



Arab American University

Faculty of Graduate Studies

**Nurses' Attitudes towards Computerized Health
Information System Use in Palestinian Private &
Governmental Hospitals**

By

Mohammad Lutfi Abdel Qader Hijazi

Supervisor

Dr. Farid Ghrayeb

**This thesis was submitted in partial fulfillment of the
requirements for Master's degree in Health Informatics**

October / 2022

© Arab American University – 2022. All rights reserved

Nurses' Attitudes towards Computerized Health Information System Use in
Palestinian Private & Governmental Hospitals

By

Mohammad Lutfi Abdel Qader Hijazi

This thesis was defended successfully on 03/10/2022 and approved by:

Committee members

Signature

1. Dr. Farid Ghrayeb



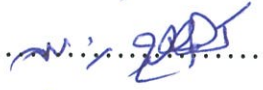
.....

2. Prof. Dr. Mohammed Awad



.....

3. Dr. Kefah Zaben



.....

Declaration

This thesis was submitted in partial fulfillment of the requirement for Master's degree in Health Informatics.

I declare that the content of this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Students Name: Mohammad Lutfi Abdel Qader Hijazi

Sig:

Date: 03/10/2022

Dedication

I dedicate this dissertation to the spirit of my father who always motivates me to learn, and my mother, for her inspiration and encouragement. I also dedicate this dissertation to my wife, for her solid support and to my wonderful kids, Ahmad, Sadeen, Tasneem, Abdel Rahman and Yousef for being my source of joy and hope for the future.

Acknowledgment

My dissertation would not have been completed without the support and help that I received from many people.

My sincere gratitude goes to Dr. Fareed Ghraib for his constant guidance and patience, and for imparting his knowledge and experience in Nursing Informatics and Public Health.

Through various meetings done with him, I was inspired to focus my work in this area.

I would like to thank Dr. Fareed Ghraib for his insightful comments and for sharing his knowledge and experience in nursing informatics and research. Dr. Fareed Ghraib is acknowledged for his support, insightful comments, and encouragement. In particular, his guidance facilitated the thesis writing and administrative processes.

I would also like to thank department staff Dr. Yousef Mimi, Dr. Shahenaz Najjar, Dr. Rami Hodroub and Dr. Mohammed Awad for their constant communication and encouragement to me.

I am also thankful to the internal and external examiners for examining and recommending this Master Degree thesis, especially Dr. Kefah Zaben and Prof. Dr. Mohammad Awad

My gratitude also goes to my colleagues in Palestinian Ministry of Health hospitals, Al-Ahli Hospital, Istishari Arab Hospital, AN-Najah National University Hospital and Health Informatics Students for their advice and help in my journey.

Last, but not least, I thank my wife, kids and my mother for being with me throughout this journey and for providing support in every aspect of this endeavor.

Abstract

Computerized Health Information System HIS are digital records for an individual in a healthcare setting that contains all medical history related to an individual. The ultimate goal for this research to know Nurses' attitudes toward the computerized HIS use in Palestinian governmental and private hospitals regarding to, the Institutional benefit, employee use of computers, capabilities of computers, quality of patient care, legal ramifications and Job security. There are no researches for private or governmental hospitals or charitable societies (hospitals or centers). Therefore, we need to know the important factors in the different nursing attitudes to direct the concerned authorities to places of correction.

To achieve our research objectives a quantitative, descriptive cross-sectional study approach was used to describe the nurses' attitudes toward computerized "HIS" use in Palestinian hospitals. The Nurse Attitudes toward Computerization (NATC) questionnaire used to collect data from four governmental hospital and three-privet hospital, the sample size was 390 nurses who work at these hospitals with more than six-month experience. Our results show 373 respondents (95.6%) returned completed questionnaires and were included in the statistical analysis; Nurses with previous computer experience had more positive attitudes than those without computer experience. Nurses with Bachelor's degrees had more positive attitudes toward computerized HIS than those with diplomas. Type of facility showed a Statistical significant difference in mean attitude scores among nurses by hospital type at the 0.05 level, p value <0.001. In addition, there is a statistically significant difference in nurses' attitudes among the type of shift categories at the 0.05 level, p value

0.022. Nurses' Ability to Access computers at Work, Home, or Both, there was a statistically significant only in two attitude subcategories including, employee use of computers (P value <0.001), and legal ramifications (P value = 0.012). Nurses' age, gender, length of service, and job title did not have any effect on nurses' general attitude toward computers.

The findings of this study showed that the majority of the nurses working in Palestinian hospitals use computers or had computer experience. Therefore, the researcher recommended Palestinian Ministry of Health and private hospital to provide further training and support for nurses to learn how to use computer technology as the Palestinian Ministry of Health and private hospital implements computerized HIS in all Palestinian hospitals.

Key word

Nurse attitude, Nurse Informatics, Health information system, HIS, Electronic medical record, EMR, PMoH, Palestine, privet hospital.

Table of Contents

Declaration.....	II
Dedication.....	III
Acknowledgment	IV
Abstract	V
Key word	VI
Table of Contents	VII
List of Tables	X
List of Figures.....	XI
List of Acronyms and Abbreviations.....	XII
List of Appendices.....	XIII
Chapter One: Introduction	1
Chapter One: Introduction	2
1.1 Background.....	2
1.2 Problem Statement	4
1.3 Significance of the Study	4
1.4 Gap in Knowledge	6
1.5 Palestine (Context of the study) West Bank	6
1.6 HIS and Nurse’s Attitudes.....	7
1.7 Aims General Objective and Specific Objectives.....	8
1.8 Research Questions:.....	9
1.9 Research Hypothesis:	9
1.10 Thesis Chapters Descriptions	9
1.11 Summary	10
Chapter Two: Literature Review	12
2.1 Technology Revolution.....	12
2.2 Implementation and Adoption of HIS	13
2.3 Nurse and Health Information System.....	15
2.4 Nurse Attitude toward Health Information System	17

2.5 Theoretical Framework	19
2.6 Summary.	21
Chapter Three: Methodology.....	23
3.1 Introduction.....	23
3.2 Study Area/ Setting	23
3.3 Research Design	24
3.4 Research Population	24
3.5 Study Subjects	25
3.6 Sample Size.....	25
3.7 Sampling Method	25
3.8 Data Collection Methods, Instruments Used, and Measurements.....	26
3.9 Data Management and Analysis.....	28
3.10 Ethical Consideration	28
3.11 Summary	29
Chapter Four: Results and Discussions	31
4.1 Introduction.....	31
4.2 Descriptive Analysis Results	31
4.2.1 Demographic characteristics of the Respondents	32
4.3 Analysis and Discussion of Research Questions.....	37
4.3.1 Hospital Type.....	39
4.3.2 Gender.....	41
4.3.3 Age.....	43
4.3.4 Education Levels.....	46
4.3.5 Duration of Computer Use	49
4.3.6 Nursing Experiences	51
4.3.7 Employee Status.....	53
4.3.8 Ability to Access Computer at Work, Home, or Both.....	54
4.3.9 Type of Shift	56
4.4 Summary	57
Chapter Five: Conclusion &Implications	59

5.1 Conclusion	59
5.2 Implications	61
5.2.1 Implications for the PMOH and Private Hospital	61
5.2.2 Implications for Nurses	62
5.2.3 Implications for Research.....	62
5.3 Summary	63
Bibliography	65
APPENDICES	74
الملخص.....	88

List of Tables

Table (3.1): Research Population.....	24
Table (4.1): Demographic characteristics of the respondents.....	34
Table (4.1): Demographic characteristics of the respondents continued.....	35
Table (4.2): Means and standard deviations for subcategories general attitudes.....	37
Table (4.3): Likert scale key.....	39
Table (4.4): Type of hospital versus attitude.....	39
Table (4.5): Gender versus attitude.....	42
Table (4.6): Age group versus attitude.....	45
Table (4.7): Educational level versus attitude.....	47
Table (4.8): Duration of computer use versus attitude.....	50
Table (4.9): Nursing experience versus attitude.....	50
Table (4.10): Employee status versus attitude.....	54
Table (4.11): Ability to access computer versus attitude.....	55
Table (4.12): Type of shift versus attitude.....	56

List of Figures

Figure 1.1: Conceptual framework of variable influence attitudes towards HIS.	21
Figure (4.1): Pie chart for demographic characteristics (Gender).	33
Figure (4.2): Pie chart for demographic characteristics (Age Group).	33
Figure (4.3): bar chart for mean to type of hospital versus attitude.	34
Figure (4.4): Pie chart for Demographic Characteristics (Qualification).	40
Figure (4.5): Bar chart for type of hospital versus attitude.	41
Figure (4.6): Bar chart for gender versus attitude.	43
Figure (4.7): Bar chart for age group versus attitude.	46
Figure (4.8): Bar chart for mean to age group versus attitude.	48
Figure (4.9): Bar chart to P value for duration of computer use versus attitude.	50
Figure (4.10): Bar chart to P value for nursing experience versus attitude.	52
Figure (4.11): Bar chart to P value for employee status versus attitude.	53
Figure (4.12): Bar chart to P value for ability to access computer versus attitude.	56
Figure (4.13): Bar chart to P value for type of shift versus attitude.	57

List of Acronyms and Abbreviations

ANA	American Nurses Association
ANOVA	A one-way analysis of variance
EHR	Electronic Health Records
EMR	Electronic Medical Records
HIS	Health Information System
IOM	Institute of Medicine
PMoH	Palestinian Ministry of Health
NATC	Nurse Attitudes Toward Computerization
USAID	U.S. Agency for International Development
WHO	World Health Organization
WB	West Bank

List of Appendices

Appendix I: Questionnaire and Confidential privacy

Appendix II: Panel of Expert

Appendix III: Cooperation Agreement between the Arab American University and the Ministry of Health in the field of health informatics

Appendix IV: A letter of facilitating a student's mission from the AAUP to PMoH

Appendix V: A letter of facilitating a student's mission from the AAUP to Al Ahli Hospital

Appendix VI: A letter of facilitating a student's mission from the AAUP to Istishari Arab Hospital

Appendix VII: A letter of facilitating a student's mission from the AAUP to An-Najah National University Hospital

Appendix VIII: The approval from author to use the original questionnaire

Appendix IX: AAUP research committee for research and ethical principles approval

Chapter One: Introduction

Chapter One: Introduction

1.1 Background

Computerized Health Information System (HIS) or Electronic Medical Records (EMR) are digital records for an individual in a healthcare setting that contains all medical history related to an individual (Evans 2016). His is the computerized documentation system that is currently being used in Palestinian hospitals and funded by U.S. Agency for International Development “USAID” (Health Information System (His) Assessment Report 2015), (Salameh et al. 2019).

All information related to the patient was recorded, and save in an electronic file so that all the information related to the patient is present, and easy to extract. So that the information about each patient is collected in a single file that is opened through a unique identification number, and thus the treating doctor can know the patient’s medical history, which helps him in making the right medical decision, (Benaloh et al. 2009) .

The HIS is applied in most governmental and private hospitals so that the department in which the program is run is trained, and there is an interlacing of the programs that are run between the different internal departments, radiology, and laboratories in the hospital, and it is also applied between primary care and hospitals. According to the Palestinian national strategic plan for the years 2017-2022, the Health Information System, which is called Avicenna, is expected to work effectively to provide effective health data and health indicators to monitor sector performance and health status, (PMoH 2019).

Attitude is defined as the "*disposition to respond favorably or unfavorably to an object, person, institution, or event*" (Ajzen 2005). An individual's attitude can influence whether

they act. Employee's (Nurses) attitudes may differ from one person to another due to factors including age, gender, position, computer experience, period of service in the job, governmental or private sector, and the size of work in the hospital, (Tarcan et al. 2017). Nursing is regarded as the primary interface in medical care delivery, serving as a link between doctors, other healthcare providers, and patients. For the past eight years, the Health information system has operated in the Palestinian Ministry of Health and some private hospitals. The general idea there is a tendency for employees to resist changes, however, there are recent studies in the world and in Palestine that measured nursing attitudes, to our knowledge, there are no studies for the private hospital, governmental sector, and some charitable societies (hospitals or centers) in Palestine related to nursing attitudes of computerized HIS. Our research aims to assess the attitudes of nurses toward the use of computerized HISs in the Palestinian government and private hospitals.

This research focused on the attitudes of nurses towards health information systems (HISs') in the government and private health sectors in Palestine. This section conceptualizes what a HIS' is and how these systems have evolved in Palestine. The gap identified is that although international literature has explored the attitudes of health professionals towards HIS' in general. Indeed, as more HISs are progressively introduced into health systems, understanding health professionals' attitudes can facilitate technology adoption, data quality control, and remediation.

1.2 Problem Statement

HIS system is important for the health system in patient care, making suitable medical decisions, documenting health information, and strategic planning (Haux 2006). The accuracy, comprehensiveness, and completeness of the information depend on the persons entering this data into the system and the majority of the system workers are in the nursing category.

There is a difference in nursing attitudes toward HIS, there are two types of difference (positive or negative), and this difference may be related to several factors, including age and gender. The supervisory site, educational level, worksite, and private or government sector (Baljoon, Banjar, and Banakhar 2018).

In Palestine, there are no assessment for private or governmental hospitals regarding to nurses attitudes toward HIS. Therefore, we need to identify the important factors in the different nursing attitudes to direct the concerned authorities to places of correction.

Assessing the attitudes of nurses toward the use of computerized HIS in the Palestinian government and private hospitals may help to improve the health policy and unify the efforts toward a complete health automation system.

1.3 Significance of the Study

The growing demands to implement computerized HIS in Palestinian hospitals have given rise to a need to understand nurses' attitudes toward computerization. Handayani (Handayani et al. 2018) found that many nurses are resistant to change and are unwilling to

take the time or make the effort to learn how computer systems could actually ease some of the frustrating aspects of practicing nursing in the health care setting.

Kimiyafar, (Kimiyafar 2006) stated that computerized His have the capability to improve nursing productivity. The projected time necessary for nurses to collect and enter computerized documentation is less than half of the time needed to complete the same written documentation. Reducing the cost of patient care by streamlining the efficiency of care delivery processes is an important consideration to health care administrators. Understanding nurses' attitudes toward computerized His and how these attitudes affect system utilization are important, considerations in determining ways of successfully managing computerized HIS.

Thomas (Stalk Jr and Hout 1990) found that because of the rapid increase in the use of computer technology in all aspects of health care, it is important that nurses become skilled with computer systems. Resistance to using computerized HIS seems to result from inadequate experience, lack of exposure, or poor attitudes about changing to a new technology.

Several studies have identified various factors that influence nurses' computer-related attitudes (see literature review in chapter2), but there are no such studies in Palestine. This research will identify the demographic factors that influence nurses' attitudes toward computerized HIS in Palestinian hospitals. The findings of this study will provide valuable information to health care administrators in the Ministry of Health who are seeking full implementation of computerized HIS for all hospitals in Palestine.

1.4 Gap in Knowledge

The Palestinian ministry of health (PMOH) was started EHR in 2010 in three governmental hospitals as a pilot, till 2014 covered all governmental hospitals (Health Information System (His) Assessment Report 2015). The successful implementation of health information technologies requires investigation of the factors that affect their acceptance and use (Garavand et al. 2016) including attitude towards use and user attitude.

Several research's was studied the physician's attitude towards HIS. Moreover, no previous studies have assessed nurses' attitudes toward computerized health systems in the Palestinian government and private hospitals.

The gap identified in this research is the lack of literature regarding nurses' attitudes towards "HIS" in public and private hospitals in Palestine.

1.5 Palestine (Context of the study) West Bank

The Palestine Ministry of Health is planning to implement a computerized HIS in all health care facilities (Health Information System (His) Assessment Report 2015). Nowadays most of the governmental and private hospitals run the HIS system and most of the nurses working in Palestinian hospitals are in age from 21 to 65 years old, have a different educational background, and have different computer skills. By this diversity (Kang and Yoon 2008), these nurses are likely to have a wide range of educational and computer skills backgrounds, and this diversity is reflected in the range of their experience and competence with the use of HISs (Ifinedo 2016). Accommodating such diversity can make it difficult to plan appropriate training courses to develop and enhance their computer skills.

Therefore, to provide the highest healthcare services with high performance and consciousness of data quality, all nurses working in public and private Palestinian hospitals should know how to use computer systems and software efficiently and develop a positive attitude towards their use (Darvish et al. 2014). From the researcher's point of view, at present, relatively, how these nurses view computerized health information systems is abstracted and what basic skills they possess due to the scarcity of research in this field at the Palestinian level. To what skills are required for nursing to adopt this HIS system in private hospitals or public health departments of the Ministry of Health, which have not yet implemented this system.

1.6 HIS and Nurse's Attitudes

Nursing is the core and link of the relationship between all medical care providers and they are the most treated class with patients. Nursing records and documents all patients' vital signs, in addition to patients receiving medications and recording some disease complaints. The Nursing profession is both an art and a science; a heart and a mind. Nursing is a purely humanitarian profession, where all inputs and outputs are human, based on respect for human dignity and insight into the patient's needs. This is supported by the mind, in the form of strict basic learning. Each nurse will have specific strengths and experiences due to the wide range of specialties and complex skills in the nursing profession (Jasmine 2009)(Peplau 1988).

