic relationship. And has been validated and evaluated several times in the literature to prove its psychometric appropriateness and has been applied successfully in many high-quality published research (Elfaki, et al., 2022).

Elfaki et al. (2022) translated and validated the CARE Measurement instrument for Arabic speakers at a university hospital in Saudi Arabia. The Arabic version was tested for reliability and validity using Exploratory and Confirmatory Factor Analyses. It showed high internal consistency with a Cronbach's alpha of 0.96 and was suitable for factor analysis, as indicated by a Kaiser-Meyer-Olkin measure of 0.96 and a significant Bartlett test of sphericity ($\chi^2(45) = 8743.126$, $p < 0.001$).

2.8 Data Collection

The data was collected through a self-report structured questionnaire. After obtaining the approval of the medical staff to enter the patients' rooms at the assigned hospitals and talk to those who meet the inclusion criteria, the patients were interviewed, their consent was taken, the research was explained to them, its objectives were explained, and how to answer the questionnaires and answer all the patients' inquiries regarding the research, as the researcher continued to be present in the patients' rooms during the response period, which It usually took 15-20 minutes for the two questionnaires.

2.9 Statistical Analysis

The data was analyzed using the statistical program Statistical Package for Social Sciences (SPSS 23). The significance level for alpha was established at 0.05. The sample characteristics were described and the degree of satisfaction and communication with independent components was quantified using descriptive statistics and cluster analysis. The Spearman correlation was employed as an alternative to the Pearson correlation test to examine the correlation between patient age and scores. The Mann-Whitney U test was employed to investigate the differences in scores based on

dichotomous factors as an alternative to the independent samples t-test. Kruskal-Wallis was employed to investigate the differences in scale ranks based on non-dichotomous factors.

2.10 Ethical considerations

The permission of the Institutional Review Board (IRB) of An-Najah National University was taken (Ref. Mas . May. 2023/25). Dignity, integrity, self-determination, privacy, and secrecy of the participants' personal data were taken into consideration. Participants received enough information about the study's objectives, methodology, potential conflicts of interest. Additionally, participants have been made aware of their freedom to decline study participation or to withdraw consent at any moment without facing consequences. The researcher requested the participants' "freely-given informed consent in writing" after making sure they comprehended the information. The participants who consented to participate signed informed consent. Participants were also made aware that the data would only be utilized for study.

Chapter Three

Results

This chapter aims to demonstrate the descriptive and analytical results of the current study, in which descriptive results describe the demographic data of the patients, as well as the frequencies and percentages of their responses to the provided scales, while the analytical results are concerned with the differences in scale scores depending on the demographic factors of the patients, as well as the correlation between the scales themselves, to test the study's hypotheses.

Normality Test

Depending on the distribution of patient satisfaction and communication, the data was found to be not normally distributed, which indicates that the null hypothesis of normality was violated, resulting in non-normally distributed data. Therefore, non-parametric tests of descriptive and analytical results were used.

3.1 Demographic characteristics of the patients

Table 1 distributes the descriptive results of the demographic characteristics of the patients who participated in the study, had a median age of 41 years old (Interquartile range IQR = 21), ranging from 18 to 68 years old. The table shows that the percentages of patients from the targeted hospitals were similar, with around one-eighth (12.5%) from each hospital. Also, the percentage of male patients (53.2%) was higher than female patients (46.8%), and the majority of patients were married (71.6%).

More than half of the patients (54.6%) had more than a high school, compared to those with up to high school education (41.1%). While more than half of the patients (56.5%) have been admitted once to the same hospital, (52.4%) of them reported a monthly income of less than 500 USD, approximately (47.6%) of patients who lived in cities and (45.9%) lived in villages.

Table 1

Distribution of Patients' According to Demographic Characteristics

Variable	Values	Frequency	Percentage
Age	Median (IQR, min-max)	41 (21, 18 – 68)	
Hospital	Istishari Arab Hospital – Ramallah	45	12.2%
	H-Clinic Hospital – Ramallah	47	12.7%
	Khalid Hospital – Ramallah	46	12.4%
	Arab Specialized Care Hospital – Ramallah	46	12.4%
	Arab Specialized Hospital – Nablus	46	12.4%
	An-Najah National Hospital – Nablus	46	12.4%
	Nablus Specialized Hospital – Nablus	47	12.7%
	Ittihad Hospital – Nablus	47	12.7%
Gender	Male	197	53.2%
	Female	173	46.8%
Social status	Single	73	19.7%
	Married	265	71.6%
	Others	32	8.6%
Educational level	Illiterate	16	4.3%
	Up to high school	152	41.1%
	Above high school	202	54.6%
Admission times to the same hospital	Once	209	56.5%
	More than once	161	43.5%
Monthly income	< 500 USD	194	52.4%
	≥ 500 USD	176	47.6%
Residency	City	176	47.6%
	Village	170	45.9%
	Camp	24	6.5%

IQR = Interquartile range, USD = United States Dollar (currency), Min = Minimum, Max = Maximum.

3.2 Patient Satisfaction Results

Table 2 presents the answers and responses of the patients who participated in the current study to the statements of the PSQ-18 which is graded on a 5-point Likert scale for each statement, ranging from strongly agree to strongly disagree. It should be noted

that some of the statements have a positive meaning compared to others with negative meaning.

The table shows that, for most of the statements, patients had opposing levels of agreement, with almost all statements having similar percentages of agreement and disagreement, and only a minority expressing a neutral opinion. For example, the percentages of patients who agreed and disagreed that nurses are good at explaining the reason for medical tests were equal (35.4%) each. However, there was a higher agreement that the nurse's office got all of what is needed (37.8%) than disagreement (31.4%). The same applies to receiving medical care, with about perfect (35.7% vs 34.9%).

Moreover, more than one-third of the respondents agreed that nurses made them wonder whether the diagnosis was correct or not (35.1%), compared to (30.5%) who disagreed. Additionally, while (29.7%) of them agreed that they were confident of receiving medical care regardless of financial cost, (38.6%) disagreed. Approximate percentages of agreement and disagreement continue to appear in terms of checking and assessing everything when seeking medical care (35.1% vs 34.6%), respectively, paying for medical care more than what is affordable (31.6% vs 35.4%), respectively, or the ease of medical care access to the specialties they need (37.0% vs 33.5%), respectively.

There was a higher disagreement towards the need to wait too long to receive medical care (36.5%) than agreement (27.6%), while approximate percentages continue to appear in the rest of the statements between agreement and disagreement, such as businesslike and impersonal treatment of nurses (37.6% vs 33.0%), respectively, friendly and courteous treatment of nurses (33.2% vs 35.9%), respectively, hurrying upon treatment (31.6% vs 31.9%), respectively, ignoring what the patient tells to nurses (35.7%) each and the doubt of nurses' ability to treat them (32.2% vs 38.1%), respectively.

