An-Najah National University

Faculty of Graduate Studies

IMPACT OF ELECTRONIC MANAGEMENT SYSTEM ON THE EMPLOYEE'S PERFORMANCE OF PRIMARY HEALTH CARE, A CROSS-SECTIONAL STUDY, IN NORTHERN WEST BANK, PALESTINE

By

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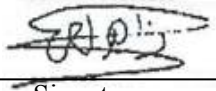
Dr. Zaher Nazal Internal Examiner	 Signature

Dedication

I dedicate this letter to the souls of my father and mother...may God have mercy on them.

To my husband and children... companions in struggle and difficult circumstances, who gave me the strength and courage to complete my master's degree.

To everyone who supported and helped me achieve my goal and complete my dissertation.

Praying to God - Glory be to Him - that it be crowned with success and acceptance

With sincere appreciation.

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Declaration

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

IMPACT OF ELECTRONIC MANAGEMENT SYSTEM ON THE EMPLOYEE'S PERFORMANCE OF PRIMARY HEALTH CARE, A CROSS-SECTIONAL STUDY, IN NORTHERN WEST BANK, PALESTINE

Unless otherwise referenced, I declare that the work provided in this thesis is the researcher's work and has not been submitted elsewhere for any other degree or qualification.

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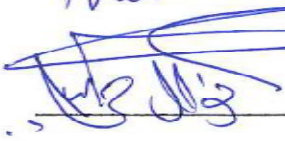
Signature: 

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IMPACT OF ELECTRONIC MANAGEMENT SYSTEM ON THE EMPLOYEE'S PERFORMANCE OF PRIMARY HEALTH CARE, A CROSS-SECTIONAL STUDY, IN NORTHERN WEST BANK, PALESTINE

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Abstract

Background: The advent of electronic management systems (EMS) has revolutionized many industries, including healthcare, by simplifying procedures, increasing productivity, and improving overall performance. This study aimed to identify the impact of using the electronic management system on job performance from the perspective of primary health care workers in the northern West Bank.

Methods: A convenient sampling technique is used in a cross-sectional study., by distributing questionnaires to 228 employees out of a total of 1,201 employees during the study period in primary healthcare centers in the northern West Bank (Nablus, Jenin, Tubas, Tulkarm, and Qalqilya), including all levels of health workers (doctors, nurses, pharmacists, laboratories, radiologists, and administrators). A descriptive analytical approach was used to select all employees eligible to participate in the study.

Results: The study found that primary healthcare (PHC) employees viewed the level of use of the electronic management system (EMS) as average, with a total score of 2.89. The highest score was in the hardware field (2.93), and the lowest was in electronic training (55.8%). Job performance was rated as high (70.4%), indicating a positive relationship with electronic management ($r = 0.59$, $p \leq 0.01$). Networking and software were the main factors that contributed to functionality (28.30% and 35.10%, respectively). Gender did not significantly affect electronic management scores. However, the variables of (age, educational level, workplace، work seniority, and job title) influenced perceptions of specific system components. There were no statistically significant differences in job performance according to (gender, age, workplace, and job title).while, the level of educationin favor of (Manager), work seniority from (1-5) years, and nature of the current jobin favor of (director) showed statistically significant differences and effects.

Conclusions:T The adoption of electronic management systems significantly improves primary health care providers' perceptions of their performance. In resource-limited settings, health care professionals can improve overall health care outcomes and quality of care by addressing the disadvantages and leveraging the advantages of an electronic management system.

Keywords: Electronic management systems, employee performance, Job performance, primary healthcare.

Chapter One

Introduction and Theoretical Background

This chapter deals in detail with the problem that this study focused on.It is divided into three parts:The first part, which consists of an introduction to the study, a statement of the study problem, a discussion of the importance of this study, the purpose and objectives, and research questions. The second part, discusses operational concepts and definitions. The third part, presented the previous studies related to the research problem.

1.1 Introduction

Technology breakthroughs have caused enormous shifts in the healthcare sector in recent years. The use of electronic management systems (EMS) in different healthcare settings, especially basic healthcare, is one of the noteworthy improvements (Julia Adler-Milstein, Ronchi, Cohen, Pannella Winn, & Jha4, 2014).So These systems, which include electronic medical records (EMRs), electronic health records (EHRs), and other digital technologies, are intended to increase overall efficiency, improve patient care, and expedite administrative procedures (Tsianaka & Peramatzis, 2024).Electronic management is one of the current trends in leadership, due to its use of advanced electronic technologies that have a significant impact on people's lives (GajananP.Mudholkar & Al-Khasi , 2020). It represents one of the ideas of the digital revolution that enables the provision of all cognitive and administrative services in the shortest time and at the lowest possible cost (GajananP.Mudholkar & Al-Khasi , 2020). One of the principles of contemporary management is electronic management. It focuses on the wide application of contemporary technologies as a new management approach, and this has a significant impact on how well primary health care staff perform as well as how electronic management interacts with network infrastructure (software, hardware and electronic training) to enhance and develop the performance of management personnel, including electronic records (AL-Aqraa, 2020). Electronic management systems have been implemented in the healthcare sector due to the growing need for patient data. (Enaizan, et al., 2024).Research have demonstrated that EMS can result in better documentation quality, fewer medical mistakes, and improved provider-to-provider communication.Healthcare workers' efficiency and productivity might be greatly improved by these technologies (Tsianaka & Peramatzis, 2024),

Additionally, the use of EMS technologies in place of traditional paper medical records to manage patient information enables healthcare workers to create, store, and retrieve crucial patient data, beginning with medical history and laboratory diagnostic history, in order to deliver high-quality care at various levels (Alanazi, Henderson, & Alanazi, 2020). Which digitize patient information and simplify administrative duties. The degree to which primary healthcare workers see these advantages, however, is still being researched. Electronic management systems (EMS) have drawn a lot of interest in the healthcare industry because of its potential to increase productivity (Ayaad, Alloubani, Abu ALhajaa, & Farhan, 2019), lower mistakes, and improve patient outcomes. The use of digital technology in primary healthcare settings has the potential to revolutionize service delivery, especially in low- and middle-income countries (LMICs). The world health organization (WHO) has emphasized the importance of digital health interventions in strengthening health systems and enhancing health outcomes (WHO, 2020).Nevertheless, in many areas, like the Northern West Bank of Palestine, the influence of these systems on the effectiveness and contentment of healthcare workers is still little understood. With an emphasis on improving health information systems, assessing and creating health policies and strategies (like the Hospital Master Plan and the National Oncology Strategy), and assessing the efficacy of primary healthcare, WHO has worked to support the achievement of universal health coverage (UNRWA, 2023). According to the Institute of Medicine's 1999 book "To Err Is Human," medical mistakes cause anywhere from 44,000 to 98,000 fatalities annually (Janchenko, 2020).The report came to the conclusion that the healthcare sector was not improving patient care the individuals (Janchenko, 2020). So, Enhancing the quality of healthcare services is greatly impacted by the use of superior electronic medical records (Ayaad, Alloubani, Abu ALhajaa, & Farhan, 2019). An efficient digital method for capturing, storing, and using patient data by licensed healthcare workers is the electronic health record system (Woldemariam & Jimma, 2023).Data-driven clinical decision making is made possible by electronic health record systems, which raises the standard of healthcare. As the electronic health record is appropriately adopted systems can improve the standard of medical treatment. By improving patient safety and guaranteeing timely, fair, efficient, and patient-centered care (Woldemariam & Jimma, 2023).Clinical workflow is captured by electronic health record (EHR) data, which are a rich source of information for comprehending variations in practice patterns. There is a

correlation between variations in the usage of electronic health records to record and facilitate the provision of treatment and clinical and operational results, such as burnout and well-being metrics for healthcare professionals (Baxter, Apathy, Cross, Sinsky, & Hribar, 2020).One of the tenets of contemporary management is electronic management, which focuses on utilizing contemporary technology extensively as a novel approach to management.

Furthermore, there exists a strong correlation between primary healthcare workers perceived performance and their level of pleasure and engagement with new technologies. According to research by (Gagnon, et al., 2014),attitudes towards technology, the system's perceived ease of use, and its perceived utility all have an impact on how readily healthcare personnel adopt EMS. Higher levels of participation and a smoother integration of EMS into regular routines can result from positive impressions. On the other hand, unfavorable opinions may prevent these methods from being adopted or diminish their potential advantages.

The performance of healthcare workers is a complex concept that is impacted by a number of variables, such as personal traits, work environment, organizational culture, job satisfaction, workload, and resource accessibility (Bataineh, 2017). Achieving organizational objectives and providing excellent care depend on high-performance healthcare. Good results are frequently linked to healthcare professionals performing at their best (Gami, 2023). The reluctance of healthcare workers to adopt and utilize existing technologies might impede the effectiveness of Telehealth Management Technologies (TMS), even with its many advantages.Diverse techniques have been devised to try to comprehend how real workers choose which new technology to adopt or not (Pavlovic, et al., 2021).One technique to determine what factors influence health professionals' usage of health information technology is the technology acceptance model (TAM), which may also partially explain the success or failure of any application procedure that is performed (Pavlovic, et al., 2021).Improving the performance of electronic management systems requires the application of practical mechanisms aimed at improving human resources and linking them to knowledge and technology through generalizing the use of electronic management systems as an important means to raise the efficiency of workers and develop their performance (Alruways, 2020).

This study's main goal is to assess how EMS affects primary healthcare workers perceptions of their performance while taking organizational and individual factors into account. Through a thorough examination of healthcare workers experiences and perspectives, this study seeks to offer important insights into the factors that promote and hinder the effective implementation of emergency management systems (EMS). In the end, the results of this study can help healthcare administrators and policymakers understand the best ways to employ electronic management systems to improve the productivity and job satisfaction of primary healthcare providers.

1.2 Problem Statement

Delivering effective and superior primary healthcare services is a major problem for the Northern West Bank of Palestine's healthcare system. The efficacy and efficiency of healthcare worker are hampered by traditional management systems, which frequently rely on paper-based procedures and manual record-keeping. These antiquated techniques exacerbate administrative difficulties, raise the risk of errors, and lead to ineffective patient care coordination. Potential solutions to these problems include the integration of Electronic Management Systems (EMS), which offers better data accuracy, more efficient processes, and greater provider performance overall. But the use of EMS in primary healthcare settings begs the question of how it affects healthcare providers' perceptions of their own performance. Although earlier research has looked at the advantages of EMS in different healthcare settings, there isn't much thorough study that focuses on the Northern West Bank. Given the distinct socio-political and economic landscape of this area, a thorough examination is required to determine the ways in which the adoption of EMS affects the productivity, job satisfaction, and perceived competence of healthcare providers.The purpose of this cross-sectional study is to close this gap by examining how primary healthcare providers in the Northern West Bank of Palestine view their own performance after using Electronic Management Systems. Through an assessment of these healthcare workers' experiences and perspectives, the research aims to offer important insights into the benefits and possible drawbacks of EMS integration in this particular context. The results of this study will provide guidance for future efforts aimed at improving primary healthcare services in the region, as well as educate legislators and healthcare administrators on the efficacy of EMS.

1.3 significance of study

It is important to study electronic management systems (EMS) in primary health care from different angles, especially when viewed from the perspectives of practice, research, education, and management. Below is a detailed examination of the importance of studying EMS in each of these areas:

- Education (Samadbeik, et al., 2020)

Curriculum Development: By include EMS in medical and health education curriculum, future healthcare workers will be prepared with a solid understanding of the tools and procedures necessary for providing treatment in the current day. This entails being knowledgeable about data analytics, telemedicine, and electronic health records (EHRs).

Enhancement of Skills: Learning about EMS gives students the tools they need to effectively handle patient data, increase team communication, and raise the standard of healthcare delivery.

Adaptability: By encouraging a mentality focused on continual learning and progress, teaching EMS equips students to adjust to continuing technology breakthroughs and innovations in the healthcare industry.

- Administration

Operational Efficiency: EMS improves the efficiency of healthcare delivery by streamlining administrative activities, cutting down on paperwork, and minimizing mistakes. Managers may now concentrate on strategic planning and enhancing patient care.

Resource Allocation: By using EMS, management may more efficiently deploy workers, keep an eye on inventories, and check resource usage—all of which help to guarantee that resources are used efficiently and patient demands are addressed on time.

