An-Najah National University

Faculty of Graduate Studies

PERCEPTIONS TOWARDS INTERNAL AUDIT EFFECTIVENESS AND ITS IMPACT ON HEALTHCARE QUALITY IN WEST BANK HOSPITALS / PALESTINE: ACROSS SECTIONAL STUDY

By

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Supervisor

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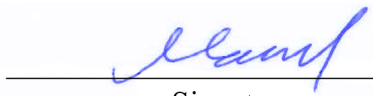
Dr. Mariam Altall	
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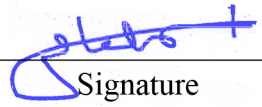
Dr. Asma Imam	
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Declaration

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

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

Student's Name: **Ola Shaheen**

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Date: **06/03/2024**

List of Contents

List of Tables

List of Figures

List of Appendices

PERCEPTIONS TOWARDS INTERNAL AUDIT EFFECTIVENESS AND ITS IMPACT ON HEALTHCARE QUALITY IN WEST BANK HOSPITALS / PALESTINE: ACROSS SECTIONAL STUDY

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Abstract

The right to accessing quality healthcare is among the globally recognized basic human rights for all citizens. Healthcare service providers need reasonable assurance that key risks to attaining healthcare outcomes are minimized. At this time, internal audit is the main tool available within healthcare organizations. Nevertheless, the evidence on its effectiveness, in the healthcare context, is still inconclusive.

In this context, this study aims to assess the perceptions towards internal audit effectiveness in the West Bank hospitals and examine the potential impact of this effectiveness on healthcare quality, using the well-known Donabedian's model of healthcare quality.

To achieve these objectives, the quantitative research approach was adopted. In order to collect the primary data, a fully structured questionnaire was personally directed, using convenience sampling technique, to a total number of 500 persons who work in the hospitals operating in the West Bank. A total of 399 completed and valid questionnaires was returned with a response rate of nearly 80%. The collected data were analyzed, with the aid of SPSS, using descriptive and inferential statistics including means, standard deviations, and multiple linear regression analysis.

The findings of the study revealed that internal audit effectiveness has a moderate level with a mean score of 3.12 on a five-point Likert scale with the dimensions of internal audit quality and internal audit independence being the most effective whereas the dimensions of relationship with external auditor and internal audit competence being the least effective. Moreover, the results showed that healthcare quality has a very good level with a mean score of 3.51 on a five-point scale with the dimension of healthcare

process having the best quality while the dimension of healthcare outcome having the worst quality among all of the three dimensions of Donabedian's model. Last but not the least, the multiple linear regression model, with an adjusted R^2 of 45 percent, confirmed that the two dimensions of internal audit quality and management support for internal audit have significant positive impact on healthcare quality, with the second dimension being the most influential. Conversely, the other three dimensions of internal audit effectiveness have no statistical impact on healthcare quality.

On the basis of the above findings, hospitals operating in the West Bank, Palestine are highly recommended, among other things, to periodically assess the effectiveness of their internal audit and healthcare quality, enhance internal audit effectiveness, design and implement patient-oriented strategies that focus on providing quality healthcare, employ the Donabedian's model to improve healthcare services as well as healthcare outcomes, and use this model as a tool for planning and allocating scarce resources.

Keywords: Healthcare Quality; Internal Audit Effectiveness.

Chapter One

Introduction and Theoretical Background

1.1 Overview

This chapter gives a brief introduction to the study. Topics covered include a general background, the problem statement, the significance of the study, the objectives to be achieved, and hypotheses development. In addition, the theoretical background is discussed and the previous literature is reviewed.

1.2 General Background

Providing the highest attainable healthcare should be the highest priority of all healthcare providers including, among others, hospitals. Nevertheless, prevailing literature confirms that healthcare interventions are associated with substantial risks to patients. Actually, patients have fifty percent chance of having the right care, one-tenth likelihood of getting harmed while admitted in a hospital, and two percent probability of major disability or death while having healthcare intervention (Braithwaite & Coiera, 2010).

Although hospital managers are responsible for delivering favorable healthcare outcomes in their hospitals, including quality healthcare, there is a conflict of interest between those managers and patients according to the well-known agency theory. Internal audit is one tool that is employed to mitigate this conflict (Amudo & Inanga, 2009). In fact, the key assurance tool available within healthcare providers is through reviewing policies and procedures by internal audit.

Internal audit is defined as “an independent, objective assurance, and consulting activity designed to add value and improve an organization’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes” (The Institute of Internal Auditors, 2017).

In Palestine, there are 89 hospitals among which 54 are located in the West Bank and 35 in Gaza Strip. These hospitals are run by the Ministry of Health (16 hospitals), the

UNRWA (one hospital), the NGOs (21 hospitals), and the private sector (16 hospitals) (Palestinian Ministry of Health, 2021).

Since the role of internal audit is dramatically shifting from financial aspects to quality assurance (The Institute of Internal Auditors, 2019), particularly in the healthcare sector, it is important to assess its effectiveness and investigate the potential impact of this effectiveness on healthcare outcomes.

To this end, this study aims to assess the perceptions towards internal audit effectiveness in the West Bank hospitals and examine the potential impact on healthcare quality. The results of this study will not only provide additional empirical evidence on the relationship between and healthcare quality but will also help related parties, including hospital managers, identify aspects of internal audit effectiveness that need to be enhanced which might, in turn, improve healthcare quality that is provided to patients.

1.3 Problem Statement

Hospital managers are responsible for ensuring that their healthcare organizations provide favorable healthcare outcomes including, among other outcomes, quality healthcare to patients. Many types of audits are usually used in healthcare context to have reasonable assurance that good healthcare outcomes are achieved. Internal auditing is one of these. However, the evidence on its effectiveness is still inconclusive.

In Palestine, although some hospitals perform internal audit, the effectiveness of this audit has not been assessed nor its impact on healthcare quality has been investigated. Thus, the objective of this study is to assess the perceptions towards internal audit effectiveness in the West Bank hospitals and investigate its potential impact on healthcare quality.

1.4 Significance of Study

The importance of the study stems from twofold. Practically, the results of the study will identify aspects of internal audit effectiveness that need to be enhanced and elements of healthcare quality that need to be improved in the Palestinian hospitals. By implementing the necessary changes by healthcare providers, more favorable healthcare

outcomes, particularly better healthcare quality, will be achieved. Theoretically, no empirical studies in the Palestinian context, to the best knowledge of the researcher, assessed internal audit effectiveness in the healthcare sector, nor investigated the impact of this effectiveness on healthcare quality. Thus, this study will contribute to the existing literature by providing extra empirical evidence regarding the potential impact of internal audit effectiveness on healthcare quality.

1.5 Objectives of Study

The main objective of the study is to assess the perceptions towards internal audit effectiveness in the West Bank hospitals and investigate its impact on healthcare quality. The specific objectives are as follows:

1. To assess the level of perceptions towards internal audit effectiveness in the West Bank hospitals.
2. To assess the level of perceptions towards healthcare quality in the West Bank hospitals.
3. To investigate the impact of internal audit competence on healthcare quality in the West Bank hospitals.
4. To investigate the impact of internal audit quality on healthcare quality in the West Bank hospitals.
5. To investigate the impact of relationship with external auditors on healthcare quality in the West Bank hospitals.
6. To investigate the impact of management support for internal audit on healthcare quality in the West Bank hospitals.
7. To investigate the impact of internal audit independence on healthcare quality in the West Bank hospitals.

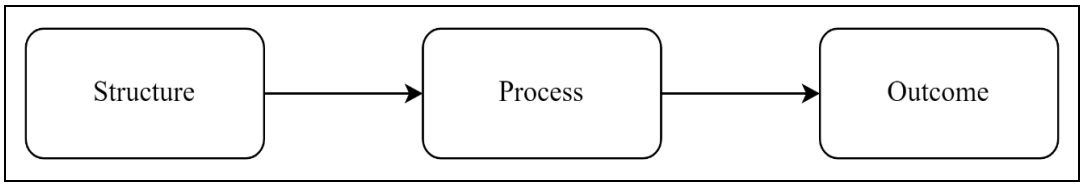
1.6 Theoretical Framework and Hypotheses Development

This study mainly employs the Donabedian's model of healthcare quality (Donabedian, 1988). Donabedian used the sequence of "input–process–output" to suggest structure, process, and outcome as the three components to assess healthcare quality. This model is depicted in Figure 1.1. According to the model, good "structure" increases the chance of good "process" which, in turn, increases the probability of good "outcome" (Donabedian, 1988). For example, having qualified healthcare professionals increases

the likelihood that a particular medical intervention will be performed in consistent with professional standards which, in turn, increases the probability of patient survival.

Figure 1.1

Donabedian's Model of Healthcare Quality Assessment



In the context of the Donabedian's model, structure (i.e. input) refers to the characteristics of the setting in which healthcare is delivered. It includes three types of resources that are required to provide healthcare services:

1. Physical resources (e.g. capital, buildings, equipment, medicines).
2. Intelligent resources (e.g. knowledge, experience, and information systems).
3. Human resources (i.e. healthcare professionals). Process denotes the procedures of delivering healthcare services.

It consists of two main processes:

1. Patient-associated processes (e.g. communication, intervention, and drug prescription).
2. Organizational processes (e.g. getting medicines, waiting time, and payment of staff). Finally, outcome is the impact of healthcare on patients and residents (e.g. mortality and disability) (Donabedian, 1988). More details and discussion on this model are provided in the following pages.

Based on previous empirical research, internal audit effectiveness is measured using five dimensions:

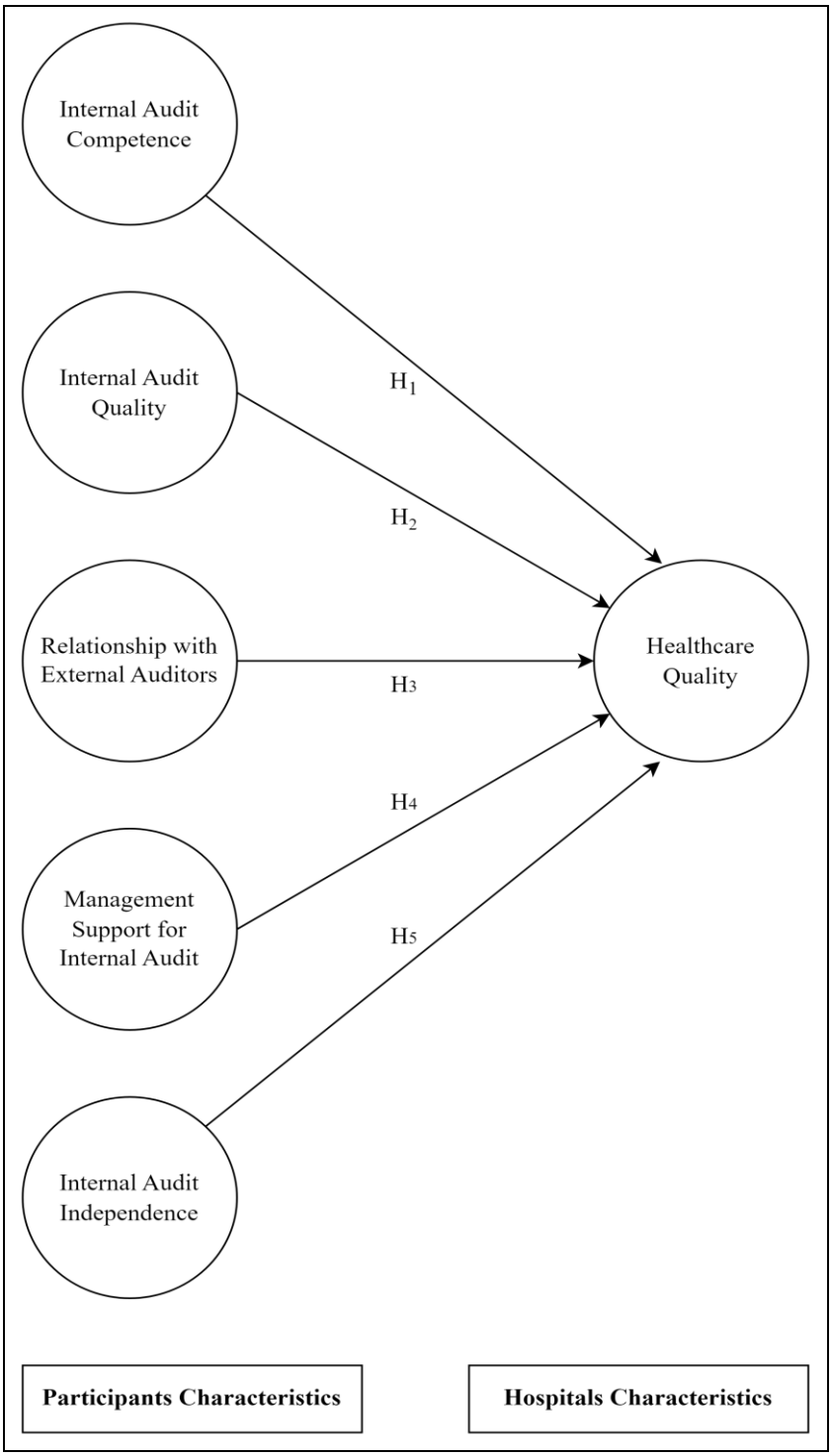
1. Internal audit competence.
2. Internal audit quality.
3. Relationship with external auditors.
4. Management support for internal audit, as well as.
5. Internal audit independence (Abdelrahim & Al-Malkawi, 2022).