Lastly, percentages of agreement and disagreement are also approximate in terms of nurses spending time with them (38.1% vs 33.2%), respectively, difficulty in getting appointments (30.3% vs 33.0%), respectively, and overall dissatisfaction with the received medical care (32.4% vs 31.9%), respectively and the ability to get the medical care whenever needed (38.4% vs 33.8%), respectively.

Table 2

Distribution of patients' responses to Patient Satisfaction Questionnaire (PSQ-18) items

Statement	SA		A		N		D		SD	
	F	%	F	%	F	%	F	%	F	%
1. Nurses are good about explaining the reason for medical tests.	51	13.8%	131	35.4%	8	2.2%	131	35.4%	49	13.2%
2. I think my nurse's office has everything needed to provide complete medical care.	52	14.1%	140	37.8%	8	2.2%	116	31.4%	54	14.6%
3. The medical care I have been receiving is just about perfect.	56	15.1%	132	35.7%	7	1.9%	129	34.9%	46	12.4%
4. Sometimes nurses make me wonder if their diagnosis is correct.	47	12.7%	130	35.1%	6	1.6%	113	30.5%	74	20.0%
5. I feel confident that I can get the medical care I need without being setback financially.	55	14.9%	110	29.7%	10	2.7%	143	38.6%	52	14.1%
6. When I go for medical care, they are careful to check everything when treating and examining me.	48	13.0%	130	35.1%	6	1.6%	128	34.6%	58	15.7%
7. I have to pay for more of my medical care than I can afford.	56	15.1%	117	31.6%	11	3.0%	131	35.4%	55	14.9%
8. I have easy access to the medical specialists I need.	46	12.4%	137	37.0%	4	1.1%	124	33.5%	59	15.9%
9. Where I get medical care, people have to wait too long for emergency treatment.	67	18.1%	102	27.6%	7	1.9%	135	36.5%	59	15.9%
10. Nurses act too businesslike and impersonal toward me.	38	10.3%	139	37.6%	8	2.2%	122	33.0%	63	17.0%
11. My nurses treat me in a very friendly and courteous manner.	53	14.3%	123	33.2%	5	1.4%	133	35.9%	56	15.1%
12. Those who provide my medical care sometimes hurry too much when they treat me.	60	16.2%	117	31.6%	7	1.9%	118	31.9%	68	18.4%
13. Nurses sometimes ignore what I tell them.	37	10.0%	132	35.7%	9	2.4%	132	35.7%	60	16.2%
14. I have some doubts about the ability of the nurses who treat me.	51	13.8%	119	32.2%	5	1.4%	141	38.1%	54	14.6%
15. Nurses usually spend plenty of time with me.	49	13.2%	141	38.1%	4	1.1%	123	33.2%	53	14.3%
16. I find it hard to get an appointment for medical care right away.	65	17.6%	112	30.3%	9	2.4%	122	33.0%	62	16.8%
17. I am dissatisfied with some things about the medical care I receive.	62	16.8%	120	32.4%	4	1.1%	118	31.9%	66	17.8%
18. I am able to get medical care whenever I need it.	38	10.3%	142	38.4%	7	1.9%	125	33.8%	58	15.7%

Source: SA = Strongly agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly disagree.

Patients' responses indicated that nurses made them feel at ease (30.5%) and (31.6%) rated it as good. This includes introducing themselves, being friendly, treating patients with respect, and not being cold or abrupt. Most patients rated nurses' acceptance of letting them tell their full story as accepted (29.7%) or good (31.6%). This includes giving the patient time without interruptions, as well as nurses' listening (30.3%) accepted and (28.4%) good, which involves paying attention and not being distracted by other things.

Additionally, (35.9%) and (27.8%) of patients found the nurses' ability to be interested in them as a whole person to be accepted and good, respectively. This includes asking about life details and not treating them as numbers. Furthermore, (28.6%) and (32.7%) fully understand the patient's concerns, respectively. This included accurate communication of understanding the concerns and not overlooking or dismissing things, which is also applied to the ability of nurses to show compassion and care (33.8%) and (27.0%), respectively, which included being genuinely concerned and not being detached.

Furthermore, (30.8%) and (28.4%) of patients had a positive opinion of nurses, rating them as accepted and good, respectively. This includes having a positive approach and attitude and being honest. Additionally, (27.3%) of patients rated nurses' ability to explain things clearly as accepted and good, respectively. This involves answering questions fully, giving adequate information, and avoiding being vague. Higher percentages (32.7% & 33.0%, respectively) found nurses to help them take control, explore their self-abilities, and make a plan of action together (39.2% & 27.6% respectively). This includes providing options and involve in decision-making. The following figure illustrates the distribution of patients' responses to CARE tool items.

Table 3

Distribution of patients' responses to Consultation and Relational Empathy (CARE) items

Statement	Bad		Accepted		Good		Very good		Excellent	
	F	%	F	%	F	%	F	%	F	%
1. Making you feel at ease	33	8.9%	113	30.5%	117	31.6%	78	21.1%	29	7.8%
2. Letting you tell your "story"	21	5.7%	110	29.7%	117	31.6%	96	25.9%	26	7.0%
3. Really listening	54	14.6%	112	30.3%	105	28.4%	73	19.7%	26	7.0%
4. Being interested in you as a whole person	41	11.1%	133	35.9%	103	27.8%	70	18.9%	23	6.2%
5. Fully understanding your concerns	42	11.4%	106	28.6%	121	32.7%	73	19.7%	28	7.6%
6. Showing care and compassion	41	11.1%	125	33.8%	100	27.0%	75	20.3%	29	7.8%
7. Being positive	42	11.4%	114	30.8%	105	28.4%	84	22.7%	25	6.8%
8. Explaining things clearly	54	14.6%	106	28.6%	101	27.3%	84	22.7%	25	6.8%
9. Helping you to take control	39	10.5%	121	32.7%	122	33.0%	74	20.0%	14	3.8%
10. Making a plan of action with you	36	9.7%	145	39.2%	102	27.6%	66	17.8%	21	5.7%

The results of the mean ranks of scores of the overall score of the PSQ-18 tool across participants' demographic factors are presented in the following table (Table 4). The satisfaction levels were higher among hospitals that used EMRs, but the difference was not statistically significant (p-value > 0.05) compared to hospitals that used paper medical records. The satisfaction level was not significantly influenced by the remaining factors (p-value > 0.05).

