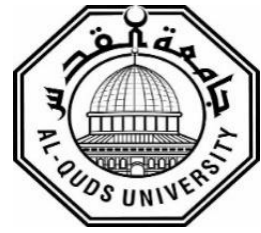


**Deanship of Graduate studies
Al-Quds University**



**Challenges and Opportunities Faced Palestinian Health
Care System in the Gaza Strip During Covid-19
Response**

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Challenges and Opportunities Faced Palestinian Health Care System in the Gaza Strip During Covid-19 Response

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Thesis Approval

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1444 / 2023

Dedication

This thesis is dedicated to:

For the sake of Allah, my Creator, and my Master, my great teacher, and messenger,

Mohammed (May Allah bless and grant him), who taught us the purpose of life,

To my homeland Palestine,

To my wonderful lovely husband Mohammed for his endless support, hope and motivation.

To my beloved father and my beloved mother, I would like to thank you for giving me the passion to complete this study,

To all my friends and colleagues, the symbol of love and giving

To everyone who helped me to finish this study, I dedicate this research.

Tasnim Mohammed Salim Qrinawi

Declaration

I certify that this thesis submitted for the degree of master, is the result of my research, except where otherwise acknowledged, and that this study (or any part of the same) has not to be submitted for a higher degree to any other university or institution

Signature:



Tasnim Mohammed Salim Qrinawi

Date: 10/1/2023

Acknowledgment

In the Name of Allah, the Most Merciful, the Most Compassionate all praise be to Allah, the Lord of the worlds; and prayers and peace be upon Mohamed His servant and messenger. First and foremost, I would like to express my gratitude to Allah and exalted be he.

I would like to express my supervisor's thanks to my thesis chair Dr. Motasem S. Salah for the excellent guidance, and support that helped added his treasured valued touches in each study step to the improvement of my work and for my learning experience.

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I must express my very grateful to my family and friends who helped, and supported me, and unlimited encouragement through my years of study and through the process of writing my thesis. I share my success with all of you and wish to be at the level of your expectations.

Last but not least, my deepest thanks go to Everyone who helped me achieve my dream.

Tasnim Mohammed Salim Qrinawi

Abstract

Coronavirus disease-2019 (COVID-19) is a serious public health crisis threatening the world with extremely fast spread. The overall main aim of this study is to assess the current challenges and opportunities faced Palestinian healthcare system in Gaza Strip during the response to Covid 19 pandemic.

The study design was a mixed methods study; it involved both quantitative and qualitative data. The quantitative data was collected through a questionnaire of 120 participants from different managerial levels who provided health services during the pandemic in Gaza in each of the Ministry of Health and NGOs in the Gaza Strip and the qualitative data was collected from key informant interview with health policy makers. For qualitative data, an open coding thematic analysis method was used. In-depth interviews with 15 from top-level management in both MOH and NGOs. The validity of the questionnaires was examined by panel of expert. Cronbach's alpha was 0.9. Data were analyzed by using Statistical Package for Social Sciences (SPSS) version 24 and analysis of quantitative data was conducted using the NVIVO program.

The findings showed that, most of study sample were in medile age (41-50) years old, most of them male and married. More than half of participant have experience between 11-20 years (55.2%) and most have a bachelors degree (58.3%). The total perceptions of the challenges faced health care system during prepardness and response to COIVD-19 was 66.4%. The result relative health workforce domin got the highest score (70.7%) follwed by health care system financing (69.7%), Health Services Delivery(68.9%), Access to essential medicines and equipment (64.5%), and Leadership and Governance(62.3%), while Health Information System rank the last (62.2%). There were statistically significant differences between ages, managerial position, years of experience, place of work and different domains of challenges faced Palestinian Health Care. On the other hand, the results showed that no statistical differences were found between gender, marital status, type of organization, qualification, and organization ocation and challenges domains. The results also indicated that there are several challenges (increased workload, shortage of health care staff, the difficulties in planning and the evaluation process during the response to the Covid 19 virus, the limited number of intensive care staff, and the capacity of beds, the lack of availability of network infrastructure, the inability to build a large data information system and a problem in obtaining and integrating data, a shortage of machines Equipment, medical devices and supplies, the failure to allocate budget for resources and administration). Regarding the opportunities of COVID-19 pandemic, the leadership and governance is the highest code followed by health services delivery and the health financing is the lowest code.

The study recommended to recruit an adequate health workforce, ensuring physical, mental health, financial support for health workers, adapting or transforming service delivery during the use of health information systems, communicating clearly and transparently with the population and stakeholders, strengthening monitoring, surveillance, and early warning systems.

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List of abbreviations

ANOVA	One-Way Analysis of Variance
CDC	Centers for Disease Control and Prevention
COVID-19	The coronavirus disease 2019
GS	Gaza Strip
HCWs	Health Care Workers
HIS	Health information system
ICU	Intensive care unit
MOH	Ministry of Health
NCDs	Non-Communicable Diseases
NGOs	Non-governmental organizations
OPT	Occupied Palestinian Territory
PCBS	Palestinian Central Bureau of Statistics
PHC	Primary Health Care
PPE	Personal protective equipment
SARS-CoV-2	The virus that causes COVID-19
SPSS	Statistical package for science
UNRWA	United Nations Relief and Works Agency
WB	West Bank
WHO	World Health Organization

Chapter One

Introduction

1.1 Background

The disease (COVID-19) is a serious health crisis that has affected the whole world due to its rapid spread and its many consequences on public, economic, social and political health. In December 2019, coronavirus disease (COVID-19), was identified in Wuhan, China. and was declared a pandemic by the World Health Organization (WHO) director-general on 11 March 2020 (WHO,2020). The COVID-19 pandemic is creating an unprecedented strain on the nation's healthcare system and revealing many underlying weaknesses that exist during covid 19 pandemic in the healthcare system.

The first case of Coronavirus was discovered in Palestine on March 5, 2020. Immediately, many measures were taken to limit the spread of the virus, such as closure and geographical separation between the northern and southern governorates (Gaza Strip), home isolation, and closure or monitoring at the crossings (Abed Y,2020).

Vulnerable population groups are the most vulnerable to infection, such as children, the elderly, and pregnant women, especially in light of the rapid spread of the virus in the entire world (IRC, 2020).

The health care system (HCS) in Palestine in the West Bank and the Gaza Strip in particular suffers from many problems, including the lack of medicines, equipment and medical devices needed to treat patients with Covid 19 and the lack of budget, as a result of the continuous blockade for 13 years and the closure of crossings, and all this affected the response to the Covid 19 pandemic and also affected the treatment patients with covid 19 (WHO, 2019).

Healthcare systems, hospitals, and the industry as a whole are still being challenged by the COVID-19 epidemic. Every fresh influx of patients puts additional burden on personnel that is already overworked and under stress, uses up resources, reduces hospital income, and has

a detrimental impact on several other healthcare activities. Because of the pandemic's unknown longevity, healthcare organizations must offer stability and opportunity for growth when they adjust to the current circumstances.(TRACIE.2021).

A COVID-19 outbreak has created some extremely interesting opportunities for the healthcare business. We may now examine healthcare delivery. One of the most important lessons to be drawn from this disaster is the need of rationalizing and using available resources during a crisis. Although there has been substantial disruption in healthcare delivery throughout the world during this time, there have also been some positive effects, such as the effective use of telemedicine, the importance of personal hygiene, and the importance of infection control. Virtual methods of education, learning, and information exchange are becoming prevalent and suitable. There has been a considerable surge in research and publications throughout these difficult times.(Karthikeyan, I., Ahmed, M., Vijay, J., et al. 2020).

1.2 Problem statement

As the covid-19 pandemic spread globally, affected the most of HCS in developed and developing countries, and faced many challenges during the response to the pandemic, Palestine as one of the developing countries already has a weak, fragmented and under-resourced healthcare system, this have affected in capability in preparation and response to covid- 19, and lead to a lot of challenges and obstacles during response.

Furthermore, Palestine suffers chronically from different forms of fragility in six building blocks that are components of the healthcare system these factors increase the pandemic permeability of transmission and fatality rate, healthcare system preparedness and response in a good way during covid19 pandemic and to which extend to cope with it under the weakness of the system, We need to explore the available chances and opportunities health system that acquired during preparedness and responses under strength and weakness of six blocks.