In recent years the Nursing practice has been greatly influenced by technology a lot, the use of information technology, computers, and the internet,(Kuo, Liu, and Ma 2013).

In every field of nursing practice, nursing research, and nursing education, play a very important role in impacting the healthcare disciplines in the way they are being practiced, So, Informatics has advanced the field of nursing by bridging the gap from nursing as art to nursing as a science (Saba 2001).

The most important factor of the success of any new system is the extent to which the working group in the institution is satisfied with the change, and this applies to nursing in health institutions. Knowledge of potential nursing behaviors and orientation toward HIS is essential in improving patient safety, communication, and EHR empowerment (Yontz, Zinn, and Schumacher 2015). The level of nurses' satisfaction considered an individual factor influencing nurses' attitudes. With a system that is easy to use, nurses tend to be more satisfied and therefore likely to be more involved in using it. This may indirectly improve patient care by saving time on documentation and enhancing communication between departments (Chow et al. 2012)

1.7 Aims General Objective and Specific Objectives

The main objective of this research is to assess nurses attitudes toward the computerized HIS use in Palestinian governmental hospitals and private hospitals regarding the Institutional benefit of employee use of computers, capabilities of computers, quality of patient care, legal ramifications, and Job security.

The specific objectives to:

1. Identify the nurses' attitudes toward the computerized HIS use in the Palestinian government and private hospitals

2. Determine the variables that have influencers' attitudes toward the use of computerized HIS.
3. Identify the relationship, if any, between demographic variables with attitudes of nurses working in Palestinian health facilities.

1.8 Research Questions:

- 1- What is the level of nurse attitudes at the Palestinian hospitals toward the computerized HIS use?
- 2- Which variables, if any, influence Palestinian nurses' attitude hospitals toward the computerized HIS use?
- 3- Are there any significant differences between demographic variables with attitudes of nurses working in Palestinian health facilities?

1.9 Research Hypothesis:

There is no significant differences between demographic variables with attitudes of nurses working in Palestinian health facilities.

1.10 Thesis Chapters Descriptions

This first chapter is an introductory chapter and contains research background, problem statement, Significance of the research, research aim and objectives, and Gap in Knowledge, research questions, research hypothesis. Chapter tow includes outlines of the scientific work from previous contributors to the field.

Methodology will be in Chapter 3. This chapter provides a detailed account of our research includes the research area and setting, research subjects, research design overview, sample size, data collection methods and measurements, data management, analysis plan and ethical consideration.

Results and Discussion in chapter 4 includes actual results including findings and a discussion of the results. The chapter includes charts, tables, and graphs as well as a narrative that describes what considered the most relevant information. Also included is an explanation of how our results confirm or diverge from those of previous researchers by quantitative analysis. The main findings regarding the research questions are abstracted.

Conclusion and Recommendations in chapter 5 are described based on the results of the studies presented in this thesis. In addition, the strengths and limitations of this thesis are considered, and recommendations are given for further research. This chapter deduces policy makers and researchers with recommendations.

1.11 Summary

All that has been mentioned and detailed in this chapter is an important introduction to link it to the coming chapters, and the first of which will be it the literature review.

Chapter Two
Literature Review

Chapter Two: Literature Review

2.1 Technology Revolution

Electronic health records (EHRs), also known as electronic medical records (EMRs), have caught the attention of many diverse health care professionals in various health organizations (Evans 2016). The healthcare industry is constantly changing; therefore, it is in the best interest of all healthcare organizations to stay abreast of the latest technology (Chang et al. 2011). The implementation and adoption of the EHR are slowly spreading throughout the United States. Throughout the 20th century, health care organizations used paper charts to document medical records (Farfán et al. 2008). Unlike the manufacturing industry, health care organizations have lagged in the adoption of computer technology (Crawley 2013). According to Green and Thomas (Green and Thomas 2008), EHRs represent the future of documentation.

A study conducted in Australia confirmed that during the last two decades there have been radical changes in the nature and extent of the use of communication and information technology in the nursing profession all over the world. This study indicated that there is a need to train and prepare nursing students to use information technology and its application in nursing (Smedley 2005).

Medical informatics expanded rapidly during the end of the last century. After decades of developing information systems designed primarily for physicians, healthcare administrators, and other professionals (Eysenbach 2000).

2.2 Implementation and Adoption of HIS

The implementation and adoption rate of EHRs in the United States has remained scarce, lagging behind other countries, such as Germany (Schimank and Lange 2009). According to the Institute of Medicine (IOM), the term “medical mistake” implies that the mistake could have been prevented (Szydowski and Smith 2009). According to two major studies, medical mistakes in United States hospitals have occurred in at least 44,000 people, and have caused as many as 98,000 deaths (Szydowski and Smith 2009). It is estimated that as many as 88 of every 1,000 individuals will suffer an injury, and six will die as a result (Bodinson 2005). Factors that contribute to medical errors are:

- A- Communication problems,
- B- Inadequate information flow,
- C- Human problems,
- D- Improper patient identification,
- E- Organizational transfer of knowledge, such as deficiencies in orientation or training,
- F- Inadequate staffing,
- G- Device or equipment failures,
- H- Inadequate policies and procedures (Makary and Daniel 2016).

Computerizing health records could result in fewer medical mistakes, reduced costs, and improved patient care (Menachemi and Collum 2011).

According to Fickenscher and Bakerman (Kevin Fickenscher and Michael Bakerman 2011), the adoption of EHRs could be pivotal in increasing patient outcomes by reducing medical errors and improving the quality of health care. In the State of the Union Address

in 2004, President George W. Bush stated that by 2014 every American would have an EHR (Murphy 2010). While that prediction now seems unlikely to be fulfilled, recent legislation has provided practical support for the adoption of EHR.

A study conducted in Jordan in the year 2017 on the adoption of the electronic medical file in Jordan, where it was found that the hospitals that adopt the electronic medical file are the largest governmental, urban, and educational hospitals that contain heart care units (Tubaishat and Al-Rawajfah 2017). In other words, the level of electronic health records adoption in Jordan is relatively low. This study called on the decision maker in Jordan to overcome the challenges and obstacles that prevent this adoption. In addition, the need for strategic plans to address the adoption of medical records systems in all Jordanian hospitals. To adopt new technology, criteria such as flexibility and advantages of using the system, ease of use, compatibility with values, and clear usage results by users are reviewed (Lee 2004).

However, many health care organizations have not fully embraced the HER because of several challenges. Expenses related to obtaining new systems, the costs and practical challenges of transitioning existing paper systems to computerized formats, and the inability to achieve and maintain stakeholder acceptance may explain the slow deployment of EHR (Crawley 2013). By improving the safety and efficiency of care, EHRs have the potential to help health care providers meet these challenges effectively.

Registered nurses are the backbone of the healthcare system because nurses are in continuous direct contact with the patient and closely evaluate the condition of the patient. Therefore, they are an essential player in the implementation of health information systems.

2.3 Nurse and Health Information System

In this section, the researcher discusses the Literature on the nurse and HIS.

Research has been conducted to evaluate the barriers and challenges physicians face when implementing an HER (Boonstra and Broekhuis 2010). However, information that adequately explores the barriers that registered and licensed practical nurses may encounter is limited. Because nurses comprise the largest single discipline within health care, their acceptance of the implementation of EHRs in health care organizations plays a significant role. In addition, an understanding of the nurse's attitudes toward the factors that may encourage and hinder the adoption of an EHR is important.

The American Nurses Association defines nursing as, *“the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations”*. (ANA 2019)

Nurses' daily activities are very diverse, including planning, organizing, collaborating, and documenting care according to the nursing process. Other important responsibilities of nurses include order input and scheduling, drug distribution and monitoring, and communication with other healthcare professionals (Wolf et al. 2006). They are also able to integrate clinical data with care management resources and services to manage nursing activities, improve patient care, and expand nursing knowledge (Lee et al. 2008).

They are either stand-alone systems or part of a more common larger clinical or electronic medical record (EMR) system. The introduction or expansion of nursing information systems affects information processing throughout the hospital.

In today's information age, computer systems are required to manage and control the flow of information. HIS is rapidly being used in healthcare systems to manage patient care. The extent to which caregivers move to paperless systems depends on their attitudes toward HIS (Abdrbo et al. 2009).

A study conducted by WHO in the year 2017 on 14 hospitals in Jordan and Palestine; the study strongly recommended the serious need for training programs in the field of HI for health professionals in Palestine and Jordan. The study showed that Palestinian nursing and health professionals are more likely to report using computers to accomplish their tasks And the use of electronic medical records more than their Jordanian counterparts (Jabareen, Khader, and Taweel 2020).

The results of a master's thesis held at Al-Quds University in 2013 on 307 health workers using the HIS system in two governmental hospitals, Rafidia and Jenin Hospital showed the great impact on patient safety, saving time, and eliminating medical errors when using advanced information technology in the management and control of health facilities. In addition to promoting evidence-based decision-making. However, there are still challenges represented by the lack of financial resources and equipment (Baniode and Hamdan 2014) . Nurses' acceptance or satisfaction with the use of clinical computer programs was identified as a key factor in the successful implementation of information systems (Van Der Meijden et al. 2003).

2.4 Nurse Attitude toward Health Information System

Nurses, like other professionals, adhere to a common set of behaviors, values, and attitudes that are conducive to a professional environment. The range of professional attitudes that nurses possess include caring, empathy, effective communication, responsibility and accountability, a sense of duty or obligation, and cooperation with patients, families, and other members of the health care team. Core beliefs shared by all medical caregivers include human poise, respect, independence, selflessness, and civil rights. Each is a core value of nursing advocacy. Values are fundamental to medical care providers to coordinate the ways of care to deal with their patients and all members of the medical community. According to the American Nurses Association (ANA) Code of Conduct, “*The nurse creates an ethical environment and a culture of civility and kindness and treats colleagues, co-workers, staff, students, and others with respect and dignity*” (Incivility, Bullying, and Workplace Violence | ANA n.d.). However, working in today's sophisticated and stressful healthcare environment can challenge this ethical code. People working in today's healthcare industry generally hold a negative attitude (Vakola and Nikolaou 2005).

Traditionally, nurses have found that information technology disrupts their established practice models and distracts from bedside patient care (Cohen 2004). Some nurses may find this change process challenging (Langowski 2005).

One of the main barriers to the adoption of information technology in nursing is the lack of understanding of its benefits. This negative attitude creates more stress on the work environment and everyone involved in it. Employees with negative attitudes create a negative culture for their colleagues and the organization (Zivnuska et al. 2020). Employees

who engage in negative attitude be held accountable and must be considered unacceptable by the organization to maintain organizational integrity.

Nursing generally had positive attitudes toward computers. There is a significant difference in the attitudes of different groups; age, marital status, education, facility type, job title, computer science education, computer experience, duration of computer use, and place of computer use (Gürdaş Topkaya and Kaya 2015)(Alquraini et al. 2007)(Huryk 2010).

Change is a daily phenomenon in healthcare. Like The computerization of nursing systems due to the information revolution. As a result, nurses have very different, may be positive or negative attitudes towards computing and changes in the workplace. nursing informatics must be aware of the factors that favor change and those that hinder it, and Strategies need to be developed to assist the transition (Bozak 2003).

An exploratory study was conducted in Nova Scotia, Canada, to evaluate the moderating effects of demographic data and individual characteristics (years of nursing experience and level of computer proficiency) on nurses' acceptance of information systems. The result of the study showed that those with a higher level of education and more basic knowledge of computers are more likely to accept the implementation of the health information system at work. (Ifinedo 2016).

Many healthcare organizations have implemented hospital information systems, and relatively few studies have examined how caregivers perceive their usefulness, ease of use, or acceptability. Several studies have shown that system quality, information quality, and service quality were positive correlated with perceived ease of use and perceived utility. Information quality has the greatest impact on perceived value and usability. Perceived usefulness and ease of use have a significant impact on system adoption. Perceived benefits

have a significant impact on system acceptance. These results suggest that nursing needs high-quality health information to support nurses daily activities (Lu, Hsiao, and Chen 2012)(Takhti, Rahman, and Abedini 2015) .

To sum up, the researcher assess the attitudes of nurses toward the use of computerized HIS in Palestine (West Bank (WB)) distributed between government and private hospitals.

The research aims to know nurses' attitudes toward the computerized HIS use in Palestinian governmental hospitals and private hospitals regarding the Institutional benefit of employee use of computers, capabilities of computers, quality of patient care, legal ramifications, and Job security.

2.5 Theoretical Framework

A modern definition of attitude has been stated as a "relatively lasting cluster of feelings, beliefs, and behavior tendencies directed toward specific persons. Ideas, objects or groups" (Baron and Byrne 1977). This definition implies that a person has positive, neutral or negative feelings toward an object, holds certain beliefs about it and tends to behave in specific ways toward it. For example, a nurse may hold a neutral feeling toward a computer and have certain beliefs about it. This nurse may not feel inclined to learn how to access and use a computer. A nurse with a negative attitude toward a computer may also be reluctant to use a computer, but may also encourage colleagues not to use it.

An old but suitable definition of attitude, for the purpose of this research, is Allport's (1935) definition which states "*an attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's*

response to all objects and situations with which it is related" cited in (Tripp and Sherrill 1991)

Baron (Pigors and Murchison 1936), and Allport (Pigors and Murchison 1936) p770, both describe the components of attitudes as being affective, cognitive and behavioral. These three components are all measurable.

The conceptual framework illustrated in Figure 1.1 shows computers as being an attitude object, attitudes as being positive, neutral or negative and the components of attitudes as being affective feelings, cognitive beliefs and potential behaviors. These components were assessed in this research. Henerson, Morris and Fitz-Gibbon (Henerson, Morris, and Fitz-Gibbon 1987) state "*When measuring attitudes, we must rely on inference, since it is impossible to measure attitudes directly*". According to Fishbein and Ajzen (1975), cited in (Brodt and Strange 1986), the most common measure of attitude is by way of a questionnaire. Therefore, in order to assess attitude in this research, statements of feelings, beliefs and potential behaviors were incorporated into the study questionnaire.

The literature review identified variables that may influence nurses' attitudes to computerization. The conceptual framework allows these variables to be categorized as stimuli, which influence attitude toward computerization as being positive, neutral, or negative .

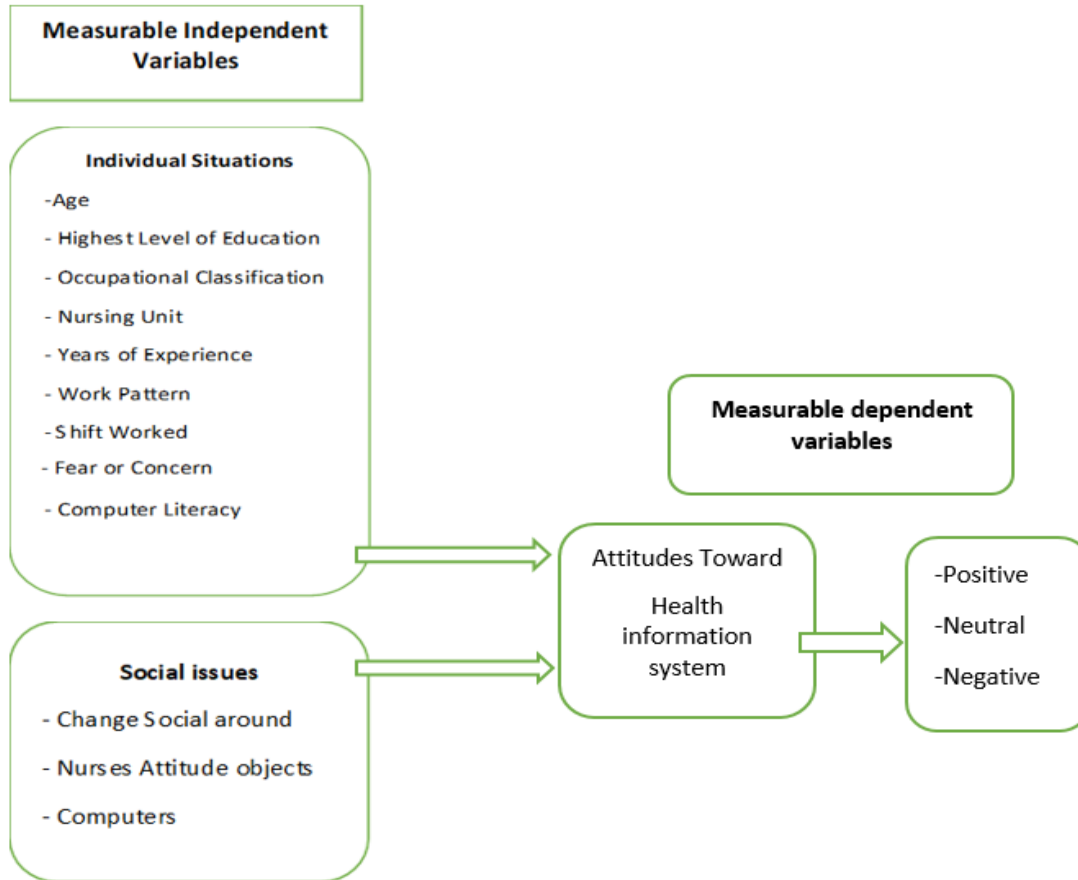


Figure 1.1: conceptual framework of variable influence attitudes towards health information systems.