Quality Control: EMS offers instruments for overseeing and assessing medical services, guaranteeing adherence to guidelines, and carrying out quality enhancement campaigns.

- Research (Biancone, Secinaro, Marseglia, & Calandra, 2023)

Data Collection and Analysis: Large-scale data collecting is made easier with EMS, which is crucial for research. This data may be analyzed by researchers to spot patterns, assess initiatives, and produce fresh insights that will improve basic healthcare.

Evidence-Based Practice: Evidence-based practice is supported by research powered by EMS data, which enables medical professionals to use the most effective and efficient therapies based on reliable data.

Innovation: Studying EMS fosters innovation in healthcare technology and methods. Researchers can develop new tools and applications to further enhance the capabilities of EMS in primary health care.

- Practice

Patient Care: By giving medical staff instant access to thorough patient information, EMS improves patient care by facilitating more precise diagnosis and individualized treatment regimens.

Communication: By enhancing coordination and communication between medical professionals, EMS lowers the possibility of mistakes and guarantees that patients get continuous treatment.

Patient Engagement: promoting patient participation and self-management through tools like patient portals, EMS improves patient satisfaction and health outcomes.

It is essential to do research on how primary healthcare workers Perceived Performance after using electronic management systems in order to improve patient care, increase worker satisfaction, and advance healthcare efficiency. It offers insightful information to technology developers, healthcare managers, and legislators, which eventually improves patient outcomes and strengthens the healthcare system. The study's significance was broken down into two categories: theoretical significance and applied significance.

First: Theoretical significance

The operational dynamics and productivity of primary healthcare personnel was profoundly altered by the introduction of electronic management systems (EMS) in healthcare settings. EMS may help with workflow optimization and mistake reduction by streamlining administrative procedures, cutting down on paperwork, and enabling real-time data access. Healthcare institutions may improve overall service delivery, expedite patient management, and increase staff communication by incorporating EMS. These gains in accuracy and efficiency have a direct impact on how healthcare professionals are seen to be doing, which lays the groundwork for improved patient outcomes and increased job satisfaction, Therefore, there are many theories that discussed the impact of implementing the Electronic Management Systems on the Perceived Performance of Primary Healthcare, including:

- Technology acceptance models (TAM) provide insight into how primary health care workers perceive and adapt to EMS.Perceived usefulness and perceived ease of use are critical factors influencing the adoption of new technologies. In the context of an EMS, the observed performance improvements of primary health care workers are likely to be influenced by their belief in the usefulness and ease of use of the system. Healthcare professionals are more likely to adopt and use EMS effectively when they perceive it to be useful and easy to use, leading to Enhance job performance and satisfaction (Rahimi, Nadri, Afshar, & Timpka, 2018).
- Socio-technical systems theory:The theory of socio-technical systems.social and technological elements both affect organizational effectiveness, and it is essential for both aspects to interact for maximum performance. The implementation of an EMS has the potential to transform healthcare personnel' job processes and social relationships, resulting in enhanced cooperation, communication, and coordination. Healthcare sociotechnical systems place a strong emphasis on the creation and application of technology that enhances and supplements human labor processes, boosting output and job satisfaction in the process (Wesley, et al., 2019).

Summary

these theoretical frameworks offer a thorough knowledge of how EMS might improve primary healthcare professionals' perceptions of their performance, which will eventually improve patient care and streamline healthcare delivery. In order to optimize the advantages and mitigate any possible drawbacks of EMS in healthcare settings, this theoretical investigation is essential for directing future research and real EMS deployments.

Second: Applied importance

Healthcare institutions are rapidly realizing the need of using electronic management systems (EMS) as a means of improving the effectiveness and caliber of service offered. This is especially important in areas like Palestine's Northern West Bank, where the healthcare system may encounter considerable difficulties. The primary healthcare personnel' perceived performance is the subject of this study, which offers insightful information about the real advantages of EMS adoption in these kinds of situations.

- Enhancing Efficiency and Reducing Workload:EMS optimize administrative and clinical operations, ultimately lowering the manual stress on healthcare workers. This efficiency is essential in primary healthcare settings because it became healthcare workers to concentrate more on patient care and less on paperwork.
- Enhancing Communication and Coordination: EMS improve coordination and communication both inside and across healthcare facilities. This can guarantee that healthcare personnel are knowledgeable and focused in their task, as well as enhance workflow overall.
- Promoting Professional Development: EMS frequently include training courses that improve the technical proficiency of medical staff. Healthcare workers can enhance their capabilities and adaptability to contemporary healthcare procedures by mastering these systems. The work satisfaction and retention rates of healthcare personnel may rise as a result of this professional development.

Summary

This study has practical significance since it can show how EMS may improve primary healthcare providers' perceptions of their performance in the Northern West Bank of Palestine. This study can aid in the creation of more accurate, patient-centered, and cost-effective healthcare services in the area by emphasizing the advantages of EMS adoption. Future projects targeted at enhancing healthcare outcomes and infrastructure in comparable environments.

1.4 Aim of study

Evaluate the impact of implementing electronic management systems (EMS) on the perceived performance of primary healthcare workers in the northern West Bank of Palestine

1.5 Objectives

- To examine the relation between demographic characteristics ((gender, age, level of education, workplace, work seniority, job title, nature of current job).) and electronic management system as perceived by the employees of primary health care.
- To investigate the level of using electronic management system (Hardware, Software, Netware, and electronic training) as perceived by health workersof primary health care in the northern West Bank, Palestine.
- To investigate the level of job performance as perceived by the employees of primary health care in the northern West Bank, Palestine.
- To evaluate the impact of using electronic management system on job performance as perceived by the employees of primary health care in the northern West Bank, Palestine.

1.6Study hypothesis

- There is no statistically significant relationship at $P \leq 0.05$ between demographic characteristics ((gender, age, educational level, place of work, seniority at work, job title, nature of current job.) and the electronic management system from the point of view of primary health care workers.

- There is a low level of use of electronic management system (Hardware, Software, Netware, and e-training) from the perspective of health workers in primary health care.
- The level of job performance among primary health care workers is medium to low.
- There is no statistically significant relationship at $P \leq 0.05$ between the electronic management system and job performance among primary health care workers.

1.7 Concepts and Operational Definition

In this section, conceptual definitions and operational definitions related to this study are defined and include the following concepts (Electronic Management Systems (EMS), Perceived Performance, Primary Healthcare Workers, implementation, Performance,).

1.7.1 Concepts Definition

These definitions provide a basic understanding of the key concepts involved in this study of the impact of electronic management systems on the perceived performance of primary health care workers.

"Electronic Health Management" (EHM): describes the methodical, integrated application of digital technology and electronic systems for the purpose of overseeing, managing, and improving healthcare procedures and services. It includes a broad variety of technologies and applications intended to raise the standard, effectiveness, accessibility, and safety of healthcare delivery (Brian F. Mandell, 2021).

Software:It is the set of programs necessary to operate the computer and take advantage of its many features. It covers the impacts on health worker productivity, efficiency, and job satisfaction using computerized physician order entry (CPOE), clinical decision support systems (CDSS), electronic health records (EHR) systems, and other software applications(Sahay, Meng, & Jensen, 2019).

Netware**:** The extensive network infrastructure is what makes data exchange and collaboration between healthcare providers possible while also enabling efficient communication and security. It strives to encourage uniform procedures (Sahay, Meng, & Jensen, 2019).

Hardware: The tangible, physical parts of a computer system that carry out different duties to allow computing activities are referred to as hardware. These parts are necessary to carry out software instructions and guarantee a computer operates correctly. (Fisher, 2021).

Electronic -Training: In primary health care (PHC), e-training is the use of digital platforms and technology to offer educational and training program that improve staff members' knowledge, abilities, and competences at different levels in PHC settings(Anderson, et al., 2023)**.**

Job performance: The degree to which a person successfully carries out the obligations, tasks, and responsibilities related to their position within an organization is referred to as job performance. It includes a range of actions and results that support the organization's aims and objectives (Ousman & Worku , 2022).

Perceived Work Performance in Primary Healthcare Workers: Perceived performance is defined as the self-assessment of a person's effectiveness and competence in carrying out his duties and obligations in the primary health care environment with performance among primary health care workers (Attah, Akintola, Archibong, & Bassey, 2023)

1.7.2 Operational definition

Introduction

The precise description and measurement of the variables under investigation are described in the operational definition.By giving these terms clear operational meanings, the researchers increase the dependability and interpretability of their results and ensure consistency and precision in their measurements.

“Electronic Health Management “The implementation of electronic management systems in Palestinian primary health care centers requires the provision of hardware, expertise in the degree of application and programmed use, networks and their strength, and continuous specialized electronic training for employees to perform daily tasks and workflows including setup modules and billing software to process financial transactions.” In this study, electronic management was measured through four parts via a questionnaire that was answered using a five-point Likert scale. (strongly agree, agree, neutral,disagree, strongly disagree).

Part one: hardware, computer and accessories (8 statements): This part discusses questions from (1-8) related to the possibility of the Ministry of Health - Directorate of Health providing a sufficient number of computers and updating the old ones regularly, Allocating sufficient financial resources to obtain modern methods and technologies,providing a sufficient number of printers in the departments, Lack of technicians capable of operating and maintaining electronic devices, The protection required for different operating systems and applications is determined Electronic archives are relied upon instead of paper archives.

Part tow: software (9 statements). This part discusses questions from (9-16) related to the programs approved by the Ministry of Health - Directorate of Health to monitor and detect errors that may occur on an ongoing basis. On the other hand, they work to protect their data using information security techniques (cybersecurity). Programs approved by the Ministry of Health - Health Directorate can publish and deliver documents to multiple parties. In the shortest possible time and benefit from it at any time. The approved programs are updated and developed, and a financial budget is available to design and develop computer programs and applications. Programmers are available to design and develop software and applications for electronic devices.

Part three:Networks (6 statements): This part measures questions from(17-22) related to Internet networks in the electronic management system and discusses the use of communication networks between all governorates, the extent of Internet flow within the directorate and primary care centers, the use of the electronic communication system EMAIL at work, networks provide ease of communication and communication between health authorities and the Ministry to facilitate and complete work. Networks contribute to providing data to all employees of the Ministry of Health - Directorate of Health at the same time and connecting to currently available networks is practically sufficient to implement electronic management

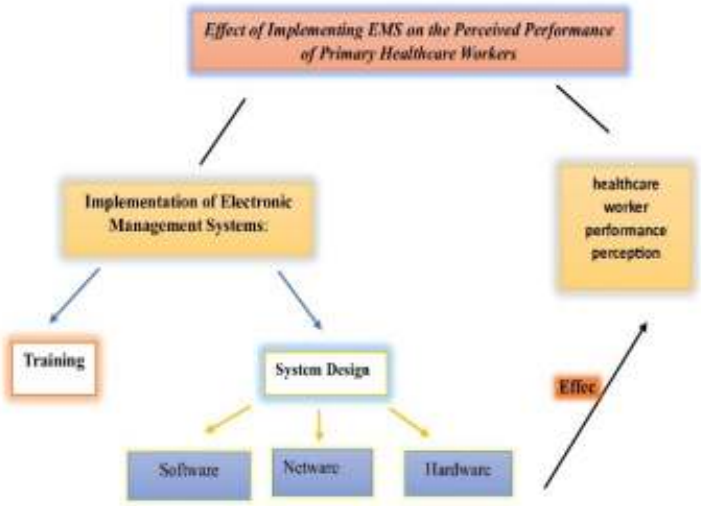
Part four: Electronic training (4 statements): This part discusses questions from (23-26) related to training programs for individual’s dependent on the use of electronic management, and providing individuals with high technical and scientific qualifications in dealing with electronic programs and devices. Employees are continuously developed electronically through specialized seminars, courses, and workshops, and employees

receive adequate training in the field of electronic management. Computer and electronic software (specialized) fields. in the health field).