1.3 Justification of the study

The outbreak of Covid 19 pandemic is affected HCS in developed and developing countries, assessing the effect of covid 19 pandemic on Palestine health care system is critical to identify challenges and opportunities during the pandemic to strike balance between managing the emergency and maintaining essential health services through based on six building block of the health care system to address the opportunities of effectiveness and efficiency of providing health services. This research is the novel of its kind in Palestine, thus the research was study the challenges and opportunities of the health system during covid 19 through focus study on the strength and gape of health system framework in Gaza strip (GS) and how affected to health system response on pandemic Health, In this study, the researcher was provide a review for the current health care system status in Gaza strip. and provide decision-makers with the main gaps and challenges of the provided services during covid 19 pandemic. Eventually, the study result cover the strengths and weaknesses of the health system framework and thus benefit the health care system during the response to the pandemic, help policymakers to develop effective strategies, and enhance effective and efficient provided services. moreover, this research may provide tentative guidelines for other researchers who study the healthcare system, especially in the GS.

1.4 General objective

The aim of this research was to assess the current challenges and opportunities faced Palestinian HCS during the response to covid 19 pandemic at the first phase before pandemic in Gaza strip, this help us to identify the weakness and strengths of the healthcare system framework in GS which ultimately promotes the health status of the Palestinian HCS and population.

1.5 Specific Objectives

1. To explore the main challenges and obstacles of the HCS in the GS during the preparedness and response to Covid 19 pandemic.
2. To determine the main available chances and opportunities that acquire in the health care system in the GS during the preparedness and response to Covid 19 pandemic.
3. To suggest recommendations for policymakers to improve the preparedness and response of the HCS.

1.6 Research Questions

1. What are the main challenges and obstacles of the HCS in the GS during the preparedness and response to Covid-19 pandemic.
2. What are the chances and opportunities that acquire in the health care system in GS during the preparedness and response to Covid-19 pandemic.
3. What are the recommendation for policymakers to improve the preparedness and response of the HCS.

1.7 Context of the study

Any health system during the Covid-19 pandemic was affected by demographic, economic, social and political factors and faced many challenges and opportunities, and therefore will affect the way health services are provided to suit the situations of the epidemic.

1.7.1 Demographic and geographic context

The area of the State of Palestine is about 27,000 square kilometers, and it is bordered by Egypt and the Mediterranean Sea in the west, Jordan in the east, Lebanon in the north, and the Gulf of Aqaba in the south (Annex 1). The population of the State of Palestine is about 5,101,414 (PCBS, 2020). Currently, Palestine is divided into two regions, the first known as

the West Bank (including East Jerusalem) with an area of 5,661 square kilometers, and the second as the Gaza Strip with an area of 365 square kilometers according to the World Health Organization (2020a). The Centers for Disease Control and Prevention (CDC) (2020) Gaza overcrowdedness stated that social distancing is one of the preventive measures to prevent the spread of Covid-19, and this poses a challenge for Palestinians who live in densely populated areas, and this prevents them from following these preventive measures.

1.7.2 The Gaza Strip (GS)

Gaza is located in the southern region of Palestine and its population in 2020 was 2.1 million people and Gaza is considered a densely populated area (UNRWA, 2018). Gaza governorate ranks second in terms of population with 13.4% of the total population, and comes after Hebron with 15.1% of the total population (Palestinian Central Bureau of Statistics, 2017). Gaza is divided into five governorates: North Gaza, Gaza City, Central Region, and Khan Yunis And Rafah. Gaza (PCBS.2017) (Annex 2), the Gaza Strip suffers from a blockade that has extended for more than 13 years, and due to the closure and restrictions on movement (UNRWA, 2018), this has led to overcrowding and high population density, and the Gaza Strip is considered a land that creates a great demand for care services health and potential overload of healthcare provider.

1.7.3 Socio-economic context

The closure and continuous blockade of the Israeli occupation of the Gaza Strip had negative repercussions on the economic situation, including a decline in income from Israel due to the non-entry of workers to work in Israel, and thus an increase in unemployment rates (51% in the Gaza Strip and 16% in the West Bank and 38.4% among refugees Unemployed (PCBS, 2019a).

The poverty rate in the West Bank was 14% and in the Gaza Strip 53% (Palestinian Central Bureau of Statistics, 2019), and 76% in East Jerusalem (ACRI, 2017). The deterioration in the general economy negatively affected the volume of government revenues from taxes, which are an important source of financing health and increasing the government's adoption of donors, as well as its impact on patients' ability to obtain medicines and make them more dependent on the Ministry of Health in the health service.

Poverty increases the chance of exposure to Covid-19, due to the inability to buy gloves, masks, or disinfectants due to their high cost. The deficit is expected to increase as a result of the COVID-19 lockdown measures (Palestinian Authority, 2020). As people will lose their jobs, the unemployed are expected to increase (Al-Monitor, 2020), and this will increase the poverty rate among Palestinians, especially refugees, and this will lead to exacerbating food insecurity, and to the deterioration of their livelihood and health.

1.8 Definition of Terms

Health Care System:

The Health system consists of organizations established to meet the health needs of targeted populations within the framework of limited resources.

Covid 19

An emerging infectious disease caused by Corona viruses, also known as an epidemic of severe respiratory diseases, and it is transmitted through droplet and contact with infectious materials, and its symptoms include high fever, severe coughing, shortness of breath, and general fatigue in the body, and it may develop into pneumonia and respiratory failure.

Responsiveness of health care system

The ability of a health care system to react quickly and positively through the understanding situation and carrying out appropriate decisions at the appropriate time.

Challenges

Anything you've never done before that requires a great degree of ability and persistence to deal with

Opportunities

The chance that the health care system gets after facing a new experience of challenges in a certain period.

Chapter Two

Conceptual framework and Literature Review

2.1 Introduction

This chapter introduces the conceptual framework of the study, which presents the healthcare system framework of services delivery and the building blocks of a healthcare system which affect the delivery of services, particularly during covid 19 pandemic with combine with community factors and how preparedness and response to pandemic create an outcome of challenges, obstacle, and opportunities.

2.2 Conceptual Framework

A conceptual framework is a tool used by researchers to direct their research. It enables researchers to establish links and relationships between existing literature and their own research aims and objectives (Miles and Huberman, 1994). It explains the primary factors and domains to be examined, as well as the hypothesized link between them, either visually or narratively. Structure, process, and outcome are the key three characteristics that can be used to assess quality, according to the Donabedian paradigm (Donabedian, 1988).

The framework covers challenges and opportunities of the six building blocks health care system during Covid-19 based on 11 pillars of public health preparedness and response to Covid-19 (WHO COVID-19: Critical Preparedness, Readiness, and Response, 2020c). See (Figure 2.1).

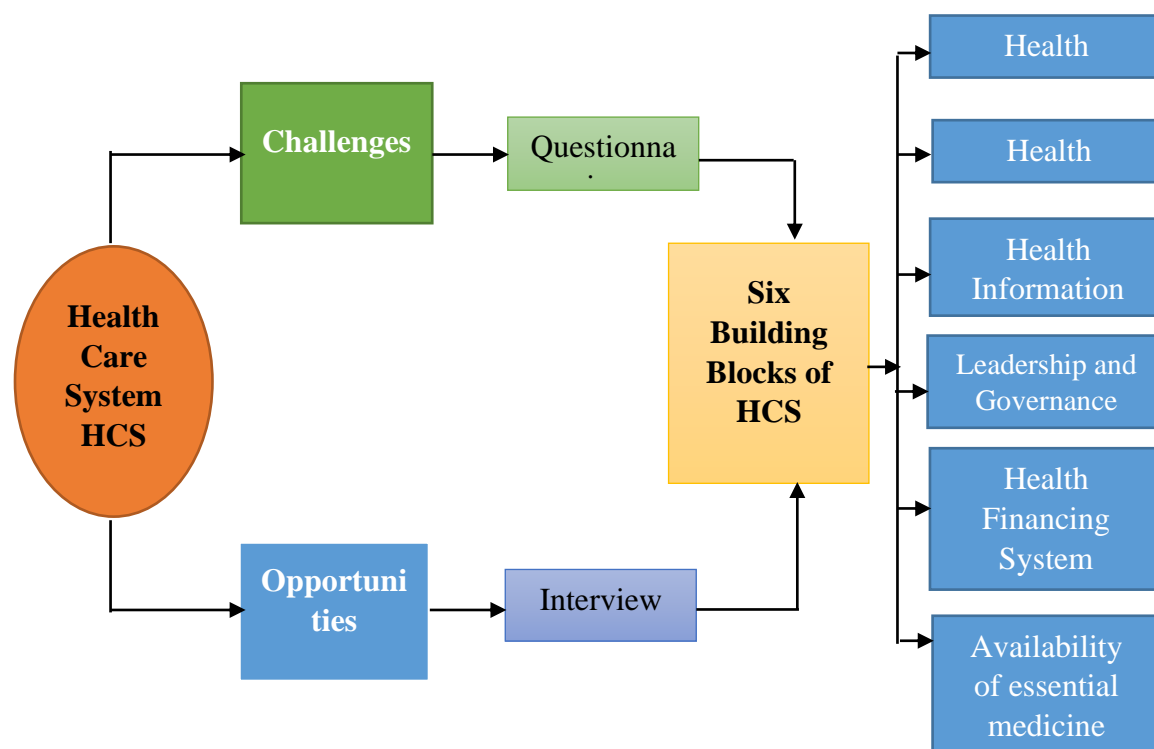


Figure (2.1): Self-Designed Conceptual framework of Challenges and opportunities of Health Care System during response to covid 19 pandemic