2.6 Summary.

This chapter outlines the study literature from previous contributors in the field. We dealt with the technology revolution, HIS implementation, and its relationship with nursing informatics. Theoretical Framework of variable influence attitudes towards health information systems. Finally, this literature is covered with regard to nursing informatics and the attitude towards HIS.

Chapter Three

Methodology

Chapter Three: Methodology

3.1 Introduction

This chapter describes the methodology used to assess the nurses' attitudes toward computerized HIS use in Palestinian government hospitals and private hospitals.

3.2 Study Area/ Setting

The research was conducted and data was collected from the respondents, the nursing category, from four government hospitals out of eleven government hospitals affiliated with the Palestinian Ministry of Health. They were divided, one in the north, two in the middle, and one in the south. These hospitals were chosen based on the number of beds and where these hospitals represented a rate of 50 percent. The number of patient beds and human cadres is Rafidia Hospital from Nablus Governorate, Palestine Medical Complex from Ramallah, and Al-Bireh Governorate, Jericho Governmental Hospital from Jericho Governorate, and Alia Hospital in Hebron Governorate. Three private hospitals operating in the West Bank of Palestine were selected: AN-Najah University Hospital in Nablus Governorate, Istishari Hospital in Ramallah, and Al-Ahly Hospital in Hebron. These three private hospitals are among the largest private hospitals operating in the West Bank, Palestine.

3.3 Research Design

A quantitative, descriptive cross-sectional study approach was used to assess the nurses' attitudes toward computerized HIS use in Palestinian government hospitals and private hospitals.

3.4 Research Population

The research populations of this research are nurses who are currently working at Rafidia Governmental Hospital, Palestine Medical Complex, Jericho Governmental Hospital, and Alia Governmental Hospital, these governmental hospitals have an amount of 810 patient beds from a total of 1569 beds for all governmental hospitals in the west bank. In addition, the three biggest private hospitals, An-Najah University Hospital, Istishari Hospital, and Al-Ahly Hospital as shown in table 3.1

Table 3.1: Research Population (Health Annual Report Palestine 2019 Page 241) (health M of 2021)

Hospital	Type	No of Nurses	No of patient beds
PMC	Governmental	321	296
HEBRON HOSPITAL	Governmental	262	259
RAFEDYA HOSPITAL	Governmental	212	201
JERICHO HOSPITAL	Governmental	68	54
ALNNAJAH HOSPITAL	Private	380	210
ISTESHARY HOSPITAL	Private	90	150
ALAHLY HOSPITAL	Private	367	215
Total		1700	1385

3.5 Study Subjects

3.5.1 Inclusion Criteria

The researcher includes male and female nurses who work on a full-time and part time basis and include all levels of experience. All areas of specialty asked to participate.

3.5.2 Exclusion Criteria

The researcher excludes the nurses who have less than 6 months of experience.

3.6 Sample Size

The sample size was 390 registered nurses, which were presentative enough to ensure to reject of the null hypothesis.

3.7 Sampling Method

An extremely important step in collecting valid information from a sample of nurses who truly represent the study population. The population of the study consisted of nurses who work in all selected Palestinian government and private hospitals. To select the required sample, a stratified randomized sampling methodology was used. The researcher stratified the population of nurses in the selected hospitals by type of hospital. After stratified random sampling is used, the distribution of the total sample size among the subgroups represents the sample in the same proportion in which they have represented the population. Then, using a random-number-generating procedure, a random sample size of nurses was drawn from the selected hospitals. Then, from each facility, a list of nurses' was obtained.

By using a random number sheet, a pointer was the point to any number on the sheet. If that number matched the serial number of any nurse, that nurse was included in the study; if not, the pointer was moved by column and every nurse with the same serial number in the random sheet was selected.

3.8 Data Collection Methods, Instruments Used, and Measurements

3.8.1 Data Collection Instruments

The Nurse Attitudes Toward Computerization (NATC) questionnaire (Stronge and Brodt 1985) is widely used and validated to measure nurses' attitudes toward computerization. Many researchers have used the Stronge and Brodt questionnaire to study the impact of computers on nursing practice.

(Stronge and Brodt 1985), (Brodt and Stronge 1986), (STRICKLIN, Bierer, and Struk 2003), (Kipturgo et al. 2014), (Salameh et al. 2019),. This instrument has been identified in the literature, and selected based on its respective ability to obtain information needed to answer the research questions of this study.

The questionnaire consists of seven demographic questions and the instrument consists of 20 questions with 14 negative and 6 positive statements. The questionnaire was divided into six subgroups:

- A- Institutional benefits.
- B- Employee use of computers.
- C- Capabilities of computers.
- D- Quality of patient care.

E- Legal ramifications.

F- Job security.

The nurses rate the statements based on the Likert response scale: 1 means strongly disagree, 2 means disagree, 3 means undecided, 4 means agree, and 5 means strongly agree. Stricklin (STRICKLIN, Bierer, and Struk 2003) and others have confirmed the reliability of the NATC questionnaire at $r = .78$ with construct validity at $r = .94$.

3.8.2 Data Collection Instrument Owner Permission

The use of this questionnaire for this dissertation was granted via Emil from Dr. Stronge.

3.8.3 Data Collection Instrument Modifications, Validity, and Reliability.

Upon request of the supervisor and the research project committee for update and modification, the questionnaire sent to four university professors in the field of Nursing, computers, and Statistics to review it for suggested modifications the questionnaire and the result was as it is now (Appendix I).

3.8.4 The Questionnaire after Modification.

The questionnaire consists of three (3) sections.

- 1- In the first section: demographic data, the questionnaire consists of nine demographic questions
- 2- The second section: Eighteen (18) questions about computer usage.

3- The Third section: questions about health information system attitudes, the instrument consists of 20 questions with 14 negative and 6 positive statements.

The questionnaire further divided into six subgroups:

- A- Institutional benefits,
- B- Employee use of computers.
- C- Capabilities of computers,
- D- Quality of patient care,
- E- Legal ramifications and
- F- Job security.

The nurses rate the statements based on the Likert response scale:

1-means strongly disagree, 2- means disagree, 3- means undecided, 4- means agree, and 5- means strongly agree. Data was collected during nursing Shifts A, B, and C.

3.9 Data Management and Analysis

Data were analyzed using SPSS 25.0 software. Research question one was analyzed using frequency distributions and percentages. This analysis helped organize nurses' responses into the various dependent variables of the study. A one-way analysis of variance (ANOVA) and independent samples t-test was used in the analysis.

3.10 Ethical Consideration

Participants recruited in the study signed consent forms (Appendix II). Privacy and confidentiality were completely protected as no identifiers or personal information were

collected or stored including participants' name, ID's, etc. Approval from MOH and the selected private hospitals. Research proposal approval obtained from the Arab American University of Palestine (AAUP) - graduate studies.

3.11 Summary

In this chapter, the research methodology is detailed by clarifying the sample of the study and the setting of the study, in addition to determining those who were included in the study and who were excluded based on the objectives of the study. Research design and data collection process were included in this chapter, and ethical considerations for research were discussed to maintain privacy. The study sample and the methodology used were very good and appropriate to the situation in Palestine.

Chapter Four
Results and Discussions

Chapter Four: Results and Discussions

4.1 Introduction

This chapter presents the results arising from the data analysis, which are an outcome of quantitative research instruments used in data collection. It contains the results focusing on the background characteristics of the respondents and on the objectives of the study.

The chapter begins with a summary of the respondents' demographic characteristics. It then presents the findings on the independent variables, that is, to determine the attitudes of nurses toward the use of computerized HIS in Palestinian government and private hospitals and to identify variables that influence those attitudes. The instrument used in this study consists of two parts: part one includes the modified version of "The Nurse Attitudes Toward Computerization (NATC) questionnaire (Stronge and Brodt 1985)", And part two including the demographic characteristics of the study sample. SPSS v 25 software was used to manage and analyze these data. Data analyses included descriptive statistics, Cronbach's alpha, and univariate analysis of variance.

4.2 Descriptive Analysis Results

This section presents the results of the descriptive statistical analyses of the data and interpretations. The descriptive statistics help to develop the basic features of the study and form the basis of virtually every quantitative analysis of the data. The results are presented in terms of the study objectives.

4.2.1 Demographic characteristics of the Respondents

Three hundred ninety questionnaires were distributed to the nursing staff at government and private hospitals in Palestine. Three hundred seventy-three (95.6%) respondents returned completed questionnaires and were included in the statistical analysis. The study sought to determine the demographic characteristics of the respondents. The characteristics measured in the study were; gender, age, level of education, Years of experience, type of shift, job title, and employee's status.

To verify the validity of the tool of study, it was presented to a group of reviewers who are specialized in this field. All their notes were taken into consideration. In addition, to check the reliability of the tool it was applied of a sample of nurses, which included 20 male and female nurses from government and private hospitals other than those in the sample. Reliability is defined as the extent to which an instrument consistently measures a concept. The Reliability scale (Alpha Cronbach) computed on a pilot study was 0.851.

The results in Table 4.1 and figure 4.1 shows that (46.9%) of the respondents were males while the rest (53.1%) were female suggesting that there was gender parity in the department of healthcare services in Palestine. The results also showed that (49.9%) of the respondents were aged between 20-29 years as shown in figure 4.2. The types of job titles were categorized as Nursing Director, Supervisor, Head Nurse, and nurse. The majority of nurses was ordinary nurse (313, or 83.9%). Regarding nurse's previous computer experience, 19 (5.1%) reported that they did not use computer, 16 (4.3%) had less than four years of computer experience, 129 (34.6%) had 1-5 years of computer experience, 101

(27.1%) had 10 years of computer experience, and only 39 (10.5%) had 16 and more years of computer experience.

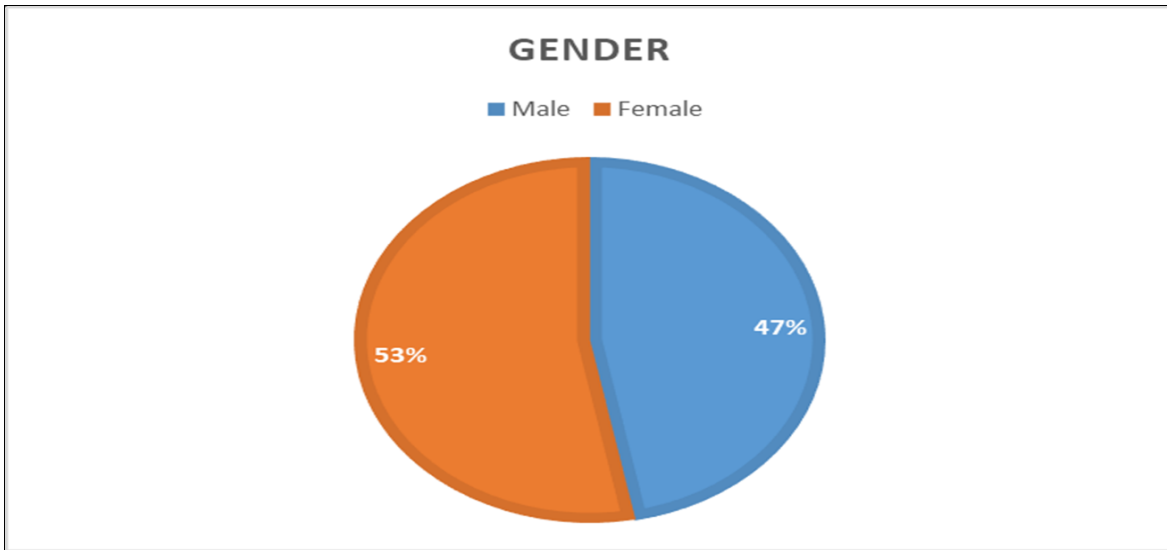


Figure (4.1): Pie chart for Demographic Characteristics (Gender)

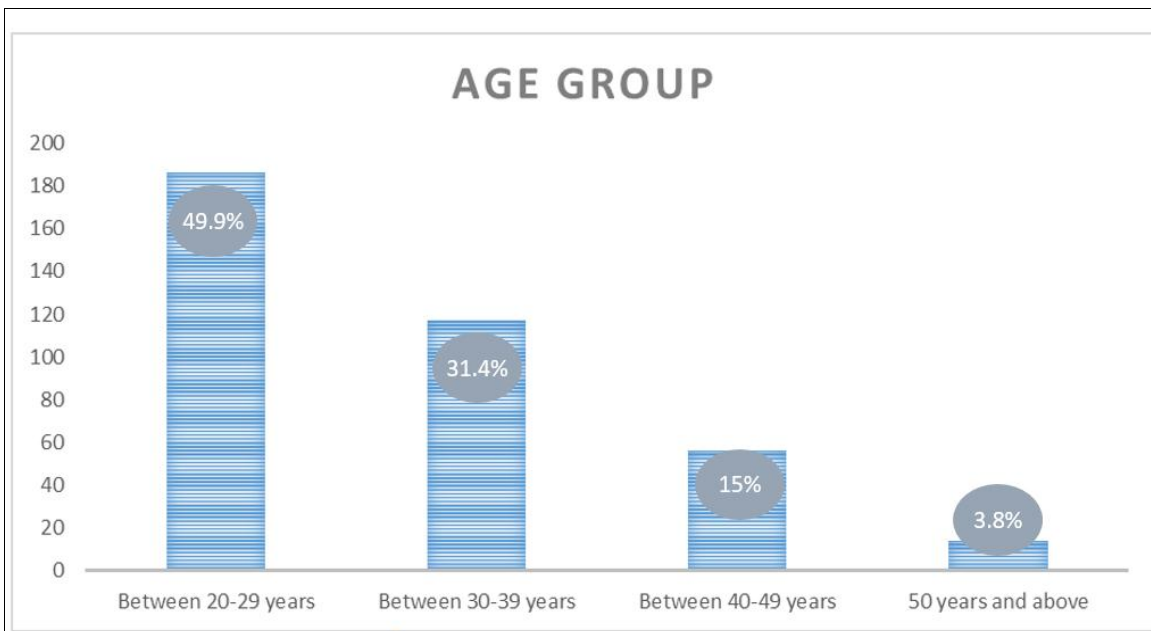


Figure (4.2): bar chart for Demographic Characteristics (Age Group)

In terms of the respondents' education level, the findings established that most respondents (66.5%) had graduate-level qualifications as shown in figure 4.3, however, there was also a moderate number of respondents who had post-graduate (10.2%). This shows the respondents had requisite qualifications that could enable them to give meaningful responses to the problem under investigation in this study. For nurses' experiences, more than half of the participants (52.5%) were 6 -10 years of experience, followed by participants with experience between 11-15 years (19.3%).

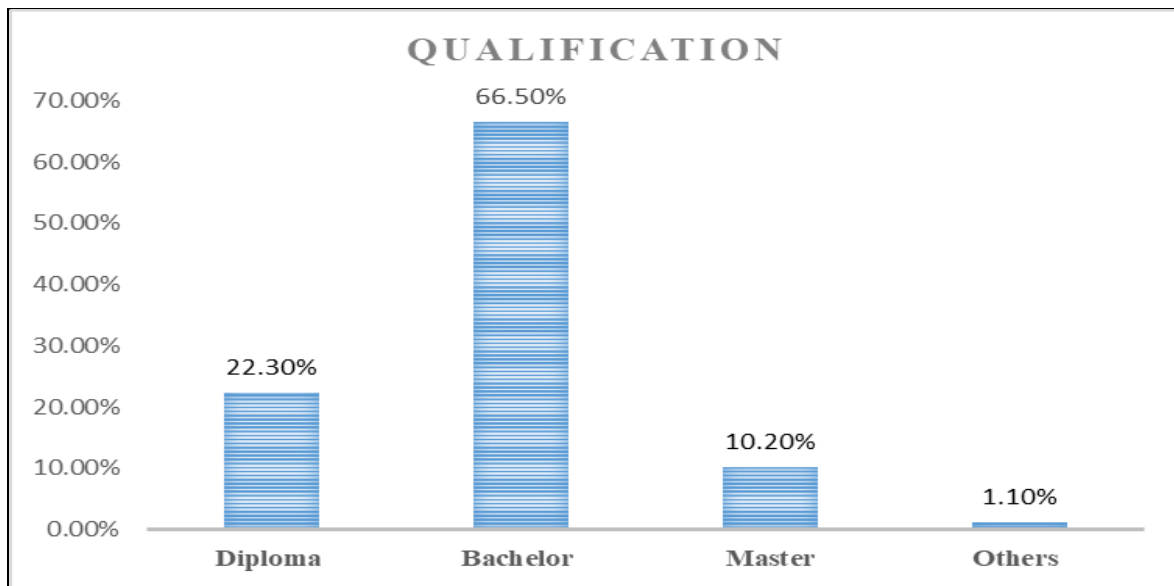


Figure (4.3): bar chart for Demographic Characteristics (Qualification)

Table (4.1): Demographic characteristics of the Respondents

Characteristic	Numbers	Percentages (%)
Gender		
Male	175	46.9%
Female	198	53.1%
Age-group		
20-29 years	186	49.9%
30-39 years	117	31.4%
40-49 years	56	15%
50 years and above	14	3.8%
Qualification		
Diploma	83	22.3%
Bachelor	248	66.5%
Master	38	10.2%
Others	4	1.1%
Job title		
Ordinary nurse	313	83.9%
Head nurse	43	11.5%
Supervisor	10	2.7%
Director	7	1.9%
Number of years worked with computers		
Didn't use computer	19	5.1%
Less than 1 year	16	4.3%
1-5 years	129	34.6%
6-10 years	101	27.1%
11-15 years	69	18.5%
16 years and more	39	10.5%
Years worked at this medical facility		
1-5 years	51	13.7%

Characteristic	Numbers	Percentages (%)
Gender		
Male	175	46.9%
Female	198	53.1%
Experience		
6-10 years	196	52.5%
11-15 years	72	19.3%
16 years and more	54	14.5%
Employment Status		
Full-time	351	94.1%
Part-time	22	5.9%
Usual shift that you work		
Morning	93	24.9%
Evening	60	16.1%
Different shift (rotation)	79	21.2%
Double shift	141	37.8%

Of those nurses who had computer experience, 18 (4.8%) had computer access at home only, the majority 293 (78.6%) had computer access at work only, 43 (11.5%) had computer access at both work and home, and 19 (5.1%) did not currently use a computer. For those nurses who used computers at work, the majority (72.9%) used computers on daily basis, and 22.0% used computers on weekly basis. For attendance of formal computer training, 280 (75.1%) reported had ever attend any formal computer training, and 93 (24.9%) reported had never attend any formal computer training.