Figure 1.2 depicts the conceptual model of the study where each of the five dimensions of internal audit effectiveness is hypothesized to have an impact on healthcare quality. More specifically, these five dimensions are the independent variables while healthcare quality is the dependent variable. In this context, it is worth saying that these variables are assessed based on the perceptions of employees working in the West Bank hospitals and thus these opinions do not necessarily reflect the opinions of other parties.

Accordingly, and as shown on the conceptual model, the following five hypotheses are developed to be tested:

Figure 1.2

Conceptual Model of Study



H_1: Internal audit competence has a significant positive impact on healthcare quality in the West Bank hospitals.

H_2: Internal audit quality has a significant positive impact on healthcare quality in the West Bank hospitals.

H_3: Relationship with external auditors has a significant positive impact on healthcare quality in the West Bank hospitals.

H_4: Management support for internal audit has a significant positive impact on healthcare quality in the West Bank hospitals.

H_5: Internal audit independence has a significant positive impact on healthcare quality in the West Bank hospitals.

1.7 Overview of Healthcare System in Palestine

In Palestine, healthcare services are rendered by the Ministry of Health, the UNRWA, the Military Health Services, the NGOs, and the private sector. They provide primary, secondary, and tertiary healthcare services (Alameddine et al., 2019).

Based on the statistics of the Ministry of Health, there are 767 primary healthcare centers in Palestine among which 608 (i.e. 79%) and 159 (i.e. 21%) are in the West Bank and the Gaza Strip, respectively. A total of 493 (i.e. 64%) of these centers are run by the Ministry of Health, 65 (i.e. 9%) by the UNRWA, 192 (i.e. 25%) by the NGOs, and 2% by the Military Health Services. The average number of population per center is 6,576 persons (Ministry of Health, 2023).

Furthermore, there are a total of 93 hospitals in the country among which 58 (i.e. 62%) and 35 (i.e. 38%) are located in the West Bank and the Gaza Strip, respectively. A total of 31 (i.e. 33%) of these hospitals are run by the Ministry of Health, one hospital (i.e. 1%) is run by the UNRWA, 39 (i.e. 42%) are run by the NGOs, 20 (i.e. 22%) are run by the private sector, and two hospitals (i.e. 2%) are run by the Military Health Services (Ministry of Health, 2023).

The 93 hospitals have a total of 6,900 beds among which 4,286 (i.e. 62%) and 2,614 (i.e. 38%) are in the West Bank and the Gaza Strip, respectively. Among these beds, 3,909 (i.e. 57%) are provided by the Ministry of Health, 58 (i.e. 1%) are provided by the UNRWA, 2,032 (i.e. 29%) are provided by the NGOs, 807 (i.e. 12%) are provided by

the private sector, and 94 (i.e. 1%) are provide by the Military Health Services (Ministry of Health, 2023).

The above-mentioned healthcare organizations employ a total of 56,373 medical human resources among them 31,413 (i.e. 56%) and 24,962 (i.e. 44%) are employed in the West Bank and the Gaza Strip, respectively. In this context, it is worth reminding that the Ministry of Health is the major employer of these resources with a total of 19,827 (i.e. 35%) employees (Ministry of Health, 2023).

These medical human resources include general physicians, specialized physicians, dentists, pharmacists, nurses, midwifes, paramedicals, and administration and services personnel (Ministry of Health, 2023).

According to the (World Health Organization, 2023), significant barriers to the right to health for Palestinians are continuing in the West Bank and the Gaza Strip. Palestinians' health is affected by structural factors of health injustices that include continuing occupation, political separation, division of territories, siege of the Gaza Strip, obstacles to movement, among others. These variables have impacted healthcare availability, healthcare access, and healthcare attacks.

It is worth saying that there is no official nor systematic assessment of the level of healthcare quality in the healthcare organizations in the Palestinian context. However, a few empirical studies have reached some conclusions regarding healthcare quality. One of these studies is that of (Abushammala, Al Shobaki, El Talla, & Hamdan, 2023) which was applied to Al-Shifa Medical Complex in the Gaza Strip and concluded that the level of healthcare quality is high with a relative weight of 69%. Another study is that of (Hamdan, Mansour, Al Shobaki, Abu-Naser, & El Talla, 2021) which stressed that the level of healthcare quality is of relative weight of 76%.

Finally, it is important to say that there are no legal requirements with respect to internal audit in healthcare organizations in the country. As a result, the structures, objectives, scopes, and responsibilities of the internal audit teams are not unified in these organizations but differ from one organization to another. In addition, there is no official nor systematic assessment of the level of internal audit effectiveness in these organizations.

1.8 Internal Audit

In this section, the concept of internal audit is defined, its importance is highlighted, and finally the measurement of its effectiveness is discussed.

1.8.1 Concept of Internal Audit

The concept of internal audit has been defined in various ways by different authors, academics, and practitioners. The most important of these definitions are briefly reviewed below.

Many academics and researchers defined internal audit as an objective and independent assurance and consulting procedure that aim to create value and enhance organizational operations (Gormly, 2014; Grandia, Steijn, & Kuipers, 2015).

Sawyer, Dittenhofer, and Scheiner (1996) provided an inclusive definition of internal audit saying that it is a planned and objective assessment by internal auditor of the different processes and controls of an organization to make sure that:

1. Financial reporting is correct and dependable.
2. Risks are analyzed and reduced.
3. Rules and policies and are adhered to.
4. Operating standards are met.
5. Resources are utilized wisely.
6. Organizational objectives are successfully attained.

The Institute of Internal Auditors (2017) provided the most widely well-known definition of internal audit as “an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes”.

In the healthcare context, internal audit is defined as an unbiassed assurance and advisory service to early detect patients’ risks that may result in adverse events, which should enhance patient safety (Hanskamp-Sebregts et al., 2013).

Earlier, in 2000, Millichamp defined internal audit as an independent evaluation task created within an organization to review and assess its various activities as a professional service provided to the organization.

Even earlier, the COSO Framework (1992) defined internal audit as the internal control system consisting of all organizational components that help in the accomplishment of organizational goals. It supports both the effectiveness and efficiency of operations by enabling them to properly respond to major risks. This results in protecting assets from misuse, loss, and fraud, as well as making sure that liabilities are identified and managed.

In this study, internal audit is operationally defined as an assessment by internal auditors in the hospitals operating in the West Bank, Palestine of the different processes and controls to add value and improve organizational operations.

1.8.2 Importance of Internal Audit

Many organizations including healthcare service providers –regardless of their size, type, structure, and so on– invest in internal audit (The Institute of Internal Auditors, 2017). This is simply due to the fact that internal audit, if carried out effectively, results in many benefits to these organizations. The most important of these benefits are briefly discussed below.

Sawyer (2019) confirms that organizations carry out internal audit to make sure that:

1. Financial reporting is correct and dependable.
2. Risks are analyzed and reduced.
3. Rules and policies are adhered to.
4. Operating standards are met.
5. Resources are utilized wisely.
6. Organizational objectives are successfully attained.

According to Alqudah, Amran, and Hassan (2019), internal audit is an important mechanism that helps organizations protect their assets and realize their objectives.

Many authors and practitioners emphasize that internal audit is a significant instrument that enables organizations achieve effective internal control (Endaya & Hanefah, 2016).

Internal audit is specifically critical to three main parties within an organization:

1. Audit committee.
2. Top management, as well as.
3. External auditor. More specifically, the audit committee makes use of internal audit to set policies of internal control, ensure quality financial reports, and guarantee adherence to laws and regulations (Behrend & Eulerich, 2019). Top management relies on internal audit to strengthen controls, minimize risks, and improve operations (Behrend & Eulerich, 2019). Last but not the least, the external auditor depends, to some extent, on the output of internal audit on their work (The Institute of Internal Auditors, 2017).

The International Federation of Accountants (2018) confirms that internal audit provides reasonable assurance with respect to the quality of procedures including, among other things, the strength of internal control and the effectiveness of risk management.

As mentioned in the definition of the The Institute of Internal Auditors (2017), an effective internal audit results in an organization's improved effectiveness in the three areas of risk management, internal control, as well as corporate governance.

Internal audit is also designated by the The Institute of Internal Auditors (2015) as the third line of defense in organizations, with the first one being daily operational controls and processes that direct healthcare and manage risks, and the second being organizational risk management and compliance functions.

In addition, internal audit, which is currently shifting from traditional role to focus more on internal control and compliance activities, can promote good governance practices within organizations by playing extensive counseling role in risk management (Alzeban & Gwilliam, 2014).

In the healthcare context, internal audit is used to early detect the potential risk of adverse events that can affect patients in a way that results inconstant improvement of patient safety (Hanskamp-Sebregts et al., 2013).

As Stern (1994) confirms, internal audit is a procedure that is normally conducted within organizations in order to achieve the two main objectives of safeguarding assets as well as enhancing efficiency of operations.

The Australian National Audit Office (2012) confirms that internal audit in the healthcare setting is extensively used to provide guarantee with respect to the strength of the several controls in place to manage potential risks and make sure that financial goals are attained. Theoretically, ideal practices of internal audit require focusing audit tasks on the most substantial risks of the organization to manage them effectively.

According to Cohen and Sayag (2010), the key objective of internal audit is to enhance organizational effectiveness and efficiency by providing productive criticism. In this context, effectiveness refers to "doing the right thing" whereas efficiency refers to "doing well".

In the healthcare settings, internal audit is conducted to appraise the quality of systems based on predetermined criteria. It is also used as an input for the work of external audit. In addition, healthcare organizations use the feedback provided by internal audit so as to regularly improve the quality of healthcare. Finally, internal audit is carried out to assess as well as enhance organizational effectiveness, improve organizational environment, boost performance of healthcare specialists, and improve patient outcomes (BOHIGAS & HEATON, 2000).

1.8.3 Measurement of Internal Audit Effectiveness

Before discussing the measurement of internal audit effectiveness, it is worth saying that internal audit is grounded on three pillars:

1. Effectiveness.
2. Efficiency, as well as.
3. Economy.

The first is the most significant among all since the other two are useless unless internal audit is effective (Lenz & Hahn, 2015). In this context, many researchers and practitioners view internal audit as effective if the predetermined internal audit objectives are attained e.g. (Ahmad, Othman, Othman, & Jusoff, 2009; Badara & Saidin, 2014)

Although many previous empirical studies indicated that internal audit is vital to attaining corporate goals (Islam, Turki, Murad, & Karim, 2017; Nsiah-Asare & Prempeh, 2016; Salehi, 2016) there is no consensus on the dimensions that measure its effectiveness. However, below is a brief review of the dimensions frequently used by researchers and practitioners to measure internal audit effectiveness.

In Abdelrahim and Al-Malkawi (2022) suggested a theoretical model to measure internal audit effectiveness that incorporates five main dimensions:

1. Organizational features.
2. Internal audit relations.
3. Internal audit procedures.
4. Internal audit resources, as well as.
5. Internal audit cooperation with other parties.

Many academics and practitioners agreed upon using five key dimensions to assess the level of internal audit effectiveness:

1. Internal audit independence.
2. Internal audit competence.
3. Top management support.
4. Relationship between internal and external auditor.
5. Internal audit quality (Grandia et al., 2015; Murungi & Senelwa, 2019)

Six main dimensions were suggested by Salehi (2018) to assess effectiveness of internal audit:

1. Competence of internal audit.
2. Relationship between internal and external auditors.
3. Other relationships.
4. Size and composition of internal audit team.
5. Management support for internal audit.
6. Independence of internal audit.

Azzali and Mazza (2018) identified four main dimensions that capture internal audit effectiveness in organizations:

1. Organizational setting.
2. Scope of work.
3. Internal-external auditors' relationship.
4. Size and structure of internal audit staff.

The five aspects of competence, management support, independence, proficiency, and organizational attributes were suggested as the main dimensions for measuring internal audit effectiveness (D'Onza, Selim, Melville, & Allegrini, 2015).

In this study, the five dimensions of internal audit competence, internal audit quality, relationship with external auditor, management support for internal audit, and internal audit independence are used to measure perceptions towards internal audit effectiveness in the West Bank hospitals. The measurement of these dimensions is discussed in the Research Methodology chapter of this study.

1.9 Healthcare Quality

In this section, the concept of healthcare quality is defined, its measurement is briefly discussed, and the key factors affecting it are reviewed.

1.9.1 Concept of Healthcare Quality

Since healthcare quality is a subjective, complicated, and multidimensional concept, it is still theoretically and operationally ambiguous. Thus, there is no global consensus on its definition nor on its measurement. Despite this, most of the available definitions share some main features including, among others, effectiveness, safety, excellence, and desired results. A brief overview of the most important definitions of healthcare quality is given below.

The Australian Commission for Safety and Quality in Health Care (2019) and the USA Institute of Medicine (2013) defined healthcare quality as the extent to which healthcare provided to individuals and people maximizes the probability of favorable healthcare outcomes and is also consistent with professional standards. In this context, favorable healthcare outcomes include, among other things, patient satisfaction and welfare. This

definition includes two main notions linked to healthcare quality. The first is the direct association between the delivery of healthcare services and healthcare results whereas the second is the need for these services to be grounded on existing evidence.

The World Health Organization (2021), provided a brief definition of quality healthcare saying that it is the practice which guarantees favorable healthcare results that agree with proficient knowledge and standards. It also viewed healthcare quality as healthcare services that are described as:

1. Effective.
2. Safe.
3. Patient-centered.
4. Timely.
5. Equitable.
6. Integrated.
7. Efficient (World Health Organization, 2018).