(Source: Derived from WHO SPRP, 2020 & WHO Six Building Blocks, 2010)

The World Health Organization (WHO) has identified six building blocks of a health care system. These building blocks were outlined in a 2010 report from the WHO and are as follows:

1. **Service delivery:** This refers to the various health care services that are provided, including preventive, curative, and rehabilitative services.
2. **Health workforce:** This refers to the personnel who work in the health care system, including doctors, nurses, and other health care professionals.
3. **Health information:** This refers to the systems and processes used to collect, store, and use data and information related to health care.

4. **Access to essential medicines:** This refers to the availability and accessibility of essential medicines and technologies that are needed to deliver high-quality health care.
5. **Health Financing System:** This refers to how health care is paid for, including the use of private and public insurance and out-of-pocket payments.
6. **Leadership and governance:** This refers to the leadership and management of the health care system, including the development and implementation of policies and strategies.

Public health emergency preparedness and response (PHEP) pillars according to WHO, 2020 follow below:

1. **Country-level coordination:** Pillar one ensures coherence and operational alignment across all pillars of the response at the national and subnational levels and serves as the foundation for ongoing decision-making and track correction based on public health intelligence provided by a comprehensive monitoring system.
2. **Risk communication and community engagement** are critical components of successful health-emergency responses. The research is clear: communities play a role in preventing and controlling epidemics, and communities must be heard in order to address demand-side barriers to health-care utilization and to guide efforts to attenuate COVID-19 control programs' socioeconomic impact.
3. **Surveillance:** The backbones of the COVID-19 response and the public health capacities to detect, isolate, and treat cases, track and quarantine contacts, and execute and alter public health and social measures are the keys to suppressing transmission until vaccinations are widely and equitably available.

4. Case Management: The clinical characterization of COVID-19 continues to evolve.

of those infected that become symptomatic, about 80% of patients have mild or moderate disease, while approximately 15% of patients with COVID-19 develop severe disease that requires oxygen support, and 5% have critical disease. Effective case management needs to emphasize the importance of saving lives in those that are at risk for death and those with severe or critical disease; and also to ensure quality of life in all patients, regardless of disease severity

5. Point of Entry: Advice to travelers, including self-monitoring of signs and symptoms; surveillance and case management at the point of entry and across borders; capacities and procedures for international contact tracing; and environmental controls and public health and social measures at points of entry are all risk mitigation measures that should always be in place.

6. Operational Support& logistics: Every pillar of the public health response, from surge personnel deployments to the acquisition, safe storage, and distribution of accurately specified needed supplies, as well as employee compensation, is underpinned by national logistical and operational capacities.

7. National laboratories: Strategic diagnostic laboratory testing is one of the cornerstones of the management of the COVID-19 pandemic. Testing is critical to detect cases and investigate clusters of cases so that public health actions can rapidly be taken to isolate those infected, quarantine contacts and break chains of transmission.

8. Infection, Prevention and Control measures are among the most effective tools available to contain the spread of SARS-CoV-2, both in health facilities and in the community.

9. Maintaining essential services: COVID-19 has posed a challenge to all countries and health systems in terms of caring for COVID-19 patients while also adapting to ensure the safe delivery of key health services for all illnesses. Complicating matters, the virus's

response has frequently resulted in supply chain interruptions, shortages of personal protective equipment (PPE), reduced staffing, and reduced capacity at health care institutions, as well as challenges to health sector budgets and overarching health system governance.

10. COVID-19 vaccination: COVID-19 vaccinations that are both safe and effective are now available, and if provided fairly, they will be strong tools in the global battle to prevent the pandemic. Almost every country, agency, industry, and community in the globe considers their availability, accessibility, and deployment to be top health, social, economic, and political objectives.

11. Public health and social measures: Public health and social measures for COVID-19 in these settings need to be balanced against other risks affecting communities, such as lack of income, access to basic

2.3 Literature Review

2.3.1 Health Care System

According to the (WHO, 2010), a health care system is made up of six building blocks: it includes the financing, delivery, and regulation of health care services, as well as the personnel, information, and technology that are necessary to support the delivery of those services. The design of a health care system can vary significantly from one country to another, and may be influenced by a variety of factors, including the size and demographics of the population, the availability of resources, and the cultural and political context. Some common components of a health care system include hospitals, clinics, and other health care facilities; health care professionals such as doctors, nurses, and therapists; and various financing mechanisms, such as private insurance, public insurance (such as Medicare or Medicaid), and out-of-pocket payments. The effectiveness of a health care system can be measured in a number of ways, including the quality and accessibility of the services it

provides, the efficiency with which it operates, and the outcomes it achieves for the population it serves.

2.3.2 Health Care Systems in Palestine

The Palestinian Healthcare system is an important element of the public sector healthcare is composed of primary, secondary and tertiary levels of care. Defined as “all the organizations, institutions and resources that are devoted to producing health actions” (WHO, 2000),

The Palestinian health care system consists mainly from four healthcare providers: the main one is Ministry of Health which provides all types of health services primary, secondary and tertiary. According to primary health care, there are 472 primary health clinics (PHC), 54 in Gaza Strip and 418 in West Bank. For secondary health services, the total numbers of hospitals are 82 with 6440 total beds number, 52 hospitals in WB with 3897 beds (1.33 per 1000 population), and 36 hospitals in GS including 13 governmental hospitals with 2543 beds (1.32 beds per 1000 population) (PCBS, 2019a). The second health provider is United Nations Relief and Works Agency that provides primary health services and health promotion programs; which operates 64 PHCs; 22 in GS and 42 in WB. In addition to that, some secondary health care services are purchased and provided for the needed cases. Non-governmental Organization (NGOs) is the third provider which provides all types of services depending on funds; it runs 80 PHC centers in GS. The fourth one is the private sector which has many health institutions and provides paid services at three levels (MOH, 2000). With a such multitude of service providers, there are numerous challenges in providing a well-coordinated, standardized health service provision during “normal” times, and frictions are deemed to exacerbate during emergencies.(Manenti, et al., 2016).

2.3.3 Health Care system in Gaza

The Palestinian health-care system is frail, with many obstacles and deficiencies. It has several challenges, including a lack of pharmaceuticals and medical equipment, a caused by Israeli occupation. Many people are obliged to seek therapy in another country. Movement limitations caused by the siege are another barrier for many sufferers (PCHR, 2020).

In the early stage of COVID-19 pandemic, the operating capability of laboratory devices was hampered by a shortage of fuel. The extreme shortage of testing kits, essential laboratory supplies, and personal protective equipment (PPE) places health workers in the face of enormous challenges and increased dangers. During the COVID-19 pandemic, the situation is projected to worsen. The Ministry of Health said that 45% of the medication list, 31% of medical consumables, and 65% of laboratory items and blood banking supplies are in low supply. MOH requested more testing kits, critical care units, respirators, medications, and personal protective equipment (PPE) to combat the pandemic (UN, 2020).

Many procedures and actions were taken by MOH in cooperation with the world health organization (WHO) office in Gaza and other health care providers to fight COVID-19 epidemic in the Gaza Strip; including determination of many respiratory triage points five hospitals in the five governorates; Indonesian hospital in the North , Al-Shifa hospital in Gaza, Al-Aqsa hospital in the Middle , Nasser hospital in Khan Younis, and Al-Najar hospital in Rafah. Furthermore, The Ministry of Health inaugurated the Emirati field hospital, which is dedicated to providing medical care to patients with Covid 19. That contributed to alleviating the suffering imposed by the siege, hoping that the hospital would be supportive to the medical staff confronting the covid -19 pandemic and Turkish Friendship Hospital (TFH) and The European Gaza Hospital (EGH) were transformed into COVID-19 facilities where the confirmed cases are being isolated, treated and followed-up. A new department at Al-Shifa Complex was allocated for COVID-19 patients divided into

suspected patients' section and confirmed patients' section with special intensive care unit for COVID-19 severe cases (MOH, 2020). According to the Ministry of Health in Gaza, the number of beds in governmental hospitals has climbed to 2616, with around 221 beds split as follows: (37 general, 29 cardiac, 3 burn, 28 pediatrics, 124 premature newborns), whereas general intensive care beds were raised to 150 during the COVID-19 pandemic (MOH, 2021).