Measures the level of job performance as perceived by the primary healthcare employees in the northern West Bank. This section includes (13 statements) questions from (1-13) related to the level of job performance while using electronic management systems: Does it facilitate the process of communication between different administrative levels during work? It works to improve and update the information and data necessary to perform the work. It helps employees make the right decisions at the right time. It helps reduce and distort information and prevent it from being monopolized during work. - Defining responsibilities and clarifying the tasks assigned to employees. It contributes to developing confidence among employees. It gives employees better control over their work performance. Reduces the possibility of errors during work. It contributes to reducing the effort and time workers spend completing their tasks. It allows the exchange of information and experiences between workers during their work. Electronic management does not contribute to increasing employees' skills in performing their jobs. It increases the efficiency and effectiveness required in performing tasks. Electronic management also allows employees to be creative and innovative in their work.

Figure 1.1

Study farmwork



1.8 Previous Studies and Theoretical Background

Introduction

Previous published papers(Google Scholar, PubMed, ResearchGate, JSTOR and ScienceDirect), which discussed the same title, objectives and keywords were used for this study. This gives us access to a robust database for our research. The keywords used in the database search are: primary healthcare, job performance, electronic health management, Electronic Training and System design (Hardware, software and Netware) a set of keywords associated with the study title and study objectives are defined in advance. The review of scientific research literature is considered a basis for clarifying the researchers' approach to topics related to the research topic.

Previous studies are considered the nucleus of drawing up scientific frameworks for research. Scientific research cannot be conducted without previous studies. The following is a presentation of the most important studies available to researchers from the previous studies that were discussed. The subject of this study, some of which are directly related to the current study and others are partially related to its components. The focus was on the main objectives of the studies and the most important results they reached so that we can compare them with the results of the current research. The studies were presented in the form of Western studies, Arab studies, and local studies.

1.8.1 International studies

A descriptive study was conducted in USA by (Janchenko, 2020) the effect of electronic health record (EHR) systems on physician productivity was investigated in this study using the notion of "relative value unit (RVU) intensity." To find out how the adoption of an EHR system affected productivity, the researcher collected productivity data from 20 physicians over a ten-year period. By analyzing this data, the researcher was able to determine how the EHR's installation affected the practice as a whole and how the system affected the average number of RVUs created each patient visit. While, the study was conducted by (GajananP.Mudholkar & Al-Khasi , 2020), the study sought to determine how electronic administration may enhance administrative performance. The descriptive method was applied.Another method for gathering data was the questionnaire. The findings showed that better administrative performance was a result of computerized management. Among the many recommendations made by the study,

the most crucial one is that the Ministry of Education train staff members on electronic management systems and provide the funding required for the operation and implementation of these systems in all Ministry departments. Additionally, the Ministry should endeavor to establish effective external communication between its office and the various offices in the governorates by connecting electronic systems. Additionally, in the USA, research by (Soumya Upadhyay & -Agyeman,, 2023) used a random effects model to investigate the impact of average and complete electronic health records on safety (adverse event rate) and quality (readmission rates for pneumonia and chronic obstructive pulmonary disease).7,084 hospital-level observations from 2014 to 2016 made up the sample. The findings showed that, in comparison to hospitals without average EHRs, hospitals with average EHRs experienced an 8% decrease in 30-day readmissions for pneumonia, while hospitals with comprehensive EHRs saw a 1% decrease in the rate of adverse incidents. Our research confirms earlier findings that suggest more focused and intentional use of EHRs should be assured, as simply access to them may not have an effect on outcomes. On the other hand, the study was conducted by (Sahay, Meng, & Jensen, 2019), The study aimed to comprehensively investigate the use of SDN to improve computer network security. We specifically review existing literature that addresses the use of SDN for network security, including middleware deployment, attack detection and mitigation, traffic engineering and monitoring, configuration and policy management, service chaining, and smart grid security.

1.8.2Regional studies

A study was conducted by (Salleh, Abdullah, & Zakaria , 2021),It sought to assess how the electronic health record (EHR) system affected primary care physicians' performance. Over the course of seven months, convenience samples were employed to gather data from three government hospitals. Primary healthcare providers were the subjects of a standardized survey on the efficacy of electronic health record systems (specialists, medical staff, and nurses), the findings showed that system compatibility was the most crucial component of system quality, while knowledge quality had the best scores for predicting performance and had a significant impact size. the findings also showed that clinical activities and processes for carers were supported by electronic health record systems, which enhanced system quality and enhanced user performance. On the other hand, the study was conducted by (Kebede, Adeba, & Chego, 2020),it

aimed to verify the timeliness, completeness and validity of data from the health management information system. From April to June 2016, 316 health and medical professionals participated in cross-sectoral research. And informative technicians. Basic random sampling was performed. The information was qualitative.16 key informants who were purposively selected through focus group discussions provided this (focus group).According to the findings, inadequate administrative support, lack of accountability for incorrect reporting, inadequate supportive oversight, and the absence of a distinct unit responsible for health information management are often cited as reasons for substandard data quality practices. While, a cross-sectional study was conducted in Malysia by (Sulaiman & Wickramasinghe, 2014) to achieve better healthcare delivery, healthcare institutions are how important information systems and information technology (IS/IT) are.the successful integration of IS/IT, thus becomes crucial in ensuring that IS/IT is applied effectively and methodically inside a healthcare business. The main conclusions of this study show that the healthcare organization must overcome obstacles either at the beginning or end of the assimilation process, as well as people, process, technology, and environmental elements that should be thought of as facilitators to the healthcare information systems (HIS) assimilation process.

1.8.3 Arab studies

A descriptive cross-sectional study was conducted in Libya by (Faraj, Mohammed, Maatuk, & Elberkawi, 2019),the goal of the study was to determine the most significant barriers, difficulties, and advantages that may arise from using electronic management in government agencies, particularly civil registry departments. A questionnaire was sent as part of a descriptive survey technique to gather information from the research community on the potential applications of electronic management in Libyan civil register offices.The findings showed that, from an administrative and technological standpoint, the main barrier to the implementation of electronic administration in civil register offices is its lack of features. On the other wise, A study was conducted by (Althonybat & Thneibat, 2019),sought to determine how the Arab Potash Company's performance was affected by computerised human resources management.A survey instrument was created and distributed to 246 workers in random order. The findings showed that 56.9% of the variation in work performance can be explained by the effects of the electronic human resources management components on job performance.On the other wise,the study was conducted in jordan by (Nawafleh, 2018),The study aimed to

determine the extent of the impact of electronic management on employee performance within the Jordanian public sector. The survey was conducted on 337 randomly selected employees who work in the Jordanian Ministry of Foreign Affairs and Expatriates, and the Civil Status and Passports Department. The results showed that electronic management may have an impact on a number of factors, including job performance. also The findings indicate a strong relationship ($\alpha \leq 0.05$) between e-management components and improved worker job performance in Jordan's public sector.

1.8.4Local studies

In a cross-sectional descriptive study conducted in Palestine by (Khrewish, 2021) The purpose of the study was to determine if the introduction of an electronic register affects how quickly prenatal care professionals in primary healthcare clinics complete their tasks. This was evaluated by keeping track of how much time the healthcare professionals spent managing health information during consultations.The time-motion design was used in the computerised Registry Time research to gather data. A random subsample of the eRegQual CRCT's intervention and control clusters—primary healthcare clinics—was used for the observations. This study was conducted in 24 primary health care clinics between August 2018 and December 2018; the control group consisted of 12 clinics with paper-based systems, while the intervention group consisted of 12 clinics with electronic registration systems.the result shown that There is no discernible difference between the two groups for any of the following variables: nurse educational level, availability of ultrasound and lab services, age and experience of the nurse, number of ANC visits per month, number of booking visits per month, number of booking visits on the day of data collection, and number of days of service provision per week. Although the intervention clinics had fewer booking visits than the control clinics, this difference is not statistically significant.The results also indicated that the time required to intervene in the caregiver’s workflow in clinics is 6.6 minutes on paper and 9.9 minutes on the computer. This results in a significant reduction in the amount of time required for electronic records in primary care clinics.

Summary

Many gaps were identified through reviewing prior research related to the current study's title. The most significant of these are as follows:

- The published literature does not cover a comprehensive range of performance measures, instead focusing on easily quantifiable aspects like time management and administrative efficiency, while ignoring qualitative aspects like job satisfaction, stress levels, and quality of patient care.
- There is also a lack of research examining the impact of e-management services in diverse geographic and cultural contexts, particularly in low- and middle-income countries where healthcare infrastructure and resources differ significantly from high-income countries.
- Longitudinal studies that monitor the long-term effects of EMRs on patient outcomes and healthcare worker performance are few, which is a necessary condition for comprehending the long-term advantages and possible disadvantages.

To compared to previous published research on related topics, the study is unique in a number of respects. Here are some notable characteristics that set them apart:

- The geographical factor in the northern West Bank in Palestine, a region with distinct social, political and economic conditions, is the subject of this study in particular. Studies conducted in other regions of the world may not yield the same ideas as the research conducted in this particular case.
- One important component of the health care system, primary health care professionals, are the focus of this study. Compared to those who work in secondary or tertiary care settings, primary health care providers often face different operational contexts and barriers.
- The study examined the impact of implementing electronic management systems (EMS) on the perceived performance of healthcare workers. An EMS can include electronic health records (EHRs), patient management systems, and other digital tools designed to streamline healthcare operations.
- Rather than focusing solely on objective measures (such as patient outcomes or system efficiency), this study emphasizes the perceived performance of healthcare workers. This includes their satisfaction, ease of use and overall impact on their workflow.

- The study may address particular issues that the Northern West Bank faces, such resource restrictions, political unpredictability, and infrastructural limitations that can affect the efficacy and execution of EMS.
- The results of this study may directly affect Palestine's local health management and policy. It can enlighten decision-makers on the advantages and possible drawbacks of using EMS in comparable contexts. All of these elements work together to make this study an important addition to the body of knowledge on healthcare management systems by providing context-specific insights that would not be completely explored in research done in other areas or under different circumstances.

Chapter Two

The Methodology

In this chapter, methods that were used to answer the study objective are presented in details.This reflects on study design, study setting, participants, used tool, study sample and sampling technique.

2.1 Study Design

A descriptive cross-sectional study, data were collected from participants using a convenience sampling method

2.2 study sitting

In Palestine, the number of primary health care centers at the end of 2022 reached 767 centers, including 608 centers in the West Bank, and 159 centers in the Gaza Strip. The population of each center was about 6,576 citizens per center. The number of primary care centers affiliated with the Ministry of Health increased from 203 centers at the end of the year 1994 to 493 centers in the year 2022, an increase of 142.8% (Center, 2023).The following table (2.1) shows the number of primary health care centers in Palestine. This study was conducted in five Primary Health Care clinics (PHC) with computerized systems in the northern governorates (Jenin, Tubas, Nablus, Tulkarem, and Qalqilya).in the northern West Bank.

Table 2.1

The number of primary health care centers in Palestine

Palestine	No	Percentage %
MOH	493	64.3%
UNRWA	65	8.5%
NGOs	192	25%
Military medical services	17	2.2%
Total	767	100%

2.3 study population

The study population consisted of all workers in the field of PHC from the northern governorates of the West Bank involving all various administrative and functional levels (doctors, nurses, pharmacists, laboratories, radiologists, and administrators), Their total number is (1,201) employees. All employees working in village centers are excluded from the study because theydo not work in the electronic system due to lack of equipment and infrastructure.as documented in the MOH(annual health report2022), as shown in the following.

Figure 2.1

Distribution of PHC human resources by health Directorate, and profession in MOH, West Bank. Palestine 2022

- **Inclusion criteria**

All employees in primary health care centers in the health directorates of the cities of the northern West Bank, including (doctors, nurses, laboratories, administrators, radiology, and pharmacists).

- **Exclusion criteria**

Employees in rural centers and psychiatric clinicswere excludedas there is no electronic medical file system for mental illness yet.

2.4 Study sample

The study was conducted on an available sample of 228 employees, With convenience sampling technique ،the homogeneous study population, in PHC in the northern West Bank. The characteristics of the sample size are shown in table F.1, in Appendix F. The number of employees in the computer field was 335, while the number of participants in the study was 228, a difference of 107 employees.

The number of workers in the computer field is not constant but rather increasing because the Ministry is constantly working to provide devices when available. 107 employees' members, such as midwives, work on computers in the city and rural sub-centers. All midwives in primary health care work on the computerized system in maternity and childhood centers, and some administrators in villages also use the computerized system to work on health insurance for patients. Some employees were working on the computerized system and were not present at their workplaces during the distribution of the questionnaire. Therefore, they are outside the scope of the study.