Healthcare quality can also be defined as the evaluation and delivery of effective and safe healthcare, in an environment of excellence, to produce ideal or desired healthcare results (Allen-Duck, Robinson, & Stewart, 2017).

Healthcare quality denotes continuously rendering effective and efficient healthcare services that are consistent with up-to-date medical procedures and standards so as to meet patients' needs and satisfy healthcare providers. He also provided another interesting and concise definition of healthcare quality saying that it refers to delivering the right healthcare services, in the right manner, in the right place, at the right time, by the right provider, to the right person, for the right price, to have the right outcomes (Mosadeghrad, 2014).

The European Commission (2010) perceived healthcare quality as healthcare services that are effective, safe, efficient, accessible, equitable, and promptly react to patients' needs and wants.

Another important definition of healthcare quality was provided by (Marshall & Øvretveit, 2011) who perceive healthcare quality as the delivery of healthcare services

that not only meets but also surpasses patient anticipations and results in the best possible medical results with the existing resources.

Earlier, in 2008, the Agency for Healthcare Research and Quality proposed a brief and clear definition of healthcare quality saying that it is doing the right thing, for the right patient, at the right time, in the right way to reach the best possible outcomes.

The Council of Europe (1997) said that healthcare quality denotes the level to which the given treatment maximizes the chance of attaining favorable outputs and minimizes the likelihood of having negative consequences, bearing in mind the available knowledge and technology.

Lohr (1990) viewed healthcare quality as the extent to which healthcare services provided to patients maximize the probability of favorable healthcare results and are in line with the present professional knowledge.

Even earlier Donabedian (1980) defined healthcare quality as the type of healthcare that is projected to maximize patient wellbeing, after analyzing the anticipated benefits and costs that are associated with the healthcare process. He also defined this concept differently saying that it is the implementation of medical sciences and technologies in a way that increases benefits to health without increasing the accompanying risks.

In this study, healthcare quality is operationally defined as the degree to which healthcare services delivered to patients of the hospitals operating in the West Bank, are perceived as resulting in desirable healthcare outcomes and agreeing with applicable professional standards. The measurement of this variable is discussed in the Research Methodology chapter.

1.9.2 Measurement of Healthcare Quality

It is often said that unless quality is measured, it cannot be improved. Consequently, it is a prerequisite to measure healthcare quality to improve it. However, the unique features of the healthcare system including, but not limited to, complexity, intangibility, heterogeneity, and simultaneity all make it difficult to measure healthcare quality (Mosadeghrad, 2014). Although there is no consensus on the measurement of healthcare quality, several models have been proposed and used by academics and practitioners.

The most widely used of these models are:

1. Donabedian's model.
2. SERVQUAL.
3. HEALTHQUAL.
4. PubHosQual.
5. HospitalQual. Each of these five models is briefly discussed in the next pages.

Donabedian's Model

The Donabedian's model, which was proposed by (Donabedian, 1980), is still the pioneer model for assessing and then improving healthcare quality. In fact, Donabedian was the first person who developed a model specifically tailored to assess quality in healthcare context. The model, as depicted in Figure 1.1, is a multi-dimensional one that categorizes healthcare quality into three main dimensions:

1. Structure.
2. Process, as well as.
3. Outcome (Donabedian, 1988).

The sequential relationship between these three linked dimensions is obvious. First, the structure of healthcare denotes physical and organizational items of healthcare settings. Examples include, but not limited to, facilities, equipment, and healthcare professionals. The process of healthcare is in the middle of the figure because it mainly depends on the structure that is available to healthcare professionals to perform healthcare procedures. Process is carried out to improve healthcare in terms of, for instance, recovery, survival, and patient satisfaction. The latter is known as the outcome of healthcare. In summary, structure is how healthcare is organized, process refers to what is done, while outcome denotes what is accomplished (Makary et al., 2006).

Finally, it is worth mentioning that the Donabedian's structure-process-outcome (SPO) model has three main advantages. First, the model is specifically developed to measure quality in the healthcare sector. Second, the model is simple, flexible, and suitable for application in different healthcare settings. Finally, the model incorporates technical as well as relational features of healthcare quality. In this respect, it is important to say that the technical aspect of healthcare is related to the way and dimensions of patient care

whereas the relational aspect of healthcare refers to communicating with the patient about his or her care (Moore, Lavoie, Bourgeois, & Lapointe, 2015).

SERVQUAL

The SERVQUAL is a well-known model that was proposed by Parasuraman, Zeithaml, & Berry (1988) to measure quality in different service contexts. The model, which consists of 22 items, has five main dimensions:

1. Tangibility.
2. Reliability.
3. Responsiveness.
4. Assurance.
5. Empathy (Parasuraman et al., 1988).

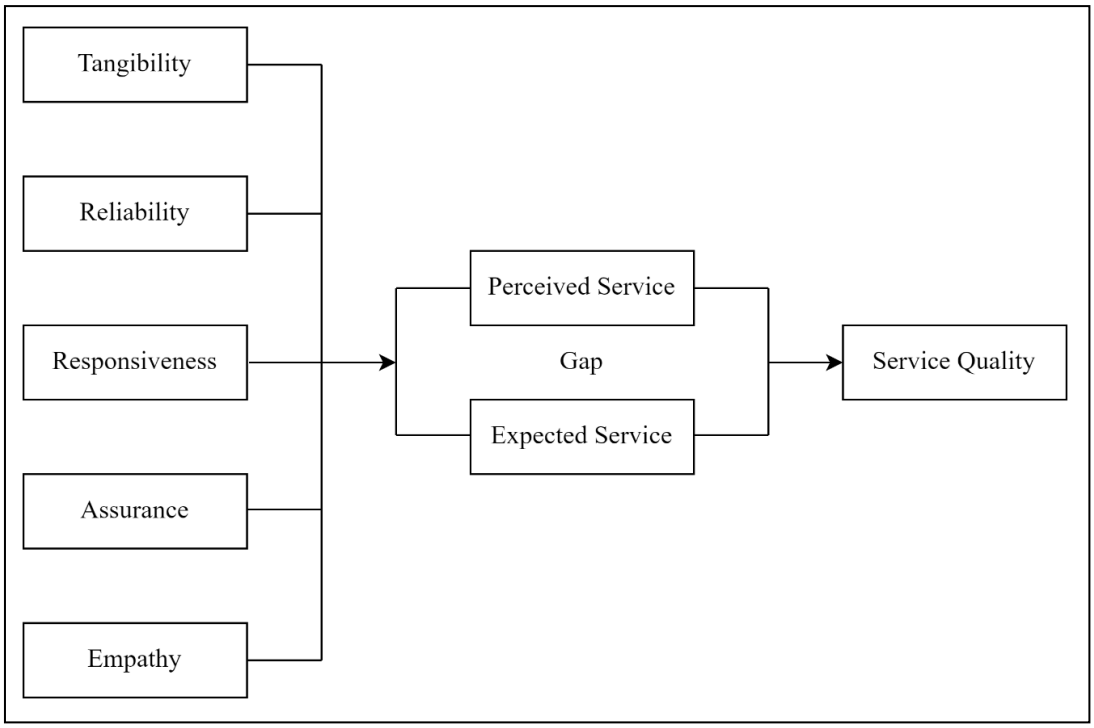
The SERVQUAL measures service quality by comparing expectations and perceptions of customers. Specifically, service quality is the arithmetic gap between customers' expectations and perceptions of quality across all of the 22 items of the scale (Kumar, Tat Kee, & Taap Manshor, 2009). That is the reason why the SERVQUAL is known as the "gap" model. This model is depicted in Figure 1.3.

In this context, tangibility denotes physical attributes including equipment, facilities, and appearance of staff. Reliability is the extent to which promised services are delivered dependably and accurately. Responsiveness means willingness to deliver help and provide rapid services. Assurance is related to competence and respect of staff and ability to instill confidence and trust. Finally, empathy refers to aspects such as the level of caring and attention (Parasuraman et al., 1988).

Although the SERVQUAL model is used to measure healthcare service quality, it has some disadvantages. First, the model is not specifically developed to measure healthcare quality and therefore some modifications need to be made. Second, the validity and reliability of the model, when used in the healthcare context, is questionable. Last but not the least, the SERVQUAL model uses customers' expectations as a reference point (Cronin and Taylor, 1992).

Figure 1.3

SERVQUAL Model



Due to the above criticisms of the SERVQUAL, many researchers and practitioners have proposed their own models, based on the SERVQUAL itself, that are specifically customized to measure service quality in healthcare settings. The three unique models in this context, are the HEALTHQUAL, the PubHosQual, and the HospitalQual. Each of these models is briefly discussed below,

HEALTHQUAL

Even though Parasuraman et al (1988) confirmed that their service quality model (i.e. the SERVQUAL) can be applied to most service sectors, many academics criticized applying this model in healthcare context and developed models that are specifically tailored to the healthcare setting e.g. (Camilleri & O'Callaghan, 1998; Juwaheer & Kassean, 2006)). In this regard, the previously discussed Donabedian's model was extremely useful and thus used as a starting point for developing dimensions of healthcare quality.

Based on both the Donabedian's model of and the SERVQUAL model, Camilleri & O'Callaghan (1998) developed an inclusive model, called the HEALTHQUAL model,

to measure healthcare quality in hospitals in Malta. The developed model includes six main dimensions:

1. Admission process.
2. Doctors' attitudes.
3. Nurses' attitudes.
4. Hospital environment.
5. Patients' facilities.
6. Discharge process.

The main advantage of the HEALTHQUAL model is simply that it combines relevant attributes of service quality that are recognized in previous literature and applies them to the healthcare context. Despite this advantage, there are two criticisms to this model. First, the model was developed using data from only one hospital in Malta and thus could not be generalized to other settings mainly because of social, economic, and environmental differences. In addition, and according to Miranda, Chamorro, Murillo, & Vega (2010), the model is specifically designed to measure the way healthcare services are provided to patients (i.e. functional quality).

PubHosQual

As the name indicates, the PubHosQual model was developed by (Aagja & Garg, 2010) to measure public hospitals' service quality in India according to patients' perceptions. The model comprises 24 items that are grouped into five main dimensions:

1. Admission.
2. Medical service.
3. Overall service.
4. Discharge.
5. Social responsibility.

In the context of this model, admission includes all measures and services starting from patient arrival at the hospital (e.g. registration, emergency, and first aid (Aagja & Garg, 2010). Medical service involves delivering medical treatment to patients' problems with no delay, informing patients of expected time of service delivery, providing help and individual care to patients, and understanding personal needs of patients (Aagja & Garg, 2010). Overall service is the combination of all factors that reflect the extent of

hospitals' attention paid to patients other than the medical service itself. These factors encompass willingness to assist patients quickly, cleanliness of facilities, and health education, just to list a few (Aagja & Garg, 2010). Discharge refers to all measures and activities linked to leaving the hospital (e.g. speed of discharge and follow-up instructions). Finally, social responsibility reflects hospitals' behavior towards all stakeholders of the local community (Dahlsrud, 2008).

Last but not the least, it is worth reminding that the major drawback of this model is that it does not include technical attributes of healthcare quality. Moreover, the model was applied to the Indian public hospitals and thus its generalizability to other countries is questionable due to structural hospital differences among countries (Kilbourne, Duffy, Duffy, & Giarchi, 2004). Finally, the model is only applicable to public hospitals.

HospitalQual

Based on the general SERVQUAL model, the HospitalQual Itumalla, Acharyulu, & Shekhar (2014) was developed. The scale is used to measure in-patient service quality in public hospitals in Hyderabad, India.

The scale consists of 25 items grouped into seven dimensions:

1. Medical services.
2. Nursing services.
3. Support services.
4. Administrative services.
5. Patient safety.
6. Communication.
7. Infrastructure (Itumalla et al., 2014).

Summary of Healthcare Quality Models

To summarize, the unique nature of the healthcare setting is not properly integrated in the generic SERVQUAL model and the other healthcare quality models that are developed accordingly (i.e. HEALTHQUAL, PubHosQual, and HospitalQual). Thus, these models have limited practical usefulness. As a result, there is an urgent need to use a model that is specifically developed to measure service quality in healthcare setting. In this regard, the Donabedian's model is the pioneer model.

Accordingly, the Donabedian's structure-process-outcome (SPO) model is used in this study to assess healthcare professionals' perceptions towards healthcare quality in the hospitals operating in the West Bank, Palestine. The measurement of this variable is fully discussed in the Research Methodology chapter of this study.

1.9.3 Factors Affecting Healthcare Quality

The healthcare literature identifies several factors that could affect healthcare quality. Knowing these factors helps suggesting appropriate strategies for quality improvement in the healthcare sector. The most important of these factors are briefly reviewed below.

Algunmeeyn, El-Dahiyat, and Al-Hussami (2021) identified the factors that impact providers' healthcare quality in Jordanian governmental hospitals from the perceptions of nurses, pharmacists, and physicians. These factors are grouped into four main groups:

1. Management support for healthcare professionals.
2. Sufficient and qualified healthcare professionals.
3. Having a trusting work environment.
4. Compensations and incentives.

According to Al-Jabri, Turunen, and Kvist (2021), the contributing factors to healthcare quality, from the patients' perceptions, are:

1. Proficient practice.
2. Interdisciplinary cooperation.
3. Pain and anxiety.
4. Result variables.
5. Communication and involvement in own care.
6. Understanding of physical needs.
7. Human resources.