Table 4.1 Demographic characteristics of the Respondents..... continued

Characteristic	Numbers	Percentages (%)
Have you ever used computers?		
Yes	354	94.9%
No	19	5.1%
Do you own or have access to a computer at home?		
Had computer access at work only	293	78.6%
Had computer access at home only	18	4.8%
Had computer access at work and home	43	11.5%
Did not currently use a computer	19	5.1%
How often you use a computer:		
Daily	272	72.9%
Weekly	82	22.0%
Less than once a month	-	-
Monthly	-	-
Did not currently use a computer	19	5.1%
Have you had a training in collage on computers?		
Yes	316	84.7%
No	57	15.3%
Have you ever attended any formal computer training?		
Yes	280	75.1%
No	93	24.9%

4.3 Analysis and Discussion of Research Questions

The first research question asked what nurses' attitudes are toward the use of computerized HIS in Palestinian government and private hospitals regarding:

A- Institutional benefits.

B- Employee use of computers.

C- Capabilities of computers.

D- Quality of patient care.

E- Legal ramifications.

F- Job security.

Table 4.2 presents the mean score for all of the respondents completing the questionnaire for general attitudes and for the subcategories toward computers in Palestinian government and private hospitals. The mean score for general attitudes toward computers in Palestinian government and private hospitals was 2.62 (range: 1-5) and the standard deviation = 0.55. This indicates that nurses had intermediate positive attitudes toward computers.

For the subcategories toward computers in Palestinian government and private hospitals, these results show that nurses had also intermediate positive attitudes toward the employee use of computers subcategory. The findings of this study were consistent with the majority of the studies reviewed for this dissertation. As mentioned earlier, 67.0% of those studies showed nurses had positive attitudes toward computers. This mean score was less than the attitude means scores reported from other similar studies by (Brodt and Strange 1986) (Scarpa, Smeltzer, and Jasion 1992), (Wood 2000), and other studies that showed positive attitudes toward computers.

The intermediate positive attitudes of nurses toward computerized HIS has implications for the Palestinian hospitals. As computer technology is introduced as a viable means of improving communication and access to health care resources, nurses may be in positions to influence attitudes toward computer usage in Palestinian hospitals.

Table (4.2): The means and the standard deviations for the general attitudes and for the subcategories

	Mean	Std. Deviation
Institutional benefits	2.74	0.79
Employee use of computers	2.99	1.07
Capabilities of computers	2.52	0.66
Quality of patient care	2.49	0.59
Legal ramifications	2.59	0.72
Job security	2.56	1.03
Total	2.62	0.55

The second research question asked what the variables are that have an influence on nurses' attitudes toward the use of computerized HIS.

Table (4.3): Likert scale key

Mean	Scale
1 – 2.33	Low
2.34 – 3.66	Intermediate
3.67 - 5	High

4.3.1 Hospital Type

Using t-tests, analysis showed a significant difference in mean attitude scores among nurses by hospital type at the 0.05 level. The total attitude p-value was $<.001$. The analysis of attitude subcategories also showed a significant difference in mean attitude scores between nurses working in governmental hospitals VS private hospitals. Nurses whom work at government hospital had positive attitudes more than whom work in privet hospital in all subcategories, as showed in (table 4.4 and figure 4.4). Nurses working in private hospitals

agree relatively more than nurses working in governmental hospitals that the more computers there are in an institution, the fewer jobs there are for employees.

Table (4.4): Type of Hospital Versus Attitude

Variable	Hospital Type	N	Mean	t statistics (df)	P Value
Institutional benefits	Government	249	2.82(.82)	2.73(371)	.007
	Private	124	2.58(.71)		
Employee use of computers	Government	249	3.11(1.10)	3.24(371)	.001
	Private	124	2.74(.96)		
Capabilities of computers	Government	249	2.58(.68)	2.31(371)	.021
	Private	124	2.41(.60)		
Quality of patient care	Government	249	2.56(.60)	3.07(371)	.002
	Private	124	2.36(.55)		
Legal ramifications	Government	249	2.65(.75)	2.14(371)	.033
	Private	124	2.48(.65)		
Job security	Government	249	2.66(1.09)	2.70(371)	.007
	Private	124	2.35(.89)		
Total	Government	249	2.69(.56)	3.67(371)	<.001
	Private	124	2.47(.50)		

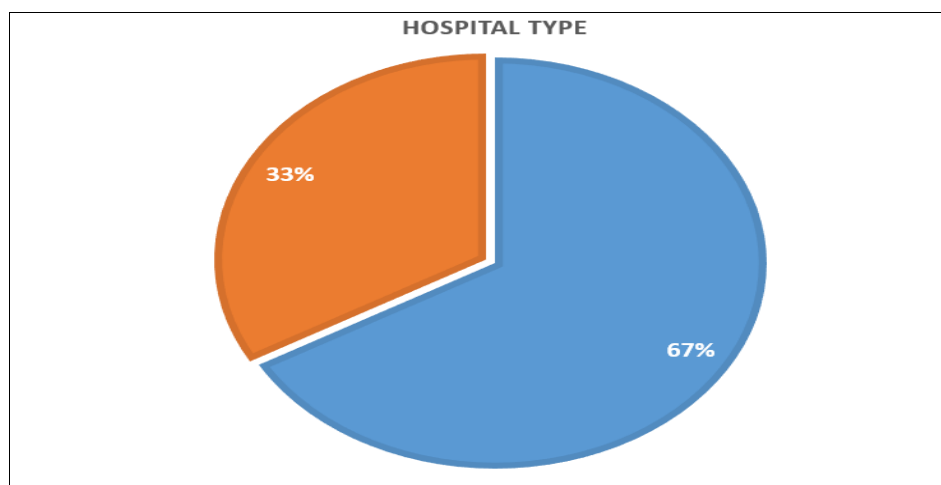


Figure (4.4): pie chart for Descriptive Analysis Results for Type of Hospital

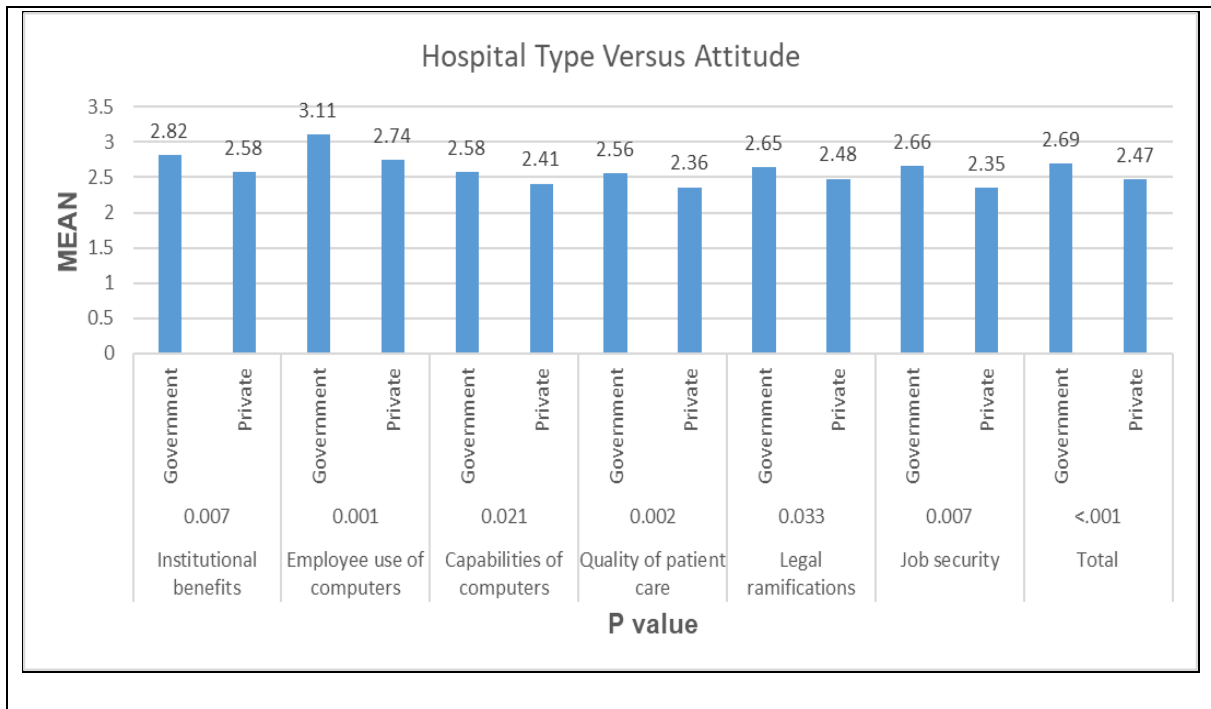


Figure (4.5): bar chart for mean to Type of Hospital Versus Attitude

4.3.2 Gender

Using t-tests, analysis showed no significant difference in mean attitude scores between males and females at the 0.05 level. The total attitude p-value was 0.793. The analysis of attitude subcategories also no significant difference in mean attitude scores between males and females' nurses. Male nurses agree relatively more than females that the more computers there are in an institution, the fewer jobs there are for employees.

These finding in this study was that male nurses felt they might lose their jobs if computer systems are implemented in the institution. This feeling could cause male nurses to resist using computers implemented in their facility.

Table (4.5): Gender versus Attitude

Variable	Gender	N	Mean (SD)	t statistics (df)	P Value
Institutional benefits	Male	175	2.70(.78)	-.82(371)	.414
	Female	198	2.77(.081)		
Employee use of computers	Male	175	2.95(1.07)	-.74(371)	.461
	Female	198	3.03(1.08)		
Capabilities of computers	Male	175	2.52(.67)	.06(371)	.952
	Female	198	2.52(.65)		
Quality of patient care	Male	175	2.51(.60)	.41(371)	.684
	Female	198	2.48(.59)		
Legal ramifications	Male	175	2.58(.72)	-.27(371)	.790
	Female	198	2.60(.73)		
Job security	Male	175	2.57(1.03)	.24(371)	.809
	Female	198	2.55(1.04)		
Total	Male	175	2.61(.55)	-.26(371)	.793
	Female	198	2.62(.55)		

Therefore, the Ministry of Health should reassure all nurses that the implementation of computerized HIS in Palestinian hospitals would not lead to minimizing the number of nurses working in the Ministry of Health. Many studies have produced no significant correlation between gender and attitude (Kipturgo et al. 2014)(Teo 2008)(Meelissen and Drent 2008).

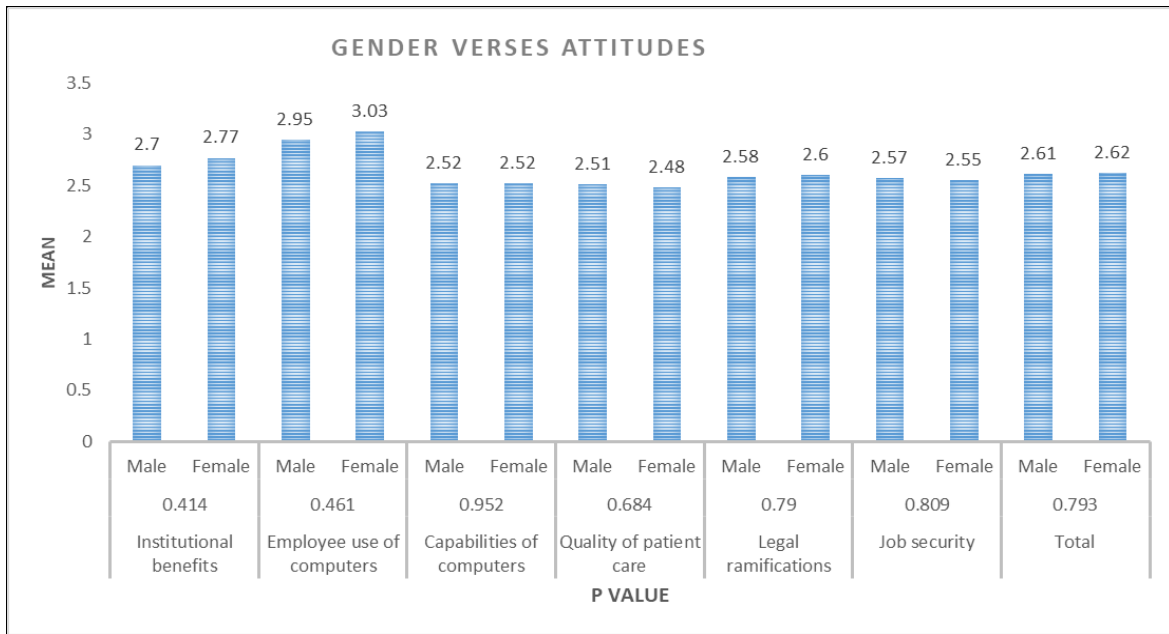


Figure (4.6): bar chart for mean to Gender Versus Attitude

4.3.3 Age

Using ANOVA, analysis showed no significant difference in nurses' attitudes among age categories. The total attitude p-value was 0.684. Despite the slightly differences in mean attitude scores, the analysis of attitude subcategories also no significant difference in mean attitude scores between age categories of nurses. Within the vast majority of nurses participated in this study 303 (81.2%) aged less 40 years had higher attitudes scores than that of nurses in age group above 40 years. This finding was expected because most of the studies in the literature showed that younger nurses had more positive attitudes toward computers, because younger nurses tend to have more computer capabilities and skills.

Other studies examining nurses' attitudes toward computers have included age as a variable, and the results have been consistent with the results of this study. Many studies

have produced no significant correlation between age and attitude. (Yontz, Zinn, and Schumacher 2015), (Brodt and Strange 1986) , and (Laramee et al. 2012) found no differences in nurses' attitudes toward computers among age groups ($p > 0.05$). However, other studies, found that age was a factor in nurses' attitudes toward computers.(Simpson and Kenrick 1997)found that age was a major factor related to attitudes toward computers. Younger nurses had more positive attitudes toward computers than did older nurses in that sample ($n=208$, $p < 0.05$). (Abell et al. 2015) and (Kipturgo et al. 2014) found a significant correlation between younger respondents and willingness to use computers. (Schwirian et al. 1989) reported more positive attitudes toward computers among nursing students who were on average younger.

With the increase in computer technology in educational settings over the past few years in Palestine and in many other countries, it is possible that the age-related differences in this study regarding capabilities of computers are a result of the younger nurses having had greater exposure to computers. These nurses may be more familiar with the advantages and uses of computer technology (Yin et al. 2012) . Therefore, both the private hospital and the Ministry of Health should make contracts with younger nurses when they implement computerized HIS.