2.5 Study time frame

The study was conducted between (April and July,2023) in primary health care directorate in (Jenin, Tubas, Nablus, Tulkarem, and Qalqilya).in the northern West Bank.

2.6 Data collection tool

The study tool was used from (Brahmi, 2019), The researcher's email was used to distribute the questionnaire. A pilot study was conducted with 30 participants to determine if the study instrument was reliable. In keeping with Palestinian culture, the results of this study were not included in the study sample.The study tool translated into arabic was used to collect data. Informed consent was provided in English and Arabic. Participation in this study was voluntary. Participants were provided with information about the purpose of this study and were informed that they could withdraw from the study at any time. It was emphasized that the privacy of the study was maintained and that it was for scientific research purposes throughout the study period.A five-point Likert scale was also used. This questionnaire was modified, translated, and revised to suit the culture of the Palestinian community.

The questionnaire in this study was included three parts

Part One**:** Discusses the social and demographic situation (Gender, Age, Educational level, Workplace, Work seniority in primary health care, job title, Nature of current job).

Part two: measures electronic management and includes four parts.

- The firstpart:hardware is a computer and accessories (8 statements): This part discusses questions from (1-8) related to the possibility of the Ministry of Health - Directorate of Health providing a sufficient number of computers and updating the old ones regularly, Allocating sufficient financial resources to obtain modern methods and technologies,providing a sufficient number of printers in the departments, Lack of technicians capable of operating and maintaining electronic devices, The protection required for different operating systems and applications is determined Electronic archives are relied upon instead of paper archives. The Ministry of Health - Directorate of Health owns the computer programs necessary for administrative work.
- The second part is the software (9 statements). This part discusses questions from (9-16) related to the programs approved by the Ministry of Health - Directorate of Health to monitor and detect errors that may occur on an ongoing basis. On the other hand, they work to protect their data using information security techniques (cybersecurity). Programs approved by the Ministry of Health - Health Directorate can publish and deliver documents to multiple parties. In the shortest possible time and benefit from it at any time. The approved programs are updated and developed, and a financial budget is available to design and develop computer programs and applications. Programmers are available to design and develop software and applications for electronic devices.
- The third part: is the Networks (6 statements): This part measures questions from(17-22) related to Internet networks in the electronic management system and discusses the use of communication networks between all governorates, the extent of Internet flow within the directorate and primary care centers, the use of the electronic communication system EMAIL at work, networks provide ease of communication and communication between health authorities and the Ministry to facilitate and complete work. Networks contribute to providing data to all employees of the Ministry of Health - Directorate of Health at the same time and connecting to currently available networks is practically sufficient to implement electronic management.
- Fourth part: Electronic training (4 statements): This part discusses questions from (23-26) related to training programs for individual's dependent on the use of electronic management, and providing individuals with high technical and scientific

qualifications in dealing with electronic programs and devices. Employees are continuously developed electronically through specialized seminars, courses, and workshops, and employees receive adequate training in the field of electronic management. Computer and electronic software (specialized) fields. in the health field).

Participants answered this section which measures electronic management and includes four parts of the questions based on a Likert scale of 5 answers or options selected from totally disagree to agree totally, and the response was according to a five-point Likert scale for items that had the same direction and the opposite for negative items (6, 17).

Part three: measures the level of job performance as perceived by the primary healthcare employees in the northern West Bank. This section includes (13 statements) questions from (1-13) related to the level of job performance while using electronic management systems: Does it facilitate the process of communication between different administrative levels during work? It works to improve and update the information and data necessary to perform the work. It helps employees make the right decisions at the right time. It helps reduce and distort information and prevent it from being monopolized during work. - Defining responsibilities and clarifying the tasks assigned to employees. It contributes to developing confidence among employees. It gives employees better control over their work performance. Reduces the possibility of errors during work. It contributes to reducing the effort and time workers spend completing their tasks. It allows the exchange of information and experiences between workers during their work. Electronic management does not contribute to increasing employees' skills in performing their jobs. It increases the efficiency and effectiveness required in performing tasks. Electronic management also allows employees to be creative and innovative in their work.

Validity and Reliability

Validity

The validity of the questionnaire indicates that it reflects the factors intended by it.(Middleton., 2023),The questionnaire was sent in its first form to the supervisor of the thesis and to the Public Health team at (Al-Najah University), which evaluated the adequacy of the tool to measure what it planned to measure. The validity of the tool was

verified. A pilot study was conducted on an external sample of the original study sample consisting of (30) health workers to determine whether each item in the questionnaire corresponds to the field to which it belongs. (Appendix E), the validity of internal consistency was used by extracting Pearson correlation values between domains and the total score of the electronic management system tool, as well as between the paragraphs and the total score of the functional performance tool, as shown in tables F.2 in Appendix F. The tool was distributed to pilot study sample of 30 health workers) Approximately 10% of the sample size (who were included in the study in primary health care centers were excluded from the original study sample. The results shown in Table F.2 in Appendix F indicated that there were statistically significant correlations at ($p \leq 0.05$) between the total score of the electronic management system and all its domains, as the values of Pearson correlation for the domains were (0.85, 0.87, 0.95, and 0.88) respectively. These results emphasize that the tool measures what it is intended to measure. The results shown in table F.3 in Appendix F, indicated that there were statistically significant correlations at ($p \leq 0.05$) between the total score of job performance and it's all items, as the values of Pearson correlation were ranged between (0.38- 0.92). These results emphasize that the tool measures what it is intended to measure.

Reliability

An internal consistency test was called Cronbach's alpha test was used in a pilot study including 30 health workers from the target population to ensure the validity of the study instruments and was not included in the study including. A Cronbach's alpha equation was used to ensure the reliability the study scales for the same pilot study. The value of reliability for the total score of the electronic management system was (0.90), and its domains ranged between (0.76 – 0.91) as shown in table (2.2). Also, the value of reliability of job performance for health workers was (0.95). these results emphasize that the study tool is reliable and achieves the study goals.

Table 2.2

Reliability coefficients of electronic management system tool

N	Domains of electronic management system	No. of items	Cronbach's alpha
1	Hardware	8	0.76
2	Software	8	0.91
3	Networks	6	0.76
4	Electronic training	4	0.81
	Total score	26	0.90

2.7 Statistical Analysis Methods

The data were analyzed using SPSS V.26 using descriptive statistics including (averages, standard deviations, and percentages). Pearson's correlation coefficient was used to determine the relationship between electronic management systems and job performance. As well as ensuring the validity of the internal consistency of the study measures. to determine the impact of electronic management and its domains on job performance, simple linear regression was used. The independent samples t-test was also used to determine the differences in the electronic management systems according to gender variable. A one-way test of variance (ANOVA) was used to determine the differences in the electronic management systems and job performance according to the variables of age, educational level, workplace, work seniority, job title, and the nature of the current job. In order to determine the sources of significant differences when it was needed, Sidak post-hoc test was used. Cronbach alpha was used to verify the reliability coefficients of the study scales.

2.8 Study procedures

Data were collected from primary health care centers affiliated with the Palestinian Ministry of Health. 230 questionnaires were distributed face-to-face to health workers (doctors, nurses, pharmacists, laboratory, radiologists, and administrators) in primary health care centers in the governorates under study (Jenin, Tubas, Nablus, Tulkarm, and Qalqilya) in the northern West Bank. A consent form was distributed It explained the objectives of the study, that participation in the study was voluntary, that all information was confidential, and that it would be used for scientific research only, for each

participant.The computerized system was applied to obtain the required sample size, and two questionnaires were excluded due to not answering all questionnaire items.

2.9 Ethical consideration

Obtaining graduate studies approval on (19/3/2023) (Appendix A). Ethical approval from the Institutional Review Board “IRB” at An-Najah National University in Nablus - Palestine on (5/4/ 2023) (Appendix B). Approval from the Department of Health Education and Scientific Research in the Palestinian Ministry of Health in Palestine on (12/6/2023) (Appendix C). After agreeing to select the study sample, a consent form to participate in this study was distributed (Appendix D), where the researcher introduced himself and explained the purpose of this study and that the study is voluntary and participants have the right to withdraw from this study at any time, and the information is confidential and is for the purposes of scientific research.

Chapter Three

Results

In this chapter, the characteristics of the participants, the most important results, and the answers to the research questions were identified, as shown in the following tables

3.1 Socio-demographic characteristics

The results in table (3.1) showed that 66.2% of participants were female, 31.1% were between 41 and 50 years old, and the educational level represented about 65% of the bachelor's degree. The percentage of participants between Jenin and Tubas was equal, reaching 22.4%. In addition, 50% of participants had work seniority of more than 10 years, while the highest percentage of administrators reached 31.1%.

Table 3.1

Distribution of the percentage of participants according to their demographic data (n= 228)

Independent variables	Level of variable	N	%
Gender	Male	77	33.8
	Female	151	66.2
	Total	228	100
Age	20- 30 years	45	19.7
	31- 40 years	70	30.7
	41- 50 years	71	31.1
	51 years and above	42	18.4
	Total	228	100
Education level	Diploma	45	19.7
	BA	148	64.9
	MA	35	15.4
	Total	228	100
Workplace	Jenin	51	22.4
	Tubas	51	22.4
	Nablus	38	16.7
	Tulkarm	51	22.4
	Qalqilya	37	16.2
	Total	228	100
Work seniority	Less than a year	16	7
	1-5 years	54	23.7
	6-10 years	46	20.2
	More than 10 years	112	49.1
	Total	228	100
Job title	Doctor	43	18.9
	Nurse	65	28.5
	Pharmacist	15	6.6
	Laboratory technician	20	8.8
	X-ray technician	14	6.1
	Administrative	71	31.1
	Total	228	100
Nature of current job	Director	8	3.5
	Head of a department	56	24.6
	Head of division	55	24.1
	Employee	109	31.1
	Total	228	100

3.2 The level of using electronic management systems *(*hardware, software,network, and electronic training)

The results in table F.4, in appendix F indicated that the level of using electronic management systems among participants was moderate, as the total mean score was moderate (2.89). In addition, the level of responses on all of the domains was moderate, where the highest response was for the hardware domain, with a total mean score (2.93), and the lowest response was for the electronic training domain, with a total mean score (2.79). Concerning the items, the highest response was on item (1), "the Ministry of Health - Directorate of Health provides a sufficient number of computers to implement electronic administration," as the mean of response on it was moderate (3.36). The lowest response was on item (18), "Internet power flow is high within the directorate and primary care centers," as the mean response on it was low (2.40).

3.3 The level of job performance from the perspective of participants

The results shown in table (3.2) indicated that the level of job performance among participants was high, as the mean of response for the total score was high (3.52). The responses to all items were high, and the averages ranged from (3.43 to 3.71). They all have the same level.

Table 3.2

Distribution of means and percentages of participants' responses to the level of job regard performance from the perspective of participants (n = 228)

N	Items	Mean	%	Level
1	Electronic management facilitates the process of communication between the various administrative levels during work.	3.48	69.6	High
2	Electronic management improves and updates the information and data necessary to perform business.	3.49	69.8	High
3	Electronic management does not help workers to make sound decisions at the right time.	3.43	68.6	High
4	Electronic management helps to reduce distortion and distortion of information and not to monopolize it during work.	3.46	69.2	High
5	Electronic management defines responsibilities and clarifies the tasks assigned to employees.	3.45	69	High
6	Electronic management contributes to the development of trust among employees.	3.51	70.2	High
7	Electronic management makes employees better control over their work performance.	3.64	72.8	High
8	Electronic management reducesChances of professional errors while working.	3.63	72.6	High
9	Electronic management contributes to reducing the effort and time for workers to complete their tasks.	3.71	74.2	High
10	Electronic management allows the exchange of information and experiences between workers during their work.	3.57	71.4	High
11	Electronic management does not contribute to increasing the skills of workers to perform their jobs.	3.43	68.6	High
12	Electronic management increases the efficiency and effectiveness required in performing tasks.	3.55	71	High
13	Electronic management allows employees to create and innovate in their work.	3.43	68.6	High
	Total score of job performance	3.52	70.4	High

3.4 The relationship between demographic characteristics (gender, age, educational level, place of work, seniority at work, job title, nature of current job.) and the electronic management system from the point of view of primary health care workers

The results in table (3.3) showed that there were no statistically significant differences at the level ($p \leq 0.05$) in the total score of the electronic management system and its fields from the point of view of participants due to gender variable (using the independent t-test) and nature of the current job variable. Whereas statistically significant differences in the domain of hardware according to (age, educational level, workplace, job title, and work seniority) variable and in the software domains according to the job title variable.