Bellio and Buccoliero (2021) viewed physical environment, empowerment and dignity, and the relationship between doctor and patient as the three main variables influencing the healthcare professionals' perceived healthcare quality.

Chigozie (2021) determined the main determinants of primary healthcare quality in the southern district of Cross River State, Nigeria. The key determinants of this quality as perceived by healthcare providers are:

1. Adequacy of staff.
2. Availability of facilities and equipment.
3. Security and general crises.

On the other hand, the major factors as perceived by clients are:

1. Behavior of healthcare professionals.
2. Infrastructure.
3. Availability of facilities and medicines.
4. Price of treatment.
5. Sufficiency of healthcare professionals.
6. Time management by healthcare providers.

The factors that are confirmed to affect the delivery of quality healthcare in Kasarani Subcounty, Kenya are categorized into organizational, interpersonal, environmental, and economic factors (Mbangua, 2021).

Mosadeghrad (2014) suggested a model of variables that affect healthcare service quality in the Iranian context. These variables are grouped into three broad categories:

1. Patient-linked variables.
2. Provider-linked variables.
3. Environmental variables. The first includes patient socio-demographic attributes, patient cooperation, and kind of disease. The second includes provider socio-demographic attributes, provider proficiency, as well as provider encouragement and satisfaction. Finally, environmental variables include items such as healthcare system, resources and amenities, management, and cooperation and partnership.

Last but not the least, many empirical studies confirmed that having an effective internal audit and control systems in healthcare organizations positively contributes to improving healthcare quality e.g. (Asiimwe, Namanya, & Nuwagaba, 2021; Nurullah & Wahyudi, 2021; Ongâ & Abbey, 2019; Oppong, Fofack, & Boakye-Yiadom, 2023).

1.10 Previous Empirical Studies

Numerous previous empirical studies assessed internal audit effectiveness in different settings including the healthcare one. Some of these studies examined the impact of this effectiveness on healthcare outcomes including, among other things, healthcare quality. Some of these studies are briefly reviewed below.

International Studies

In Indonesia, Nurullah and Wahyudi (2021) analyzed the impact of internal control system and internal audit on hospital performance. To achieve this objective, a combination of qualitative and quantitative research methods was adopted whereby data were collected from primary and secondary sources. The results of the study indicated that internal control has a significant positive impact on hospital performance. In other words, the better the internal control, the better the hospital performance. In addition, the results proved that internal audit has a significant positive impact on hospital performance. This implies that enhancing the quality of internal audit significantly improves hospital performance.

Hanskamp-Sebregts, Robben, Wollersheim, and Zegers (2020) examined the extent to which sharing the outcomes of internal audit in Dutch hospitals with outside supervisors is possible and the essential prerequisites. To do so, the qualitative research design was used whereby 42 persons from six hospitals and the Dutch Health and Youth Care Inspectorate were interviewed. The interviewees declared no coordination in terms of timing and content between internal audits and external supervision. The results also confirmed that those interviewees support sharing internal audit outcomes with external supervisors to decrease the supervisory load. Finally, they said that internal audits give vision into quality problems and improvements, how hospitals manage quality and safety, and the culture of improvement within healthcare teams.

In the Netherlands, van Gelderen et al. (2017) investigated the impact of internal audit effectiveness on patient safety from the viewpoint of hospital boards. A mixed research design was employed whereby a questionnaire was used to collect data from 89 hospitals and interviews were carried out with stakeholders from six hospitals. Primary data were analyzed using descriptive statistics and content analysis. The main result of

the study confirmed that internal audit is effective for patient safety governance since it assists hospital boards in identifying problems related to patient safety.

In Romania, Turlea, Stefanescu, Calu, Mihaescu-Pintia, and Mocanu (2011) examined the impact of internal audit on public hospitals' performance. To achieve this objective, the quantitative hypotheses testing research approach was used. Primary data were collected, using a fully-structured questionnaire, from managers of public hospitals operating in the country. The main result of the study confirmed that internal audit has a significant positive impact on the performance of public hospitals. In addition, respondents reported that the weakneses determined by the internal audit are most likely to be eliminated in the future. Finally, participants emphasized that the minimization of unnecessary expenses is the main way through which internal audit adds value to public hospitals.

Regional Studies

In Saudi Arabia, Alshamrani (2023) identified the factors of internal audit effectiveness having an impact on patient safety. A cross-sectional study was carried out. Data were gathered, using a structured questionnaire, from general and medical managers of healthcare organizations in the city of Taif. Data analysis was conducted using means and Pearson correlation. The main result of the study indicated that the five dimensions of management support, coordination, independence, objectivity, and competence have mean scores of 4.04, 3.95, 4.03, 4.20, and 4.46 on a five-point scale, respectively.

Owusu and Owusu-Boateng (2023) evaluated the internal audit tools in governmental health organizations in Ghana. The descriptive research approach was used in the study. Two governmental hospitals were randomly selected to draw the sample of the study. A sample of 26 participants including accountants, managers, and internal auditors was selected using the purposive sampling technique. A questionnaire was utilized as the data collection tool. Primary data were analyzed using percentages, means, and standard deviations. The study concluded that despite the presence of internal auditors, managers very often ignore internal controls. The results also showed that internal audit units are understaffed and insufficiently resourced. Finally, the results confirmed that internal audit adds value to overall performance.

In Ghana, Oppong et al. (2023) investigated the impact of audits in public hospitals on delivering quality healthcare. The quantitative hypotheses testing research design was employed. Primary data were collected, using a structured survey, from 123 managers, accountants, and auditors. The structural equation modeling (SEM) technique was mainly used in data analysis. The results indicated that internal audit, external audit, and audit committee have a significant positive impact on the effectiveness of public hospital audits. In turn, this effectiveness has a significant positive impact on quality healthcare. Finally, it is found that audit committee has the highest impact on the effectiveness of public hospital audits.

In Uganda, Asiimwe et al. (2021) investigated the effect of internal control practices on healthcare service delivery in Rukungiri region. The quantitative research approach was utilized in the study. Primary data were gathered, using a survey, from a sample of 104 stakeholders out of the whole population of 140. Data were mainly analyzed using descriptive statistics as well as regression analysis. The key result of regression analysis indicated that there is a significant positive relationship between internal control practices and healthcare service delivery in Rukingiri Region. Specifically, healthcare service delivery depends on internal control environment, internal audit function, and internal control activities. This means that improving any of these dimensions will improve healthcare service delivery.

In Nigeria, Ethel et al. (2021) investigated the various dimensions that affect internal audit effectiveness in the public health sector. The exploratory and case study research designs were used in the study. Primary data were gathered from respondents using semi structured interviews. The results of the study indicated that the quality of internal audit (i.e. scope, independence, communication, staff, and experience) and management support (i.e. finance, response to audit reports, and training) are the two dimensions influencing internal audit effectiveness. On the other hand, audit characteristics and organizational attributes are found to be pertinent but not major determinants of internal audit effectiveness.

In Uganda, Ongâ and Abbey (2019) investigated the influence of internal control on the quality of healthcare service delivery in Greater Iganga Local Government. The study utilized the cross-sectional research approach. Primary data were collected, through a

fully-structured questionnaire, from a sample of 635 respondents selected from 127 out of 205 healthcare organizations. The main result of the study indicated that internal control has significant positive influence on the quality of healthcare service delivery in Greater Iganga Local Government.

In Kenya, Alala and Paul (2016) investigated the impact of internal audit on the financial performance of the public health sector using Matungu Hospital as a case study. Primary data were collected, through a structured questionnaire, from 40 respondents. Data were analyzed using descriptive and inferential statistics with the aid of SPSS. The main result of the study confirmed the existence of a significant positive association between internal audit and the financial performance of Matungu hospital. This means that enhancing internal audit leads to improved financial performance of the hospital.

In Nigeria, Suleiman (2015) examined the effect of internal audit in attaining the objectives of internal control in the federal hospitals in Kano State from respondents' perceptions. The quantitative hypotheses testing research approach was used. Primary data were collected, using a questionnaire, from 68 respondents. The results of the study found that internal auditing in Federal Hospitals in Kano State is effective. The results also confirmed that internal audit has positive contribution to the achievement of the objectives of internal control of those hospitals.

Palestinian Studies

Takruri, Radwan, El Jabari, Nawajah, and Hassan (2023) assessed patient experiences with healthcare services and identified main aspects connected with better experiences. The study used a mixed cross-sectional and qualitative research design. The Hospital Consumer Assessment of Healthcare Providers and Systems was employed to collect data. A convenience sample of 391 patients participated in the study. Qualitative interviews were carried out with patients and healthcare providers to enrich the quantitative results. The main finding of the study confirmed that Palestinian patients had a moderate level of hospital experiences. More specifically, most of the respondents stated that doctors and nurses were respectful, carefully listened, and clearly explained the conditions to them. The results also proved that 29% of respondents were given documented information about their symptoms. In addition, hospital experiences were

found to significantly vary due to patients' variables including gender, health condition, financial status, location, and hospital type. Finally, the qualitative interviews identified crowding, weak processes, as well as insufficient drugs and equipment as the three main variables negatively affecting the quality of healthcare services.

Alyacoubi, Böttcher, Albarqouni, and Elessi (2021) investigated the impact of clinical audit on patient care quality in the Gaza Strip. To achieve this objective, nn online questionnaire was employed to gather primary data from medical students and healthcare professionals who carried out audits between during 2015-2018. The main result of the study is that the increasing number of audits performed reflects an increasing awareness of their significant role in healthcare and patient safety.

In Baidoun, Salem, and Omran (2018) evaluated the level of total quality management application in hospitals operating in the Gaza Strip. Data were gathered using a questionnaire that was developed according to the Malcolm Baldrige National Quality Award framework. 363 questionnaires were analyzed using descriptive statistics. The key finding of the study revealed that hospitals in the Gaza Strip perform at a fairly acceptable level. In addition, the results confirmed that non-governmental hospitals perform better than governmental ones with higher level of total quality management application. The study proposed, among other things, using business quality models to assess the quality level and determine strengths and weaknesses to enhance performance of hospitals.

Summary of Previous Empirical Studies

Having reviewed the previous empirical studies that examined the relationship between internal audit effectiveness and healthcare outcomes, two important notes are worth mentioning. First, most of these studies investigated the potential impact of internal audit on healthcare outcomes other than healthcare quality, such as patient safety and hospital performance, and only a few of them considered healthcare quality. Second, no empirical studies, at least to the researchers' best knowledge, investigated the potential impact of internal audit effectiveness on healthcare quality in the Palestinian context. Accordingly, this study contributes to the existing body of knowledge by bridging the previously-mentioned gap in the literature through providing extra empirical evidence on this relationship.

Chapter Two

Research Methodology

2.1 Overview

This chapter is devoted to discussing the research methodology. It includes research design, population and sample, data collection tool, procedures and fieldwork, validity and reliability of data collection tool, ethical considerations and approvals, as well as statistical analysis techniques

2.2 Research Design

The quantitative cross-sectional design was selected to test the study hypotheses. This design is specifically selected since large numbers of quantitative data need to be collected at a single point of time. More specifically, the primary data on the main variables of the study (i.e. demographic characteristics, hospital characteristics, internal audit effectiveness, as well as healthcare quality) was collected, through a fully structured questionnaire.

2.3 Population and Sample of Study

2.3.1 Population of Study

The population of this study consisted of all employees who work in any of the 54 hospitals that provide their healthcare services in the West Bank, Palestine. Currently, there are 39,463 healthcare employees who work in the Palestinian hospitals. 56% of them are in the West Bank while the other 44% are in Gaza Strip (Health, 2023). Accordingly, and since this study is specifically applied to hospitals located in the West Bank, the whole population of the study is roughly 22,100 (i.e. 39,463*56%).