2.3.4 Covid 19 Pandemic

2.3.4.1 Introduction

COVID-19 is the disease caused by a new coronavirus called SARS-CoV-2 a mild to severe respiratory illness that is caused by a coronavirus (severe acute respiratory syndrome coronavirus 2 of the genus Beta coronavirus).

The COVID-19 pandemic is causing increased morbidity and mortality and is an international challenge. Research has shown that the groups most vulnerable to infection with Covid 19 are people who suffer from other diseases such as cancer, diabetes and high blood pressure, as well as the elderly and those who suffer from diseases of weak immunity, and this will expose them to serious consequences. COVID-19 older people face a greater risk of developing a severe illness because of underlying health conditions and many physiological changes that come with age and the presence of diabetes mellitus, hypertension, and obesity significantly increases the risk for hospitalization and death in COVID-19 patients (Ranganath Muniyappa and Sriram Gubbi, 2020).

Research studies have shown the possibility of transmission of this virus from human to human and the need to adhere to preventive measures to protect against infection, and the need for early detection of viruses, and defining preventive and treatment protocols is the best way to limit the expansion of the spread of the virus through measures that aim to break

the chain of infection by developing plans and principles And laws for an effective response to the virus and prevent the spread of infection. Patients should be instructed to wear a simple surgical mask and to practice respiratory hygiene. Caregivers should be required to wear a surgical mask when in the same room as the patient and to keep hand hygiene (WHO, 2020). Is transmitted chiefly by contact with infectious material, with contact with objects or surfaces contaminated with the causative virus, and is characterized especially by fever, cough, and shortness of breath and may progress to pneumonia and respiratory failure (WHO,2019).

2.3.4.2 COVID-19 Disease Symptoms

Many different symptoms, from little discomfort to serious sickness, have been described in people with COVID-19. After exposure to the virus, symptoms may start to show up 2–14 days later. There are mild to severe symptoms for everyone.

The infectiousness of the COVID-19 virus peaks one day before symptoms appear, however people can start transmitting it on average 2-3 days before they start experiencing symptoms.

The COVID-19 virus can potentially be transmitted by individuals who show no signs of the disease. Typically, eight days after the onset of symptoms, a person is still considered infectious.

Patients with COVID-19 experience a range of symptoms, including none at all (approximately 81%), mild to moderate symptoms without requiring hospitalization (14%), and severe to critical symptoms (5%). Patients who require hospitalization, intensive care, a ventilator, or who have died from an infection are considered to have a severe disease.

The most common symptoms of the covid 19 disease are fatigue, a dry cough, and fever. Loss of taste or smell, nasal congestion, conjunctivitis, sore throat, headache, muscle or joint discomfort, various forms of skin rash, nausea or vomiting, and diarrhea are some mild

symptoms that are less prevalent but may still affect some people. Shortness of breath, lack of appetite, disorientation, persistent chest pain or pressure, and a high temperature (over 38 °C) are all signs of a severe COVID-19 sickness (CDC, 2020).

2.3.4.3 Global Burden of COVID-19

The novel Coronavirus Diseases 2019 (COVID-19) is a major public health burden in the world. The morbidity and mortality of the global community due to this disease are dramatically increasing from time to time, coronavirus disease-2019 (COVID-19) is a serious public health crisis threatening the world with extremely fast spread and mortality. The COVID-19 pandemic is the greatest global public health challenge of the twenty-first century (Crisis Group, 2020) whose social, economic, political and public health consequences remain unclear (WHO, 2020).

The spread of the virus in China began in Wuhan in December 2019 and was declared a pandemic on March 11, 2020. Currently, there are more than 5 million people infected with the virus and counting according to the World Health Organization (Pandemic 2020). And with the continued rapid spread of Covid-19, countries with weak health systems will be more likely to increase the number of infected people and the severity of their condition. The COVID-19 pandemic has put an enormous strain on healthcare systems across the world by increasing the demand for healthcare professionals and the need for beds in intensive care units and respiratory support such as ventilators. However, the mortality rate among confirmed cases has greatly varied between countries and this is in great part due to differences in the capacity and preparedness of their health systems (WHO, 2020).

2.3.4.4 Local Burden of COVID in Palestine

The first case of COVID-19 was discovered in Palestine on March 5, 2020. Immediately a state of emergency was declared and preventive measures were announced. First, Bethlehem

governorate was closed, then other governorates. On Aug 24 in the Gaza Strip, movement was restricted. The first case was diagnosed in Gaza on March 21 (MOH, 2020).

The Palestinian health system consists of four health service providers: the Ministry of Health as the main regulator and provider, the United Nations Relief and Works Agency for Palestine Refugees (UNRWA), the private sector, and NGOs. The system suffers from weak governance, evidence-based policies and research, and a lack of budget, resources, equipment, and medicines. These elements are essential for preparing and implementing effective health contingency plans (AlKhaldi et al., 2018).

Lack of medicines, medical equipment and devices, shortage of intensive care beds, and shortage of ventilators in the Gaza Strip and West Bank (PA, 2020), it is expected that COVID-19 will affect the health system and affect its ability to deal with the increasing infections.

2.3.5 Preparedness and Readiness of health system

Palestine, like many other nations in a similar situation, is in dire need of a comprehensive national emergency strategy and a proactive plan, since COVID-19 is a disease caused by a novel coronavirus that has not been previously detected in humans. In the Gaza Strip, the answer was to put in place precautionary measures including lockdown and declare a state of emergency, the closure of non-essential facilities like schools on Aug 24. The preparedness and response of the Palestinian national health system with the necessary capacity and resources, as well as the effectiveness of governance and the decisions made in relation to preparedness and responsiveness to the COVID-19 outbreak, contingency plans to support the significant needs of the Palestinian health system at an earlier stage, taking into account the fragility of the health system (WHO,2020).

There are several steps that healthcare systems can take to improve preparedness and response in the face of future pandemics or other public health emergencies:

Develop a robust emergency response plan: Healthcare systems should have a well-developed emergency response plan in place that outlines how to handle various types of public health emergencies, including pandemics. This should include details on how to allocate resources, communicate with the public, and coordinate with other agencies.

Build capacity: Healthcare systems should invest in infrastructure and resources to increase their capacity to handle a large influx of patients. This might include adding more beds, purchasing additional medical equipment, or hiring more healthcare workers.

Enhance communication and coordination: Strong communication and coordination between healthcare providers, public health agencies, and other stakeholders is critical in the response to a public health emergency. Healthcare systems should work to establish clear channels of communication and establish protocols for sharing information and resources.

Train and prepare healthcare workers: Healthcare workers are on the front lines of the response to a public health emergency, and it is important to ensure they are well-trained and prepared to handle the challenges they may face. This might include providing training on the use of PPE, infection control measures, and stress management techniques.

Increase access to testing: Rapid and widespread testing is critical in the response to a public health emergency. Healthcare systems should work to increase access to testing and establish protocols for identifying and isolating infected individuals.

Promote public health measures: Healthcare systems can play a key role in promoting public health measures, such as social distancing, mask-wearing, and vaccination, which can help reduce the spread of infectious diseases.

Palestine was categorized by WHO as a high-risk country for the spread of COVID-19, our goal is to prevent the introduction and outbreak of the virus to our communities, and take steps to prepare according to Centers for Disease Control and Prevention (CDC, 2020).

- Monitor state and local health departments for information and recommendations.
- Prepare your employees through want our staff to be informed and prepared.
- Gather supplies through having supplies on hand is directly impacted by the outbreak
- Review infection control protocols, with a focus on hand hygiene, droplet/respiratory precautions, and personal protective equipment.
- Develop a communication plan through give clear and direct communication to your staff, residents, and families

2.3.6 WHO building blocks during covid 19 pandemic response

Building Blocks are the foundation of every healthcare system, providing access to better health status while maintaining quality and efficiency to accomplish risk reduction and customer satisfaction. The World Health Organization (WHO) has developed a framework for health systems that divides health systems into six components, each of which contributes in a different way to the strengthening of health systems. The WHO has backed up its framework for health systems with a framework for monitoring and evaluating program management of health system investments, evaluating the performance of health systems, and assessing the outcomes of investments in health reform. Leadership and governance in the health sector, the cost of access to necessary medications, service delivery, the health information system, and the health funding system. (WHO, 2010).