Table 4

Relationship between patients' demographics & hospital factors, and the total score of PSQ-18

Factor	Values	Mean	SD	Mean rank	Test value	p-value
Age	Spearman Correlation				r = 0.028	0.591
Gender	Male	60.27	5.14	178.89	15738	0.203
	Female	60.72	5.19	193.03		
Social status	Single	61.02	5.10	196.36	1.000	0.607
	Married	60.30	5.27	182.31		
	Others	60.73	4.30	187.13		
Educational level	Illiterate	61.25	6.90	198.59	0.309	0.857
	≤ high school	60.37	5.11	183.35		
	> high school	60.51	5.06	186.08		
Admission to same hospital	Once	60.53	4.80	188.36	16226	0.556
	> once	60.42	5.61	181.78		
Monthly income	< 500 USD	60.21	5.24	181.61	16316	0.461
	≥ 500 USD	60.78	5.06	189.79		
Residency	City	60.41	5.12	184.45	0.507	0.776
	Village	60.59	5.30	188.43		
	Camp	60.19	4.61	172.40		
Type of record	Electronic	60.88	4.78	192.13	15893	0.235
	Paper	60.09	5.50	178.95		

Looking at the relationship with communication, Table 5 shows that the perceived communication with nurses was surprisingly better among patients with lower educational levels (p-value = 0.008), while it was perceived to be significantly better among patients in the targeted hospitals with electronic compared to paper medical records (p-value = 0.038). On the other hand, the rest of the factors were not significantly related to differences in communication scores with patients (p-value > 0.05), nor was a correlation between age and communication.

Table 5

Relationship between patients' demographic and hospital factors and communication score (measured using CARE tool)

Factor	Values	Mean	SD	Mean rank	Test value	p-value
Age	Spearman Correlation				0.032	0.539
Gender	Male	55.91	8.57	185.03	16948	0.928
	Female	56.27	8.23	186.03		
Social status	Single	184.19	8.54	192.79	0.537	0.764
	Married	205.94	8.28	184.43		
	Others	170.22	9.31	177.73		
Educational level	Illiterate	57.00	11.29	184.19	9.733	0.008
	≤ high school	57.39	8.03	205.94		
	> high school	55.01	8.32	170.22		
Admission to same hospital	Once	56.30	8.30	186.22	16673	0.882
	> once	55.79	8.55	184.56		
Monthly income	< 500 USD	55.27	7.80	175.66	15164	0.063
	≥ 500 USD	56.97	8.96	196.34		
Residency	City	56.43	8.58	190.13	0.867	0.648
	Village	55.85	8.55	182.69		
	Camp	55.08	5.81	171.46		
Type of record	Electronic	56.67	8.28	197.09	14979	0.038
	Paper	55.48	8.51	174.03		

Table 6 shows that the satisfaction levels were higher among hospitals that used EMRs, but the difference was not statistically significant (p-value > 0.05) compared to hospitals that used paper medical records. communication with nurses while it was perceived to be significantly better among patients in the targeted hospitals with electronic compared to paper medical records (p-value = 0.038).

Table 6

Satisfaction and communication levels among hospitals with Electronic medical records and hospitals with paper medical records

Factor	Values	Mean	SD	Mean rank	Test value	p-value
Communication	Electronic	56.67	8.28	197.09	14979	0.038
	Paper	55.48	8.51	174.03		
Satisfaction	Electronic	60.88	4.78	192.13	15893	0.235
	Paper	60.09	5.50	178.95		

Lastly, Table 7 shows that the correlation between communication with nurses and the patient's satisfaction level was significant (p-value = 0.018) and in a positive correlation coefficient (r = 0.261), which indicates that better communication with the nurses, as perceived by the patients, was significantly correlated with higher satisfaction level among them.

Table 7

Correlation between patients' perception of communication with nurses and their satisfaction level

Independent factor	Correlation Coefficient with satisfaction	p-value
Communication with nurses	r = 0.261	0.018

Chapter Four
Discussions and Conclusions

4.1 Discussions

This chapter is concerned with discussing the current study's results, which is done by comparing the results of this study with previous studies reviewed earlier. The chapter is also finished with a conclusion of the study, in addition to specific recommendations for policymakers, the study's sample and future research, and limitations regarding the conduction of the current study that may improve future studies if taken into consideration.

Hypothesis 1: There is a significant difference in patient satisfaction with the provided healthcare between hospitals that use EMRs and hospitals that use paper medical records.

The current study found that there were no significant differences in total satisfaction scores (as measured by the PSQ-18 tool) according to the type of documentation (EMRs vs Paper), which indicates the rejection of the first alternative hypothesis at a significance level of 0.05 (p-value = 0.235). This also indicates that the satisfaction level among patients is not merely directed to the type of documentation, but other factors that may be related to the work environment.

The current study is parallel in its findings with the experimental study of Nagy & Kanter (2017) in terms of the absence of significant differences in satisfaction scores of patients before and after the use of EMRs. The similarities are found despite the differences in several methodological aspects, mainly the design, where the previous study used a longitudinal design, and followed up the patient's satisfaction across 6 months over 3 phases, while the current study used a cross-sectional design, capturing the current satisfaction scores only. Also, the previous study recruited patients and were asked to evaluate their satisfaction when interacted with physicians rather than nurses as in the current study, which gives an indicator that the satisfaction among patients when EMRs are implemented are not different between nurses and physicians.

On the other hand, the current study is not parallel with the findings of Freeman, Taylor, & Adelman (2016), where the previous study found a more positive satisfaction among the patients when EMRs are used, while the current study found no significant differences between EMRs and the paper medical records hospitals. The differences may be mainly related to the use of different tools to investigate the satisfaction levels, where the current study used a valid tool called PSQ-18, and is validated in Arabic version, while the previous study used a researcher-developed tool, which may need further validation.

The findings of the current study are also not parallel with the Saudi study of Wali, Alghamdi, & Alzahrani (2020) regarding the relationship between EMRs and the satisfaction levels of patients. The previous study utilized a different tool, as well as the differences related to the focus on the satisfaction with nurses' services in the current study, while the previous study included the experience and perception of satisfaction of patients related to different healthcare providers, including physicians. The differences in findings are found despite similarities in methodological aspects between both studies, where approximate number of patients are recruited in the previous (N = 377) and current (N = 370) studies, and that both of them used a cross-sectional design. But the differences in the individual items of satisfaction scales may interpret the differences in findings.

Hypothesis 2: There is a significant difference in patient communication with nurses between hospitals that use EMRs and hospitals that use paper medical records.

Unlike the satisfaction level, the perception of communication with nurses among the patients was significantly different in mean scores between the hospitals who used EMRs (mean score = 56.67, mean rank = 197.09) than paper medical records (mean score = 55.48, mean rank = 174.03) according to the CARE tool scores, which indicates a higher positive perception of communication with nurses among patients who are treated in hospitals that used EMRs. This highlights the benefit of using electronic records in enhancing the communication process between nurses and patients. The findings of the current study are concurrent with the findings of Farber et al. (2015), who stated that the implementation of electronic documentation was associated with better nurse-patient communication, and the current study found significantly

higher communication perception scores among hospitals who applied the electronic records. Also, the findings are similar although both studies had differences in their methodologies. The current study used a tool to measure the patient's perception of communication, while the previous study used a tool based on the 4HCM that reflects the experience of the healthcare providers. Also, the current study was multicenter, and had larger sample size than the previous study. Therefore, despite methodological differences, similarities appear in terms of the benefit of using electronic records on the positive perception of communication in the hospital settings.