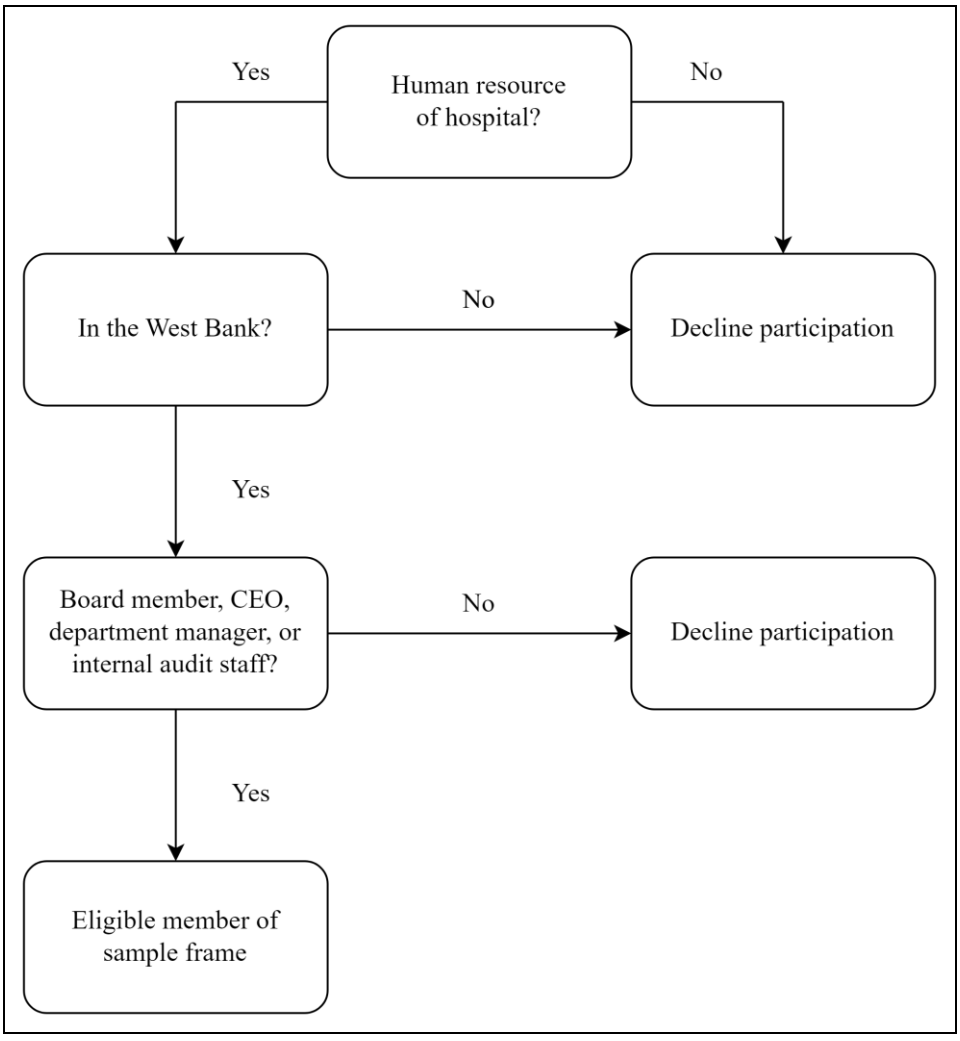
Hospital employees targeted to participate in this study are decided to belong to one of these four categories: (1) board member (or any equivalent position), (2) CEO/general manager, (3) department manager, or (4) internal audit staff. The reason why these four categories are specifically chosen is simply because they are more likely than others to be knowledgeable about and familiar with issues related to internal audit and healthcare quality in hospital settings.

2.3.2 Sample Size and Sampling Method

The convenience nonprobability sampling technique was used to draw a sample from the whole population. It was selected for two main reasons. First, there is no readily available sample frame from which to select the target members to participate in the study as required in random sampling. Second, this sampling technique is faster, more convenient, and less expensive compared to other sampling techniques. The flowchart of the sample collection process is depicted in Figure 2.1.

Figure 2.1

Flowchart of Sample Collection Process



The sample size was calculated using the following formula (Thompson, 2012):

$$n = \frac{N \times p(1-p)}{([N-1 \times (d^2 \div z^2)] + p(1-p))} \quad \text{.....(1)}$$

where:

n: Sample size

N: Population size (22,100)

Z: Confidence level at 95% (1.96)

d: Error proportion (5%)

P: Probability of picking a choice (50%)

Substituting in an online sample size calculator, based on the above formula, gives the calculated minimum sample size of 378. This means that 378 observations are needed to have a confidence level of 95% that the real value is within ±5% of the measured value.

2.4 Data Collection Tool

A self-administrative questionnaire was utilized as a data collection tool since large numbers of quantitative data need to be collected and thus this tool is more efficient than the other tools of data collection.

Questionnaires were decided to be self-administered for four reasons: (1) respondents can be motivated to participate, (2) doubts can be clarified to respondents, (3) a high response rate is ensured, and (4) privacy of respondents is assured.

In detail, a fully-structured questionnaire was employed as a data collection tool. The questionnaire starts with a cover page in which the main objective of the study was stated and the confidentiality of data was assured to respondents. The questionnaire (see Appendix A) consisted of the following four parts:

Part One

This part was developed by the researcher to collect data on respondents' demographic characteristics. It consisted of seven items, namely age, educational level, current position, type of work, total years of experience, and total years of experience in current position.

Part Two

This part was developed by the researcher to collect data on hospital characteristics. It consisted of ten items, namely type of hospital, classification of hospital, hospital region, city where hospital is located, total number of departments and/or units in hospital, total number of beds in hospital, total number of personnel in hospital, total number of doctors in hospital, total number of nurses in hospital, and total number of internal audit staff in hospital.

Part Three

This part aimed to collect data on perceptions towards internal audit effectiveness in the West Bank hospitals. It was adopted from (Ta & Doan, 2022). This part consisted of thirty-four items that belong to five dimensions: (1) internal audit competence (items 1–6 ranging from Not Competent to Very Competent), (2) internal audit quality (items 7–11 ranging from Very Bad to Excellent), (3) relationship with external auditors (items 12–20 ranging from Very Bad to Excellent), (4) management support for internal audit (items 21–26 ranging from Very Bad to Excellent), and (5) internal audit independence (items 27–34 ranging from Not Independent to Very Independent).

Part Four

This part was based on the Donabedian's model of healthcare quality (1988). It consisted of nineteen items, adopted from (Opele, 2017), that belong to three dimensions: (1) structure of healthcare (items 1–7), (2) process of healthcare (items 8–12), and (3) outcome of healthcare (items 13–19). All of these items range from Very Bad to Excellent.

A five-point Likert scale was used in parts three and four. All of the items in these two parts are positively phrased. Therefore, no items need to be reverse-scaled. Higher

scores (moving from 1 to 5) indicate higher perceptions of internal audit effectiveness and higher perceptions of healthcare quality.

Perceptions towards internal audit effectiveness and healthcare quality are evaluated based on their means. The scoring system is shown in Appendix B. The interval size is calculated as the maximum value minus the minimum value divided by the number of categories (5–1/5 = 0.80).

2.5 Procedures and Fieldwork

The researcher spent nearly seven weeks (from 5th April, 2023 till 23th May, 2023) to collect the primary data from a convenience sample of target population. In detail, the researcher met potential participants at their premises at the hospitals where they work. The purpose of the study was explained to each potential participant who was granted the opportunity to participate in the study or decline participation. In total, 500 self-administered questionnaires were personally distributed to employees who work in the hospitals that provide healthcare services in the West Bank, Palestine.

Among the 500 questionnaires, a total of 399 completed questionnaires were received with a response rate of nearly 80 percent (399/500 * 100%). Some participants did not complete filling the questionnaires due to several reasons including, among other reasons, limited time. All of the received responses were valid for descriptive and inferential statistical analyses.

2.6 Validity and Reliability of Data Collection Tool

2.6.1 Validity of Data Collection Tool

To establish the content validity of the data collection tool that was used in this study, two steps are followed. First, five expert judges evaluated the tool in terms of content, phrasing, form, and sequencing of questions. The necessary modifications were made based on the feedback of those judges. Second, a pilot study was carried out using the 40 completed and valid questionnaires. Based on the feedback, it was estimated that filling the questionnaire needs no more than 20 minutes. In addition, it was decided that there was no need to modify the questions of the data collection tool. Therefore, these 40 questionnaires were included in the main study sample. The list of the expert judges who evaluated the data collection tool is provided in Appendix C.

2.6.2 Reliability of Data Collection Tool

Table 2.1

Cronbach Alpha Coefficients for Study Variables

Variable	Number of Items	Cronbach Alpha Coefficient	
		Pilot Study	Main Study
Internal audit effectiveness	34	0.951	0.951
Internal audit competence	6	0.859	0.818
Internal audit quality	5	0.935	0.929
Relationship with external auditor	9	0.929	0.929
Management support for internal audit	6	0.853	0.857
Internal audit independence	8	0.897	0.903
Healthcare quality	19	0.930	0.941
Structure of healthcare	7	0.905	0.902
Process of healthcare	5	0.754	0.793
Outcome of healthcare	7	0.789	0.850

In this study, the Cronbach Alpha coefficient was used to test the reliability of the data collection tool. The Cronbach Alpha coefficients for both the pilot study and the main study are shown in Table 2.1. The results indicate that the Cronbach Alpha coefficients for the study tool items are all above the minimum acceptable level of 0.70 in the pilot study and the main study. Therefore, it is concluded that the data collection tool is reliable.

2.7 Ethical Considerations and Approvals

Several ethical considerations with respect to the study are worth mentioning. First, two formal approvals were obtained from relevant bodies to carry out this study. The first was from the Institutional Review Board (IRB) of the university (Appendix D) whereas the second was from the Ministry of Health (Appendix E). Also, potential respondents were given the opportunity to decline participation in the study. In addition, respondents were informed of the main objective of the study at the cover page of the questionnaire. Furthermore, the privacy of data was assured to all respondents. Besides, no deliberate misrepresentation of data or results was made by the researcher. Finally, the researcher declares no conflict of interest, what so ever, with any other party.

2.8 Statistical Analysis Techniques

In this study, two main types of statistical analysis techniques were employed: descriptive statistics and inferential statistics. More specifically, descriptive statistics were utilized to describe demographic characteristics of respondents and hospital characteristics. In addition, they were used to assess perceptions towards internal audit effectiveness and healthcare quality in the hospitals operating in the West Bank, Palestine.

On the other hand, the inferential statistics of multiple regression analysis was employed to investigate the impact of each of the five dimensions of internal audit effectiveness (i.e. independent variables) on healthcare quality (i.e. dependent variable) as perceived by employees who work in the hospitals operating in the West Bank, Palestine. The reason why multiple linear regression analysis was specifically used is that the main interest is to investigate the variation in one dependent variable (i.e. healthcare quality) that could be explained by variation in more than one independent variable (i.e. five dimensions of internal audit effectiveness).

The following regression equation is estimated in the next chapter:

$$HQ = \propto + \beta_1 * IAC + \beta_2 * IAQ + \beta_3 * REA + \beta_4 * MSIA + \beta_5 * IAI + u \quad \text{.....(2)}$$

where:

$\propto$: Intercept coefficient

β_i: Slope coefficient

HQ: Healthcare quality

IAC: Internal audit competence

IAQ: Internal audit quality

REA: Relationship with external auditor

MSIA: Management support for internal audit

IAI: Internal audit independence

u: An error term

Finally, it is worth saying that the Statistical Package for Social Sciences (SPSS) was used in this study to carry out the statistical analyses.

Chapter Three

Results

3.1 Overview

In this chapter, results are presented. More specifically, participants characteristics as well as hospital characteristics are both analyzed in a descriptive way. Moreover, the levels of internal audit effectiveness and healthcare quality in the hospitals operating in the West Bank, Palestine are assessed. Finally, the five study hypotheses are tested using the multiple linear regression analysis technique.

3.2 Participants Characteristics

Table 3.1

Distribution of Percentage of Participants according to Their Characteristics

Variable	Category	Frequency	Percentage
Gender	Male	248	62.1
	Female	151	37.9
Age	Less than 30	40	10.0
	30–40	198	49.6
	41–50	97	24.3
	51–60	43	10.8
	More than 60	21	5.3
Educational level	BA	303	75.9
	Master's	89	22.4
	PhD	7	1.7
Current position	Member of governing body	19	4.8
	General manager / CEO	49	12.2
	Department / unit manager	253	63.5
	Internal auditor	78	19.5
Type of work	Medical	55	13.8
	Non-medical	172	43.1
	Support	172	43.1
Total years of experience	Less than 10	206	51.7
	10–20	179	44.8
	More than 20	14	3.5
Years of experience in current position	Less than 5	170	42.6
	5–10	196	49.2
	More than 10	33	8.1
Total		399	100.0

The results indicated that 62% of participants were males, 50% were in the age of 30–40 years, almost 76% hold a BA degree, nearly 64% were department or unit managers,

only 14% perform medical work, 52% have less than 10 years of total experience, and finally 49% have between 5 to 10 years of experience in current position.

3.3 Hospital Characteristics

Table 3.2

Distribution of Participants according to Hospital Characteristics

Variable	Category	Frequency	Percentage
Type of hospital	Public (i.e. government)	69	17.2
	Private	179	44.8
	NGO	151	37.9
Classification of hospital	General hospital	200	50.0
	Specialized hospital	103	25.9
	Teaching hospital	96	24.1
Region of hospital	North	213	53.4
	Middle	151	37.9
	South	35	8.6
Number of departments and/or units	Less than 10	251	63.0
	10–20	118	29.6
	More than 20	30	7.4
Number of beds	Less than 50	30	7.6
	50–100	83	20.8
	101–150	218	54.6
	More than 150	68	17.0
Number of personnel	Less than 200	37	9.3
	200–400	81	20.3
	401–600	193	48.4
	More than 600	88	22.0
Number of doctors	Less than 50	96	24.1
	50–100	259	64.8
	More than 100	44	11.1
Number of nurses	Less than 100	38	9.4
	100–200	105	26.4
	201–300	188	47.2
	More than 300	68	17.0
Number of internal audit staff	Less than 10	337	84.5
	10–15	52	13.0
	More than 15	10	2.5
Total		399	100.0

The results indicated that 45% of the participants work in private hospitals and 50% work in general hospitals, 53% of them work in hospitals located in the north, 55% work in hospitals having 101–150 beds, 49% work in hospitals having 401–600 personnel, 65% work in hospitals having 50–100 doctors, 47% work in hospitals having 201–300 nurses, and finally 85% work in hospitals having less than 10 internal auditors.