A. Health Workforce

The majority of this responsibility is carried out by frontline healthcare workers who selflessly put their lives on the line to do so. In this article, we attempt to highlight some of

the dire challenges that frontline health workers are currently facing and propose some recommendations to reduce the encuity. Healthcare systems across developed and developing nations are being put to the ultimate test and are under tremendous pressure to limit the spread of the novel coronavirus. The initial wave of the disease managed to infect 80% of the employees working in the medical wards of Prince Wales Hospital, according to reports from impacted nations in the past. 22% of healthcare professionals in hospitals around Hong Kong were infected. Having infected more than 3300 healthcare workers in March and resulting in at least 46 fatalities as of March 17, 2020, this is only one illustration of the extent to which this virus has impacted the health workforce, according to China's National Health Commission. 20% of the country's medical staff was affected, according to Italy, and the infection claimed many lives. Staff shortages, inadequate supplies, and the fact that the majority are separated from their families have an emotional and physical toll on them. When faced with this epidemic, people will experience stress, sadness, denial, sleeplessness, and rage, which will have a negative impact on how well healthcare is delivered and contribute to the rise in morbidity and illness. In addition to influencing clinical decision-making, judgment, attention, and comprehension of the condition, these mental health issues may also have a long-term effect on the general well-being of health professionals. (Stuti, C., and Shubha, N., 2020).

B. Service Delivery

In the response phase, the Gaza Strip imposed a set of measures to restrict movement to limit the spread of the virus, and this led to the inability to access health services due to the lack of a health system equipped to deal with all cases and injuries outside the hospital buildings. This gap led to the use of digital health technologies to provide health services and health and psychological consultations remotely through the Telemedicine.

However, the efficacy and impact on clinical outcomes across various healthcare thematic areas need to be explored further and more evidence generated, Although telehealth has enabled bridging the gap of continued access to healthcare services during the COVID-19 pandemic in Gaza strip, there were some noted challenges including the decrease of service coverage and there were geographical limitations.

C. Health Information System (HIS)

The coronavirus disease (COVID-19) epidemic poses an enormous challenge to the global health system, and governments have taken active preventive and control measures, effort made to design the National Health Information Infrastructure, a comprehensive, knowledge-based system capable of providing critical information to make sound decisions during emergencies, Accurate and reliable data about the population and their health is of great importance in the infection tracking system by testing people infected with Covid 19 virus, and people affected by them in a specific geographical area, and determining the age and gender of those individuals who sought care in the health facility, who were transferred to the hospital, and the number of infected people who They were admitted to the intensive care unit, and he was put on a ventilator.

A national health IT infrastructure could serve as an essential foundation for public health–based surveillance strategies, the health IT infrastructure contributes to the ability of countries to test, track, trace, and quarantine individuals in public health emergencies, limited data sets could be collected on a local basis to enable public health officials to identify hotspots, restrict large gatherings, limit individuals’ movement, and allocate limited health care resources, the data from a national health IT infrastructure could efficiently generate more accurate estimates of real-time disease burden and need for resources, such as hospital personnel, personal protective equipment, intensive care unit beds, and ventilators.

The polymerase chain reaction (PCR) test is used to detect infection with the virus and is essential for managing infected people and guiding national epidemiological policies for Coronavirus Disease 2019 (COVID-19). Increasing the demand for (PCR) in a way that exceeds the capacity in the laboratories has led to the stress of staff in the laboratories, and this leads to delay in results and thus affects the clinical decision and increases the overcrowding of emergency departments. Therefore, leveraging the capabilities of electronic laboratory information systems (LIS) to streamline all phases of laboratory testing (pre-analytical, analytical, and post-analytical) has proven essential to alleviate the burden on laboratory personnel, streamline laboratory testing, improve test reporting, facilitate epidemiological and translational research, and enable data-driven policymaking.

D. Leadership and governance

Leadership and governance are an essential part of any health system that includes ensuring strategic action plans are in place and integrating them with effective oversight, collaboration, regulation, and accountability. Health governance is increasingly seen as a prominent component of the development agenda. Health governance is a cross-cutting topic. It is closely related to the issues surrounding accountability and is a core aspect of governance that relates to managing the relationships between various health stakeholders, including individuals, families, communities and companies (WHO, 2010).

The COVID-19 crisis presents significant leadership and governance challenges and opportunities for organizations the pandemic spotlights leadership in healthcare, and proactivity anticipating events with contingency plans has been a critical leadership competency in the coronavirus pandemic. Two kinds of proactivity seem evident, proactivity before the crisis hits and proactivity once the crisis is underway.

Anticipatory behavior, ideally coupled with commensurate action, is key to understanding the people, roles, and resources that are needed when a crisis befalls us. proactivity during

the crisis regards real-time, dynamic modeling. Based on the expected events, what is the challenge that will materialize tomorrow, next week, and next month from the earliest signal of disease? The centrality of seeing the current state—a projected shortage of equipment and personal protective equipment, developing models with contingencies, and, most importantly, using these predictions to drive action and decision making has been underscored.

E. Health financing system

Health support and financing is an essential element to enhance the capacity of health systems to maintain human health and well-being. Without funding, health staff will not be appointed, there will be a shortage of medicines and medical devices, and thus it will negatively affect the health services provided and lead to the failure of prevention and health promotion (WHO, 2010). Good governance requires oversight, clear standards, and the ability to hold providers accountable, service will be delivered, and health status will improve (Kai, P.,(2017).

There are four main primary sources of health care funding in Palestine; MOF "from revenues of taxation, health insurance, co-payment", the second source is international donors and agencies including UNRWA, the third source is a private for-profit investment, and the last one is household expenditures (out of pocket payment) (United Nations. (2016).).

F. Availability of Essential Medicine

The WHO framework for health systems states that a functional health system guarantees equal access to necessary medicines, vaccines, and technology of guaranteed quality, safety, efficacy, and affordability. The term "access" is defined as "having consistently available and inexpensive medications at public or private health facilities or pharmacies that are

within one hour's walk of the population." Almost 2 billion people lack access to basic medications, leading to a chain reaction of avoidable pain and misery. Essential medicines are essential parts of health systems and play a vital role in the delivery of health care services (WHO, 2020).

There is an urgent ethical need that motivates efforts to increase access to medications. Two billion people are believed to lack access to basic medications, effectively cutting them off from the advantages of modern science and medicine. People shouldn't be denied access to interventions that could save their lives or improve their health for unfair reasons, including those that have economic or social roots. Reference (WHO, 2004).

Efforts continue to improve access to life-saving or health-promoting medicines, and people should not be denied them, especially for economic or social reasons. An estimated 2 billion people do not have access to essential medicines.

2.3.7 Challenges of Covid-19 for health care system:

The COVID-19 pandemic has presented a number of challenges to societies and health care systems around the world. These challenges have been well documented by numerous sources, including the World Health Organization (WHO, 2021) and other public health agencies:

1. **Health impacts:** The virus has caused illness and death for millions of people, and has put a strain on health care systems. According to the World Health Organization (WHO), as of January 2021, there have been over 91 million confirmed cases and over 1.9 million deaths from COVID-19 globally.
2. **Economic impacts:** The pandemic has led to widespread job losses and economic downturns, as many businesses have had to close or reduce their operations. According to a report from the International Labor Organization (ILO), the pandemic could lead to the loss of up to 195 million jobs globally.

3. Social impacts: The pandemic has disrupted people's daily lives, including the way they work, go to school, and socialize. It has also led to social isolation and loneliness for many people. According to a survey conducted by the WHO in 2020, nearly one-third of people globally reported negative impacts on their mental health due to the pandemic.
4. Political impacts: The pandemic has exposed inequalities and disparities in societies, and has led to debates about the appropriate response at the national and international level.
5. Psychological impacts: The pandemic has caused stress and anxiety for many people, and has had a negative impact on mental health. According to the WHO, the pandemic has exacerbated pre-existing mental health conditions and has also led to the development of new mental health problems.
6. Public health system impacts: The pandemic has highlighted the importance of strong public health systems, and has revealed weaknesses in some systems. It has also led to the development and distribution of vaccines, which has presented its own set of challenges.

The COVID-19 pandemic has presented a number of challenges to health care systems around the world. Some of these challenges include (Filip, et. al, 2022):

1. Overcrowding: The pandemic has led to an increase in the number of patients seeking care, which has put a strain on hospitals and other health care facilities.
2. Personal protective equipment (PPE) shortages: There have been shortages of PPE, such as masks and gloves, for health care workers, which has put them at increased risk of infection.