It is worth noting the differences in the measurement between the current study and the previous study of Duffy, Kharasch, & Du (2015) in terms of the communication efficacy between electronic and paper documentation styles. The previous study investigated the findings from the perception of the researchers (objective), while the current study utilized a patient-centered overview. The differences may be also related to that measuring communication efficacy can include different dimensions when measured than when objectively investigated by the researchers, which means that when the researchers investigate the communication, they focused on eye contact and communication time, but when the current study focused on the perception of patient, it focused on the ultimate outcome of communication, which is the provision of effective healthcare services.

The previous study of McGarth et al. (2013) found different results than in the current study, where they concluded worse communication experience when EMRs are used. The differences may be related to different methodological aspects, mainly the use of a qualitative approach in the previous study rather than a cross-sectional, quantitative design in the current study, with the investigation of the perceptions of patients towards physicians in the previous study compared to with nurses in the current study. It is worth noticing the qualitative findings in the previous study that may interpret such findings, where worse communication was related to less eye contact and more distractions, as well as worse body posture and non-verbal communication. This indicates the importance of focusing on non-verbal communication among healthcare providers when interviewing a patient, which helps in the delivery and gathering of information from the patient.

The differences between the current study and the literature review of Alkurreishi et al. (2016) is justified. The previous review found mixed conclusions, where the use of EMRs have been seen as effective, neutral or detrimental in terms of the communication and the interaction with the nurses. This can be related to the diversity of study designs that were included in the review. The researchers who conducted the review declared that different designs and sample sizes hindered the generalizability of the results. We cannot say that the current study findings are more reliable than the previous review, but a more rigorous study designs are recommended to be conducted to capture a better overview of the relationship between EMRs and the communication and interaction between patients and all healthcare providers, especially nurses who are considered the frontline in the healthcare services and spend most of their times with patients. This is apparent in the meta-analysis of Forde-Johnston, Butcher & Aveyard (2022) which is a much higher in strength in the evidence-based hierarchy, who found similar conclusions with the current results, where better communication is found among the samples where EMRs are implemented.

Hypothesis 3: The use of EMRs has a significant correlation between patient's perception of communication with nurses and their satisfaction level.

In the current study, the results revealed a significant positive correlation between patient's perception of communication with nurses and their satisfaction level in terms of type of documentation style, and therefore accepting the third alternative hypothesis. This reflects the importance of patient's satisfaction regarding the way that nurses communicate with patients.

The findings of the current study are parallel with the findings of the correlational path analysis of Tejero (2012) who found a positive correlation between the nurse-patient relationship scores and the patient's satisfaction level. Both studies agree on the findings despite the use of different tools to determine the patient-nurse communication, where the current study used CARE tool, which measured the perception of the patients towards nurse-patient communication, while the previous study used the Nurse Patient Bonding Instrument. This gives the conclusion that the effective nurse-patient communication is a good indicator of their relationship, and directly correlated with better patient satisfaction, and therefore, it is a point worth focusing on by the

policymakers and nurses themselves, in terms of continuously trying to enhance their communication skills.

Hypothesis 4: There are statistically significant differences in the levels of patient satisfaction with the provided healthcare and patient communication with nurses when considering other independent variables (such as age, gender, socioeconomic status).

In terms of the demographic factors of patients who were recruited in the current study, none of them (age, gender, social status, educational level, admission on same hospital, monthly income or residency) showed significant relationships with their satisfaction level as measured using the PSQ-18 tool (p-value > 0.05), indicating the rejection of the fourth alternative hypothesis. Additionally, the communication of nurses with patients as measured by the CARE tool revealed a significant relationship with only the educational level of the patient, with higher perception of positive communication among patients with lower educational levels (mean rank = 205.94 among who have up to high school degree, compared to mean rank = 170.22 among who have more than high school degree), with no significant relationships with the rest of the demographic factors of the patients.

The current study findings are in contrast with the findings of the longitudinal study of Rose, Richter, & Kapustin (2014) in terms of the improvement of perception of satisfaction regarding the EMRs after one year of implementation, while the current study found no significant differences between electronic and paper records in the patients' satisfaction levels, while a better communication with nurses among the hospitals with electronic records. The differences between both studies can be related to several factors, like the design, where the current study used a cross-sectional design and the previous study used a longitudinal design, which is better in capturing the prospective changes in the satisfaction and perception of communication over time than the cross-sectional design, as well as the differences in sample characters, where the current study included patients only, with a sample size of 370 patients, and measured the perception and the point of view of the patients, rather the previous study that recruited different types of healthcare professions, with a sample size of 70 healthcare providers, and measured the perception of them towards the changes. The latter design

is hard to be implemented due to restrictions of time. Also, the cross-sectional design has the benefit of the ability of being conducted on multiple settings.

It is also recommended to look at the experience of nurses themselves regarding the implementation of EMRs and investigate their satisfaction, as the previous study of Ramoo, Kamaruddin, Wan Nawawi, Che, & Kavitha (2022) did, where such findings are worth comparing with the findings related to the experience and satisfaction of patients. Concurrent findings between nurses and patients' satisfaction indicate higher efficacy of the implementation of EMRs. This was implemented in the previous study of Zahabi & Lyman (2019), who investigated the perception and experience of both young individuals and the healthcare providers when EMRs are used. Although the previous study was only conducted on outpatient clinics appointments, it is recommended to look over these results and try to replicate the design and aims on a wider selection of departments.

5.2 Conclusion

The current study was conducted with the main aim of investigating the differences in patient satisfaction and direct communication among Palestinian patients between hospitals that do and do not apply EMRs, with the investigation of several other sociodemographic factors, as well as the correlation between patients' satisfaction and direct communication. The study implemented the descriptive, comparative, exploratory design on a sample of 370 patients who were equally recruited from 8 private hospitals in Nablus and Ramallah cities in West Bank – Palestine. The valid tools of PSQ-18 and CARE tool were used to evaluate satisfaction and communication, respectively.

Results found that the overall satisfaction of patients is high, as evidenced by the agreement levels on the items of PSQ-18, as well as the very good level of direct communication with the nurses. The satisfaction level of patients did not significantly differ across all sociodemographic factors and the type of documentation, while better direct communication was found to be significant among patients with lower educational levels and who are admitted to hospitals that apply EMRs ($p\text{-value} < 0.05$). Also, higher satisfaction levels were found to be correlated with better direct communication in a positive moderate way ($r = 0.261$, $p\text{-value} = 0.018$).

It is important to focus on the enhancement of patient-nurse communication to improve the satisfaction levels of patients. Also, policymakers should focus on improving nurses' verbal and non-verbal communication methods. Lastly, further research is needed in this area in Palestine.