3.4 Perceptions towards Internal Audit Effectiveness in West Bank Hospitals

Dimension 1: Internal Audit Competence

Table 3.3

Distribution of Mean and Standard Deviation of Participants' responses regarding Internal Audit Competence

Item	Mean ± Std	Level
1. The practical experience of internal auditors is very good	3.21 ± 1.005	Moderately competent
2. Internal auditors are viewed as professional staff	3.33 ± 1.033	Moderately competent
3. Internal auditors are viewed as proactive rather than reactive	2.93 ± 1.107	Moderately competent
4. There is proper communication between internal auditors and auditees	3.26 ± 1.102	Moderately competent
5. Internal auditors participate in training activities for continuous learning	2.96 ± 1.027	Moderately competent
6. Internal auditors have adequate academic education	3.49 ± 0.940	Competent
Total	3.20	Moderately competent

The results indicated that participants perceive that internal auditors were competent in their academic education with the highest mean score of 3.49 and they were moderately competent in the other required items. Overall, the dimension of internal audit competence has a moderate qualitative level with a mean score of 3.20.

Dimension 2: Internal Audit Quality

Table 3.4

Distribution of Mean and Standard Deviation of Participants' responses regarding Internal Audit Quality

Item	Mean ± Std	Level
1. Established internal audit objectives are usually accomplished	3.40 ± 1.091	Good
2. Internal audit work is performed in an efficient manner (i.e. in a way that does not interrupt work)	3.42 ± 1.124	Very good
3. Internal audit findings are reported in an objective manner (i.e. with no bias)	3.42 ± 1.109	Very good
4. Internal audit recommendations are generally feasible to implement	3.47 ± 1.063	Very good
5. Internal audit reports and documentation are accurate	3.46 ± 1.011	Very good
Total	3.43	Very good

When looking at each of the five items making up the dimension of internal audit quality, it is clear that Item 4 “Internal audit recommendations are generally feasible to implement” has the highest mean score of 3.47 whereas Item 1 “Established internal audit objectives are usually accomplished” has the lowest mean score of 3.40. Overall, the dimension of internal audit quality has a very good qualitative level with a mean score of 3.43.

Dimension 3: Relationship with External Auditor

Table 3.5

Distribution of Mean and Standard Deviation of Participants' responses regarding Relationship with External Auditor

Item	Mean ± Std	Level
1. External auditors are supportive	2.61 ± 0.988	Good
2. External auditors have good attitude toward internal auditors	2.91 ± 0.885	Good
3. External auditors give internal auditors an opportunity to explain their concerns	2.84 ± 0.989	Good
4. External and internal auditors consult on the work in which they have a mutual interest	2.67 ± 0.962	Good
5. External auditors discuss their plans with internal auditors	2.61 ± 0.854	Good
6. External auditors rely on internal audit work and reports	2.65 ± 1.085	Good
7. External and internal auditors meet on a regular basis	2.44 ± 1.045	Good
8. External and internal auditors share their working papers	2.53 ± 1.046	Good
9. Senior management promotes effective cooperation between internal and external audit	2.68 ± 1.080	Good
Total	2.66	Good

When looking at each of the nine items making up the dimension of relationship with external auditors, it is clear that Item 2 “External auditors have good attitude toward internal auditors” has the highest mean score of 2.91 whereas Item 7 “External and internal auditors meet on a regular basis” has the lowest mean score of 2.44. Overall, the dimension of relationship with external auditors has a good qualitative level with a mean score of 2.66.

Dimension 4: Management Support for Internal Audit

Table 3.6

Distribution of Mean and Standard Deviation of Participants' responses regarding Management Support for Internal Audit

Item	Mean ± Std	Level
1. Senior management supports internal audit to perform its duties and responsibilities	3.61 ± 0.970	Very good
2. Senior management is involved in the internal audit plan	3.14 ± 0.982	Good
3. Internal audit provides senior management with sufficient, reliable, and relevant reports about the work they perform	3.37 ± 1.021	Good
4. The response to internal audit reports by senior management is reasonable	3.46 ± 0.939	Very good
5. The internal audit unit is properly staffed to successfully carry out its duties and responsibilities	3.42 ± 0.858	Very good
6. The internal audit unit has sufficient budget to successfully carry out its duties and responsibilities	3.21 ± 0.833	Good
Total	3.37	Good

When looking at each of the six items making up the dimension of management support for internal audit, it is clear that Item 1 “Senior management supports internal audit to perform its duties and responsibilities” has the highest mean score of 3.61 whereas Item 2 “Senior management is involved in the internal audit plan” has the lowest mean score of 3.14. Overall, the dimension of management support for internal audit has a good qualitative level with a mean score of 3.37.

Dimension 5: Internal Audit Independence

Table 3.7

Distribution of Mean and Standard Deviation of Participants' responses regarding Internal Audit Independence

Item	Mean ± Std	Level
1. Internal audit staff are viewed as independent to perform their professional duties	3.30 ± 0.956	Moderately independent
2. The head of internal audit reports to the governing body (e.g. board of directors)	3.65 ± 1.036	Independent
3. The internal audit unit reports to senior management other than the finance director	3.68 ± 1.030	Independent
4. Conflict of interest is rarely present in the work of internal audit	3.40 ± 1.091	Moderately independent
5. Internal auditors perform their duties without intervention from top management	3.11 ± 1.120	Moderately independent
6. Internal audit staff have free access to all departments and employees in the hospital	3.42 ± 1.026	Independent
7. The governing body (e.g. board of directors) approves the appointment and replacement of the head of internal audit	3.44 ± 1.045	Independent
8. Internal audit staff are not requested to perform non-audit functions	3.21 ± 0.988	Moderately independent
Total	3.40	Moderately independent

When looking at each of the eight items making up the dimension of internal audit independence, it is clear that Item 3 “The internal audit unit reports to senior management other than the finance director” has the highest mean score of 3.68 whereas Item 5 “Internal auditors perform their duties without intervention from top management” has the lowest mean score of 3.11. Overall, the dimension of internal audit independence has a moderate qualitative level with a mean score of 3.40.

Summary of Internal Audit Effectiveness

The results indicated that internal audit has a moderate level of effectiveness with a mean score of 3.12. In detail, the two dimensions of internal audit quality and internal audit independence are the most effective among all five dimensions with mean scores of 3.43 and 3.40, respectively. In contrast, the two dimensions of relation with external auditor and internal audit competence are the least effective among all five dimensions with means scores of 2.66 and 3.20, respectively.

Table 3.8

Qualitative Level of Internal Audit Effectiveness

Dimension	Mean	Level
Internal audit competence	3.20	Moderately competent
Internal audit quality	3.43	Very good
Relationship with external auditor	2.66	Good
Management support for internal audit	3.37	Good
Internal audit independence	3.40	Moderately independent
Total	3.12	Moderately effective

3.5 Perceptions towards Healthcare Quality in West Bank Hospitals

Dimension 1: Healthcare Structure

Table 3.9

Distribution of Mean and Standard Deviation of Participants' responses regarding Healthcare Structure

	Item	Mean ± Std	Level
1.	The hospital provides basic infrastructure (e.g. building, equipment)	3.79 ± 1.089	Very good
2.	Medical supplies (e.g. drugs) are usually available in the hospital	3.77 ± 0.993	Very good
3.	The hospital provides basic amenities (e.g. toilets, cafeteria)	3.88 ± 1.079	Very good
4.	The hospital provides basic medical technologies	3.82 ± 1.079	Very good
5.	The hospital provides adequate funding	3.51 ± 1.012	Very good
6.	Healthcare services are affordable to patients in terms of cost	3.14 ± 0.946	Good
7.	The hospital provides good staff incentives	2.91 ± 1.234	Good
	Total	3.55	Very good

When looking at each of the seven items making up the dimension of healthcare structure, it is clear that Item 3 “The hospital provides basic amenities (e.g. toilets, cafeteria)” has the highest mean score of 3.88 whereas Item 7 “The hospital provides good staff incentives” has the lowest mean score of 2.91. Overall, the dimension of healthcare structure has a very good qualitative level with a mean score of 3.55.

Dimension 2: Healthcare Process

When looking at each of the five items making up the dimension of healthcare process, it is clear that Item 3 “Healthcare providers have good attitudes towards patients” has the highest mean score of 3.74 whereas Item 5 “The hospital has proper policies and procedures in place” has the lowest mean score of 3.40. Overall, the dimension of healthcare process has a very good qualitative level with a mean score of 3.58.

Dimension 3: Healthcare Outcome

When looking at each of the seven items making up the dimension of healthcare outcome, it is clear that Item 4 “The hospital has a very good level of patient safety” has the highest mean score of 3.75 whereas Item 1 “The hospital has low mortality rate” has the lowest mean score of 3.12 in Appendix F. Overall, the dimension of healthcare outcome has a very good qualitative level with a mean score of 3.41.

Summary of Healthcare Quality

The results indicated that healthcare quality has a very good qualitative level with a mean score of 3.51. In detail, the dimension of healthcare process has the best quality among all three dimensions with a mean score of 3.58. In contrast, the dimension of healthcare outcome has the worst quality among all three dimensions with a mean score of 3.41. The dimension of healthcare structure, with a mean score of 3.55, has a qualitative level that lies between the above two dimensions.

3.6 Hypotheses Testing

In this section, the five hypotheses that are developed in Chapter One are tested using the appropriate inferential statistical tests as shown in the following pages.
Recall that the five hypotheses are as follows:

H_1: Internal audit competence has a significant positive impact on healthcare quality in the West Bank hospitals.

H_2: Internal audit quality has a significant positive impact on healthcare quality in the West Bank hospitals.

H_3: Relationship with external auditors has a significant positive impact on healthcare quality in the West Bank hospitals.

H_4: Management support for internal audit has a significant positive impact on healthcare quality in the West Bank hospitals.

H_5: Internal audit independence has a significant positive impact on healthcare quality in the West Bank hospitals operating in the West Bank, Palestine.

To test each of the above hypotheses, the multiple linear regression analysis technique is employed. The reason why this technique is specifically selected is that the researcher is interested in explaining the variation in one dependent variable (i.e. healthcare quality) using more than one independent variable (i.e. five dimensions of internal audit effectiveness).

The multiple linear regression model is estimated by regressing each of the five dimensions of internal audit effectiveness (i.e. internal audit competence, internal audit quality, relationship with external auditor, management support for internal audit, and internal audit independence) on healthcare quality.

Testing Overall Significance of Regression Model

In order to test the overall significance of the estimated regression model, the analysis of variance (ANOVA) is used as shown in Table 3.13 in Appendix F. Under the Degrees of Freedom column in the ANOVA table, the first number represents the number of independent variables (5), the second number (393) is the total number of complete responses for all the variables in the equation (399), minus the number of independent variables (5) minus 1.

The mean square for each source of variation is derived by dividing the sum of squares by its associated degrees of freedom. Finally, the F-statistic itself equals the explained mean square divided by the residual mean square. The F-statistic of 66.117 is significant at the 0.05 level ($p < 0.05$). Thus, the overall regression model is significant.

Testing Individual Regression Coefficients

The results of regressing each of the five dimensions of internal audit effectiveness (independent variables) on healthcare quality (dependent variable) are shown in Table 3.14 in Appendix F.

The results indicated that only two dimensions of internal audit effectiveness have a significant impact on healthcare quality. More specifically, internal audit quality and management support have coefficients of 0.238 and 0.431, respectively. Each of these coefficients is significant at the 0.05 level ($p < 0.05$). The positive signs of these coefficients indicate that internal audit quality and management support have significant positive impact on healthcare quality in hospitals operating in the West Bank, Palestine. In other words, improving the quality of internal audit and enhancing management support for internal audit lead to better healthcare quality. Thus, the second and fourth hypotheses are supported.

Standardized Regression Coefficients

Standardized regression coefficients (also known as beta coefficients) are the coefficients resulting from a multiple regression analysis performed on variables that are standardized (i.e. transformed into variables with 0 mean and 1 standard deviation). These coefficients are used to compare the relative importance of each of the independent variables on the response (dependent) variable.

In order to know which among the significant dimensions of internal audit effectiveness influences most the variation in healthcare quality, it is important to look at the column Beta under Standardized Coefficients in Table 3.14 .

The results indicate that management support for internal audit is the most influential among the two significant dimensions of internal audit effectiveness whereas internal audit quality is the least influential among the two dimensions.

Coefficient of Determination (R2)

To assess how well the regression model fits data, the coefficient of determination (R^2) is typically used. It indicates the percentage of the variation in the dependent variable that is actually explained by all of the independent variables that are included in the

regression model. An extreme R^2 value of 1 indicates that the independent variables totally explain the variation in the dependent variable (i.e. the regression model perfectly fits the data). On the other hand, an extreme R^2 value of 0 indicates that the independent variables do not explain the variation in the dependent variable at all.

The coefficient of determination (R^2) of the developed multiple linear regression model is shown in Table 3.15 in Appendix F. The results indicate that the adjusted R^2 for the regression model is 0.450. This indicates that exactly 45 percent of the variation in healthcare quality in the hospitals operating in the West Bank, Palestine is explained by the variation in the five dimensions of internal audit effectiveness that are included in the regression model. On the other hand, the remaining 55 percent of the variation in healthcare quality could be explained by variables other than the five dimensions that are included in the developed regression model.

3.7 Summary of Hypotheses Testing

The results of hypotheses testing are summarized in Table 3.16 in Appendix F. The results confirm that only two dimensions of internal audit effectiveness (namely internal audit quality and management support for internal audit) have a significant positive impact on healthcare quality in the hospitals operating in the West Bank, Palestine. On the other hand, the other three dimensions (i.e. internal audit competence, relationship with external auditor, and internal audit independence) have no significant impact on healthcare quality.

Chapter Four

Discussion and Conclusions

4.1 Overview

In this chapter, main results are discussed, the conclusions of the study are summarized, key recommendations are provided, and some limitations to the study are mentioned.