3. Staffing shortages: Many health care workers have become ill or have had to self-isolate, which has led to staffing shortages. This has made it difficult to meet the increased demand for care.
4. Financial strains: The pandemic has put a strain on the finances of health care systems, as the costs of treating COVID-19 patients have increased.
5. Mental health impacts: The pandemic has had a negative impact on the mental health of health care workers, who may be experiencing high levels of stress, anxiety, and burnout as a result of the pandemic.
6. Disruption of non-COVID-19 care: The focus on responding to the pandemic has disrupted the delivery of non-COVID-19 care, leading to delays in treatment and an increase in preventable morbidity and mortality.
7. Burnout among health care workers: The pandemic has led to a high level of stress and burnout among health care workers, who have been working long hours and dealing with a large number of critically ill patients.

The COVID-19 pandemic has presented a number of challenges for health information systems. Some of these challenges include (Elsa, 2021):

1. Data privacy and security: The pandemic has led to a greater need for remote access to patient information, which has raised concerns about data privacy and security. Health information systems have had to adapt to ensure that patient data is protected when accessed remotely.
2. Interoperability: The pandemic has highlighted the importance of interoperability, or the ability of different systems to exchange information and work together effectively. Many health information systems have struggled to interoperate with one another, which has made it difficult to share information and coordinate care.

3. Data quality: The rapid expansion of telehealth and the use of new technologies has led to an increase in the amount of data being collected and stored. Ensuring the quality of this data can be a challenge, as it may be collected in different formats and from a variety of sources.
4. Data overload: The pandemic has generated a large amount of data, which can be overwhelming for health information systems to manage. This can make it difficult to extract meaningful insights and inform decision-making.
5. Lack of infrastructure: In some countries, the health care system may not have the necessary infrastructure in place to support the use of health information systems, which can limit their effectiveness.

The COVID-19 pandemic has presented a number of challenges for the health care workforce. Some of these challenges include (Nishtha, et al., 2021):

1. Burnout: The pandemic has led to a high level of stress and burnout among health care workers, who have been working long hours and dealing with a large number of critically ill patients. This has led to an increase in absenteeism and a decline in the quality of care.
2. Shortages of personal protective equipment (PPE): Health care workers have faced shortages of PPE, such as masks, gloves, and gowns, which has put them at risk of infection and made it difficult for them to provide care safely.
3. Infection risk: Health care workers have been at increased risk of infection due to their exposure to COVID-19 patients. This has led to absences due to illness and has increased the burden on remaining staff.
4. Disruption of education and training: The pandemic has disrupted education and training for health care workers, as schools and training programs have had to close or adapt to new methods of delivery.

5. Policy changes: The pandemic has prompted a number of policy changes related to the health care workforce, including changes to working conditions, pay, and training. These changes may have longer-term impacts on the health care system.

The COVID-19 pandemic has presented a number of challenges for health governance.

Some of these challenges include (Riley, 2021):

1. Decision-making: The pandemic has presented a number of complex and unprecedented challenges, which has made decision-making difficult for health governance bodies. Decisions have had to be made quickly and often with incomplete information, which has led to a greater risk of errors.
2. Coordination: The pandemic has highlighted the importance of coordination among different levels of government, health care providers, and other stakeholders. However, coordinating these efforts has been challenging, especially in cases where there are differences in policies or priorities.
3. Equity: The pandemic has exposed and exacerbated existing inequalities in the health care system, as certain populations have been disproportionately affected by the virus. Ensuring equitable access to care has been a challenge for health governance bodies.
4. Transparency: The pandemic has highlighted the need for transparency in health governance, as people have looked for information about the spread of the virus and the actions being taken to address it. However, ensuring transparency has been challenging, as information about the virus has evolved rapidly and there have been conflicting messages from different sources.
5. Political considerations: The pandemic has had significant political implications, and health governance decisions have often been influenced by political considerations.

This has made it difficult to focus on the needs of the population and ensure that decisions are based on evidence.

The COVID-19 pandemic has presented a number of challenges for health finance.

Some of these challenges include (Kaye, 2021):

1. Financial strain: The pandemic has put a financial strain on health care systems, as the cost of treating COVID-19 patients has increased and revenue from other sources has decreased. This has led to a greater focus on financial sustainability and risk management.
2. Funding shortages: The pandemic has led to a shortage of funding for health care systems, as governments and other funders have had to redirect resources to address the crisis. This has made it difficult for health care systems to meet their financial needs.
3. Resource allocation: The pandemic has raised questions about how to allocate limited resources, such as personal protective equipment (PPE), ventilators, and medications, in an equitable and transparent way. Health finance systems have had to adapt to support these decisions.
4. Cost-saving measures: The pandemic has led to a greater focus on cost-saving measures, such as the use of telehealth and the consolidation of services. These measures may lead to long-term cost savings, but they may also have unintended consequences, such as reduced access to care.
5. Policy changes: The pandemic has prompted a number of policy changes related to health finance, including changes to the way that health care is financed and the way that health care decisions are made. These changes may have longer-term impacts on the health care system.

2.3.8 Opportunities of Covid-19 for health care system

The COVID-19 pandemic has presented a number of opportunities for the health care system according to (WHO, 2020). Some of these opportunities include:

1. **Telehealth:** The pandemic has led to a significant increase in the use of telehealth, with many people turning to virtual visits with health care providers instead of in-person appointments. This has made it easier for people to access health care, especially in areas where there may be a shortage of providers. According to a report by the World Health Organization (WHO), the use of telehealth services increased by more than 50% in many countries during the early months of the pandemic.
2. **Innovation:** The pandemic has spurred innovation in the health care field, as researchers and developers have worked to create new treatments, vaccines, and diagnostic tests for COVID-19. According to the WHO, as of January 2021, there are more than 200 vaccines in development for COVID-19, and several have received regulatory approval for use.
3. **Collaboration:** The pandemic has brought people and organizations together in new ways, as they work to address the challenges posed by the virus. This has led to increased collaboration among health care providers, researchers, and other stakeholders.
4. **Resilience:** The pandemic has tested the resilience of the health care system, and has shown that it is capable of adapting to and addressing new challenges. This has helped to build confidence in the system and its ability to respond to future crises.
5. **Policy changes:** The pandemic has prompted a number of policy changes related to health care, including changes to.

The COVID-19 pandemic has presented a number of opportunities for the health care workforce. Some of these opportunities include (Omboni, (2022):

1. Telehealth: The pandemic has led to a significant increase in the use of telehealth, which has created new opportunities for health care professionals to deliver care remotely.
2. Collaboration: The pandemic has brought people and organizations together in new ways, as they work to address the challenges posed by the virus. This has led to increased collaboration among health care providers, researchers, and other stakeholders.
3. Professional development: The pandemic has presented new learning opportunities for health care professionals, as they have had to adapt to new methods of delivering care and to new treatments and technologies.
4. Career advancement: The pandemic has created new leadership and management opportunities for health care professionals, as they have taken on additional responsibilities and played a critical role in the response to the pandemic.
5. Policy changes: The pandemic has prompted a number of policy changes related to the health care workforce, including changes to working conditions, pay, and training. These changes may have longer-term impacts on the health care system.

The COVID-19 pandemic has presented a number of opportunities for health information systems. Some of these opportunities include (Negro, 2021):

1. Electronic health records (EHRs): The pandemic has highlighted the importance of electronic health records (EHRs) in enabling remote access to patient information and facilitating care coordination.

2. Telehealth: The increased use of telehealth has led to a greater need for robust health information systems that can support virtual visits and the exchange of information between patients and providers.
3. Data analytics: The pandemic has generated a large amount of data that can be used to track the spread of the virus, identify trends and patterns, and inform decision-making. Health information systems can help to collect, analyze, and interpret this data.
4. Quality improvement: The pandemic has prompted a focus on quality improvement in the health care system, and health information systems can play a role in this by providing data that can be used to monitor and measure the quality of care.
5. Policy changes: The pandemic has prompted a number of policy changes related to health information systems, including changes to privacy and security regulations. These changes may have longer-term impacts on the health care system.

The COVID-19 pandemic has presented a number of opportunities for health governance. Some of these opportunities include (Taghizade, 2021):

1. Collaboration: The pandemic has brought people and organizations together in new ways, as they work to address the challenges posed by the virus. This has led to increased collaboration among health care providers, researchers, and other stakeholders.
2. Policy changes: The pandemic has prompted a number of policy changes related to health governance, including changes to the way that health care is financed and the way that health care decisions are made. These changes may have longer-term impacts on the health care system.