5.3 Recommendations

Based on the discussion of the results of the current study, the researcher recommends the following:

For Policymakers

1. Encourage and support hospitals in obtaining and maintaining accreditations like the Joint Commission International (JCI) Accreditation. This has been shown to improve the quality of care, including patient satisfaction and communication between healthcare professionals and patients. Also, further research on this point is needed in the Palestinian setting.
2. Invest in and promote the adoption of EMRs systems across hospitals. The study suggests that EMRs can improve communication scores and indirectly enhance patient satisfaction. Policymakers should consider facilitating the transition from paper to electronic systems while addressing challenges such as decreased physical interaction due to increased computer use.
3. Policymakers should address specific items that reflect minor issues but significantly impact patient satisfaction, such as nurses' responsiveness and interpersonal communication.
4. Implement training and educational programs focused on effective communication skills for nurses, emphasizing empathy, patient engagement, and the ability to adapt to different patient needs and documentation systems.
5. Encourage and fund research focused on evaluating the impact of EMRs and accreditations on patient care. Studies that explore the subjective feedback of healthcare professionals and patients regarding the use of EMRs should also be supported.

For Nurses:

1. Nurses should focus on improving direct communication with patients, making them feel comfortable, and ensuring they understand their care plan, especially for patients with lower educational levels.
2. Nurses should become competent in using EMRs systems to ensure that documentation does not hinder patient interaction. Training programs can help nurses balance computer use with maintaining eye contact and engaging with patients.
3. Nurses should continue providing empathetic and patient-centered care, as satisfaction levels were not significantly affected by demographic factors or the type of documentation. This suggests the importance of the quality of care over the method of record-keeping.
4. Engage in continuous education and training programs that focus on both technical skills, like using EMRs efficiently, and soft skills, such as communication and empathy.
5. Participate in feedback mechanisms that allow for continuous improvement in patient care based on patient satisfaction surveys and direct communication assessments.

5.4 Limitations

The current study was limited by the following points:

1. The use of cross-sectional design, which although suitable for the current study's aims, is less rigorous than other possible approaches, including pre-post studies, which may have allowed to compare the impact of using EMRs in the same hospital before and after its application.
2. Time restraints caused by academic needs and the current situation hindered transportation.
3. Despite efforts to allocate an almost equal number of patients from targeted hospitals, natural selection bias cannot be entirely ruled out. The sample may not fully represent all patient demographics or conditions, potentially affecting the study's external validity.

4. The study is conducted within the Palestinian healthcare context, specifically in hospitals located in Ramallah and Nablus. Cultural, economic, and healthcare system differences may limit the applicability of findings to other regions or countries.
5. Patient satisfaction and communication are subjective experiences that can be influenced by individual expectations, preferences, and prior experiences, and therefore it can lead to variability in the responses that might not fully get of patient-nurse interactions.
6. The rapid evolution of healthcare technology, including EMRs systems, means that findings related to the use and impact of EMRs may quickly become outdated. Also, the differences in EMRs systems across the hospitals should be taken into account.

List of Abbreviations

Abbreviation	Meaning
HIT	Health Information Technology
HER	Electronic Health Record
EMR	Electronic Medical Record
PHR	Personal Health Record
4HCM	Four Habits Communication Model
WSP	Web Station for Physicians
CCS	Clinical Care Station
JCI	Joint Commission International
CARE	Consultation and Relational Empathy
HCP	Health Care Provider

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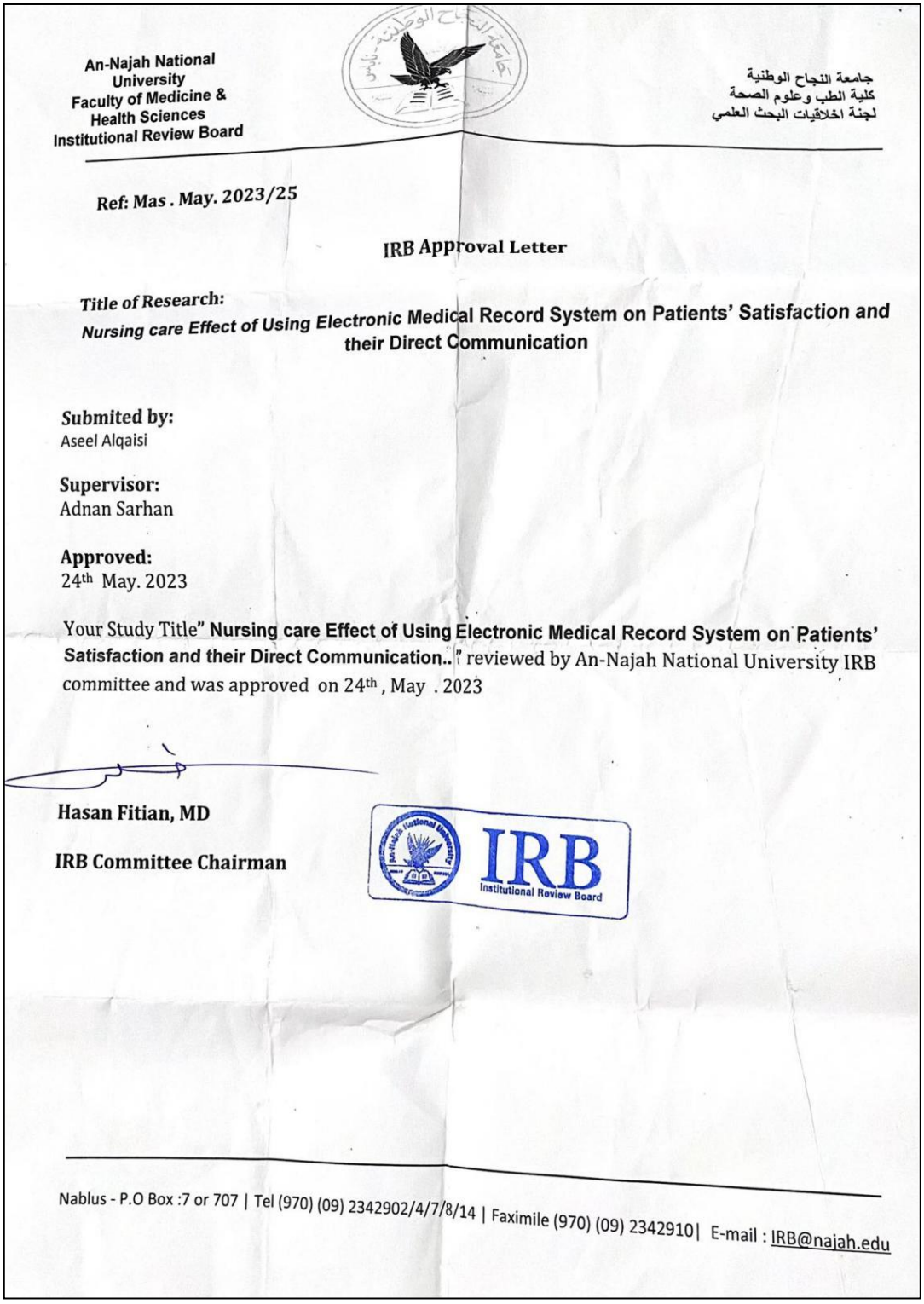
Appendices