4.2 Discussion of Results

Governing bodies of healthcare organizations need reasonable assurance that key risks to attaining optimal healthcare outcomes are being controlled. Now, the main assurance tool within these organizations is through internal audit. Thus, this study investigated the potential impact of internal audit effectiveness on healthcare quality in the West Bank hospitals.

The first finding of the study reveals that internal audit in the West Bank hospitals is moderately effective with an overall average of 62%. Analyzing the dimensions of internal audit effectiveness reveals that internal audit quality and internal audit independence scored the highest levels with an overall average of 69% and 68%, respectively. This result is consistent with the result of Ethel et al. (2021) who investigated the various dimensions that affect internal audit effectiveness in the public health sector and concluded that the quality and independence of internal audit are the two dimensions influencing internal audit effectiveness. In contrast, relation with external auditor and internal audit competence scored the lowest levels of effectiveness in the West Bank hospitals with an overall average of 53% and 64%, respectively. These averages are lower than that of Alshamrani (2023) who obtained averages for internal audit effectiveness ranging from a minimum of 79% and a maximum of 89%. The above result indicates that hospital management in the West Bank emphasizes the importance of internal audit quality and focuses on enhancing the independence of audit team. Nonetheless, hospital management needs to enhance internal audit competence, strengthen relationship with external auditors, and improves management support for internal audit.

In addition, the findings reveal that healthcare quality in the West Bank hospitals has a very good level with an overall average of 70%. Analyzing each of the three dimensions of the Donabedian's model of healthcare quality reveals that healthcare process scored the highest level with an overall average of 72%. On the other hand, healthcare outcome scored the lowest level with an overall average of 68%. This result is in line with previous empirical results such as that of Takruri et al (2023) who assessed patient experiences with healthcare services and concluded that Palestinian patients have a moderate level of hospital experiences. This result also agrees with that of Baidoun et al (2018) who concluded that hospitals in the Gaza Strip perform at a fairly acceptable level.

The regression analysis confirmed that the two dimensions of internal audit quality and management support for internal audit have a significant statistical impact on healthcare quality in the West Bank hospitals. This means that improving the quality of internal audit as well as providing additional management sunspot for internal audit leads to better healthcare quality. This result agrees with many previous empirical results including the results of (Asiimwe et al., 2021; Oppong et al., 2023) who concluded that internal audit effectiveness has a significant positive impact on quality healthcare. It is also in line with the results of other studies which confirmed the positive impact of internal audit effectiveness on health-related variables e.g.(Alala & Paul, 2016; Nurullah & Wahyudi, 2021; Ongâ & Abbey, 2019; van Gelderen et al., 2017). Moreover, it also coincides with the result of Van Gelderen et al. (2017) who confirmed that internal audit is effective for patient safety, which is one component of quality healthcare.

In contrast, the other three dimensions of internal audit effectiveness (namely internal audit competence, relationship with external auditor, and internal audit independence) are not significant. This means that these three dimensions have no significant impact, what so ever, on healthcare quality in the West Bank hospitals. In other words, improving internal audit competence, enhancing relationship with external auditor, and having more internal audit independence do not necessarily lead to better healthcare quality. This result is inconsistent with previous empirical results such as that of (Asiimwe et al., 2021; Oppong et al., 2023) who concluded that internal audit effectiveness has a significant positive impact on quality healthcare.

This result may not be surprising in light of the fact that despite the necessity of internal audit competence, it is not sufficient unless internal audit is independent. Unfortunately, the results of descriptive statistics indicated that internal auditors have a moderate level of independence. As a consequence, this level of independence is not high enough to enable the internal audit team to carry out their responsibilities and duties and thus internal audit has no significant impact on healthcare quality. Similarly, despite the importance of relationship with external auditor, it is not sufficient unless internal audit is independent. This might explain the reason why relationship with external auditor has no significant impact on healthcare quality.

Finally, the results of the study show that management support for internal audit is the dimension with the most influential impact on healthcare quality among all dimensions of internal audit effectiveness. This result proves that management support for internal audit should be the top priority to hospital management. This result totally agrees with the result of Ethel et al. (2021) who indicated that the quality of internal audit and management support (i.e. finance, response to audit reports, and training) are the two dimensions influencing internal audit effectiveness. In contrast, the result of Oppong et al (2023) found that audit committee has the highest impact on the effectiveness of public hospital audits.

4.3 Conclusions of Study

The first result of the study revealed that internal audit in the West Bank hospitals has a moderate level of effectiveness with a mean score of 3.12 out of a maximum of 5. This indicates that more efforts need to be made in this context. More specifically, the two dimensions of internal audit quality and internal audit independence are the most effective among the five dimensions whereas the other two dimensions of relation with external auditor and internal audit competence are the least effective.

In addition, the results of the study showed that healthcare quality in the West Bank hospitals has a very good level with a mean score of 3.51 out of a maximum of 5. More specifically, the dimension of healthcare process has the best quality among all three dimensions of Donabedian’s model with a mean score of 3.58 out of a maximum of 5

whereas the dimension of healthcare outcome has the worst quality with a mean score of 3.41 out of a maximum of 5.

Last but not the least, the estimated multiple linear regression model confirmed that the two dimensions of internal audit quality and management support for internal audit have a significant statistical impact on healthcare quality in the West Bank hospitals whereas the other three dimensions of internal audit effectiveness (i.e. internal audit competence, relationship with external auditor, and internal audit independence) have no significant impact.

4.4 Recommendations of Study

In light of the above conclusions, the following recommendations are provided to policy makers, hospital management, as well as to future researchers:

To Policy Makers

1. Healthcare policy makers in the West Bank, Palestine are highly recommended to draft legislations whereby hospitals are required to have effective internal audit units.
2. Healthcare policy makers in the West Bank, Palestine are urged to assess, on a timely basis, the effectiveness of internal audit work carried out by different hospitals.
3. Healthcare policy makers in the West Bank, Palestine are encouraged to periodically assess the healthcare quality provided by hospitals based on international healthcare quality models such as the Donabedian's model.

To Hospital Management

1. Hospitals operating in the West Bank, Palestine are highly recommended to periodically assess the effectiveness of their internal audit using the five dimensions used in this study along with any other relevant dimensions such as process and scope of audit.
2. Hospitals operating in the West Bank, Palestine should improve all of the dimensions of internal audit effectiveness especially the two dimensions that have a

significant statistical impact on healthcare quality (i.e. internal audit quality and management support for internal audit).

3. Hospitals operating in the West Bank, Palestine are highly recommended to design and implement patient-oriented strategies that focus on providing quality healthcare services.
4. Hospitals operating in the West Bank, Palestine are highly encouraged to employ the Donabedian's healthcare quality model, including all its three dimensions, as a tool to make their healthcare services better and distinct from other hospitals.
5. Hospitals operating in the West Bank, Palestine need to further improve aspects that are related to the dimension of healthcare outcome to provide better healthcare services. This could be achieved by paying more attention to mortality rate, medical errors, patient satisfaction, patient safety, and attrition rate, just to name a few.
6. Hospitals operating in the West Bank, Palestine are highly encouraged to assess the quality of the healthcare services they provide, using the Donabedian's model along with other healthcare quality models, including the SERVQUAL and SERVPERF, to further improve the quality of these services.
7. The assessment of the three dimensions of the Donabedian's model of healthcare quality should be used by the hospitals operating in the West Bank, Palestine as a guideline for planning and allocating their scarce resources among competing alternatives.

To Future Researchers

1. Future researchers are recommended to assess healthcare quality using models other than the Donabedian one including the SERVQUAL, HealthQual, and PubHosQual, among others.
2. Future researchers are advised to include a moderating variable, such as organizational culture, while examining the impact of internal audit effectiveness on healthcare quality.
3. Future researchers are encouraged to apply this study to healthcare providers other than hospitals (e.g. medical labs).

4.5 Limitations to Study

Four main limitations to this study are worth mentioning. First, this study is applied to hospitals operating in the West Bank, Palestine, so generalizing the results to the Gaza Strip or other countries needs special attention. Second, this study is specifically carried out in the hospitals setting, so generalizing the results to other healthcare settings should be made carefully. Third, the convenience sampling technique was used in this study, so generalizing the results requires attention. Finally, it is worth mentioning that there is lack of similar previous empirical studies.

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Appendices

Appendix A

Data Collection Tool

Dear Sir / Madam,

The researcher is carrying out a study titled **"Perceptions towards Internal Audit Effectiveness and Its Impact on Healthcare Quality in West Bank Hospitals"** as partial fulfilment of the requirements for the Master's degree in Public Healthcare Management from An-Najah National University.

This questionnaire is developed to collect the primary data. The data you provide will help the researcher assess the effectiveness of internal audit in Palestinian hospitals and examine the impact of this effectiveness on quality of healthcare.

Because you are the one who can give a correct picture in this regard, you are kindly invited to respond to the questions honestly. Completing the questionnaire takes no more than 20 minutes.

The responses you provide will be dealt with as strictly confidential. They will only be used for the purpose of scientific research.

Thank you for devoting your valuable time, your help is really appreciated.

Regards,

Researcher

Part One: Demographic Characteristics

For the following questions, please circle the right choice for you:

1. Gender:

1. Male
2. Female

2. Age:

1. Less than 30
2. 30–40
3. 41–50
4. 51–60
5. More than 60

3. Highest completed level of education:

1. BA
2. Master's
3. PhD

4. Current position:

1. Member of governing body
2. General manager / CEO
3. Department manager
4. Internal auditor

5. Type of work:

1. Medical
2. Non-medical
3. Support

6. Total years of experience:

1. Less than 10
2. 10–20
3. More than 20

7. Total years of experience in current position:

1. Less than 5
2. 5–10
3. More than 10

Part Two: Hospital Characteristics

Please circle the right choice for the hospital where you work:

1. Type of hospital

1. Public (i.e. government)
2. Private
3. NGO
4. UNRWA

2. Classification of hospital

1. General hospital
2. Specialized hospital
3. Teaching hospital

3. Hospital region

1. North
2. Middle
3. South

4. Total number of departments and/or units:

1. Less than 10
2. 10–20
3. More than 20

5. Total number of beds:

1. Less than 50
2. 50–100
3. 101–150
4. More than 150

6. Total number of personnel:

1. Less than 50
2. 50–100
3. 101–150
4. More than 150

7. Total number of doctors:

1. Less than 50
2. 50–100
3. More than 100

8. Total number of nurses:

1. Less than 100
2. 100–200
3. 201–300
4. More than 300

9. Total number of internal audit staff:

1. Less than 10
2. 10–15
3. More than 15

Part Three: Perceptions of Internal Audit Effectiveness				
On a scale from 1-5, please indicate the extent to which you agree or disagree with each of the following statements regarding internal audit effectiveness in the hospital where you work.				
Strongly Disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
Dimension 1: Internal Audit Competence (IAC)				
7. The practical experience of internal auditors is very good.				
8. Internal auditors are viewed as professional staff.				
9. Internal auditors are viewed as proactive rather than reactive.				
10. There is proper communication between internal auditors and auditees.				
11. Internal auditors participate in training activities for continuous learning.				
12. Internal auditors have adequate academic education.				
Dimension 2: Internal Audit Quality (IAQ)				
13. Established internal audit objectives are usually accomplished.				
14. Internal audit work is performed in an efficient manner (i.e. in a way that does not interrupt work).				
15. Internal audit findings are reported in an objective manner (i.e. with no bias).				
16. Internal audit recommendations are generally feasible to implement.				
17. Internal audit reports and documentation are accurate.				
Dimension 3: Relationship with External Auditor (REA)				
18. External auditors are supportive.				
19. External auditors have good attitude toward internal auditors.				
20. External auditors give internal auditors an opportunity to explain their concerns.				
21. External and internal auditors consult on the work in which they have a mutual interest.				
22. External auditors discuss their plans with internal auditors.				
23. External auditors rely on internal audit work and reports.				
24. External and internal auditors meet on a regular basis.				

Part Three: Perceptions of Internal Audit Effectiveness				
On a scale from 1-5, please indicate the extent to which you agree or disagree with each of the following statements regarding internal audit effectiveness in the hospital where you work.				
Strongly Disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
25. External and internal auditors share their working papers.				
26. Senior management promotes effective cooperation between internal and external audit.				
Dimension 4: Management Support for Internal Audit (MSIA)				
27. Senior management supports internal audit to perform its duties and responsibilities.				
28. Senior management is involved in the internal audit plan.				
29. Internal audit provides senior management with sufficient, reliable, and relevant reports about the work they perform.				
30. The response to internal audit reports by senior management is reasonable.				
31. The internal audit unit is properly staffed to successfully carry out its duties and responsibilities.				
32. The internal audit unit has sufficient budget to successfully carry out its duties and responsibilities.				
Dimension 5: Internal Audit Independence (IAI)				
33. Internal audit staff are viewed as independent to perform their professional duties.				
34. The head of internal audit reports to the governing body (e.g. board of directors).				
35. The internal audit unit reports to senior management other than the finance director.				
36. Conflict of interest is rarely present in the work of internal audit.				
37. Internal auditors perform their duties without intervention from top management.				
38. Internal audit staff have free access to all departments and employees in the hospital.				
39. The governing body (e.g. board of directors) approves the appointment and replacement of the head of internal audit.				
40. Internal audit staff are not requested to perform non-audit functions.				