3. Leadership development: The pandemic has created new leadership and management opportunities for health care professionals, as they have taken on additional responsibilities and played a critical role in the response to the pandemic.
4. Quality improvement: The pandemic has prompted a focus on quality improvement in the health care system, and health governance can play a role in this by setting standards and monitoring the quality of care.
5. Public health: The pandemic has highlighted the importance of strong public health systems and the need for effective health governance at the national and international level.

The COVID-19 pandemic has presented a number of opportunities for health finance. Some of these opportunities include (Thomas, 2022):

1. Policy changes: The pandemic has prompted a number of policy changes related to health finance, including changes to the way that health care is financed and the way that health care decisions are made. These changes may have longer-term impacts on the health care system.
2. Innovation: The pandemic has spurred innovation in the health care field, as researchers and developers have worked to create new treatments, vaccines, and diagnostic tests for COVID-19. This has created new opportunities for investment in the health care sector.
3. Cost-saving measures: The pandemic has led to a greater focus on cost-saving measures, such as the use of telehealth and the consolidation of services. These measures may lead to long-term cost savings for the health care system.
4. Data analytics: The pandemic has generated a large amount of data that can be used to track the spread of the virus, identify trends and patterns, and inform decision-

making. Health finance systems can help to collect, analyze, and interpret this data to inform financial decision-making.

5. Financial strain: The pandemic has put a financial strain on health care systems, as the cost of treating COVID-19 patients has increased and revenue from other sources has decreased. This has led to a greater focus on financial sustainability and risk management.

Chapter Three

Methodology

Study design, data collection methods, study sample, study population, and ethical considerations are all thoroughly described in this chapter. In addition, it presents the instrument used in the study, covers methods for ensuring its validity and reliability, and describes the data and its analysis. Finally, it lists study limitations and selection criteria.

3.1 Study Design

The design of this study was a descriptive, analytical and cross-sectional study with a combination of quantitative and qualitative methods to explore most challenges faced healthcare system during covid 19 and opportunities acquired, through describing the status of the Six WHO health system building blocks in Gaza strip.

3.2 Study Setting

The study was conducted at the Ministry of Health, and the health of a non-governmental organization (HNGO) in the GS, The researcher is interested in gathering information from managers of healthcare organizations from various perspectives. The results were triangulated with a multi-layer analysis to strengthen the overall study.

3.3 Study period

Between September 2021 and September 2022, the study was carried out.

3.4 Study population

The study population consists of two parts:

3.4.1 The population of the quantitative part is:

The sample population of the study consisted of a health worker survey in the HCS, consisting of 250 people working at different managerial levels in both ministry of health (MOH) and Non-governmental organizations (NGOs) in the Gaza strip, the sample size after calculated was 120 participants .

3.4.2 The population of the qualitative part is:

The researcher used In-depth interviews with 15 participants and institutions were selected purposively based on a set of criteria and peer review to cover the most challenges and opportunities for the HCS in the GS, through the study of the core framework of health care function process was taken including main stakeholder and sample selection criteria cover framework of the health system in Gaza strip including top-level management in both MOH and NGOs (managerial position of emergency, creating resources and financing).

3.5 Sample size and sampling process

The sites and participants for the investigation and evaluation of the challenges and opportunities experienced by the healthcare system during COVID-19 in the Gaza Strip were chosen using a non-probability (purposive sampling method).

3.6 Eligibility criteria

Inclusion criteria for health system stakeholders:

- Stakeholder who works at many managements level in both of ministry of health and the health of the non-governmental organization in the Gaza strip.

3.7 Data Collection Tools:

3.7.1 For the Quantitative part

The questionnaire contained main sections integration between the evaluation of six building blocks and 8 pillars of WHO of evaluation response of health care system during the pandemic to be the researcher able to study the challenges and opportunities that affected health care system during covid 19 response, the first section including asking the manager in top-level and divided into sub sectional that including

- General information including a sociodemographic variable for stakeholders.
- Healthcare system facility general information
- The question that indicates characteristics of the input services and appropriateness of service delivery
- Preparedness and responsiveness of the healthcare system during the Covid-19 pandemic.
- The question indicates to processing of preparedness and responsiveness to the pandemic.
- Barriers to delivering Appropriateness of service during covid 19
- Questions of outcome service delivery.

3.7.2 For the Qualitative part

By looking through pertinent literature, the interview questions were created. Purely medical literature was not included in the review; only materials pertinent to the current investigation were included. The instruction manual included questions regarding chances discovered while responding to COVID-19 regarding medical personnel, medical services delivery, medical information systems, medications and equipment, management, governance, and funding.

The interview is composed of two parts:

- Part one: includes questions related to personal and sociodemographic characteristic data like age, gender, marital status, qualifications, job title, years of experience, and workplace.

-Part two: six questions

1. As one of the key persons in health: Can you please tell us, what opportunities of health workers gain during the COVID-19 response?
2. Can you tell me about the major opportunity health services delivery gained during the response to COVID?
3. Could you describe the opportunities gained during the COVID-19 response to the health information system?
4. Could you describe the opportunities gained during the COVID-19 response for essential medicines and equipment?
5. Can you talk about the major Leadership and Governance opportunities gained during the COVID-19 response?
6. Can you talk about the major financing opportunities gained during the COVID-19 response?

Data have been collected by the researcher by using the structured interview to get information from the eligible policymakers about opportunities gained during the response to COVID-19. Interviews were conducted and data were collected through multiple sessions. The duration of each session was generally 30-40 minutes, and the interviews were recorded through an audio tape recorder, which was transcribed in the next. The data was then encoded independently from the verbatim transcript as the process involved developing the code and sub-coding structure. The entire coding procedure has been reviewed and finalized.

3.8 Pilot study

3.8.1 Quantitative part

The following two phases of piloting were carried out: the first was distributed 10 questionnaires through an interview to fill them in, to explore the suitability of the study tool, determining the time taken to fill it, and predicting the response rate and allowing the researcher to make a practical attempt to collect data after looking at the first stage and obtaining feedback on the questionnaire. The required modifications were made, in the second stage 10 other questionnaires were distributed from the selected sample, and this stage aimed to ensure the suitability of the tool and to validate the validity of the data collected, and these questionnaires were excluded from the final set of data.

3.8.2 Qualitative part

To determine whether the instrument was appropriate, the researcher did a pilot interview. As a result of the questions we modified appropriately, this gave the researcher the opportunity to practice data collecting while also enhancing the validity and reliability of the study.

3.9 Scientific rigor

3.9.1 Quantitative part (questionnaire)

Validity: The questionnaire's relevance was examined by specialists, and their feedback was taken into account. Additionally, a pilot research was carried out to assess how consumers responded to the questionnaire and how they understood it before to the actual data collection.

Reliability: Data were input on the same day as data collection with potential interventions to check data quality or to refill the questionnaire as necessary to ensure the reliability of the question tools. The questionnaire's internal consistency was assessed using Cronbach's alpha

coefficient, and entry errors were decreased by entering 5% of the data again after data entry was finished.

Table (3.1): Reliability of the study instrument

Domain	No. of Items	Cronbach's Alpha
Health Workforce Challenges	12	0.690
Health Services Delivery Challenges	13	0.644
Challenges of Health Information System	10	0.923
Challenges of Leadership and Governance	13	0.649
Challenges of health care system financing	9	0.826
Challenges of Access to essential medicines and equipment	9	0.880
Total score	66	0.902

3.9.2 Qualitative part (in-depth interview)

The following steps were taken to ensure the trustworthiness of the study's qualitative component. First, the in-depth interview questions were revised with the help of health professionals as a peer check to ensure that they addressed all necessary dimensions. The interview transcripts were then double-checked by a member to ensure their veracity and transparency. The longer engagement was carried out as the researcher made an effort to elicit information and correctly address each interview dimension. The meeting also was recorded for a thorough interview that aided in fact-checking and double-checking the veracity of the transcripts. Finally, all of the transcripts and recordings were archived so that anyone may track the information at any point during an audit trial.

3.10 Data analysis

3.10.1 Quantitative data analysis

After reviewing the completed data abstract sheets and creating a data entry model with the help of the SPSS program version 24, the data input was completed. To verify the accuracy

of data entry, the questionnaire was coded before being entered into the computer and cleaned using frequency tables and a random questionnaire selection process. occurrences and descriptive information (means, ranges, percentages, and standard deviations). The researcher next coded the summary sheet variables, reviewed the data for mistakes such as missing or inconsistent data, and input the data into the computer. After that, the researcher conducted data analysis with the supervisor's assistance. An independent t-test, a one-way ANOVA test, and a Chi-square test for categorical variables were employed in the advanced statistical analysis to investigate the probable association between the study variables. A confidence interval (CI) of 95% was used to define statistical significance as a p-value of 0.05 or less.