Table 3.3

The differences in the use of electronic management system domains by participant concerning their demographic data; one-way ANOVA test (n= 228)

Mean± SD & *variable*	category	Hardware	Software	Networks	Electronic training	The total score
Gender	Male	3.05± 0.71	2.99± 0.78	2.93± 0.76	2.78± 0.95	2.94± 0.65
	Female	2.87± 0.65	2.88± 0.75	2.91± 0.67	2.79±0.89	2.86± 0.62
	T&	1.85	1.07	0.16	-0.10	0.82
	p-value	0.066	0.286	0.872	0.924	0.412
Age	20- 30	3.16± 0.72	3.06± 0.74	3.02± 0.70	2.94± 0.89	3.04± 0.67
	31- 40	2.97± 0.69	2.95± 0.76	2.95± 0.67	2.83± 0.97	2.92± 0.63
	41- 50	2.73± 0.62	2.89± 0.73	2.88± 0.74	2.71± 0.94	2.84± 0.62
	≥50	2.73± 0.62	2.73± 0.62	2.83± 0.69	2.68± 0.76	2.75± 0.59
	F &	3.25	1.15	0.65	0.84	1.82
	p-value	0.025*	0.329	0.584	0.476	0.145
Educational level	Diploma	2.74± 0.61	2.82± 0.80	2.83± 0.69	2.59± 0.84	2.74± 0.61
	BA	3.01± 0.66	2.90± 0.72	2.93± 0.70	2.81± 0.92	2.91± 0.63
	MA	2.83± 0.77	3.10± 0.86	2.98± 0.69	2.95± 0.93	2.97± 0.66
	F &	3.46	1.45	0.56	1.68	1.60
	p-value	0.033*	0.236	0.189	0.189	0.205
Workplace	Jenin	2.90± 0.67	3.09± 0.68	3.00± 0.59	2.72± 0.85	2.93± 0.58
	Tubas	3.19± 0.77	2.97± 0.90	3.09± 0.74	3.05± 0.97	3.07± 0.73
	Nablus	2.73± 0.46	2.86± 0.64	2.80± 0.61	2.80± 0.83	2.80± 0.47
	Tulkarm	2.77± 0.67	2.81± 0.78	2.73± 0.76	2.66±0.95	2.74± 0.67
	Qalqilya	3.04± 0.62	2.82± 0.74	2.96± 0.72	2.67± 0.91	2.87± 0.61
	F &	3.90	1.18	2.26	1.58	2.08
	p-value	0.004*	0.320	0.063	0.181	0.084
Work seniority	Less than a year	2.95± 0.74	2.98± 0.93	2.96± 0.87	2.81±0.104	2.93± 0.82
	1-5 years	3.16± 0.65	2.99± 0.73	2.99± 0.55	2.96± 0.93	3.03± 0.59
	6-10 years	2.86± 0.66	2.85± 0.72	2.72± 0.73	2.77± 0.91	2.80± 0.62
	More than 10 years	2.84± 0.67	2.90± 0.77	2.96± 0.72	2.71± 0.88	2.85± 0.61
	F &	2.91	0.32	1.62	0.98	1.28
	p-value	0.035*	0.809	0.186	0.403	0.283
Job title	Doctor	2.72± 0.64	2.65± 0.74	2.77± 0.69	2.60± 0.92	2.69± 0.62
	Nurse	2.84± 0.74	2.93± 0.78	2.93± 0.65	2.85± 0.98	2.89± 0.68
	Pharmacist	2.88± 0.61	2.77± 0.61	2.76± 0.82	2.92± 0.73	2.83± 0.56
	Lab .technician	2.69± 0.63	2.75± 0.60	2.79± 0.49	2.69± 0.84	2.73± 0.51
	X-ray technician	2.95± 0.45	3.16± 0.62	2.80± 0.65	3.04± 0.76	2.99± 0.53
	Administrative	3.21± 0.62	3.11± 0.80	3.09± 0.76	2.80± 0.92	3.05± 0.63
	F &	4.20	2.71	1.68	0.71	2.22
	p-value	0.001*	0.021*	0.140	0.613	0.053
Nature of current job	Director	3.52± 0.39	3.27± 0.45	3.38± 0.77	3.25± 0.71	3.35± 0.39
	Head of department	2.96± 0.68	2.88± 0.80	3.02± 0.66	2.75± 0.93	2.90± 0.66
	Head of division	2.92± 0.68	2.90± 0.77	2.91± 0.66	2.89± 0.94	2.90± 0.61
	Employee	2.88± 0.67	2.92± 0.75	2.83± 0.72	2.72± 0.90	2.84± 0.63
	F &	2.29	0.62	2.12	1.16	1.69
	p-value	0.079	0.603	0.099	0.327	0.170

To determine differences in participants' use of electronic management systems (hardware and software) according to their demographic variables. The Sidak post hoc test was used. The results in table (3.4) of Sidak post-hoc test revealed that there were statistically significant differences at ($p \leq 0.05$) in the domain of hardware by participants due to the variable, Age between (20- 30 years) and (51 years and above) in favor of (20- 30 years). Educational level between (diploma) and (BA) in favor of (BA). Workplace between (Tubas) and (Nablus and Tulkarm) in favor of (Tubas). Work seniority between (1-5 years) and (more than 10 years) in favor of (1-5 years). And the job title between (administrative) and (doctor, nurse, and laboratory technician) in favor of (administrative). Concerning the software domain, there were statistically significant differences between (x-ray technician and administrative) and (doctor) in favor of (x-ray technician and administrative).

Table 3.4

The differences in the use of electronic management systems (Hardware&Software) by participants according to their demographic variables; Sidak's post hoc test

Electronic management systems Domains	Demographic Variables	Categories	N	Mean± SD	F	P-value	Sidak's post hoc test
Hardware	Age		45	3.16± 0.72	3.25	0.025*	(1,4 *)
		31- 40 years	70	2.97± 0.69			
		41- 50 years	71	2.87± 0.63			
		≥ 50 years	42	2.73± 0.62			
	Education level	Diploma	45	2.74± 0.61	3.46	0.033*	(1.2*)
		BA	148	2.74± 0.61			
		MA	35	2.83± 0.77			
	Workplace	Jenin	51	2.90± 0.67	3.90	0.004*	(2, 3*), (2,4*)
		Tubas	51	3.19± 0.77			
		Nablus	38	2.73± 0.46			
		Tulkarm	51	2.77± 0.67			
		Qalqilya	37	3.04± 0.62			
	Work seniority	Less than a year	16	2.95± 0.74	2.91	0.035*	(2, 4*)
		1-5 years	54	3.16± 0.65			
		6-10 years	46	2.86± 0.66			
		> 10 years	112	2.84± 0.67			
	Job title	Doctor	43	2.72± 0.64	1.10	0.001*	(1, 6*) (2, 6*) (4, 6*)
		Nurse	65	2.84± 0.74			
		Pharmacist	15	2.88± 0.61			
		Lab technician	20	2.69± 0.63			
		X-ray technician	14	2.95± 0.45			
		Administrative	71	3.21± 0.62			
Software	Job title	Doctor	43	2.65± 0.74	4.20	0.021*	(1, 5*) (1, 6*)
		Nurse	65	2.93± 0.78			
		Pharmacist	15	2.77± 0.61			
		Lab technician	20	2.75± 0.60			
		X-ray technician	14	3.16± 0.62			
		Administrative	71	3.11± 0.80			

* Significant differences at ($p \leq 0.05$).

3.5 The relationship between demographic characteristics ((gender, age, educational level, place of work, seniority at work, job title, nature of current job.) and job performance from the point of view of primary health care workers

The result was indicated in table (3.5), that there were no statistically significant differences at the level ($p \leq 0.05$) in the job performance of the participants due to the variables of gender, age, place of work, and job title. On the other hand, there are statistically significant differences due to the variables of educational level, work seniority, and the nature of the current job.

Table3.5

One-way ANOVA results for the differences in the job performance by participants according to demographic variables (n= 228)

demographic variables	Categories	N	Mean± SD	F	P-value
Gender	Male	77	3.57± 0.77	0.56	0.449
	Female	151	3.50± 0.69		
Age	20- 30 years	45	3.56± 0.74	0.57	0.633
	31- 40 years	70	3.50± 0.64		
	41- 50 years	71	3.58± 0.78		
	51 years and above	42	3.41± 0.72		
Education level	Diploma	45	3.25± 0.77	8.03	0.000*
	BA	148	3.52± 0.68		
	MA	35	3.88± 0.63		
Workplace	Jenin	51	3.58± 0.73	0.97	0.427
	Tubas	51	3.63± 0.76		
	Nablus	38	3.39± 0.60		
	Tulkarm	51	3.42± 0.82		
	Qalqilya	37	3.56± 0.58		
Work seniority	Less than a year	16	3.22± 0.86	2.96	0.033*
	1-5 years	54	3.72± 0.56		
	6-10 years	46	3.38± 0.77		
	More than 10 years	112	3.53± 0.72		
Job title	Doctor	43	3.53± 0.75	1.10	0.361
	Nurse	65	3.47± 0.80		
	Pharmacist	15	3.43± 0.80		
	Laboratory technician	20	3.29± 0.62		
	X- ray technician	14	3.46± 0.53		
	Administrative	71	3.66± 0.65		
Nature of current job	Director	8	4.03± 0.42	3.73	0.012*
	Head of department	56	3.70± 0.66		
	Head of division	55	3.52± 0.71		
	Employee	109	3.39± 0.74		

* Significant differences at ($p \leq 0.05$).

To determine the differences in job performance according to educational level, work seniority categories, and nature of current job categories variable. The result was shown in table (3.6), that there were no statistically significant differences at ($p \leq 0.05$) in the job performance among participants due to the variables of gender, age and job title. In contrast, there were statistically significant differences in the job performance among participants due to the variables of educational level between (diploma and BA) and (MA) in favor of (MA) (Figure 3.1). work seniority between (1-5 years) and (less than a year) in favor of (1-5 years), (Figure3.2)., and nature of the current job between (director) and (head of division, and employee) in favor of (director). (Figure3.3).

Table 3.6

Sidak post hoc results for the differences in job performance according to educational level, work seniority categories, and nature of current job categories variable

Means of job performance	Educational level categories		
	Diploma	BA	MA
3.25	-	-0.27	-0.63*
3.52		-	-0.36*
3.88			-

Means of job performance	Work seniority categories			
	Less than a year	1-5 years	6-10 years	More than 10 years
3.22	-	-0.50*	-0.16	-0.31
3.72		-	0.34	0.19
3.38			-	-0.15
3.53				-

Means of job performance	Nature of current job categories			
	Director	Head of department	Head of division	Employee
4.03	-	0.33	0.51*	0.64*
3.70		-	0.18	0.31
3.52			-	0.13
3.39				-

Figure 3.1

Means of job performance according to the variable of educational level.

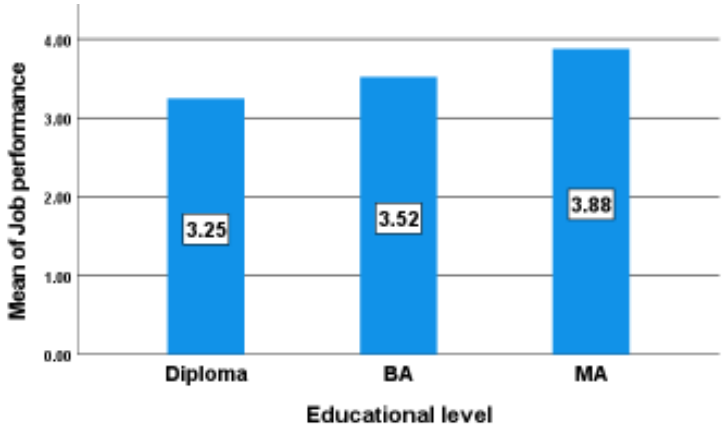


Figure 3.2

Means of job performance according to the variable of work seniority in primary health care centers.