Appendix A

Approval Letter



An-Najah National University
Faculty of Medicine & Health Sciences
Institutional Review Board

جامعة النجاح الوطنية
كلية الطب وعلوم الصحة
لجنة اخلاقيات البحث العلمي

Ref: Mas . May. 2023/25

IRB Approval Letter

Title of Research:

Nursing care Effect of Using Electronic Medical Record System on Patients' Satisfaction and their Direct Communication

Submited by:
Aseel Alqaisi

Supervisor:
Adnan Sarhan

Approved:
24th May. 2023

Your Study Title" **Nursing care Effect of Using Electronic Medical Record System on Patients' Satisfaction and their Direct Communication..**" reviewed by An-Najah National University IRB committee and was approved on 24th , May . 2023

Hasan Fitian, MD

IRB Committee Chairman

IRB
Institutional Review Board

Nablus - P.O Box :7 or 707 | Tel (970) (09) 2342902/4/7/8/14 | Faximile (970) (09) 2342910| E-mail : IRB@najah.edu

Appendix B

Questionnaire

Section 1: Demographic Information

Hospital_____

Age:

Gender: a. Male b. Female

Marital status: a. Single b. Married c. Other

Level of education: a. Illiterate b. Less than Tawjihi c. More than Tawjihi

Monthly income: a. less than 500 $ b. more than 500 $

Place of residence: a. city b. village c. camp

The number of admissions to the same hospital: a. once b. more than once

Section 2:

Patient satisfaction questionnaire (PSQ18)

For each question, please fill X in a number from 1 to 5, to let us know how you feel. 1is the highest rating and 5 is the lowest rating.

Electronic medical record: It is a paperless system that enhances the process of extracting data smoothly so that the health data of each patient becomes easily available to health care providers and contains important or chronic medical problems, the group of medications the patient is currently taking, drug allergies, hospitalization, including surgeries (Dates, location, name of the resident, diagnosis), lab test results, family medical history, visits, immunizations, and advances.

*** Measuring patient satisfaction (PSQ-18)**

NO	Paragraph	Strongly agree	Agree	uncertain	Disagree	Strongly disagree
1.	Nurses are good about explaining the reason for medical tests.	1	2	3	4	5
2.	I think my nurse's office has everything needed to provide complete medical care.					
3.	The medical care I have been receiving is just about perfect.					
4.	Sometimes nurses make me wonder if their diagnosis is correct.					
5.	I feel confident that I can get the medical care I need without being setback financially.					
6.	When I go for medical care, they are careful to check everything when treating and examining me.					
7.	I have to pay for more of my medical care than I can afford.					
8.	I have easy access to the medical specialists I need.					
9.	Where I get medical care, people have to wait too long for emergency treatment.					
10.	Nurses act too businesslike and impersonal toward me.					
11.	My nurses treat me in a very friendly and courteous manner.					
12.	Those who provide my medical care sometimes hurry too much when they treat me.					
13.	Nurses sometimes ignore what I tell them.					
14.	I have some doubts about the ability of the nurses who treat me.					
15.	Nurses usually spend plenty of time with me.					
16.	I find it hard to get an appointment for medical care right away.					
17.	I am dissatisfied with some things about the medical care I receive.					
18.	I am able to get medical care whenever I need it.					

Section 3 :

The Consultation and Relational Empathy (CARE) measure

For each question please fill X in a number from 1 to 5 , to let us know how you feel.

1is the lowest rating and 5 is the highest rating

		Bad 5	Accepted 4	Good 3	Very good 2	Excellent 1
1.	Making you feel at ease (introducing him/herself, explaining his/her position, being friendly and warm towards you, treating you with respect; not cold or abrupt)					
2.	Letting you tell your "story" (giving you time to fully describe your condition in your own words; not interrupting, rushing, or diverting you)					
3.	Listening (paying close attention to what you were saying; not looking at the notes or computer as you were talking)					
4.	Being interested in you as a whole person (asking/knowing relevant details about your life, and your situation; not treating you as "just a number")					
5.	Fully understanding your concerns (communicating that he/she had accurately understood your concerns and anxieties; not overlooking or dismissing anything)					
6.	Showing care and compassion (seeming genuinely concerned, connecting with you on a human level; not being indifferent or "detached")					
7.	Being positive (having a positive approach and a positive attitude; being honest but not negative about your problems)					
8.	Explaining things clearly (fully answering your questions; explaining clearly, giving you adequate information; not being vague)					
9.	Helping you to take control (exploring with you what you can do to improve your health yourself; encouraging rather than "lecturing" you)					
10.	Making a plan of action with you (discussing the options, involving you in decisions as much as you want to be involved; not ignoring your views)					

With Respect

الأخ/ت الفاضل/ة: ..... المحترم،،،

تحية طيبة وبعد،،،

تتشرف الباحثة أن تضع بين أيديكم استبانة لأغراض البحث العلمي لموضوع "**رضا المرضى عن السجلات الصحية الإلكترونية وتأثيرها على طريقة تواصلهم مع الممرضين**".

راجياً منكم الإجابة عن جميع فقرات الاستبانة بصدق وموضوعية لتفي بالغرض الذي أعدت من أجله، علماً بأن إجاباتكم على هذه الاستبانة ستحاط بسرية تامة ولن يتم استخدامها إلا لأغراض البحث العلمي فقط، ولذا أرجو ان تتسع صدوركم لهذا العمل وأن تتبرعوا بهذا الجزء من وقتكم لتعبئة الاستبانة.

حصلت على شرح مفصل عن الدراسة وأهدافها وإجراءاتها، ومنافعها، والمخاطر المحتملة وعن الحرية الكاملة للمشاركة.

أفهم كل المعلومات التي قدمت ووصلتني إجابة على كل أسئلتي.

أوافق على أن أشارك في هذه الدراسة بطوعية وبدون أي نوع من الاجبار أو الضغوط. أفهم ان بإمكاني التوقف عن المشاركة في أي وقت.

لا يحرمك التوقيع على نموذج الموافقة هذا أى من حقوقك القانونية بأى حال كما لا يعفي الباحث من مسئولياته المهنية او القانونية.

شاكرين لكم جهودكم وحسن تعاونكم

توقيع المشارك المعتمد قانونيا ----------

الباحثة: أسيل القيسي

يمكنك الاتصال بالباحثة: اسيل قيسي على الرقم: 0595493031 متى راودتك أسئلة عن الدراسة.

<u>الجزء الأول: البيانات الشخصية:</u>

اسم المستشفى: .....