Table (4.6): Age group Versus Attitude

Variable	Age-group	Mean	F statistics(df)	P value
Institutional benefits	Between 20-29(n=186)	2.77(.82)	.67(3)	.570
	Between 30-39(n=117)	2.66(.75)		
	Between 40-49(n=56)	2.81(.82)		
	50 years and above(n=14)	2.70(.78)		
Employee use of computers	Between 20-29(n=186)	3.02(1.10)	.95(3)	.416
	Between 30-39(n=117)	2.91(1.05)		
	Between 40-49(n=56)	2.94(1.02)		
	50 years and above(n=14)	3.39(1.04)		
Capabilities of computers	Between 20-29(n=186)	2.51(.66)	2.06(3)	.105
	Between 30-39(n=117)	2.46(.68)		
	Between 40-49(n=56)	2.59(.58)		
	50 years and above(n=14)	2.89(.72)		
Quality of patientcare	Between 20-29(n=186)	2.48(.59)	.44(3)	.726
	Between 30-39(n=117)	2.51(.65)		
	Between 40-49(n=56)	2.54(.54)		
	50 years and above(n=14)	2.36(.28)		
Legal ramifications	Between 20-29(n=186)	2.62(.73)	.95(3)	.414
	Between 30-39(n=117)	2.51(.73)		
	Between 40-49(n=56)	2.64(.71)		
	50 years and above(n=14)	2.76(.66)		
Job security	Between 20-29(n=186)	2.62(1.06)	.59(3)	.622
	Between 30-39(n=117)	2.52(1.06)		
	Between 40-49(n=56)	2.45(.95)		
	50 years and above(n=14)	2.43(1.22)		
Total	Between 20-29(n=186)	2.63(.56)	.50(3)	.684
	Between 30-39(n=117)	2.57(.57)		
	Between 40-49(n=56)	2.66(.50)		
	50 years and above(n=14)	2.70(.43)		

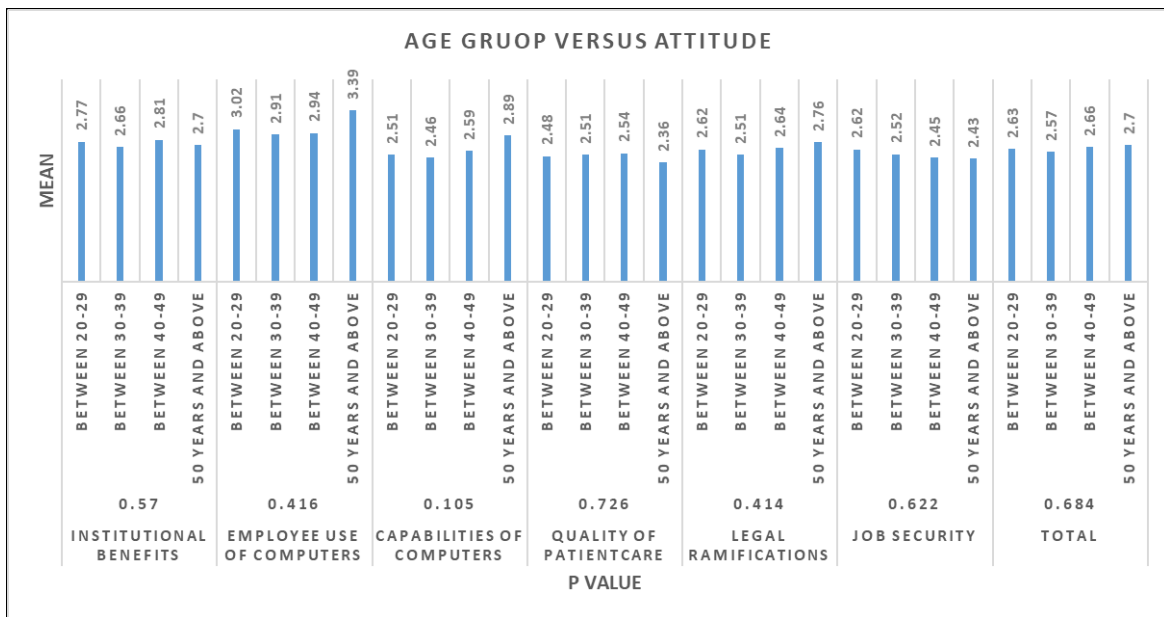


Figure (4.7): bar chart for mean to Age group Versus Attitude

4.3.4 Education Levels

Using ANOVA, analysis showed no significant difference in mean attitude scores between nurses by educational level at the 0.05 level. The total attitude p-value was 0.159. The analysis of attitude subcategories by educational level also showed no significant difference in mean attitude scores between educational levels of nurses. Nurses with bachelor and higher degrees had more positive attitudes toward computers than did nurses with diplomas. However, results showed that there was no significant correlation between education levels and attitudes toward computers (see Table 4.7 and figure 4.8).

The findings of this study are consistent with Brodt & Strange (Brodt and Strange 1986) findings that nurses with higher education levels had more positive attitudes toward computers. Other studies did not find education preparation to be a factor influencing nurses' attitudes. Burkes (Burkes 1991) stated that education level "was expected to

correlate with greater computer-use attitude” (p.195). However, results showed that there was no correlation between education levels and attitudes toward computers.

Additionally, Yontz et al.'s (Yontz, Zinn, and Schumacher 2015) found that level of education was not significantly associated with nurses’ computer-related attitudes. This study found that education level is a unique factor influencing nurses to have more positive attitude toward computerized HIS. The Ministry of Health and Privets Hospitals should make contracts with nurses who have at least Bachelor's degree when the Ministry and privets hospital implements its planned computerized HIS because the findings of this study show that nurses with Bachelor's degree had significantly more positive attitudes toward computers.

Table (4.7): Educational Level Versus Attitude

Variable	Educational Level	Mean (SD)	F statistics(df)	P value
Institutional benefits	Diploma (n=83)	2.55(.75)	2.13(3)	.096
	Bachelor(n=248)	2.78(.79)		
	Master(n=38)	2.88(.88)		
	Other(n=4)	2.81(.75)		
Employee use of computers	Diploma (n=83)	2.72(.99)	2.39(3)	.069
	Bachelor(n=248)	3.06(1.10)		
	Master(n=38)	3.11(1.01)		
	Other(n=4)	2.88(.85)		
Capabilities of computers	Diploma (n=83)	2.53(.65)	.16(3)	.921
	Bachelor(n=248)	2.51(.67)		
	Master(n=38)	2.58(.61)		

	Other(n=4)	2.63(.60)		
Quality of patient care	Diploma (n=83)	2.38(.50)	1.79(3)	.150
	Bachelor(n=248)	2.52(.61)		
	Master(n=38)	2.48(.63)		
	Other(n=4)	2.88(.58)		
Legal ramifications	Diploma (n=83)	2.49(.63)	1.18(3)	.317
	Bachelor(n=248)	2.60(.75)		
	Master(n=38)	2.74(.75)		
	Other(n=4)	2.75(.32)		
Job security	Diploma (n=83)	2.52(.94)	.71(3)	.546
	Bachelor(n=248)	2.55(1.05)		
	Master(n=38)	2.63(1.03)		
	Other(n=4)	3.25(1.71)		
Total	Diploma (n=83)	2.50(.46)	1.74(3)	.159
	Bachelor(n=248)	2.64(.57)		
	Master(n=38)	2.69(.53)		
	Other(n=4)	2.81(.45)		

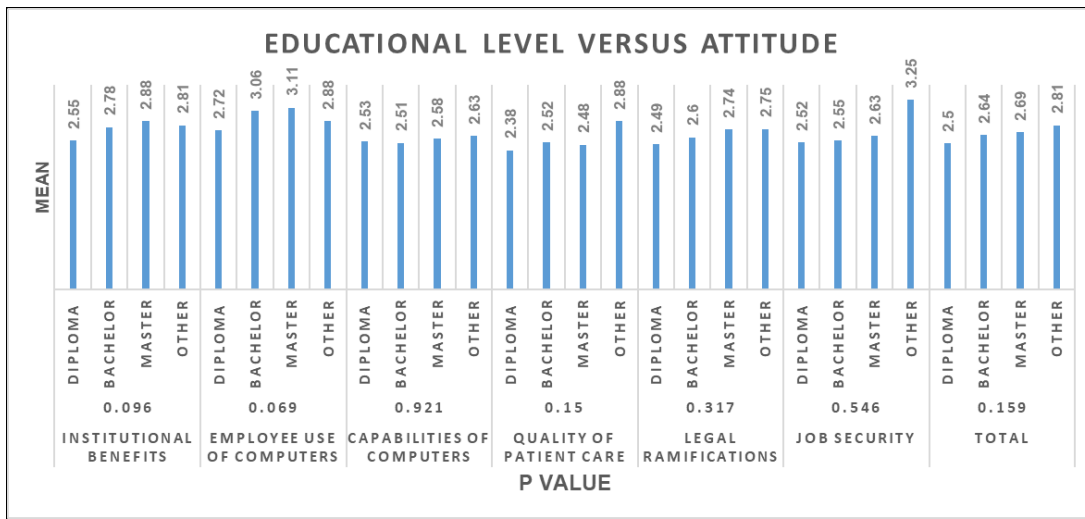


Figure (4.8): bar chart for mean to Age group Versus Attitude

4.3.5 Duration of Computer Use

The duration of exposure to computers showed no significant association with attitude toward computerization (P-value = 0.505). (See Table 4.8 and figure 4.9). Nurses with longer duration of exposure to computer at all attitude subcategories were likely to have more positive attitude than those with relatively shorter duration of computer use. However, the analysis of attitude subcategories by nurse's duration of exposure to computers also showed no statistically significant association in mean attitude scores in all attitude subcategories between nurses by nurse's duration of exposure to computers.

The literature review of this dissertation showed an inconsistent relationship between computer experience and nurses' attitudes toward computers. It was expected that exposure to computer use would significantly influence the attitudes of the nurses towards computerization compared to shorter or non-exposure. In the articles reviewed in this research, the common assumption was that computer experience would correlate positively with attitudes toward computers. However, this was not always the case. Bongartz (Bongartz 1988) found that nurses who used computers more in the work setting were less positive about computers than were those nurses who did not use computers.

Sultana(Sultana 1990) found no significant differences in attitudes between nurses grouped by computer experience. However, a qualitative study involving the respondents from Palestine would shed more light into this finding. When One Way ANOVA test was applied to analyze the data, no significant associations between the nurses' characteristics and attitude was observed.

Table (4.8): Duration of Computer Use versus Attitude

		Sum of Squares	df	Mean Square	F	Sig.
Institutional benefits	Between Groups	6.69	5	1.34	2.15	0.059
	Within Groups	227.95	367	0.62		
Employee use of computers	Between Groups	9.54	5	1.91	1.68	0.139
	Within Groups	417.42	367	1.14		
Capabilities of computers	Between Groups	1.16	5	0.23	0.53	0.751
	Within Groups	159.60	367	0.44		
Quality of patientcare	Between Groups	.99	5	0.20	0.56	0.730
	Within Groups	129.79	367	0.35		
Legal ramifications	Between Groups	1.04	5	0.21	0.39	0.853
	Within Groups	194.19	367	0.53		
Job security	Between Groups	8.67	5	1.73	1.64	0.148
	Within Groups	387.34	367	1.06		
Total	Between Groups	1.31	5	0.26	0.86	0.505
	Within Groups	111.46	367	0.30		

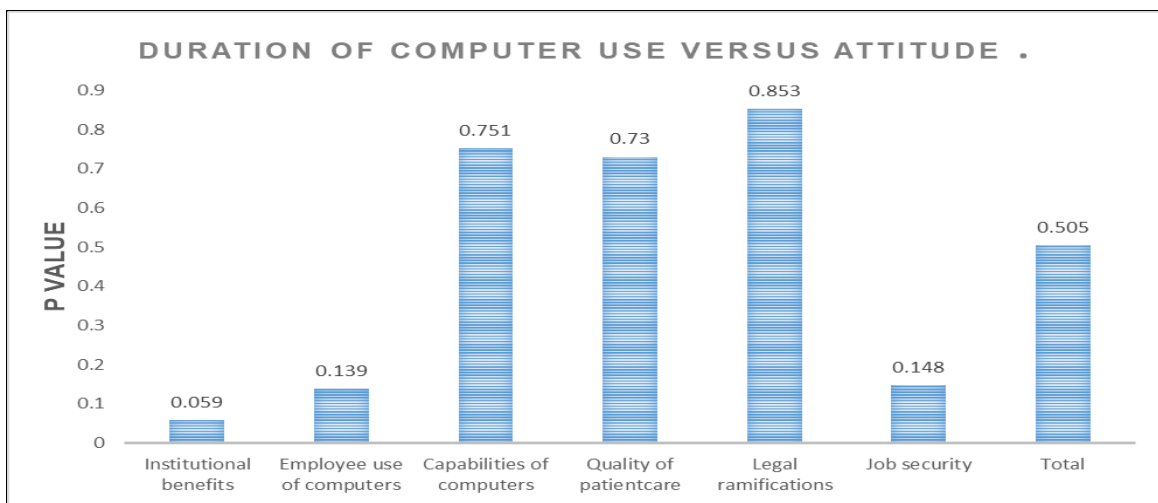


Figure (4.9): bar chart to P value for duration of computer use versus attitude

4.3.6 Nursing Experiences

Although nurses with less experience had positive attitude toward computerization than nurses with higher experience, the length of nursing experience did not show a statistically significant association with attitude of nurses toward computerization. The total attitude P value was (0.697). (see Table 4.9 and figure 4.10).The analysis of attitude subcategories by nurse's experience also showed no statistically significant association in mean attitude scores in all attitude subcategories between nurses by years of experience.

This finding provides more evidence that younger nurses with fewer years in practice have more positive attitudes toward computers than older nurses do with more years in practice. In the literature review of this dissertation, three studies showed significant differences in nurses' attitudes toward computerized HIS among different numbers of years in nursing practice. Those studies found that older nurses and nurses with more years of experience had more positive attitudes toward computers than less experienced and younger nurses did. furthermore, three studies showed that younger nurses with fewer years in nursing practice had more positive attitudes toward computerized HIS, (Kipturgo et al. 2014)(Rababah, Al-Hammouri, and Wafa'a 2021)(Kaya 2011). In this dissertation, nurses with fewer years in nursing practice were found to have more positive attitudes toward computers in the employee use of computers.

Other results were consistent with the results of this dissertation Mathew et al. (Kipturgo et al. 2014) and Yontz et al. (Yontz, Zinn, and Schumacher 2015)which found no significant relationship between work experience and attitudes toward computers.

Table (4.9): Nursing Experience versus Attitude

		Sum of Squares	df	Mean Square	F	Sig.
Institutional benefits	Between Groups	0.54	3	0.18	0.28	0.838
	Within Groups	234.10	369	0.63		
Employee use of computers	Between Groups	1.21	3	0.40	0.35	0.790
	Within Groups	425.75	369	1.15		
Capabilities of computers	Between Groups	0.88	3	0.29	0.67	0.569
	Within Groups	159.88	369	0.43		
Quality of patientcare	Between Groups	1.09	3	0.37	1.04	0.376
	Within Groups	129.69	369	0.35		
Legal ramifications	Between Groups	1.54	3	.512	0.98	0.404
	Within Groups	193.70	369	0.53		
Job security	Between Groups	7.15	3	2.38	2.26	0.081
	Within Groups	388.86	369	1.05		
Total	Between Groups	0.44	3	0.15	0.48	0.697
	Within Groups	112.34	369	0.30		

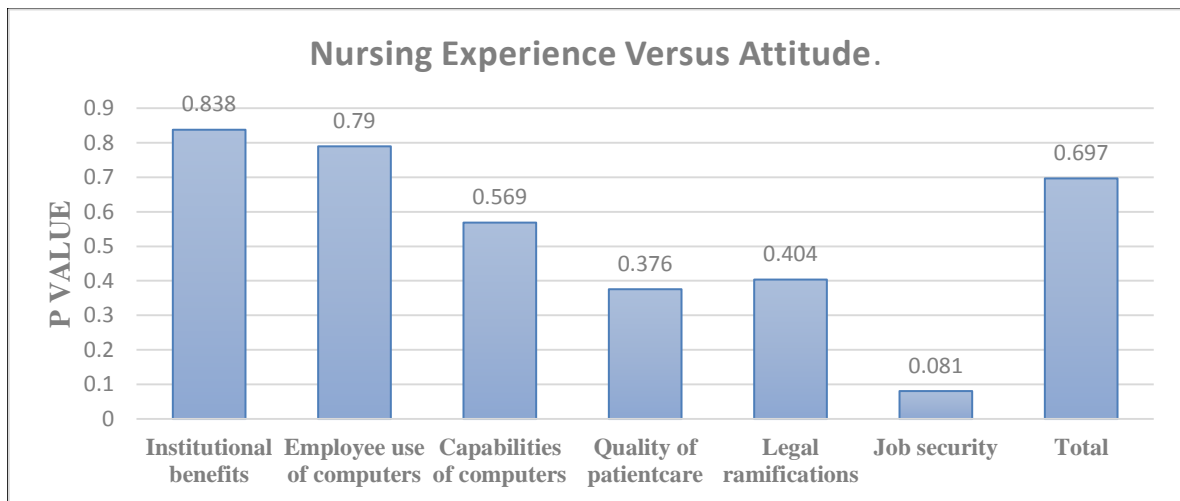


Figure (4.10): bar chart to P value for nursing experience versus attitude

4.3.7 Employee Status

Using t-test, analysis showed no significant association in mean attitude scores between nurses by employee status at the 0.05 level. The total attitude p-value was 0.708. The analysis of attitude subcategories by employee status also showed no significant association in mean attitude scores between employee statuses of nurses. Nurses with full-time had more positive attitudes toward computers than did nurses with part-time. However, results showed that there was no correlation between employee status and attitudes toward computers (see Table 4.10 or figure 4.11)

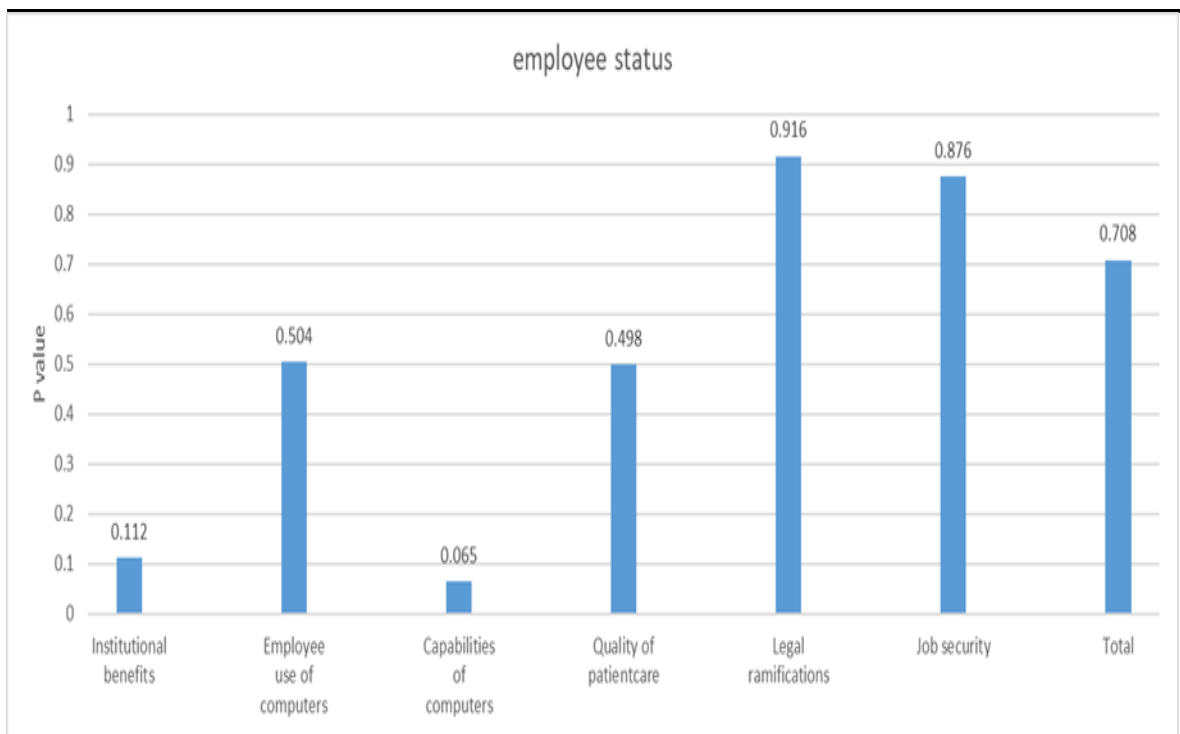


Figure (4.11): bar chart to P value for employee status versus attitude.