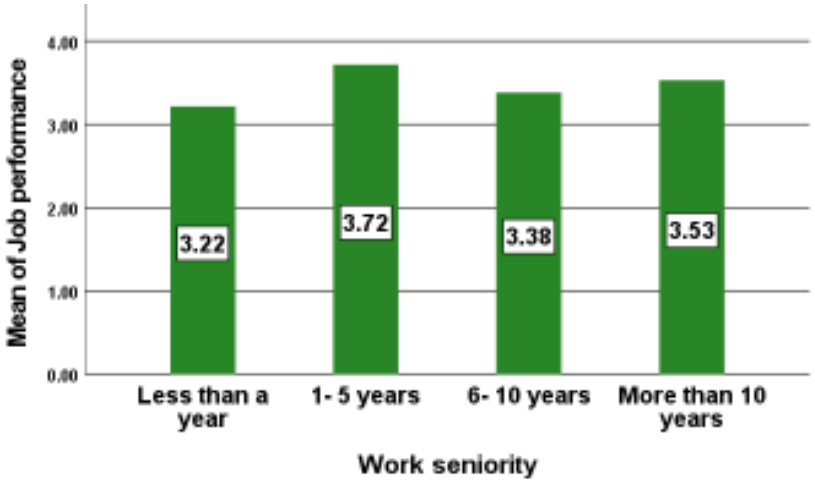
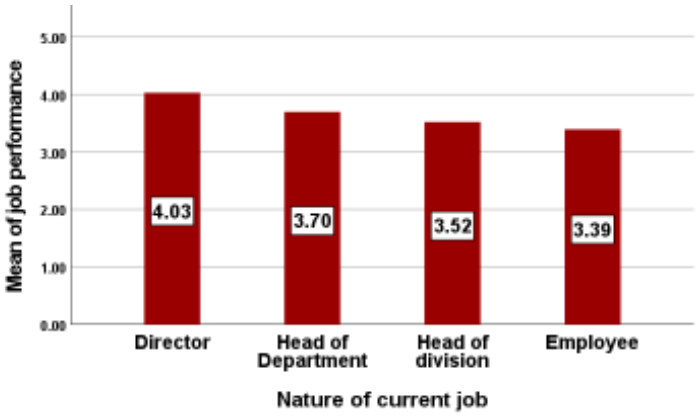


Figure 3.3

Means of job performance according to the variable of nature of the current job.



3.6 The impact of electronic management and its domains on job performance as perceived by primary healthcare participants

The results of stepwise multiple regression shown in table (3.7) indicated that t-values were statistically significant at ($p \leq 0.01$). The total score of electronic management systems contributed to explaining (34.30%) of the job performance of PHC participants. Furthermore, networks were the main important domain of electronic management, which contributed to explaining (28.30%) of the job performance of PHC participants. Finally, the connection between networks and software was the second main factor contributing to explaining (35.10 %) of the job performance of PHC participants.

Table 3.7

Summary of Multiple regression results for determining the impact of electronic management system on job performance as perceived by the participants

	Model	Unstandardized Coefficients		Standardized Coefficients	T- value	P- value	R^2
		B	Std. error	Beta			
1	Constant	1.60	0.18		8.83	0.000*	0.343
	Total score	0.67	0.06	0.59	10.85	0.000*	
2	Constant	1.93	0.17		11.10	0.000*	0.283
	Networks	0.55	0.05	0.53	9.45	0.000*	
3	Constant	1.56	0.18		8.60	0.000*	0.351
	Networks+	0.38	0.07	0.37	5.90	0.000*	
	Software	0.29	0.06	0.31	4.85	0.000*	

* Significant level at ($p \leq 0.05$).

3.7 The relationship between the use of electronic management systems and job performance among participants

The results shown in table (3.8) revealed a positive relationship between the total score of electronic management and job performance among participants of PHC in the northern West Bank, Palestine ($r= 0.59$; $p \leq 0.01$). Furthermore, the domains of electronic management were positively and significantly correlated with job performance at

($p \leq 0.01$), as the coefficients of Pearson correlation were (0.39, 0.50, 0.53, and 0.51) respectively.

Table 3.8

The relationship between the use of electronic management systems and job performance among participants (n= 228)

Variables	Domains of electronic management				
	Hardware	Software	Networks	Electronic training	Total score
Job performance	0.39**	0.50**	0.53**	0.51**	0.59**

** Significant correlation at ($p \leq 0.01$).

Chapter four

Discussion, Conclusion, and Recommendations

In this chapter, a discussion, conclusions, and recommendations were presented.The study population, which is made up of all health workers in PHC directorates in the northern West Bank, provided the previously mentioned data. The study's goals, which included examining the degree of electronic management from the perspective of health workersand how it affects health workers' performance in primary healthcare facilities, were accomplished. In order to provide many crucial suggestions that would assist decision-makers in reassessing the degree of electronic management and its influence on employee performance, the results were thus reviewed and compared with earlier research. These recommendations were then sent to all significant PHC facilities.

4.1 Discussion

4.1.1 Socio-demographic characteristics of participants' response

The results indicated that there are statistically significant differences at the level (($p \leq 0.05$). in the field of hardware from the point of view of PHC participants due to the age variable in favor of employees aged between)20-30(years, the reasonthat younger participants are the ones who keep pace with technological development, and older people prefer to deal with paperwork, as they seem not ready to learn new computer skills,While the study by (Abdula & Adam,2020) supported the results of the current study,The study indicated that younger participants are more likely to adopt electronic health records than older health service providers.While the results of the current study contradicted the study (Al-Qir, 2018), as the study indicated that there were no statistically significant differences in the field of devices, the point of view of participants in primary health care was due to the variable of age.On the other hand, the results of this study indicated that there were statistically significant differences at the level ($p \geq 0.05$). In the field of devices from the perspective of participants in primary health care due to the variable of work seniority in the initial stage. In favor of (1-5 years), the results of the current study contradicted a study by (Al-Qair, 2018), which indicated that there were no statistically significant differences. At the level of ($p \geq 0.05$) in field devices from the point of view of participants in primary health care, according to the variable of seniority of work in primary health care centers.

The results also indicated that there were statistically significant differences at the level (p ≥0.05). In the field of equipment from the perspective of participants in primary health care in the northern West Bank according to the job title variable among (doctors, nurses, pharmacists, laboratories, radiologists, and administrators). The results of this study agreed with a study conducted by (Alkhsabah, 2017), which indicated the presence of differences Statistically significant in the job title variable.While a study conducted by (Al-Anazi, 2022) contradicted the results of the current study, as it indicated that there were no statistically significant differences at the level (p ≥ 0.05).Attributable to variables of job type or job title.As a result, top management has to thoroughly examine all of the job descriptions employed by the health organization, paying particular attention to the roles or departments that would be directly impacted by the implementation of the electronic management system.The results indicated that there are statistically significant differences in job performance according to the educational level variable, The result of this study was confirmed by a study conducted by (Salle, Abdullah, & Zakaria, 2021), which indicated that there were statistically significant differences in the academic qualification variable in electronic management, strategic performance, and human resources development.The administration of primary health directorates should train staff members and encourage them to pursue graduate degrees. This will enable participants to take on a variety of roles, which broadens their experience and skill set and helps them come up with fresh ideas that improve their capacity to handle day-to-day challenges and carry out tasks effectively. Participants' jobs will also become more in line with their qualifications and will harness their energies and skills, which will spur t Enhancing participant performance necessitates information technology-trained human resources, which raises the organization's competitiveness in delivering administrative outputs. The results indicated that there were statistically significant differences at the level (p ≥ 0.05). In job performance, it is attributed to the variable nature of the current job. However, no statistically significant differences were found in comparisons of other dimensions between the nature of the current job. The results of a study by (Alkhsabah, 2017), were consistent with the results of the current study, as they indicated the presence of statistically significant differences in job performance due to the nature of the job, This is a result of the General Administration of Primary Health Care's involvement in helping managers

enhance their abilities through frequent training and enrollment in several local and occasionally external educational courses.

4.1.2 The level of use of electronic management systems from the perspective of participants in PHC

The results indicated that the level of use of the electronic management system from the perspective of participants in primary health care was average (2.89). The level of responses in all areas was average, and the highest response was in hardware (2.93). The lowest response was in the field of electronic training (2.79).The administration of the health directorate has to include staff members in the decision-making process from the start. Their feeling of ownership would grow as a result, and they would be less resistant to change. Ensuring that all participants feel secure utilizing the new system requires the creation of comprehensive training programs that cater to their individual roles and responsibilities.This result was confirmed by a study (Al-Qair, 2018), which indicated that the overall score for the “electronic management” level was average in all its dimensions.

4.1.3 The level of job performance according to participants of PHC.

The results indicated that the level of job performance from the perspective of primary healthcare participants was high (3.52).A study conducted by (Krijgsheld et al., 2022) supported the results of the current study, indicating that the level of job performance is moderately affected by the work expended, the effort expended, and the organization’s goals.

The results indicated that there is positive relationship between the total score of electronic management and job performance($r = 0.59$; $p \leq 0.01$). This was confirmed by the study by (Alruways, 2020) which indicated that employing electronic management positively impacts hospital workers' performance.Therefore, selecting and deploying easy-to-use electronic management systems should be a top priority for health institutions if they want to continue to enhance functional performance. Participants can adapt quickly when systems are easy to use, leading to improved work performance. Senior management must ensure that all participants have appropriate training and qualifications when establishing or updating electronic management systems.

Participants who complete comprehensive training are better able to use the system because they better understand how it works.

4.2 Conclusion

The study provided insightful information about the beneficial correlation between electronic management systems (EMS) and staff effectiveness in primary healthcare. The study's findings and analysis focus on a number of key areas, the most significant of which is the enhancement of performance brought about by the use of the electronic management system in primary healthcare institutions. Electronic management systems have significantly enhanced access to patient data and information. In order to enhance patient outcomes, this has made it possible for medical practitioners to make wiser judgements and administer care quickly. In order to deploy an electronic management system, healthcare organizations and legislators must overcome implementation obstacles, engage in continuing training, continue to monitor the infrastructure, and create an environment that enables the management system to operate to its maximum capacity. By using these technologies, the primary healthcare sector can improve staff productivity and performance, improve patient care, and create a more beneficial and effective healthcare system.

4.3 limitation of the study

Selection bias: The sampling technique used in this study leaves room for selection bias. The study did not consider potential differences between PHC facilities that had already deployed electronic management systems and those that had not. For example, central sponsors with greater resources or a stronger commitment to adopting new technology may be more likely to establish an EMS. Because the sample cannot represent all primary care settings, this bias may impact the generalizability of the results.

Time considerations: The study overlooked many time considerations that could impact employee performance, such as the number of continuous working hours for the employee, the time required to enter data, and the speed of the Internet connection.

Contextual differences: This study did not fully capture subtle differences across different healthcare settings. The performance impact of an electronic management

system may vary depending on the size of the healthcare organization, the sophistication of the technology infrastructure, and the amount of experience of the healthcare staff.

Generalizability: Conclusions apply only to the study area of the health care system in which it was conducted. The generalizability of findings to different contexts may be limited by factors such as cultural and geographic differences in healthcare policies and laws.

Unexpected external events, such as employee strikes, decreased monthly income, and other healthcare crises, affect employee performance and study results. Although these external influences may not be under our control, we must be aware of them as potential stumbling blocks.

Technological development: Study results may not take into account technical developments that occur after the time of data collection. With the rapid development of EMS technology, newer systems may have unique features and capabilities that can have a diverse impact on employee performance.

4.4 Recommendation:

This study emphasizes the importance of the association between the performance of workers in primary health care facilities and electronic management systems (EMS). The study findings have important implications for policy-making to enhance healthcare service delivery and increase staff productivity. In light of the results of this study, the following recommendations were presented:

- Needs Assessment: Conduct comprehensive assessments to determine requirements for primary health care facilities (staff and equipment) to implement and sustain electronic management systems. This evaluation must consider factors such as employing employees who are between (20-30) years old, hold at least a bachelor's degree, and have (1-5) years of experience to raise their level of performance and technical competence. Technological skills and their ability to solve administrative and technical problems quickly and with little effort. Purchasing guidelines: Establish clear purchasing guidelines that specify technical specifications and quality standards for devices used in electronic management systems. Emphasize the

importance of reliability, security, and compatibility with existing software platforms.