Part Four: Perceptions of Healthcare Quality				
On a scale from 1-5, please indicate the extent to which you agree or disagree with each of the following statements regarding healthcare quality in the hospital where you work.				
Strongly Disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
Dimension 1: Healthcare Structure (HS)				
1. The hospital provides basic infrastructure (e.g. building, equipment).				
2. Medical supplies (e.g. drugs) are usually available in the hospital.				
3. The hospital provides basic amenities (e.g. toilets, cafeteria).				
4. The hospital provides basic medical technologies.				
5. The hospital provides adequate funding.				
6. Healthcare services are affordable to patients in terms of cost.				
7. The hospital provides good staff incentives.				
Dimension 2: Healthcare Process (HP)				
8. The hospital ensures privacy and confidentiality of patients' health information.				
9. There is proper interaction between healthcare providers and patients.				
10. Healthcare providers have good attitudes towards patients.				
11. The hospital has convenient location for patient visitation.				
12. The hospital has proper policies and procedures in place.				
Dimension 3: Healthcare Output (HO)				
13. The hospital has low mortality rate.				
14. The hospital has infrequent medical errors.				
15. Patients are generally satisfied with medical outcomes.				
16. The hospital has a very good level of patient safety.				
17. The hospital has low attrition rate.				
18. Patients generally have good acceptance of healthcare.				

<u>Part Four</u>: Perceptions of Healthcare Quality					
On a scale from 1-5, please indicate the extent to which you agree or disagree with each of the following statements regarding healthcare quality in the hospital where you work.					
Strongly Disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**	
19. Patients have fewer clinic visits and/or hospital stays.					

Thank You

Appendix B

Scoring System of Study Variables

Mean Range	**Qualitative Level**
Internal Audit Competence	
1.00–1.80	Not competent
1.81–2.60	Slightly competent
2.61–3.40	Moderately competent
3.41–4.20	Competent
4.21–5.00	Very competent
Internal Audit Quality, Relationship with External Auditor, Management Support	
1.00–1.80	Very bad
1.81–2.60	Bad
2.61–3.40	Good
3.41–4.20	Very good
4.21–5.00	Excellent
Internal Audit Independence	
1.00–1.80	Not independent
1.81–2.60	Slightly independent
2.61–3.40	Moderately independent
3.41–4.20	independent
4.21–5.00	Very independent
Internal Audit Effectiveness	
1.00–1.80	Not effective
1.81–2.60	Slightly effective
2.61–3.40	Moderately effective
3.41–4.20	effective

Mean Range	**Qualitative Level**
4.21–5.00	Very effective
Healthcare Structure, Healthcare Process, Healthcare Output, Healthcare Quality	
1.00–1.80	Very bad
1.81–2.60	Bad
2.61–3.40	Good
3.41–4.20	Very good
4.21–5.00	Excellent

Appendix C

Judges of Research Instrument Tool

Title and Name	Current Position
1. Dr. Kamal Hijjazi	• Chief Executive Officer • An-Najah National University Hospital
2. Dr. Nidal Dwaikat	• Associate Professor • Faculty of Engineering • Vice President for Planning and Development • An-Najah National University Hospital
3. Dr. Ramzi Shawahna	• Assistant Professor • Faculty of Medicine and Health Sciences • An-Najah National University
4. Dr. Saed Zyoud	• Assistant Professor • Head of Clinical and Community Pharmacy Division • Faculty of Medicine and Health Sciences • An-Najah National University
5. Dr. Wafaa Menawi	• Assistant Professor • Faculty of Medicine and Health Sciences • An-Najah National University

Appendix D

IRB Approval Letter

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

جامعة النجاح الوطنية
كلية الطب وعلوم الصحة
لجنة اخلاقيات البحث العلمي

Ref: Mas.. Feb. 2023/20

IRB Approval Letter

Title of Research:

Perceptions of Healthcare Professionals about Internal Audit Effectiveness and Its Impact on Healthcare Quality in Palestinian Hospitals

Submitted by:
Ola Ibrahim Shaheen

Supervisor:
Mariam Al-Tell

Approved:
26th Feb. 2023

Your Study Title "**Perceptions of Healthcare Professionals about Internal Audit Effectiveness and Its Impact on Healthcare Quality in Palestinian Hospitals**" reviewed by An-Najah National University IRB committee and was approved on 26th Feb. 2023

Hasan Fitian, MD

IRB Committee Chairman

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

Appendix E

Ministry of Health Approval

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

دولة فلسطين
وزارة الصحة
وحدة التعليم الصحي
والبحث العلمي

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

الرقم: ٢٠٢٠/٨٤٦/١٣٤
التاريخ: ٢٠٢٠/٤/١٩

ق. أ. الوكيل المساعد لشؤون المستشفيات والطوارئ المحترم،،،

تحية واحترام،،

الموضـــوع: تسهيل مهمة بحث

يرجى تسهيل مهمة الطالبة: **علا ابراهيم عبد الرحيم شاهين- ماجستير ادارة الصحة العامة- جامعة النجاح**، لعمل بحث الماجستير بعنوان:

" تصورات اخصائيي الرعاية الصحية حول فعالية التدقيق الداخلي واثرها على جودة الرعاية الصحية في المستشفيات الفلسطينية: دراسة مقطعية"

حيث ستقوم الطالبة بجمع معلومات حول البحث من خلال تعبئة استبانة من قبل العاملين (بعد اخذ موافقتهم)، وذلك في:

- **المستشفيات الحكومية**

مع العلم أن مشرف الدراسة: د.مريم الطل.

على ان يتم الالتزام بالمحافظة على اخلاقيات البحث العلمي وسرية المعلومات، وعدم استخدام المعلومات الشخصية للمرضى.

على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر لحين الحصول على موافقة وزارة الصحة.

مع الاحترام،،

د. عبد الله القواسمي
رئيس وحدة التعليم الصحي والبحث العلمي

دولة فلسطين-وزارة الصحة
وحدة التعليم الصحي والبحث العلمي

نسخة: نائب العميد للشؤون الأكاديمية المحترم / جامعة النجاح

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

Appendix F

Tables

Table 3.10

Distribution of Mean and Standard Deviation of Participants' responses regarding Healthcare Process

Item	Mean ± Std	Level
1. The hospital ensures privacy and confidentiality of patients' health information	3.53 ± 0.882	Very good
2. There is proper interaction between healthcare providers and patients	3.72 ± 0.812	Very good
3. Healthcare providers have good attitudes towards patients	3.74 ± 0.739	Very good
4. The hospital has convenient location for patient visitation	3.49 ± 0.995	Very good
5. The hospital has proper policies and procedures in place	3.40 ± 0.935	Good
Total	3.58	Very good

Table 3.11

Distribution of Mean and Standard Deviation of Participants' response regarding Healthcare Outcome

Item	Mean ± Std	Level
1. The hospital has low mortality rate	3.12 ± 0.861	Good
2. The hospital has infrequent medical errors	3.46 ± 0.861	Very good
3. Patients are generally satisfied with medical outcomes	3.68 ± 0.883	Very good
4. The hospital has a very good level of patient safety	3.75 ± 0.865	Very good
5. The hospital has low attrition rate	3.18 ± 1.012	Good
6. Patients generally have good acceptance of healthcare	3.53 ± 0.862	Very good
7. Patients have fewer clinic visits and/or hospital stays	3.16 ± 0.895	Good
Total	3.41	Very good

Table 3.12

Qualitative Level of Healthcare Quality

Dimension	Mean	Level
Healthcare structure	3.55	Very good
Healthcare process	3.58	Very good
Healthcare outcome	3.41	Very good
Total	3.51	Very good

Table 3.13

ANOVA: Overall Significance of Estimated Regression Model

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F-Statistic	Sig.
Regression	80.527	5	16.105	66.117	0.001*
Errors	95.731	393	0.244		
Total	176.258	398			

* Significant at the 0.05 level.

Table 3.14

Results of Regression Analysis: Healthcare Quality as a Dependent variable

Constant and Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	1.588	0.135		11.774	0.000
Internal audit competence	– 0.105	0.058	– 0.118	– 1.813	0.071
Internal audit quality	0.238	0.062	0.341	3.865	0.001*
Relationship with external auditor	0.010	0.036	0.012	0.271	0.786
Management support	0.431	0.089	0.463	4.831	0.001*
Internal audit independence	– 0.013	0.069	– 0.015	– 0.184	0.854

* Significant at the 0.05 level

Table 3.15

Coefficient of Determination (R2) of Regression Model

R	R Square	Adjusted R Square	Std. Error of Estimate
0.676	0.457	0.450	0.49355

3.1 Summary of Hypotheses Testing

Table 3.16

Summary of Hypotheses Testing

No.	Hypothesis Path	Conclusion
1	Internal audit competence → Healthcare quality	Not supported
2	Internal audit quality → Healthcare quality	Supported
3	Relationship with external auditor → Healthcare quality	Not supported
4	Management support for internal audit → Healthcare quality	Supported
5	Internal audit independence → Healthcare quality	Not supported

جـامعـــة النجاح الوطنية

كليـــة الدراســـات العليـــا

التصورات تجاه فعالية التدقيق الداخلي وأثرها على جودة الرعاية الصحية في مستشفيات الضفة الغربية/ فلسطين: دراسة مقطعية

إعداد

علا شاهين

إشراف

د. مريم الطل

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

2024

التصورات تجاه فعالية التدقيق الداخلي وأثرها على جودة الرعاية الصحية في مستشفيات الضفة الغربية / فلسطين: دراسة مقطعية

إعداد

علا شاهين

إشراف

د. مريم الطل

الملخص

يُعدّ الحق في الحصول على رعاية صحية جيدة من بين حقوق الإنسان الأساسية المعترف بها عالمياً لجميع المواطنين. ولهذا يحتاج مقدمو خدمات الرعاية الصحية إلى تأكيد معقول بأن المخاطر الرئيسة لتحقيق نتائج الرعاية الصحية يتم تقليلها إلى الحد الأدنى. في الوقت الراهن، يُعدّ التدقيق الداخلي الأداة الرئيسة المتاحة داخل مؤسسات الرعاية الصحية. ومع ذلك، فإن الأدلة على فعاليته، في سياق الرعاية الصحية، لا تزال غير حاسمة.

وتهدف هذه الدراسة إلى تقييم التصورات تجاه فعالية التدقيق الداخلي في المستشفيات الفلسطينية وفحص الأثر المحتمل لهذه الفعالية على جودة الرعاية الصحية باستخدام نموذج دونابيديان المشهور لجودة الرعاية الصحية.

ولتحقيق هذه الأهداف، تم اعتماد منهج البحث الكمي. ومن أجل جمع البيانات الأولية، تم توجيه استبانة مهيكلة بالكامل، باستخدام أسلوب العينة الملائمة، إلى ما مجموعه 500 من العاملين في مستشفيات الضفة الغربية، فلسطين. وقد تم استرجاع ما مجموعه 399 استبانة مكتملة وصالحة للتحليل الإحصائي بمعدل استجابة بلغت تقريباً 80٪. وقد تم تحليل البيانات بمساعدة برنامج الرزم الإحصائية في العلوم الاجتماعية (SPSS) باستخدام الإحصاءات الوصفية والاستدلالية بما في ذلك المتوسطات الحسابية والانحرافات المعيارية وتحليل الانحدار الخطي المتعدد.

وتشير نتائج الدراسة إلى أن فعالية التدقيق الداخلي لها مستوى متوسط بوسط حسابي يبلغ 3.12 على مقياس من 5 درجات في مستشفيات الضفة الغربية، علماً بأن مجالي جودة التدقيق الداخلي واستقلالية التدقيق الداخلي هما الأكثر فعالية في حين أن مجالي العلاقة مع المدقق الخارجي وكفاءة التدقيق الداخلي هما الأقل فعالية. علاوةً على ذلك، أظهرت النتائج أن جودة الرعاية الصحية تتمتع بمستوى جيد جداً بوسط حسابي يبلغ 3.51 على مقياس من 5 درجات، علماً بأن مجال عمليات الرعاية الصحية هو الأفضل جودة في حين أن مجال نتائج الرعاية الصحية هو الأسوأ جودة بين المجالات الثلاثة لنموذج دونابيديان. وأخيراً وليس آخراً، أكّد نموذج الانحدار الخطي المتعدد، بمعامل تحديد يبلغ 45%، أن مجالي جودة التدقيق الداخلي ودعم الإدارة للتدقيق الداخلي لهما أثر إيجابي ذو دلالة إحصائية على جودة الرعاية الصحية، علماً بأن المجال الثاني هو الأكثر تأثيراً. وعلى العكس من ذلك، فإن المجالات الثلاثة الأخرى لفعالية التدقيق الداخلي ليس لها أثر ذو دلالة إحصائية على جودة الرعاية الصحية.

وبناءً على النتائج المذكورة أعلاه، تُوصي الدراسة المستشفيات العاملة في الضفة الغربية، فلسطين بشدة، من بين أمور أخرى، بإجراء تقييم دوري لفعالية التدقيق الداخلي وجودة الرعاية الصحية، وتعزيز فعالية التدقيق الداخلي، وتصميم وتنفيذ إستراتيجيات موجهة نحو المرضى ترتكز على توفير رعاية صحية عالية الجودة، وتوظيف نموذج دونابيديان لتحسين خدمات الرعاية الصحية وكذلك نتائج الرعاية الصحية، واستخدام هذا النموذج كأداة لتخطيط وتخصيص الموارد النادرة.

كلمات مفتاحية: جودة الرعاية الصحية، فعالية التدقيق الداخلي.