Table (4.10): Employee Status versus Attitude.

	employee status	Mean (SD)	t statistics(df)	P-value
Institutional benefits	full time(n=351)	2.75(0.80)	1.59(371)	0.112
	part time(n=22)	2.48(0.75)		
Employee use of computers	full time(n=351)	3.00(1.08)	0.67(371)	0.504
	part time(n=22)	2.84(0.88)		
Capabilities of computers	full time(n=351)	2.51(0.65)	-1.85(371)	0.065
	part time(n=22)	2.77(0.76)		
Quality of patientcare	full time(n=351)	2.50(0.59)	0.68(371)	0.498
	part time(n=22)	2.41(0.62)		
Legal ramifications	full time(n=351)	2.59(0.73)	0.10(371)	0.916
	part time(n=22)	2.58(0.72)		
Job security	full time(n=351)	2.56(1.02)	-0.16(371)	0.876
	part time(n=22)	2.59(1.22)		
Total	full time(n=351)	2.6181(0.55)	0.37(371)	0.708
	part time(n=22)	2.5727(0.56)		

4.3.8 Ability to Access Computer at Work, Home, or Both

As shown in Table 4.11 and Figure. Nurses with access to computer at work had positive attitude toward computerization than nurses with access to computer either at home and work, or at home only in all attitude subcategories, but this association was statistically significant only in two attitude subcategories including, employee use of computers (P value <0.001), and legal ramification (P value = 0.012).

Although access to computers was expected to significantly influence the attitudes of nurses, this study found that the effect of access was statistically significant only in one-attitude subcategories (Legal ramifications). It is therefore heartening to know that a good

percentage of nurses had access to computer. This indicates nurses' willingness to use technology to further their work or personal competencies.

Table (4.11): Ability to Access Computer versus Attitude

		Sum of Squares	df	Mean Square	F	P-value
Institutional benefits	Between Groups	2.83	3	0.94	1.50	0.214
	Within Groups	231.81	369	0.63		
Employee use of computers	Between Groups	21.62	3	7.21	6.56	<0.001
	Within Groups	405.34	369	1.10		
Capabilities of computers	Between Groups	0.91	3	0.30	0.70	0.551
	Within Groups	159.84	369	0.43		
Quality of patientcare	Between Groups	.95	3	0.36	0.90	0.444
	Within Groups	129.84	369	0.35		
Legal ramifications	Between Groups	5.67	3	1.89	3.68	0.012
	Within Groups	189.56	369	0.52		
Job security	Between Groups	2.14	3	0.72	0.67	0.572
	Within Groups	393.87	369	1.07		
Total	Between Groups	1.80	3	0.60	1.991	0.115
	Within Groups	110.98	37	0.30		

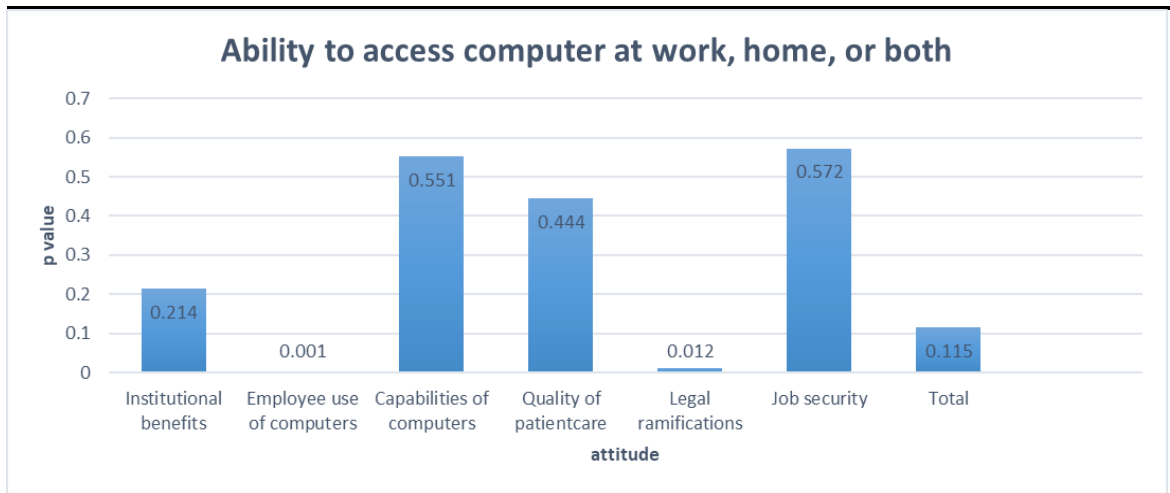


Figure (4.12): bar chart to P value for ability to access computer at work, home, or both Versus Attitude.

4.3.9 Type of Shift

Using ANOVA, analysis showed a significant difference in nurses' attitudes among type of shift categories. The total attitude p-value as shown in table 4.12 and figure 4.13 was 0.022. However, two of the attitude subcategories (Quality of patientcare and Legal ramifications) showed a significant difference in attitude among type of shift categories ($p=0.048$ and 0.002), respectively.

Table (4.12): Type of Shift versus Attitude

		Sum of Squares	df	Mean Square	F	P-value
Institutional benefits	Between Groups	3.48	3	1.16	1.85	0.137
	Within Groups	231.16	369	0.63		
Employee use of computers	Between Groups	4.11	3	1.37	1.20	0.311
	Within Groups	422.85	369	1.15		
Capabilities of	Between Groups	2.21	3	0.74	1.71	0.164

computers	Within Groups	158.55	369	0.43		
Quality of patientcare	Between Groups	2.78	3	0.93	2.67	0.048
	Within Groups	128.1	369	0.35		
Legal ramifications	Between Groups	7.44	3	2.48	4.88	0.002
	Within Groups	187.79	369	0.51		
Job security	Between Groups	3.23	3	1.08	1.01	0.388
	Within Groups	392.78	369	1.06		
Total	Between Groups	2.89	3	0.96	3.24	0.022
	Within Groups	109.88	369	0.30		

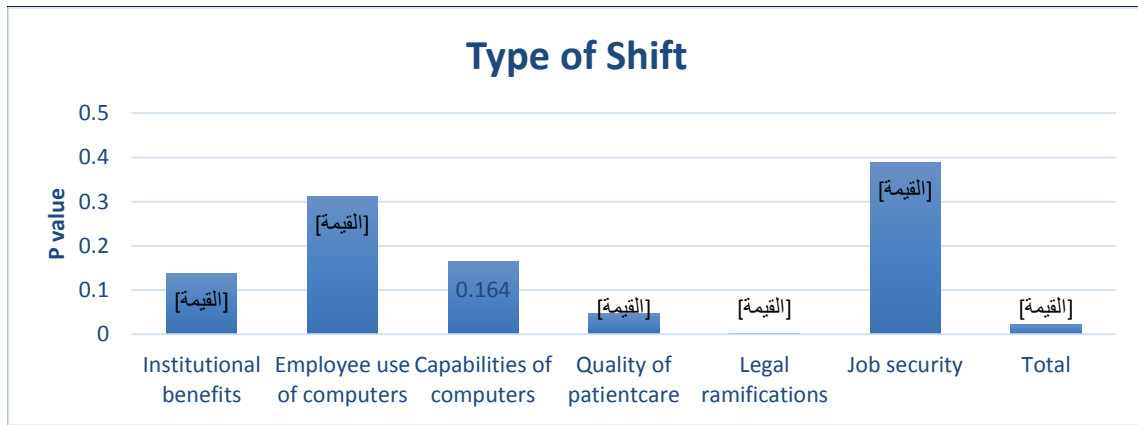


Figure (4.13): bar chart to P value for type of shift versus attitude

4.4 Summary

In this chapter, we clearly assert the findings for our study, explaining the demographic data in the first part and the attitude towards HIS in the next one.

Our findings will be explained, and discussed with our recommendations in chapter five.

Chapter Five
Conclusion & Implications

Chapter Five: Conclusion & Implications

5.1 Conclusion

This study was conducted to determine the attitudes of nurses toward the use of computerized HIS in Palestinian government and private hospitals and to identify variables that influence those attitudes. The Nurses' Attitudes Toward Computerization (NATC) questionnaire developed by Stronge & Brodt (Stronge and Brodt 1985) was used in this study. Computers have been introduced into many health care settings for use with storage and management of patient data, administrative functions and communication tasks. For the use of computerized, HIS to be effective for nurses working in Palestinian hospitals, computers viewed positively by the users. Unfortunately, as described in this dissertation, previous studies have found that nurses have negative attitudes toward computers. Attitudes of nurses toward computerized HIS must first be determined prior to implementation of computerized HIS in all government and private hospitals in Palestine.

For this reason, this research was conducted, and the findings showed that the nurses in this research had intermediate positive attitudes toward computerized HIS. Nurses' general attitudes were significantly related to type of hospital at the 0.05 level, the total attitude p-value was $<.001$. Using t-tests, analysis showed no significant difference in mean attitude scores between males and females at the 0.05 level, the total attitude p-value was 0.793. Using ANOVA, analysis showed no significant difference in nurses' attitudes among age categories; the total attitude p-value was 0.684. Also Using ANOVA, analysis showed no significant difference in mean attitude scores between nurses by educational level at the 0.05 level, the total attitude p-value was 0.159. The duration of exposure to computers

showed no significant association with attitude toward computerization (P-value = 0.505).

The length of nursing experience did not show a statistically significant association with attitude of nurses toward computerization, the total attitude P value was (0.697).

Using a t-test, the analysis showed no significant association in mean attitude scores between nurses by employee status at the 0.05 level, the total attitude p-value was 0.708.

The ability to access computer showed no significant association with attitude toward computerization (P-value = 0.115). Meanwhile across all attitude subcategories, nurses who use computers at work have more positive attitudes toward computerization than nurses who use computers at home and at work or only at home, but this association is statistically significant in only two attitude subcategories, including employee computer use. P-value (<0.001); and legal effect (P-value = 0.012). Using ANOVA, the analysis revealed significant differences in nurse attitudes between shift type categories; the overall setting has a p-value of 0.022. However, two subcategories within the Attitudes subcategory (Patient Care Quality and Legal Impact) showed significant differences in attitudes between the transition type categories ($p = 0.048$ and 0.002 , respectively).

Based on these findings, several conclusions were drawn with implications for nurses working in the Palestinian government and private hospitals. The exploratory nature of this research also resulted in areas for further research regarding computer usage by nurses working in Palestinian government and private hospitals.

5.2 Implications

5.2.1 Implications for the PMOH and Private Hospital

For the Ministry of Health to introduce computerized HIS into all hospitals, several recommendations can be made based on the results of this study.

First, recommend to the Palestinian Ministry of Health to provide adequate technological education and training for nurses using the technology, and technological support available for nurses as questions and problems arise. In case for nursing training the proportion of those who did not receive college training in computers was 15% and those who did not attend any formal computer training represented 25% of the total participants.

Second, the researcher recommends the Ministry of Health to set up a mechanism for technical support. Perform backup procedures before using the computer so nurses are aware of the policies and understand what to do if problems arise. Once nurses are comfortable with the technology and realize the benefits computerized, HIS has to offer; nurses will be ready to begin implementing computer systems into their daily routine.

Third. The Ministry of Health should hire more nurses with Bachelor's degree than with diplomas because nurses with Bachelor's degree showed significantly positive attitudes toward computerized HIS. Education preparation was also found to be a strong predictor of attitudes toward computerized HIS

Fourth, the Ministry of Health should cooperate with nursing schools in Palestine to educate and train nurses in computer usage and to enhance their computer usage.

Finally, the Ministry of Health useful to change the rules in new nurses' contracts by adding previous computer experience as a condition for hiring any nurse to work in

Palestinian hospitals. This is because previous computer experience has been found to be a significant factor in this study and other studies in influencing nurses' positive attitudes toward computers. Previous computer experience was also found to be a previous computer experience was also found a strong positive significance of attitudes toward computerized HIS of attitudes toward computerized HIS.

5.2.2 Implications for Nurses

The rising interest and investment in computerized HIS by the Ministry of Health will place nurses in the position of having to learn to use computer technology in their daily workflow. However, nursing may not have had as much exposure to computer technology in the past as have other professions. This study showed that more than 80% of the nurses working in Palestinian hospitals had previous computer experience. Therefore, it will be useful to identify those who had previous computer experience, as they can be targeted as 'key people' within units to assist in the orientation of their colleagues to computerize HIS. Nurses working in Palestinian hospitals need to educate themselves about how to use computers before the Ministry of Health implements computer technology in all Palestinian hospitals.

5.2.3 Implications for Research

The most important factor related to further research is that nurses' attitudes toward computerized HIS in Palestinian government and private hospitals had not been studied prior to this dissertation. The findings of this study can be generalized for all government

and private hospitals in Palestine. This study resulted in the identification of several factors related to positive attitudes toward computerized HIS in Palestinian government and private hospitals: age, gender, level of education preparation, previous computer experience, and computer skills were all related to more positive general attitudes toward computerized HIS. A policy for back-up procedures needs to be developed prior to implementation of the computer systems so that efficiency of day-to-day operations is not jeopardized when computers are not functioning or when problems occur.

For future research, the most important issue will be the examination of how nurses' attitudes in Palestinian health care facilities change over time with regard to computerized HIS usage. As computerized HIS are implemented, it is important that research be conducted to measure changes in attitudes for nurses who experience more exposure to computer technology.

5.3 Summary

This study provided a unique view of the experience and attitudes about computer technology use of nurses working in Palestinian government and private hospitals. The findings of this study provide clear guidelines for the Ministry of Health in Palestine regarding computerized HIS, identification of specific areas that are important for administrators in the Ministry of Health for decision-making, and a basis for further research regarding computer technology usage.

Nurses in this study had intermediate positive attitudes toward computerized HIS. Nurses with previous computer experience had more positive attitudes than those without computer

experience. Nurses with Bachelor's degree had more positive attitudes toward computerized HIS than those with diplomas. Nurses' age, gender, length of service, job title, and type of facility did not have any effect on nurses' general attitudes towards computers. The findings of this study showed that the majority of the nurses working in Palestinian hospitals use computers or had computer experience. Therefore, the Ministry of Health should provide further training and support for nurses to learn how to use computer technology as the Ministry of Health implements computerized HIS. This will enable all nurses to fully appreciate the benefits computerized HIS can have for them as health care professionals.