- Maintenance protocols: Establish periodic protocols for ongoing repair and maintenance of devices and infrastructure service to provide Internet networks, update software, and resolve technical problems immediately to prevent downtime and ensure optimal performance.
- Technical Support Network: A dedicated technical network is needed to assist primary healthcare centers in preparing, configuring, and troubleshooting
- hardware and software errors. This network must provide remote and on-site services to meet diverse needs.
- Initiatives to stimulate and enhance efficiency: Priority should be given to implementing training programs for employees on managing computerized devices and electronic management systems. Training includes operating basic equipment, maintenance procedures, and troubleshooting techniques.
- Continuous improvement: Encouraging a policy of continuing education (bachelor's) and promoting a culture of higher education (master's) for employees to raise the level of their performance and technical and administrative skills in dealing with infrastructure in the field of (software and hardware). Involve employees in decision-making and consider their comments to implement targeted improvements.
- Encouraging interoperability: Facilitating the exchange of information and encouraging collaboration in healthcare settings about their experiences using EMS ensures smooth integration between different healthcare systems. For example, platforms or forums can be created to share best practices and lessons.By implementing these recommendations, the Palestinian Ministry of Health can ensure that primary health care facilities are equipped with a strong hardware infrastructure and a permanent presence of Internet networks to obtain information quickly and provide better service with the effective use of electronic management systems. This results in efficient, high-performing employees who aim to improve healthcare outcomes.

In addition, future studies could consider using more precise sampling techniques to provide more comprehensive insights into the relationship between EMS and employee performance. For example, comparative studies could evaluate the impact of different environmental management systems on employee performance, or longitudinal research

could be conducted over time to determine whether the effects are long-term or change over time.

List of Abbreviation

Abbreviation	Meaning
EM	Electronic management
EMS	Electronic Management Systems
EP	Employee performance
PHC	Primary health care
MOH	Ministry of Health
PAHR	Palestinian Annual Health Report
PNIPH	Palestinian National Institute of Public Health
HRIS	Human Resource Information Systems
TAM	Technology Acceptance Model
SUS	System Usability Scale
CDSS	Clinical decision support systems
EHRs	Electronic Health Records
CPOE	Computerized Physician Order Entry
ANNU	An- Najah National University
RM	Research Model
DHTs	Digital Health Technologies (DHTs)
HRIS	Human Resource Information systems
HIS	Health Information system

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Appendices

Appendix A

Faculty of Graduate studies approval

Reload Page

نموذج تحديد عنوان الأطروحة و المشرف

*** يجب توفر جميع الشروط التالية لتحديد عنوان الأطروحة و المشرف :

- أن يكون مسار الطالب أطروحة ** الشرط متحقق **
- أن يتم الطالب 12 ساعة . ** الشرط متحقق ** ** عدد الفصول أقل أو يساوي 4 **
- أن لا يكون الوضع الدراسي للطالب "مفصول من البرنامج". ** الشرط متحقق **

اسم الطالب :	نوال "محمد سعيد" عبد الرحمن حداد	رقم التسجيل :	12053184
اسم البرنامج :	ماجستير إدارة الصحة العامة	مسار الدراسة:	أطروحة
عدد الساعات المعتمدة التي انجزت حتى الآن:	33	المعدل التراكمي:	3.42
الوضع الدراسي :	ترك		
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البريد الالكتروني :	S12053184@stu.najah.edu		
لغة الرسالة :	انجليزي		
عنوان الأطروحة باللغة العربية :	أثر نظام الإدارة الإلكترونية على أداء الموظفين في مجال الرعاية الصحية الأولية ، دراسة مقطعية ، شمال الضفة الغربية ، فلسطين		
عنوان الأطروحة باللغة الانجليزية:	Impact of electronic management system on the employee's performance of primary health care, a cross-sectional study, in northern West Bank, Palestine.		
النسخة الإلكترونية من مقترح الأطروحة :	doc.12053184-1		

رقم المشرف الأول :	2511	اسم المشرف الأول:	مريم عامر اسماعيل الطل
المشرف الثاني :	يعمل في جامعة النجاح:	----------------	

ملاحظة المشرف :	موافق			التاريخ :	2023-04-02
ملاحظة المنسق :	لا مانع	رأي المنسق :	موافق	التاريخ :	2023-04-02
ملاحظة رئيس القسم :	موافق	رأي رئيس القسم :	موافق	التاريخ :	2023-04-02
ملاحظة مدقق الدراسات :	تعرض على مجلس الكلية	رأي مدقق الدراسات :	موافق / عبء الاشراف : أدنى من الحد	التاريخ :	2023-04-04
ملاحظة عميد الدراسات العليا :	لا مانع	رأي عميد الدراسات العليا:	موافق	التاريخ :	2023-04-04

قرار مجلس الكلية			
تم تغيير العنوان من قبل مجلس الكلية :	لا		
عنوان الأطروحة باللغة العربية :	أثر نظام الإدارة الإلكترونية على أداء الموظفين في مجال الرعاية الصحية الأولية ، دراسة مقطعية ، شمال الضفة الغربية ، فلسطين		
عنوان الأطروحة باللغة الانجليزية:	IMPACT OF ELECTRONIC MANAGEMENT SYSTEM ON THE EMPLOYEE'S PERFORMANCE OF PRIMARY HEALTH CARE, A CROSS-SECTIONAL STUDY, IN NORTHERN WEST BANK, PALESTINE.		
رقم المشرف:	2511	اسم المشرف:	مريم عامر اسماعيل الطل

المشرف الثاني :	يعمل في جامعة النجاح:			
فصل الاعتماد :	الثاني	سنة الاعتماد :	2020-2021	[illegible]
رقم جلسة الكلية :	608			
تاريخ جلسة الكلية :	19/3/2023			

AppendixB

IRB approval

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

جامعة النجاح الوطنية
كلية الطب و علوم الصحة
لجنة اخلاقيات البحث الطبي

Ref: Mas . May. 2023/2

IRB Approval Letter

Title of Research:

Impact of electronic management system on the employee's performance of primary health care, a cross-sectional study, in northern West Bank, Palestine.

Submitted by:
Nawal "Mohammad Saed" Hammad

Supervisor:
Mariam Al-Tell

Approved:
4th May. 2023

Your Study Title "***Impact of electronic management system on the employee's performance of primary health care, a cross-sectional study, in northern West Bank, Palestine,***" reviewed by An-Najah National University IRB committee and was approved on 4th . 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

AppendixC

Task facility of the General Administration of Health Education and Scientific Research

State of Palestine
Ministry of Health
Education in Health and Scientific Research Unit

دولة فلسطين
وزارة الصحة
وحدة التعليم الصحي
والبحث العلمي

Ref.: ....
Date:..................

الرقـــم: ٢٠٢٤/١١٠٥/١٦٤
التـاريخ: ٢٠٢٤/٦/٢٤

عطوفة الوكيل المساعد لشؤون الصحة العامة وصحة الاسرة المحترم،،،

تحية واحترام...

الموضــوع: تسهيل مهمة بحث

يرجى تسهيل مهمة الطالبة: **نوال محمد سعيد حماد**، برنامج ماجستير ادارة الصحة العامة– **جامعة النجاح**، لعمل بحث بعنوان:

أثر نظام الادارة الالكترونية على اداء الموظفين في مجال الرعاية الصحية الأولية: دراسة " مقطعية، شمال الضفة الغربية، فلسطين"

حيث ستقوم الطالبة بجمع معلومات من خلال تعبئة استبانة من قبل موظفي الرعاية الصحية الأولية(أطباء، ممرضين، فنيي مختبرات، فنيي اشعة، موظفين اداريين) (بعد اخذ موافقتهم)، وذلك في:

- **مديريات الصحة في: – نابلس – جنين – طوباس – طولكرم – قلقيلية**

مع العلم أن مشرف الدراسة: د. مريم الطل.

على ان يتم الالتزام بالمحافظة على اخلاقيات البحث العلمي وسرية المعلومات.
على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر لحين الحصول على موافقة وزارة الصحة.

د. عبد الله القواسمي
رئيس وحدة التعليم الصحي والبحث العلمي

دولة فلسطين وزارة الصحة
وحدة التعليم الصحي والبحث العلمي

نسخة: نائب الرئيس للشؤون الأكاديمية المحترم/ جامعة النجاح

Telfax.:09-2333901 scientificresearch.dep@gmail.com تلفاكس: 09-2333901

AppendixD

Consent form

Impact of electronic management system on the employee's performance of primary health care, a cross-sectional study, in northern West Bank, Palestine

Dear Participant

We put in your hands a form for to research the experience of the student Nawal Muhammad Saeed Hammad under the supervision of Professor Dr. Mariam Al-Tal to discuss the impact of electronic management on the performance of workers in primary health care. My working brother, the veracity of the results of this study depends on the extent of your actual contribution in providing the appropriate answer, so please read each statement carefully and indicate the answer that you deem appropriate. However, this questionnaire will require about 5-10 minutes of your cooperation. Knowing that the information that we will obtain remains confidential and will not be used except for scientific research.

Thank you for your cooperation.

Subscriber signature: _____.

Appendix E

Consent form Arabic version

أثر تطبيق أنظمة الإدارة الإلكترونية على الأداء المدرك للعاملين في الرعاية الصحية الأولية: دراسة مقطعية في شمال الضفة الغربية في فلسطين.

عزيزي المشارك

نضع بين ايديكم استمارة لغرض بحث تجريه الطالبة نوال محمد سعيد حماد بإشراف الأستاذة الدكتورة مريم الطل لبحث أثر الإدارة الالكترونية على أداء العاملين في الرعاية الصحية الأولية. اخي العامل ان صدق نتائج هذه الدراسة يتوقف على مدى مساهمتكم الفعلية في تقديم الإجابة المناسبة، لذا نرجو قراءة كل عبارة بعناية والإشارة الى الإجابة التي تراها مناسبة ومع ذلك، سيتطلب هذا الاستبيان حوالي 5–10 دقائق من تعاونك. ومع العلم أن المعلومات التي سنحصل عليها تبقى سرية ولن تستخدم إلا لغرض البحث العلمي.

شكرا على حسن تعاونكم.

توقيع المشترك: _____

Appendix F

Tables

Table F.1

Distribution of employees and clarification of the selection of study participants

PHC centers, in the Northern West Bank	Number of employees in2022according to (AHR)	Number of employees workingon thecomputer	Number of employees participating in the study	Employees not participating in the study (1201-228)
Jenin	319	80	51	268
Tubas	147	68	51	96
Nablus	328	70	38	290
Tulkarm	248	72	51	197
Qalqilya	159	45	37	122
Grand total	1201	335	228	973

Table F.2

The validity of internal consistency for electronic management system tool

N	Domains of electronic management system	R- value	P- value
1	Hardware	0.85	0.000*
2	Software	0.87	0.000*
3	Networks	0.95	0.000*
4	Electronic training	0.88	0.000*

* Significant correlation at ($p \leq 0.05$).

Table F.3

The validity of Internal consistency for job performance tool

N	Items	R- value	p- value
1	Electronic management facilitates the process of communication between the various administrative levels during work.	0.83	0.000*
2	Electronic management improves and updates the information and data necessary to perform business.	0.84	0.000*
3	Electronic management does not help workers to make sound decisions at the right time.	0.38	0.039*
4	Electronic management helps to reduce distortion and distortion of information and not to monopolize it during work.	0.92	0.000*
5	Electronic management defines responsibilities and clarifies the tasks assigned to employees.	0.80	0.000*
6	Electronic management contributes to the development of trust among employees.	0.90	0.000*
7	Electronic management makes employees better control over their work performance.	0.92	0.000*
8	Electronic management reduces Chances of professional errors while working.	0.89	0.000*
9	Electronic management contributes to reducing the effort and time for workers to complete their tasks.	0.87	0.000*
10	Electronic management allows the exchange of information and experiences between workers during their work.	0.77	0.000*
11	Electronic management does not contribute to increasing the skills of workers to perform their jobs.	0.39	0.031*
12	Electronic management increases the efficiency and effectiveness required in performing tasks.	0.90	0.000*
13	Electronic management allows employees to create and innovate in their work.	0.80	0.000*

* Significant correlation at ($p \leq 0.05$).