1- العمر:

2- الجنس :☐ ذكر ☐ أنثى

3- الحالة الاجتماعية:☐ أعزب ☐ متزوج ☐ أخرى

4- المؤهل العلمي: ☐غير متعلم(أمي) ☐ أقل من توجيهي ☐ متعلم بعد التوجيهي

5- عدد مرات الدخول لنفس المستشفى: ☐مرة واحدة ☐أكثر من مرة

6- الدخل الشهري:☐ أقل من 500 دولار ☐ أكثر من 500 دولار

7- مكان السكن: ☐ مدينة ☐ قرية ☐ مخيم

الجزء الثاني:

يرجى وضع اشارة X في المكان المناسب والذي يعبر عما تشعر به ، الرقم 1 هو الاكثر ترتيب اما الرقم 5 فهو الاقل ترتيب:

خاص بالمرضى المتواجدين في مستشفيات التوثيق الالكتروني

السجل الطبي الالكتروني: هو نظام لا ورقي يعزز عملية إستخراج البيانات بشكل سلس لتصبح البيانات الصحية لكل مريض متاحة بسهولة أمام مقدمي الرعاية الصحية ويحتوي على المشاكل الطبية المهمَّة أو المزمنة، مجموعة الأدوية التي يأخذها المريض حالياً، الحساسية للأدوية، الاستشفاء، بما في ذلك العمليَّات الجراحيَّة (التواريخ، والمكان، واسم الطبيب المقيم، والتَّشخيص)، نتائج فحوصات المختبر، التاريخ الطبِّي العائلي والزيارات والتطعيمات والمدفوعات المقدَّمة.

بعد تعاملك مع التمريض في المستشفى في ظل استخدام التوثيق الالكتروني الرجاء الإجابة عن الأسئلة التالية

***قياس رضى المرضى**

الرقم	الفقرة	اوافق بشدة1	اوافق 2	محايد3	غير موافق4	غير موافق بشدة 5
.1	يجيد الممرضين شرح سبب الاختبارات الطبية.					
.2	أعتقد أن الممرضين لديهم كل ما يلزم لتقديم رعاية طبية كاملة.					
.3	الرعاية الطبية التي تلقيتها ممتازة.					
.4	أحيانًا يجعلني الممرضين أتساءل إذا ما كان تشخيصهم صحيحًا.					
.5	أشعر بالثقة في أنني أستطيع الحصول على الرعاية الطبية التي أحتاجها دون العودة الى تعيينها ماليا.					
.6	عندما أذهب للحصول على رعاية طبية ، فهم حريصون على فحصي بشكل شامل عند علاجي.					
.7	يجب أن أدفع مقابل تلقي الرعاية الطبية أكثر مما أستطيع.					
.8	لدي سهولة الوصول إلى الأخصائيين الطبيين الذين أحتاجهم.					
.9	عندما أحصل على رعاية طبية، يتعين على الناس الانتظار لفترة طويلة لتلقي العلاج في حالات الطوارئ.					
.10	يتصرف الممرضين بطريقة عملية للغاية وغير شخصية تجاهي.					
.11	يعاملني الممرضين بطريقة ودية ولطيفة للغاية.					
.12	في بعض الأحيان يكون الممرضين على عجل كثير عندما يعالجونني.					
.13	يتجاهل الممرضين أحيانًا ما أقوله لهم.					
.14	لدي بعض الشكوك حول قدرة الممرضين الذين يعالجونني.					
.15	يقضي الممرضين عادة الكثير من الوقت معي.					
.16	أجد صعوبة في الحصول على موعد للرعاية الطبية على الفور.					
.17	أنا غير راض عن بعض الأشياء حول الرعاية الطبية التي أتلقاها.					
.18	أنا قادر على الحصول على رعاية طبية متى احتجت إليها.					

Consultation and Relational Empathy (CARE) measure

	الفقرة	ممتاز 1	جيد جدا 2	جيد 3	مقبول 4	سيئ 5
1	يجعلك تشعر بالراحة (تعريفه عن نفسه، وشرح موقعه الوظيفي، كان ودودًا ودافئًا تجاهك، يعاملك باحترام؛ ليس بارد أو حاد)					
2	يسمح لك بقول ما لديك (يمنحك الوقت لوصف حالتك بشكل كامل بكلماتك الخاصة؛ لا يقاطعك أو يستعجلك أو يشتت انتباهك)					
3	ينصت باهتمام (يولي اهتمامًا وثيقًا لما كنت تقوله؛ لا ينظر إلى الملاحظات أو الكمبيوتر أثناء حديثك)					
4	الاهتمام بك كشخص كامل (يسأل عنك / يعرف التفاصيل ذات الصلة بحياتك وظروفك ، لا يعاملك على أنك "مجرد رقم")					
5	يفهم مخاوفك جيدا (يبلغك أنه قد فهم مخاوفك وقلقك بدقة ؛ لا يتجاهل أو يتغاضى عن أي شيء)					
6	يظهر الاهتمام والتعاطف (يبدو مهتمًا حقًا ، يتواصل معك على المستوى الإنساني ؛ لا يبدو غير مبالٍ أو غير مكترث)					
7	يكون إيجابيا (يتبع نهج وموقف إيجابي ؛ يكون صادقًا ولكن ليس سلبيًا بشأن مشاكلك)					
8	يشرح الأمور بشكل واضح (يعطي إجابة كاملة على أسئلتك ؛ يشرح بوضوح ، يعطيك معلومات كافية وبعيدة عن الغموض)					
9	يساعدك في السيطرة على وضعك الصحي (يبحث معك عن ما يمكنك القيام به لتحسين صحتك بنفسك؛ تشجيعك بدلاً من انتقادك)					
10	يضع خطة عمل معك (يناقشك في الخيارات المتاحة، يقوم بإشراكك في القرارات بقدر ما تريد المشاركة؛ لا يتجاهل آرائك)					

وتقبلوا فائق الاحترام والتقدير

خاص بالمرضى المتواجدين في مستشفيات التوثيق الورقي

بعد تعاملك مع التمريض في المستشفى في ظل استخدام التوثيق الورقي الرجاء الإجابة عن الأسئلة التالية:

*** قياس رضى المرضى**

الرقم	الفقرة	اوافق بشدة1	اوافق2	محايد3	غير موافق4	غير موافق بشدة5
.1	يجيد الممرضين شرح سبب الاختبارات الطبية.					
.2	أعتقد أن الممرضين لديهم كل ما يلزم لتقديم رعاية طبية كاملة.					
.3	الرعاية الطبية التي تلقيتها ممتازة.					
.4	أحيانًا يجعلني الممرضين أتساءل إذا ما كان تشخيصهم صحيحًا.					
.5	أشعر بالثقة في أنني أستطيع الحصول على الرعاية الطبية التي أحتاجها دون العودة الى تعيينها ماليا.					
.6	عندما أذهب للحصول على رعاية طبية ، فهم حريصون على فحصي بشكل شامل عند علاجي.					
.7	يجب أن أدفع مقابل تلقي الرعاية الطبية أكثر مما أستطيع.					
.8	لدي سهولة الوصول إلى الأخصائيين الطبيين الذين أحتاجهم.					
.9	عندما أحصل على رعاية طبية ، يتعين على الناس الانتظار لفترة طويلة لتلقي العلاج في حالات الطوارئ.					
.10	يتصرف الممرضين بطريقة عملية للغاية وغير شخصية تجاهي.					
.11	يعاملني الممرضين بطريقة ودية ولطيفة للغاية.					
.12	في بعض الأحيان يكون الممرضين على عجل كثير عندما يعالجونني.					
.13	يتجاهل الممرضين أحيانًا ما أقوله لهم.					
.14	لدي بعض الشكوك حول قدرة الممرضين الذين يعالجونني.					
.15	يقضي الممرضين عادة الكثير من الوقت معي.					
.16	أجد صعوبة في الحصول على موعد للرعاية الطبية على الفور.					
.17	أنا غير راض عن بعض الأشياء حول الرعاية الطبية التي أتلقاها.					
.18	أنا قادر على الحصول على رعاية طبية متى احتجت إليها.					