Bibliography

- Abdrbo, Amany A, Christine A Hudak, Mary K Anthony, and Sara L Douglas. 2009. "Moderating and Mediating Roles of Nurses' Beliefs: Information Systems Use among Ohio Nurses." *Western journal of nursing research* 31(1): 110–27.
- Abell, Cathy H et al. 2015. "Nurses' Knowledge and Attitudes toward Implementation of Electronic Medical Records." *International Journal of Faith Community Nursing* 1(3): 74.
- Ajzen, Icek. 2005. *EBOOK: Attitudes, Personality and Behaviour*. McGraw-hill education (UK).
- Alquraini, Habib, Abdul Majeed Alhashem, Makhdoom A Shah, and Rafiqul I Chowdhury. 2007. "Factors Influencing Nurses' Attitudes towards the Use of Computerized Health Information Systems in Kuwaiti Hospitals." *Journal of Advanced Nursing* 57(4): 375–81.
- ANA. 2019. "Nursing Scope of Practice | American Nurses Association." *American Nurses Association*. <https://www.nursingworld.org/practice-policy/scope-of-practice/> (October 11, 2022).
- Baljoon, Reem A, Hasnah E Banjar, and Maram A Banakhar. 2018. "Nurses' Work Motivation and the Factors Affecting It: A Scoping Review." *International Journal of Nursing & Clinical Practices* 5(1): 277.
- Baniode, Mohammad, and Motasem Hamdan. 2014. *Users' Perspectives on the Computerized Health Management Information System in the Ministry of Health Hospitals in the West Bank-Palestine*. Mohammad Baniode.

- Baron, Robert A, and Donn Byrne. 1977. *Social Psychology: Understanding Human Interaction*. Allyn and Bacon.
- Benaloh, Josh, Melissa Chase, Eric Horvitz, and Kristin Lauter. 2009. "Patient Controlled Encryption: Ensuring Privacy of Electronic Medical Records." In *Proceedings of the 2009 ACM Workshop on Cloud Computing Security*, , 103–14.
- Bodinson, Glenn W. 2005. "Change Healthcare Organizations from Good to Great." *Quality progress* 38(11): 22.
- Bongartz, C. 1988. "Computer-Oriented Patient Care. A Comparison of Nurses' Attitudes and Perceptions." *Computers in Nursing* 6(5): 204–10.
- Boonstra, Albert, and Manda Broekhuis. 2010. "Barriers to the Acceptance of Electronic Medical Records by Physicians from Systematic Review to Taxonomy and Interventions." *BMC health services research* 10(1): 231.
- Bozak, Marilyn G. 2003. "Using Lewin's Force Field Analysis in Implementing a Nursing Information System." *CIN: Computers, Informatics, Nursing* 21(2): 80–85.
- Brodts, A, and J H Strange. 1986. "Nurses' Attitudes towards Computerization in a Midwestern Community Hospital." *Computers in Nursing* 4(2): 82–86.
- Brodts, A, and J H Stronge. 1986. "Nurses' Attitudes Toward Computerization in a Midwestern Community Hospital." *Computers in Nursing* 4(2): 2–66.
- Burkes, Marijo. 1991. "Identifying and Relating Nurses' Attitudes toward Computer Use." *Computers in Nursing* 9(5): 190–201.
- Chang, Steven L et al. 2011. "Cost-Effectiveness Analysis of Nephron Sparing Options for the Management of Small Renal Masses." *The Journal of urology* 185(5): 1591–97.
- Chow, Susan K Y et al. 2012. "Nurses' Perceptions and Attitudes towards Computerisation

- in a Private Hospital.” *Journal of clinical nursing* 21(11- 12): 1685–96.
- Cohen, Shelley. 2004. “Technology’s Important, but Nursing’s Irreplaceable.” *Nursing management* 35(12): 12.
- Crawley, Rocquel Devonne. 2013. “Nurses’ Perceptions of the Electronic Health Record.”
- Darvish, Asieh, Fatemeh Bahramnezhad, Sara Keyhanian, and Mojdeh Navidhamidi. 2014. “The Role of Nursing Informatics on Promoting Quality of Health Care and the Need for Appropriate Education.” *Global journal of health science* 6(6): 11.
- Evans, R Scott. 2016. “Electronic Health Records: Then, Now, and in the Future.” *Yearbook of medical informatics* (Suppl 1): S48.
- Eysenbach, Gunther. 2000. “Consumer Health Informatics.” *Bmj* 320(7251): 1713–16.
- Farfán, Fernando, Vagelis Hristidis, Anand Ranganathan, and Redmond P Burke. 2008. “Ontology-Aware Search on Xml-Based Electronic Medical Records.” In *2008 IEEE 24th International Conference on Data Engineering*, IEEE, 1525–27.
- Garavand, Ali et al. 2016. “Factors Influencing the Adoption of Health Information Technologies: A Systematic Review.” *Electronic physician* 8(8): 2713.
- Green, Shayla, and Joan Thomas. 2008. “Interdisciplinary Collaboration and the Electronic Medical Record.” *Pediatric nursing* 34: 225-227,240.
- Gürdaş Topkaya, Sati, and Nurten Kaya. 2015. “Nurses’ Computer Literacy and Attitudes towards the Use of Computers in Health Care.” *International journal of nursing practice* 21: 141–49.
- Handayani, Putu Wuri et al. 2018. “Hospital Information System User Acceptance Factors: User Group Perspectives.” *Informatics for Health and Social Care* 43(1): 84–107.
- Haux, Reinhold. 2006. “Health Information Systems—Past, Present, Future.” *International*

- journal of medical informatics* 75(3–4): 268–81.
- “Health Information System (His) Assessment Report.” 2015. (September): 1–67.
https://pdf.usaid.gov/pdf_docs/PA00WCWP.pdf.
- health M of. 2021. 148 Palestinian Health Information Center *Health Annual Report Palestine* 2021. ramallah.
https://site.moh.ps/Content/Books/WQQ7kS7tOAtS1e31IEVGwNjVrneMDFRW7fvxSrORV3UHMBFXOTGJMI_2VqYZLbTYveRuvd6H5gb66H15dhE8mjpogAvlILyM1hgbLQ9K7QjwP.pdf (October 11, 2022).
- Henerson, Marlene E, Lynn Lyons Morris, and Carol T Fitz-Gibbon. 1987. *How to Measure Attitudes*. Sage.
- Huryk, Laurie A. 2010. “Factors Influencing Nurses’ Attitudes towards Healthcare Information Technology.” *Journal of Nursing Management*.
- Ifinedo, Princely. 2016. “The Moderating Effects of Demographic and Individual Characteristics on Nurses’ Acceptance of Information Systems: A Canadian Study.” *International journal of medical informatics* 87: 27–35.
- “Incivility, Bullying, and Workplace Violence | ANA.”
<https://www.nursingworld.org/practice-policy/nursing-excellence/official-position-statements/id/incivility-bullying-and-workplace-violence/> (October 11, 2022).
- Jabareen, Hussein, Yousef Khader, and Adel Taweel. 2020. “Health Information Systems in Jordan and Palestine: The Need for Health Informatics Training.” *Eastern Mediterranean Health Journal* 26(11).
- Jasmine, Tayray. 2009. “Art, Science, or Both? Keeping the Care in Nursing.” *Nursing Clinics* 44(4): 415–21.

- Kang, Neung Eun, and Wan Chul Yoon. 2008. "Age-and Experience-Related User Behavior Differences in the Use of Complicated Electronic Devices." *International journal of human-computer studies* 66(6): 425–37.
- Kaya, Nurten. 2011. "Factors Affecting Nurses' Attitudes toward Computers in Healthcare." *CIN: Computers, Informatics, Nursing* 29(2): 121–29.
- Kevin Fickenscher, M D, and M D Michael Bakerman. 2011. "Clinician Adoption of Technology." *Physician executive* 37(4): 82.
- Kimiyafer, K H. 2006. "A Study of Users Views about Hospital Information System Quality in Teaching Hospitals of Mashhad University of Medical Sciences."
- Kipturgo, Mathew K, Lucy W Kivuti-Bitok, Ann K Karani, and Margaret M Muiva. 2014. "Attitudes of Nursing Staff towards Computerisation: A Case of Two Hospitals in Nairobi, Kenya." *BMC medical informatics and decision making* 14(1): 1–8.
- Kuo, Kuang-Ming, Chung-Feng Liu, and Chen-Chung Ma. 2013. "An Investigation of the Effect of Nurses' Technology Readiness on the Acceptance of Mobile Electronic Medical Record Systems." *BMC medical informatics and decision making* 13(1): 1–14.
- Langowski, Caron. 2005. "The Times They Are a Changing: Effects of Online Nursing Documentation Systems." *Quality Management in Healthcare* 14(2): 121–25.
- Laramee, Ann S, Marcia Bosek, Hollie Shaner-McRae, and Terry Powers-Phaneuf. 2012. "A Comparison of Nurse Attitudes before Implementation and 6 and 18 Months after Implementation of an Electronic Health Record." *CIN: Computers, Informatics, Nursing* 30(10): 521–30.
- Lee, Ting-Ting. 2004. "Nurses' Adoption of Technology: Application of Rogers'

- Innovation-Diffusion Model.” *Applied Nursing Research* 17(4): 231–38.
- Lee, Ting-Ting, Mary Etta Mills, Barker Bausell, and Ming-Hui Lu. 2008. “Two-Stage Evaluation of the Impact of a Nursing Information System in Taiwan.” *International journal of medical informatics* 77(10): 698–707.
- Lu, Cho-Hsun, Ju-Ling Hsiao, and Rai-Fu Chen. 2012. “Factors Determining Nurse Acceptance of Hospital Information Systems.” *CIN: Computers, Informatics, Nursing* 30(5): 257–64.
- Makary, Martin A, and Michael Daniel. 2016. “Medical Error—the Third Leading Cause of Death in the US.” *BMJ* 353: i2139.
- Meelissen, Martina R M, and Marjolein Drent. 2008. “Gender Differences in Computer Attitudes: Does the School Matter?” *Computers in Human behavior* 24(3): 969–85.
- Van Der Meijden, M J, Huibert J Tange, Jaap Troost, and Arie Hasman. 2003. “Determinants of Success of Inpatient Clinical Information Systems: A Literature Review.” *Journal of the American Medical Informatics Association* 10(3): 235–43.
- Menachemi, Nir, and Taleah H Collum. 2011. “Benefits and Drawbacks of Electronic Health Record Systems.” *Risk management and healthcare policy* 4: 47–55.
- MoH. 2019. “National Health Strategy 2017-2022.” *Ministry of Health* 53(9): 1689–99. http://www.site.moh.ps/Content/Books/OhV2yDbK3NBuMaBgzXrM13Tgf5Ek46VMsINeNQ9CvdRJ68xSIueheN_CUmin4TqPtVNgd7v3aBpOzbD57AZWI5OPIGu6RsGzmn3mNE745Rr5.pdf.
- Murphy, Judy. 2010. “The Journey to Meaningful Use of Electronic Health Records.” *Nursing economic\$* 28: 283–86.
- Peplau, Hildegard E. 1988. “The Art and Science of Nursing: Similarities, Differences, and

- Relations.” *Nursing Science Quarterly* 1(1): 8–15.
- Pigors, Paul, and Carl Murchison. 1936. 1 *American Sociological Review A Handbook of Social Psychology*.
- Rababah, Jehad A, Mohammed M Al-Hammouri, and F Wafa’a. 2021. “A Study of the Relationship between Nurses’ Experience, Structural Empowerment, and Attitudes toward Computer Use.” *International journal of nursing sciences* 8(4): 439–43.
- Saba, V K. 2001. “Nursing Informatics: Yesterday, Today and Tomorrow.” *International Nursing Review* 48(3): 177–87.
- Salameh, Basma et al. 2019. “Nurses’ Attitudes Toward the Use of an Electronic Health Information System in a Developing Country.” *SAGE Open Nursing* 5: 2377960819843711. <https://doi.org/10.1177/2377960819843711>.
- Scarpa, Raymond, S C Smeltzer, and Berit Jasion. 1992. “Attitudes of Nurses toward Computerization: A Replication.” *Computers in Nursing* 10(2): 72–80.
- Schimank, Uwe, and Stefan Lange. 2009. “Germany: A Latecomer to New Public Management.” In *University Governance*, Springer, 51–75.
- Schwirian, P Malone et al. 1989. “Computers in Nursing Practice. A Comparison of the Attitudes of Nurses and Nursing Students.” *Computers in Nursing* 7(4): 168–77.
- Simpson, G, and M Kenrick. 1997. “Nurses’ Attitudes toward Computerization in Clinical Practice in a British General Hospital.” *Computers in Nursing* 15(1): 37–42.
- Smedley, Alison. 2005. “The Importance of Informatics Competencies in Nursing: An Australian Perspective.” *CIN: Computers, Informatics, Nursing* 23(2): 106–10.
- Stalk Jr, George, and Thomas M Hout. 1990. “Competing against Time.” *Research-Technology Management* 33(2): 19–24.

- STRICKLIN, MARY L O U V, S Beth Bierer, and Cynthia Struk. 2003. "Home Care Nurses' Attitudes toward Computers: A Confirmatory Factor Analysis of the Stronge and Brodt Instrument." *CIN: Computers, Informatics, Nursing* 21(2): 103–11.
- Stronge, James, and Ann Brodt. 1985. "Assessment of Nurses' Attitudes toward Computerization." *Computers in Nursing* 3(4): 154–58.
- Sultana, Nusrat. 1990. "Nurses' Attitudes towards Computerization in Clinical Practice." *Journal of Advanced Nursing* 15(6): 696–702.
- Szydowski, Steven, and Christina Smith. 2009. "Perspectives from Nurse Leaders and Chief Information Officers on Health Information Technology Implementation." *Hospital Topics* 87(1): 3–9.
- Takhti, Hesamaddin Kamalzadeh, Azizah Abdul Rahman, and Samireh Abedini. 2015. "Factors Determining Nurse Acceptance of Hospital Information Systems in the Medication Process." *Journal of Soft Computing and Decision Support Systems* 2(6): 14–19.
- Tarcan, Menderes et al. 2017. "An Analysis of the Relationship between Burnout, Socio-Demographic and Workplace Factors and Job Satisfaction among Emergency Department Health Professionals." *Applied nursing research* 34: 40–47.
- Teo, Timothy. 2008. "Assessing the Computer Attitudes of Students: An Asian Perspective." *Computers in Human Behavior* 24(4): 1634–42.
- Tripp, April, and Claudine Sherrill. 1991. "Attitude Theories of Relevance to Adapted Physical Education." *Adapted Physical Activity Quarterly* 8(1): 12–27.
- Tubaishat, Ahmad, and Omar M Al-Rawajfah. 2017. "The Use of Electronic Medical Records in Jordanian Hospitals: A Nationwide Survey." *CIN: Computers, Informatics,*

Nursing 35(10): 538–45.

Vakola, Maria, and Ioannis Nikolaou. 2005. “Attitudes towards Organizational Change:

What Is the Role of Employees’ Stress and Commitment?” *Employee relations*.

Wolf, Laurie D et al. 2006. “Describing Nurses’ Work: Combining Quantitative and Qualitative Analysis.” *Human factors* 48(1): 5–14.

Wood, Wendy. 2000. “Attitude Change: Persuasion and Social Influence.” *Annual review of psychology* 51(1): 539–70.

Yin, Chun-Po et al. 2012. “Examining User Satisfaction of School Nursing Information System in Taiwan.” *Health and Technology* 2(2): 137–45.

Yontz, Laura S, Jennifer L Zinn, and Edward J Schumacher. 2015. “Perioperative Nurses’ Attitudes toward the Electronic Health Record.” *Journal of periAnesthesia nursing* 30(1): 23–32.

Zivnуска, Suzanne L et al. 2020. “Information and Communication Technology Incivility Aggression in the Workplace: Implications for Work and Family.” *Information Processing & Management* 57(3): 102222.

APPENDICES

Appendix I: Questionnaire and Confidential privacy**Nurses' Attitudes towards Computerized Health Information System Use in Palestinian Private & Governmental Hospitals**

Dear Participant,

The aim of this study is to know the "**Nurses' Attitudes towards Computerized Health Information System Use in Palestinian Private & Governmental Hospitals**" as a requirement for obtaining a master's degree in **Health Informatics (HI)** from the Arab American University / College of Graduate Studies.

The questionnaire will take about 15 minutes to answer. Your responses will kept confidential. All data collected will be used for the scientific research purpose only. You are free to withdraw from the study at any time, but your participation will help improving health information system in hospitals.

Thank you

Researcher: Mohammad Hijazi

Mobil and WhatsApp: +972569222023

Telefax :00972 2 2321970

Email: hijazimh@hotmail.com

The questionnaire consist of three (3) sections.