Table F.4

Distribution of means and percentages of participants' responses regarding the level of using electronic management systems (hardware, software, network, and electronic training) (n= 228)

N	Items	Mean	%	Level
1	The Ministry of Health - Directorate of Health provides a sufficient number of computers to implement electronic administration.	3.36	67.2	Moderate
2	The Ministry of Health - Directorate of Health updates old devices regularly.	2.90	58	Moderate
3	Computers are used in various administrative processes.	3.22	64.4	Moderate
4	The Ministry of Health - Health Directorate allocates sufficient financial resources to obtain Modern methods and technologies.	2.61	52.2	Moderate
5	Ministry of Health - Health Directorate has a sufficient number of printers for different types of printers in Departments and divisions.	2.50	50	Low
6	The Ministry of Health - Directorate of Health does not have technicians capable of operating and maintaining electronic devices.	3.12	62.4	Moderate
7	In the Ministry of Health - Directorate of Health, the protection required for operating systems and various applications is determined.	3.12	62.4	Moderate
8	The Ministry of Health - Directorate of Health relies on the electronic archive instead of the paper archive.	2.60	52	Low
	Total score of hardware domain	2.93	58.6	Moderate
9	The Ministry of Health - Directorate of Health owns the computer programs necessary to implement administrative work.	3.21	64.2	Moderate
10	The programs approved by the Ministry of Health - Directorate of Health can absorb As many workers as possible at one time.	2.77	55.4	Moderate
11	The software continuously monitors and detects errors that may occur.	3.07	61.4	Moderate
12	The Ministry of Health - Directorate of Health works to protect its data through the use of Information security techniques (cyber security).	3.03	60.6	Moderate
13	The software approved by the Ministry of Health - Directorate of Health can publish and deliver documents to more than one party in the shortest possible time and benefit from them at any time.	3.02	60.4	Moderate

N	Items	Mean	%	Level
14	The Ministry of Health - Directorate of Health updates old programs and keeps pace with modern programs.	2.96	59.2	Moderate
15	The Ministry of Health - Directorate of Health provides the financial budget for the design and development of computer programs and applications.	2.49	49.8	Low
16	The Ministry of Health - Directorate of Health provides programmers to design and develop programs and electronic device applications.	2.79	55.8	Moderate
	Total score of software domain	2.92	58.4	Moderate
17	The Ministry of Health - Directorate of Health does not use communication networks between all governorates.	3.03	60.6	Moderate
18	Internet power flow is high within the directorate and primary care centers.	2.40	48	Low
19	The Department of Health uses the EMAIL electronic communication system at work.	2.95	59	Moderate
20	Networks provide ease of communication and communication between health centers and the Ministry to facilitate work and get work done.	3.23	64.6	Moderate
21	The networks contribute to providing data to all employees of the Ministry of Health - Directorate of Health at the same time.	3.26	65.2	Moderate
22	Connecting to the currently available networks is practically sufficient for the application of electronic management.	2.64	52.8	Moderate
	Total score of network domain	2.92	58.4	Moderate
23	The Ministry of Health - Directorate of Health adopts training programs for individuals on the use of electronic administration.	2.89	57.8	Moderate
24	The Ministry of Health - Directorate of Health provides individuals with high technical and scientific qualifications in dealing with electronic programs and devices.	2.95	59	Moderate
25	The Ministry of Health - Directorate of Health seeks to continuously develop employees electronically through seminars, courses, and specialized workshops.	2.73	54.6	Moderate
26	Workers receive adequate training in the fields of computers and electronic programs (specialized in the health field).	2.58	51.8	Low
	Total score of electronic training domain	2.79	55.8	Moderate
	Total score of entire scale	2.89	57.8	Moderate

Appendix G

Tool

Demographic characteristics

Electronic management systems and their impact on the Performance of Employees

The first axis:Demographic data.

1) Sex:

( ) Male ( ) Female

2) Age:

( ) 20 - 30 years ( ) 31 - 40 years

( ) 41 - 50 years ( ) 51 and above

3) Educational level:

( ) Diploma ( ) Bachelor's Degree

( ) Master's Degree

4) Workplace:

( ) Jenin ( ) Tabas ( ) Nablus

( ) Tulkarm ( ) Qalqilya

5) Work seniority in primary health care centers:

( ) Less than a year ( ) From 1-5 years

( ) From 6 to 10 years ( ) More than 10 years

6) Job title:

( ) Doctor ( ) Nurse

( ) Pharmacist ( ) Laboratory technician

( ) X-ray technician ( ) Administrative

7) Nature of current job:

( ) Director ( ) Head of Department

( ) Head of Division ( ) Employee

The second axis: Electronic management:

	No.	Paragraphs (questions)	Strongly Disagree	Not Agree	neutral	agree	Strongly Agree
Hardware	1.	The Ministry of Health - Directorate of Health provides a sufficient number of computers to implement electronic administration					
	2.	The Ministry of Health - Directorate of Health updates old devices regularly					
	3.	Computers are used in various administrative processes.					
	4.	The Ministry of Health - Health Directorate allocates sufficient financial resources to obtainModern methods and technologies.					
	5.	Ministry of Health - Health Directorate has a sufficient number of printers for different types of printers Departments and divisions.					
	6.	The Ministry of Health - Directorate of Health does not have technicians capable of operating and maintaining electronic devices.					
	7.	In the Ministry of Health - Directorate of Health, the protection required for operating systems and various applications is determined.					
	8.	The Ministry of Health - Directorate of Health relies on the electronic archive instead of the paper archive					
	9.	The Ministry of Health - Directorate of Health owns the computer programs necessary to implement administrative work					
Software	10.	The programs approved by the Ministry of Health - Directorate of Health can absorbAs many workers as possible at one time.					

	No.	Paragraphs (questions)	Strongly Disagree	Not Agree	neutral	agree	Strongly Agree
	11.	The software continuously monitors and detects errors that may occur.					
	12.	The Ministry of Health - Directorate of Health works to protect its data through the use ofInformation security techniques (cyber security).					
	13.	The software approved by the Ministry of Health - Directorate of Health can publish and deliver documents to more than one party in the shortest possible time and benefit from them at any time.					
	14.	The Ministry of Health - Directorate of Health updates old programs and keeps pace with modern programs.					
	15.	The Ministry of Health - Directorate of Health provides the financial budget for the design and development of computer programs and applications.					
	16.	The Ministry of Health - Directorate of Health provides programmers to design and developprogramsand electronic device applications.					
Networks	17.	The Ministry of Health - Directorate of Health does not use communication networks between all governorates.					
	18.	Internet power flow is high within the directorate and primary care centers.					
	19.	The Department of Health uses the EMAIL electronic communication system at work.					
	20.	Networks provide ease of communication and communication between health centers and the Ministry to facilitate work and get work done.					

	No.	Paragraphs (questions)	Strongly Disagree	Not Agree	neutral	agree	Strongly Agree
	21.	The networks contribute to providing data to all employees of the Ministry of Health - Directorate of Health at the same time.					
	22.	Connecting to the currently available networks is practically sufficient for the application of electronic management.					
Electronic training	23.	The Ministry of Health - Directorate of Health adopts training programs for individuals on the use of electronic administration.					
	24.	The Ministry of Health - Directorate of Health provides individuals with high technical and scientific qualifications in dealing with electronic programs and devices.					
	25.	The Ministry of Health - Directorate of Health seeks to continuously develop employees electronically through seminars, courses, and specialized workshops.					
	26.	Workers receive adequate training in the fields of computers and electronic programs (specialized in the health field).					
The third axis: is job	1.	Electronic management facilitates the process of communication between the various administrative levels during work.					
	2.	Electronic management improves and updates the information and data necessary to perform business.					
	3.	Electronic management does not help workers to make sound decisions at the right time.					
	4.	Electronic management helps to reduce distortion and distortion of information and not to monopolize it during work.					

	No.	Paragraphs (questions)	Strongly Disagree	Not Agree	neutral	agree	Strongly Agree
	5.	Electronic management defines responsibilities and clarifies the tasks assigned to employees.					
	6.	Electronic management contributes to the development of trust among employees.					
	7.	Electronic management makes employees better control over their work performance.					
	8.	Electronic management reduces Chances of professional errors while working.					
	9.	Electronic management contributes to reducing the effort and time for workers to complete their tasks.					
	10.	Electronic management allows the exchange of information and experiences between workers during their work.					
	11.	Electronic management does not contribute to increasing the skills of workers to perform their jobs.					
	12.	Electronic management increases the efficiency and effectiveness required in performing tasks.					
	13.	Electronic management allows employees to create and innovate in their work.					

جامعة النَّجاح الوطنيَّة
كليَّة الدّراسات العليا

أثر نظام الإدارة الإلكترونية على أداء الموظفين في مجال الرعاية الصحية الأولية، دراسة مقطعية، شمال الضفة الغربية، فلسطين

إعداد
نوال ("محمد سعيد" عبد الرحمن حماد

إشراف
د. مريم عامر الطل

قدمت هذه الرسالة استكمالا لمتطلبات الحصول على درجة الماجستير في إدارة الصحة العامة،
من كلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس –فلسطين.

2024

أثر نظام الإدارة الإلكترونية على أداء الموظفين في مجال الرعاية الصحية الأولية، دراسة مقطعية، شمال الضفة الغربية، فلسطين

إعداد

نوال ("محمد سعيد" عبد الرحمن حماد

إشراف

د. مريم عامر الطل

الملخص

الخلفية: أحدث ظهور أنظمة الإدارة الإلكترونية (EMS) ثورة في العديد من الصناعات، بما في ذلك الرعاية الصحية، من خلال تبسيط الإجراءات وزيادة الإنتاجية وتحسين الأداء العام. هدفت هذه الدراسة إلى التعرف على أثر استخدام نظام الإدارة الإلكتروني على الأداء الوظيفي من وجهة نظر العاملين في الرعاية الصحية الأولية في شمال الضفة الغربية.

الطرق: تم استخدام تصميم بحث مقطعي في الدراسة الحالية على 230 مشاركًا من العاملين الصحيين في مديرية الرعاية الصحية الأولية تم تعيينهم بشكل ملائم، وتم جمع البيانات باستخدام الاستبيان .

النتائج: وجدت الدراسة أن موظفي الرعاية الصحية الأولية ينظرون إلى مستوى استخدام نظام الإدارة الإلكترونية (EMS) على أنه متوسط، بمجموع نقاط 2.89. وكانت أعلى الدرجات في مجال الأجهزة (2.93)، وأقلها في التدريب الإلكتروني (55.8%). تم تصنيف الأداء الوظيفي على أنه مرتفع (70.4٪)، مما يشير إلى وجود علاقة إيجابية مع الإدارة الإلكترونية($r = 0.59$) ، ($p \geq 0.01$). وكانت الشبكات والبرمجيات هي العوامل الرئيسية التي ساهمت في الأداء الوظيفي (28.30% و35.10% على التوالي). ولم يؤثر الجنس بشكل كبير على درجات الإدارة الإلكترونية. إلا أن متغيرات (العمر، المستوى التعليمي، مكان العمل، الأقدمية في العمل، والمسمى الوظيفي) أثرت على تصورات مكونات النظام المحددة. لا توجد فروق ذات دلالة إحصائية في الأداء الوظيفي حسب (الجنس، العمر، مكان

العمل، والمسمى الوظيفي).بينما أظهر مستوى التعليم لصالح (المدير)، والأقدمية في العمل من (1–5) سنوات، وطبيعة الوظيفة الحالية لصالح (المدير) فروقاً وتأثيرات ذات دلالة إحصائية.

الاستنتاجات: إن اعتماد أنظمة الإدارة الإلكترونية يحسن بشكل كبير تصورات مقدمي الرعاية الصحية الأولية عن أدائهم. في البيئات المحدودة الموارد، يمكن لمتخصصي الرعاية الصحية تحسين نتائج الرعاية الصحية الشاملة وجودة الرعاية من خلال معالجة العيوب والاستفادة من مزايا نظام الإدارة الإلكتروني.

الكلمات المفتاحية: أنظمة الإدارة الإلكترونية، أداء الموظفين، الأداء الوظيفي، الرعاية الصحية الأولية.