الفقرة	ممتاز 1	جيد جدا 2	جيد 3	مقبول 4	سيئ 5
يجعلك تشعر بالراحة (تعريفه عن نفسه، وشرح موقعه الوظيفي، كان ودودًا ودافئًا تجاهك، يعاملك باحترام؛ ليس بارد أو حاد)					
يسمح لك بقول ما لديك (يمنحك الوقت لوصف حالتك بشكل كامل بكلماتك الخاصة؛ لا يقاطعك أو يستعجلك أو يشتت انتباهك)					
ينصت باهتمام (يولي اهتمامًا وثيقًا لما كنت تقوله؛ لا ينظر إلى الملاحظات أو الكمبيوتر أثناء حديثك)					
الاهتمام بك كشخص كامل (يسأل عنك / يعرف التفاصيل ذات الصلة بحياتك وظروفك، لا يعاملك على أنك "مجرد رقم")					
يفهم مخاوفك جيدا (يبلغك أنه قد فهم مخاوفك وقلقك بدقة ؛ لا يتجاهل أو يتغاضى عن أي شيء)					
يظهر الاهتمام والتعاطف (يبدو مهتمًا حقًا ، يتواصل معك على المستوى الإنساني؛ لا يبدو غير مبالٍ أو غير مكترث)					
يكون إيجابيا (يتبع نهج وموقف إيجابي؛ يكون صادقًا ولكن ليس سلبيًا بشأن مشاكلك)					
يشرح الأمور بشكل واضح (يعطي إجابة كاملة على أسئلتك؛ يشرح بوضوح، يعطيك معلومات كافية وبعيدة عن الغموض)					
يساعدك في السيطرة على وضعك الصحي (يبحث معك عما يمكنك القيام به لتحسين صحتك بنفسك؛ تشجيعك بدلاً من انتقادك)					
يضع خطة عمل معك (يناقشك في الخيارات المتاحة، يقوم بإشراكك في القرارات بقدر ما تريد المشاركة؛ لا يتجاهل آرائك)					

جامعة النجاح الوطنية
كلية الدراسات العليا

رضا المرضى عن نظام السجلات الصحية الإلكترونية وتأثيرها على طريقة تواصلهم مع الممرضين

إعداد
اسيل عبد الحميد محمود قيسي

إشراف
د. عدنان سرحان

قدمت هذه الرسالة استكمالا لمتطلبات الحصول على درجة الماجستير في برنامج تمريض الصحة النفسية المجتمعية، من كلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس – فلسطين

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الملخص

الخلفية: تعتبر تكنولوجيا المعلومات الصحية، وخاصة السجلات الطبية الإلكترونية، ضرورية لتحسين جودة وسلامة رعاية المرضى. في بيئة المستشفيات المعقدة اليوم، تساعد السجلات الطبية الإلكترونية المؤسسات في تحقيق الأهداف الحكومية وتحسين الكفاءة التشغيلية من خلال تقليل الأخطاء وزيادة الدقة، مما يؤدي إلى بيئة أكثر أمانًا للمرضى وتقليل الأخطاء الطبية.

الهدف: يهدف البحث إلى مقارنة المستشفيات التي تستخدم السجلات الطبية الإلكترونية بتلك التي تستخدم السجلات الورقية من حيث رضا المرضى عن الرعاية الصحية المقدمة وتواصلهم مع الممرضين.

المنهجية: تم إجراء دراسة مقارنة وصفية في مستشفيات الضفة الغربية بفلسطين، مقارنةً بين السجلات الطبية الإلكترونية والسجلات الورقية. تم اختيار عينة عشوائية من 370 مريضًا من كلا النوعين من المستشفيات. تم جمع البيانات باستخدام استبيانات مُعدلة من أبحاث سابقة، بما في ذلك استبيان رضا المرضى (PSQ-18) لقياس رضا المرضى عن الرعاية بشكل عام ومقياس الاستشارة والتعاطف العلاجي لتقييم تواصل المرضى مع الممرضين.

النتيجة: كان متوسط عمر المرضى في الدراسة 41 عامًا، مع توزيع متساو تقريبًا عبر المستشفيات. تم تحليل البيانات باستخدام اختبارات غير بارامترية بسبب عدم التوزيع الطبيعي. تألفت المجموعة من 53.2% ذكور و46.8% إناث، حيث كان 71.6% متزوجين و54.6% يحملون مؤهلات تعليمية أعلى. أفاد 52.4% من المرضى بدخل أقل من 500 دولار شهريًا، حيث يعيش 47.6% في المدن و45.9%

في المناطق الريفية. أظهرت مستويات الرضا تباينًا ولكنها كانت عمومًا أعلى في المستشفيات التي تستخدم السجلات الطبية الإلكترونية، رغم عدم وجود فرق ملحوظ. ارتبطت المستويات التعليمية الأدنى بتسجيلات تواصل أعلى ($p = 0.008$)، كما ارتبط استخدام السجلات الإلكترونية بتسجيلات تواصل أفضل ($p = 0.038$). كانت هناك علاقة إيجابية بين تحسين تواصل الممرضين وزيادة رضا المرضى ($r = 0.261$، $p = 0.018$).

الاستنتاج: كان رضا المرضى عمومًا مرتفعًا، مع توافق قوي حول عناصر استبيان رضا المرضى وتواصل فعال مع الممرضين. لم يتغير الرضا بشكل ملحوظ مع العوامل الديموغرافية أو نوع التوثيق، على الرغم من أن التواصل الأفضل كان مرتبطًا بشكل ملحوظ بمستويات تعليمية أدنى والمستشفيات التي تستخدم السجلات الطبية الإلكترونية. يرتبط تحسين التواصل بشكل إيجابي بزيادة الرضا. يعد تعزيز التواصل بين المرضى والممرضين أمرًا أساسيًا، وينبغي لصانعي السياسات التركيز على تحسين طرق التواصل اللفظي وغير اللفظي. يُوصى بإجراء مزيد من الأبحاث في هذا المجال داخل فلسطين.

الكلمات المفتاحية: الرعاية التمريضية؛ نظام السجلات الطبية الإلكترونية؛ رضا المرضى؛ التواصل المباشر مع المرضى.