The first section: demographic data

The second section: questions about computer usage

The Third section: questions about health information system attitudes

Section 1: Demographic Data

Hospital name:

1- Hospital sector: Governmental Private

2- Age: 18-29 30-39 40-49 50 years old and more

3- Gender Male Female

4- Highest degree obtained in Nursing:

Diploma Baccalaureate Masters other, specify

5- The year of graduation from the last degree

Less than one year 1- 5 6-10 11-15 16 and more

6- Job title: Ordinary nurse Head Nurse Supervisor Director

7- Number of years of work at the current medical facility:

Less than one year 1- 5 6-10 11-15 16 and more

8- Employment Status: Full time Part time

9- The usual shift that you work:

Morning shift Evening shift Night shift Different shift (Rotation) Double shift

Section 2 computer usage

- 10- Have you ever used computers? Yes No
- 11- Have you had experience working with computers? Yes No
- 12- Number of years worked with computers:
- Less than one year 1- 5 6-10 11-15 16 and more
- 13- Do you own or have access to a computer at home? Yes No
- 14- How often you use a computer:
- Daily Weekly Monthly Less than once a month
- 15- Have you had a training in collage on computers? Yes No
- 16- Have you ever attended any formal computer training? Yes No
- 17- To what extent do you think Health Information system (HIS) will influence nursing care?
- greatly improve Improve No effect Deteriorate greatly deteriorate
- 18- As a consequence of computerization do you think your job will be?
- more satisfying No change is satisfaction Less satisfaction Uncertain
- 19- To what extent will computerization influence your working relationship with doctors?
- Improve the relationship No effect Deteriorate the relationship Uncertain
- 20- To what extent will computerization influence you're working relationship with the para-medical (e.g. Physiotherapist, Occupational therapist, social worker)
- Improve No effect Deteriorate the relationship Uncertain
- 21- Are internet services available in work? Yes No
- 22- Is Wi-Fi service available in the work? Yes No

If you don't have a computer health information system in your facility skip to **section three**

23- The number of computers in nursing station are enough for staff: Yes No

24- The computer (HIS system) is down

Never Rare Some times Always

25- Do you face technical problems in when using HIS

Never Rare Some times Always

26- The nurse use computer health information system for: (you can choice more than 1 item)

- Internet access
- Scheduling patients
- Ordering tests
- Tracking physician order
- Medication administration
- Typing reports
- Entering vital signs
- Nursing note
- Follow up patient progress
- Use of patient demographic data
- Receiving and discharge patients

27- The quality of data collected by nurses through HIS is

Excellent acceptable Poor

Section 3

Read each statement carefully then select one of the five responses

SA=Strongly Agree. A=Agree. U=Uncertain. D=Disagree. SD=Strongly Disagree

No	Statement	SA	A	U	D	SD
1	Computers (HIS system) increases the costs by increasing the nurse's workload					
2	Computer health information system decreases communication between hospital departments					
3	Computer health information system will allow the nurse more time for the professional tasks for which he/she is trained for.					
4	Part of the increase in costs of health care is because of computers (HIS system)					
5	The time spent using a computer (HIS system) is out of proportion to the benefits					
6	Computers (HIS system) represents a violation of patient privacy					
7	Only one person at a time can use a computer terminal, therefore, staff efficiency is inhibited					
8	Computerization of nursing data offers nurses a remarkable opportunity to improve patient care					
9	Computers (HIS system) contains too much personal data to be used in an area as open as a nursing station					
10	Computers cause nurses to give less time to quality patient care					
11	If I had my way, nurses would not ever have to use computers					
12	Computers should only be used in the financial department					
13	Computer (HIS system) make nurses' jobs easier					
14	Paperwork for nurses has been greatly reduced by the use of computers (and HIS system)					
15	Orientation for new employees takes longer because of computers and, therefore, unnecessary work delays occur					
16	Nursing data does not lend itself to computer (HIS system)					
17	Computer (HIS system) saves steps and allow the nursing staff to become more efficient					
18	The more computers in an institution, the smaller number of jobs for employees					
19	Increased computer usage will allow nurses more time to give patient care					
20	Because of computers (HIS system), nurses will face more lawsuits					

Thank you for taking the time to complete this questionnaire

Researcher: Mohammad Hijazi

Appendix II: Panel of Expert

Name of Expert	Place of work
Dr. Mohammed Awad	Full Professor at Arab American University
Dr. Dalia Toqan	Assistant professor at Arab American University

Appendix II: Cooperation Agreement between the Arab American University and the Ministry of Health in the field of health informatics

23 Jun 2019 11:45 HP Fax page 1

State of Palestine
Ministry of Health
Minister's Office



دولة فلسطين
وزارة الصحة
مكتب الوزير



الوقاية
مركز المعلومات
al QUDS

16/19/23
19/4/16

الاستاذ الدكتور علي زيدان ابو زهري حفظه الله
رئيس الجامعة العربية الامريكية

تحية طيبة وبعد،،

الموضوع : التعاون بين الجامعة العربية الامريكية وقسم المعلومات الصحية في وزارة الصحة الفلسطينية
لاجراء دراسات في مجال المعلوماتية الصحية والخدمات الصحية المقدمة للمواطن

تهديكم وزارة الصحة أطيب التحيات ، وبالإشارة الى كتابكم بخصوص الموضوع المذكور اعلاه ،
يرجى العلم انه لامانع لدينا من الحصول على المعلومات الصحية اللازمة من طرفنا لاجراء
الدراسات الصحية، على ان تزودونا بنتائج هذه الدراسات .

وتفضلوا بقبول فائق الاحترام والتقدير ،،،



د. نائل النابلي
وزير الصحة
مكتب الوزير
وزارة الصحة
STATE OF PALESTINE
Dr. Nabil Nabli
Minister of Health

الاذن د. وليد زيب
للدطلاع واجراءاتكم
0.19/1/12

نسخة : عطفة الوكيل المساعد المحترم

Ministry of Health - Nablus- Tel.: 09/2384771/6 - Fax : 09/2384777
Ministry of Health -Rarnallah- Behind Palestine Medical Complex
Tel.: 02/2964183 - Fax : 02-2964182
Ministry of Health - Gaza- Tel. : 08/2846949 - Fax : 08/2826295

وزارة الصحة - نابلس - تلفون : 09/2384771/6 - فاكس : 09/2384777
وزارة الصحة - رام الله - خلف مجمع فلسطين الطبي
تلفون : 02/2964183 - فاكس : 02/2964182
وزارة الصحة - غزة - تلفون : 08/2846949 - فاكس : 08/2826295

Appendix IV: A letter of facilitating a student's mission from the AAUP to MoH

Arab American University

Faculty of Graduate Studies



الجامعة العربية الأمريكية

كلية الدراسات العليا

2021-4-17

حضرة د. عبد الله القواسمي المحترم

رئيس وحدة التعليم الصحي والبحث العلمي / وزارة الصحة الفلسطينية

تسهيل مهمة بحثية

تحية طيبة وبعد،

تهديكم كلية الدراسات العليا في الجامعة العربية الأمريكية أطيب التحيات، وبالإشارة إلى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالب محمد لطفي عبد القادر حجازي والذي يحمل الرقم الجامعي 201812528 وهو طالب ماجستير في الجامعة العربية الأمريكية تخصص المعلوماتية الصحية، ويعمل على رسالة بعنوان "سلوكيات التمريض اتجاه نظام الصحي المحوسب في المستشفيات الحكومية والخاصة الفلسطينية" تحت إشراف د. فريد غريب. نأمل من حضرتكم الإيعاز لمن يلزم لمساعدته في الحصول على المعلومات اللازمة للدراسة وتوزيع الاستبانة في مستشفى رفديبا الحكومي، ومستشفى الخليل الحكومي، ومستشفى أريحا الحكومي، ومجمع فلسطين الطبي. علماً أن المعلومات ستستخدم لغاية البحث فقط وسيتم التعامل معها بغاية السرية، وقد أعطيت هذه الرسالة بناءً على طلبه.

وتفضلوا بقبول فائق الاحترام

د. أشرف الميمي

عميد كلية الدراسات العليا



Page 1 of 1

Jenin Tel: +970-4-2418888 Ext.:1471,1472 Fax: +970-4-2510810 P.O. Box:240

Ramallah Tel: +970-2-2941999 Fax: +970-2-2941979 Abu Qash - Near Alrehan

E-mail: FGS@aaup.edu ; PGS@aaup.edu Website: www.aaup.edu

Appendix V: A letter of facilitating a student's mission from the AAUP to Al Ahli Hospital

Arab American University
Faculty of Graduate Studies



الجامعة العربية الأمريكية
كلية الدراسات العليا

2021-4-17

حضرة السادة في مستشفى الأهلي / الخليل المحترمين

تسهيل مهمة بحثية

تحية طيبة وبعد،

تهنئكم كلية الدراسات العليا في الجامعة العربية الأمريكية لطيب التحيات، وبالإشارة إلى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالب محمد لطفي عبد القادر حجازي والذي يحمل الرقم الجامعي 201812528 وهو طالب ماجستير في الجامعة العربية الأمريكية تخصص المعلوماتية الصحية، ويعمل على رسالة بعنوان "سلوكيات التمريض تجاه نظام الصحي الحوسبي في المستشفيات الحكومية والخاصة الفلسطينية" تحت إشراف د. فريد غريب. نأمل من حضراتكم الأيعاز لمن يلزم لمساعدته في الحصول على المعلومات اللازمة للدراسة. علماً أن المعلومات تستخدم لغاية البحث فقط وسيتم التعامل معها بغاية السرية، وقد أعطيت هذه الرسالة بناءً على طلبه.

وتفضلوا بقبول فائق الاحترام

د. أشرف الميمي

عميد كلية الدراسات العليا



Page 1 of 1

Appendix VI: A letter of facilitating a student's mission from the AAUP to Istishari Arab Hospital

Arab American University
Faculty of Graduate Studies



الجامعة العربية الأمريكية
كلية الدراسات العليا

2021-4-17

حضرة السادة في مستشفى الاستشاري المحترمين

تسهيل مهمة بحثية

تحية طيبة وبعد،

تهدىكم كلية الدراسات العليا في الجامعة العربية الأمريكية أطيب التحيات، وبالإشارة إلى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالب محمد لطفي عبد الغافر حجازي والذي يحمل الرقم الجامعي 201812528 وهو طالب ماجستير في الجامعة العربية الأمريكية تخصص المعلوماتية الصحية، ويعمل على رسالة بعنوان "متواليات التمرير تجاه نظام الصحي المحوسب في المستشفيات الحكومية والخاصة الفلسطينية" تحت إشراف د. فريد غريب. نأمل من حضراتكم الإيعاز لمن يلزم لمساعدته في الحصول على المعلومات اللازمة للدراسة. علماً أن المعلومات المستخدمة لغاية البحث فقط وسيتم التعامل معها بغاية السرية، وقد أعطيت هذه الرسالة بناءً على طلبه.

وتفضلوا بقبول فائق الاحترام

Ashraf Almeemy
د. أشرف الميمى

عميد كلية الدراسات العليا



Page 1 of 1

Appendix VII: A letter of facilitating a student's mission from the AAUP to An-Najah National University Hospital

Arab American University
Faculty of Graduate Studies



الجامعة العربية الأمريكية
كلية الدراسات العليا

2021-4-17

حضرة السادة في مستشفى النجاح/ نابلس المحترمين

تسهيل مهمة بحثية

تحية طيبة وبعد،

تهديكم كلية الدراسات العليا في الجامعة العربية الأمريكية أطيب التحيات، وبالإشارة إلى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالب محمد لطفي عبد القادر حجازي والذي يحمل الرقم الجامعي 201812528 وهو طالب ماجستير في الجامعة العربية الأمريكية تخصص المعلوماتية الصحية، ويعمل على رسالة بعنوان "سلوكيات التمريض اتجاه نظام الصحي المحوسب في المستشفيات الحكومية والخاصة الفلسطينية" تحت إشراف د. فريد غريب. نأمل من حضرتكم الإيعاز لمن يلزم لمساعدته في الحصول على المعلومات اللازمة للدراسة. علماً أن المعلومات ستستخدم لغاية البحث فقط وسيتم التعامل معها بغاية السرية، وقد أعطيت هذه الرسالة بنهاى على طلبه.

وتفضلوا بقبول فائق الاحترام

Ashraf Al-Meimi

د. أشرف الميمي

عميد كلية الدراسات العليا



Page 1 of 1

Appendix VIII: The approval from author to use the original questionnaire

3:26 2022/9/10

Mail - mohammad hijazi - Outlook

Re: Permission to use your "Nurses' Attitudes Toward Computerization Questionnaire"

Stronge, James H <jhstro@wm.edu>

Thu 1/28/2021 2:54 PM

To: farid ghrayeb <ghrayeb2000@yahoo.com>

Cc: Mohammad Hijazi <hijazimh@hotmail.com>

Dear Dr. Ghrayeb,

Please accept this email as permission for your student, Mohammad Hijazi, to use the instrument, *Nurses' Attitudes Toward Computerization*, in his study within your academic program and under your guidance.

Best wishes for success with the study.

James Stronge

From: farid ghrayeb <ghrayeb2000@yahoo.com>

Sent: Thursday, January 28, 2021 2:59 AM

To: Stronge, James H <jhstro@wm.edu>

Cc: Mohammad Hijazi <hijazimh@hotmail.com>

Subject: Permission to use your "Nurses' Attitudes Toward Computerization Questionnaire"

Hello Dr. Stronge.

Allow me to introduce myself. My name is Farid Ghrayeb, coordinator of higher studies at Al-Quds University. One of my master's students currently enrolled at Arab American University in Palestine, in the Graduate Health Informatics Program. I am writing you to ask your permission to use your "Nurses' Attitudes Toward Computerization Questionnaire" as his sampling tool for his thesis. His thesis topic is "**Nurses' Attitudes of Computerized Health Information System in Palestinian Private & Governmental Hospitals**" (I am writing on behalf of my student).

Thank you.

Sincerely

Farid Ghrayeb, Ph.D. Dr of Public Health/Health Promotion
 Coordinator of Higher Studies
 Nursing Department
 Faculty of Health Professions
 Al-Quds University
 P.O.Box. 51000
 H/P: +970597-590131

Appendix IX: AAUP research committee for research and ethical principles approval

Arab American University
Faculty of Graduate Studies



الجامعة العربية الأمريكية
كلية الدراسات العليا

Study title: "Nurses' Attitudes of Computerized Health Information System in Palestinian Private & Governmental Hospitals."

Submitted By:

Student's Name: Mohammad Hijazi

Supervisor: Dr. Farid Ghraib

Date Reviewed:

15 November 2021

Date approved:

06 January 2021

Study titled: "Nurses' Attitudes of Computerized Health Information System in Palestinian Private & Governmental Hospitals." was reviewed by AAUP research committee for research and ethical principles and was approved on 06 January 2021.

Dr. Shabenaz Najjar

Dean of Graduate studies



Page 1 of 1

الملخص

نظام المعلومات الصحية المحوسب HIS عبارة عن سجلات رقمية للفرد في مراكز الرعاية الصحية، تحتوي هذه السجلات على كل التاريخ الطبي المتعلق بالفرد. الهدف النهائي لهذا البحث هو معرفة سلوك التمريض تجاه استخدام النظام الصحي المحوسب في المستشفيات الحكومية والخاصة الفلسطينية فيما يتعلق بالفائدة المؤسسية واستخدام الموظفين لأجهزة الكمبيوتر وإمكانيات أجهزة الكمبيوتر وجودة رعاية المرضى والتداعيات القانونية والأمن الوظيفي. لا يوجد أبحاث سابقة حول سلوك التمريض اتجاه النظام الصحي المحوسب في المستشفيات الفلسطينية الخاصة والحكومية. لذلك نحتاج إلى معرفة العوامل المهمة التي تؤثر على سلوكيات التمريض المختلفة لتوجيه الجهات المعنية إلى أماكن التصحيح.

لتحقيق أهدافنا البحثية، تم استخدام منهج الدراسة المقطعية الوصفية الكمية لوصف مواقف المرشحات تجاه استخدام النظام الصحي المحوسب في المستشفيات الفلسطينية. استخدم استبيان اتجاهات المرشحات تجاه الحوسبة (NATC) لجمع البيانات من أربعة مستشفيات حكومية وثلاثة مستشفيات خاصة، وكان حجم العينة 390 ممرضاً يعملون في هذه المستشفيات بخبرة تزيد عن ستة أشهر. أظهرت نتائجنا أن 373 مستجيباً (95.6%) أعادوا استبيانات مكتملة وتم تضمينهم في التحليل الإحصائي، وكان للممرضين ذوي الخبرة السابقة في استخدام الكمبيوتر مواقف إيجابية أكثر من أولئك الذين ليس لديهم خبرة في الكمبيوتر. كان للتمريض الحاصلين على درجة البكالوريوس مواقف إيجابية تجاه HIS المحوسب أكثر من أولئك الحاصلين على درجة الدبلوم.

أظهر نوع المستشفى فرقاً معنوياً إحصائياً في متوسط درجات الموقف بين الممرضين حسب نوع المستشفى عند مستوى 0.05، قيمة $p < 0.001$. بالإضافة إلى ذلك، هناك فرق ذو دلالة إحصائية في مواقف المرشحات بين نوع فئات المناوبة عند مستوى 0.05، قيمة $P = 0.022$. قدرة المرشحات على الوصول إلى أجهزة الكمبيوتر في العمل أو المنزل أو كليهما، كانت هناك دلالة إحصائية فقط في فئتين فرعيتين من السلوكيات هما، استخدام الموظف لأجهزة الكمبيوتر (قيمة P

($P < 0.001$) ، والتداعيات القانونية (قيمة $P = 0.012$). لم يكن لعمر التمريض والجنس ومدة الخدمة والمسمى الوظيفي أي تأثير على السلوك العام للتمريض اتجاه النظام الصحي المحوسب. أظهرت نتائج هذه الدراسة أن غالبية الممرضين العاملين في المستشفيات الفلسطينية يستخدمون أجهزة الكمبيوتر أو لديهم خبرة في استخدام الكمبيوتر. لذلك، نوصي وزارة الصحة الفلسطينية والمستشفيات الخاصة توفير المزيد من التدريب والدعم للممرضات لتعلم كيفية استخدام تكنولوجيا الكمبيوتر حيث تقوم وزارة الصحة الفلسطينية والمستشفيات الخاصة بتطبيق نظام معلومات صحية محوسب في جميع المستشفيات الفلسطينية.