3.10.2 Qualitative part

The researcher obtained the key findings from the audio recording of the key informant interview and then managed data with a deep reading of the raw data from the transcripts. The note was taken to identify the important then categorize of related ideas, and comparison and integration between the quantitative and qualitative findings will be done to create rich items for discussion and representation. One-way ANOVA test results for the participants' means for all challenge domains related to their organization location categories as shown in the table (4.18) displayed the findings from a comparison of mean differences between Organization location categories and research on all Challenges domains. Organization location categories did not effect all challenge domains in the study, since there were no statistically significant differences in mean scores between them and all challenge domains ($p>0.05$).

After carefully reviewing all the answers going over each respondent's responses, the data were organized grouped according to below suggested codes and subcodes using NVivo 12 software. See table (3.2).

Table (3.2): Codes and Subcodes

Code Name	Code Name
Health workers	Medicines and equipment
The number of HCWS increase	Essential Medicines, Medical Equipment & Supplies needs
HCWS training	PPE needs
Protocols and guidelines implemented	The increasing number of ambulances, oxygen stations, and cylinders.
COVID-19 Work Experience	
Health services delivery	Leadership and Governance
Standardized protocols-based care	Increasing Clinical Capacity
Policies, plans and quality systems	The decision to open new sections
Expanding COVID-19 vaccination	Activation of Scientific and infection control Committees
Telemedicine services	Establishment of a Safety and Infection Control Unit at MoH
Health information system	Opening of the Friendship Turkish Hospital
Computerization System	Coordination and cooperation among Health General administration
Cases and O2 monitoring systems in hospitals	Cooperation between Government Ministries
Hospital admission systems	Financing
Coronavirus information is publicly available and reported daily	Allocating a budget to confront the pandemic
	Meeting the financial needs of MoH
Programs to facilitate the release of information about Corona patients	Incentive and rewards

- Health services delivery (no.16), is the second common code with refernces.
- Health worker and Health information system (no. 15), is the third commond code with references.
- Medicine & equipments (no. 11) and Health Financing (no.7), is the lowest code was referred.

3.11 Ethical consideration and procedures

The application of the research must be done under very strict ethical administrative guidelines. The study took into account the pertinent principles when conducting the research; these principles include the principle of beneficence, the principle of respect for human dignity, the principle of justice, anonymity, confidentiality, and informed consent. All ethical procedures were followed without exception. The researcher was steadfastly committed to upholding all ethical standards necessary for doing research. Before the study is done, the participants will be informed of these concepts.

- A formal letter of approval was acquired from the Al Quds University School of Public Health, and privacy was upheld when collecting the data from individuals like managers and organizations that may benefit most from the study.
- The Helsinki Committee in Gaza provided an official letter of consent. Annex,...
- To carry out this study, an official letter was obtained from MOH. Annex,..
- An explanation of the study, including its goal, the confidentiality of the data, and certain instructions, was given to each participant.

3.12 Limitation of the study

- The time limit may decrease the scope of the study
- Lack of previous national studies in this field
- Refuse of some of the participant stakeholders in the questionnaire and interview

- Absence of found baseline data about health framework in Gaza strip.
- Limited scientific resources like books.
- The study is cross-sectional while the health care system situation changes by time and circumstances.

Chapter Four

Results and Discussion

The study aimed to assess the challenges and opportunities faced Palestinian Health Care System in the Gaza Strip During Covid-19 Response. The evaluation of the healthcare system is a crucial step in determining its strong and weak aspects, which aids in our understanding of how to strengthen the system by identifying its gaps, guiding decision-making, and accumulating knowledge. The evaluation of the difficulties and opportunities encountered by the healthcare system during the COVID 19 pandemic serves as a representation of this study and aims to assist health managers and decision-makers in reducing the pandemic burden.

This chapter includes both the qualitative data to identify the most opportunities that gain access during the covid 19 pandemic in the Gaza Strip and the results of the quantitative data collected in this study using a questionnaire based on WHO blocks of the health care system during response.

4.1 Quantitative and Qualitative Data Analysis

4.1.1 Demographic participants' characteristics.

The following information is included in the study's analysis of the participant's demographic information, which included information from the questionnaire's "Doctor, Nurse, Pharmacist, Lab Technician," and other categories (Gender, Age, Marital status, Qualification, Managerial Position, Category of staff, Years of Experience, Place of work, Type of health organization, Organization location).

4.1.1.1 Characteristics of the study participants

Table (4.1): Sample distribution based on the participants' gender, marital status & Age (n=96)

Variables		Frequency	Percent
Gender	Male	74	77.1
	Female	22	22.9
Marital status	Married	88	91.7
	Non married	8	8.3
Age	40 and less	23	24.0
	41-50	58	60.4
	more than 50	15	15.6

Table(4.1), shows that the distribution of the study's male participants percentage was 77.1% while the percentage of females was 22.9%, The results show gender imbalance in top management positions, this finding fully agrees with the MOH report that reported “Although women make up approximately 70% of the worldwide health and social workforce, they are only thought to hold 25% of senior positions (WHO,2021^a).

And study agrees with a previous study that found the gender gaps in COVID-19 in 87 countries included in this analysis of gender parity in their membership information regarding task force composition and membership criteria 85.2% are majority men decision-making (Kim, D., songor, B., Maisoon, C., et al. (2020).

Table (4.1), show that the percentage of married participants was 91.7%, while the percentage of unmarried participants was 8.3%. Moreover, The table shows that 24% of the study participants are less than 40 years old, and More than half of them (60.4%) are between the ages of 41 and 50, while 15.6% are older.

The results show that more than half of the managers are in middle- age adult, which is fully grown or developed, Middle age adult is the golden age because it has stability characterized for example physical health, emotional maturity, a clearly defined sense of competence, and

power in the work situation, this is very important in a managerial position that helps make realistic and correct decisions, especially during the workflow.

Table (4.2): Sample distribution based on the participants' Category of staff, Qualification, Managerial position& experience (n=96)

Variables		Frequency	Percent
Category of staff	Physician	20	20.8
	Nurse	24	25.0
	Pharmacist	19	19.8
	Lab technician	12	12.5
	Others	21	21.9
Qualification	Bachelor	56	58.3
	Master	30	31.3
	PhD	10	10.4
Managerial position	General director	23	24.0
	Supervisor	12	12.5
	Head Dept.	52	54.2
	Other	9	9.3
Years of Experience	1-10	8	8.3
	11-20	53	55.2
	21-30	28	29.2
	more than 30	7	7.3

As shown in Table (4.2), the nurse staff was the highest percentage of participants 25%, From a researcher's perspective, the explanation for this increase is the growing proportion of nurses relative to other staff categories, as nurses already make up the majority of the HCWs in MOH, (1.5 nurses per physician) (MOH, 2021b). followed by the physician with a percentage of 20.8%, a shortage of healthcare workforce with a very low physician-patient ratio of 1 to 2 physicians per 1,000 population (AlKhaldi et al., 2020) then pharmacists 19.8% and the lowest percentage of staff shown lab technician.

Table (4.2) show that a bachelor's degree is the highest percentage of participants (58.3%). this result was near a study finding in Saudi Arabia that reported 58% with a bachelor's degree (Almohammed et al., 2021). then master degrees 31.3% and the lowest qualification percentage is the Ph.D. degree 10.4% because of the low number of Ph.D. programs in the

Gaza strip and the high cost of high education level. Also, Moreover, that 54.2% were “head department”, 24% were “general director”, 12.5% were “supervisor” and 9.4% were other managerial position.

Additionally, As shown in Table (4.2), 8.3% of the sample had “1-10 years “of experience and 55.2% of the sample had “11-20 years”, 29.2% of the sample had “21-30 years” and 7.3% from the samples had “more than 30 years”. The results revealed that more than half of the study sample has 11-20 years of experience.

Table (4.3): Sample distribution based on the participants’ Place of work, Type of organization& organization location(n=96)

Variables		Frequency	Percent
Place of work	MoH General Directorates	25	26.0
	Hospitals	44	45.8
	Primary Health Care	27	28.1
Type of organization	Governmental	92	95.8
	Non-governmental	4	4.2
Organization location	North Gaza	8	8.3
	Gaza	28	29.2
	Middle	29	30.2
	Khan Younis	18	18.8
	Rafah	13	13.5

Table (4.3) demonstrates that, with a percentage of 45.8%, over half of the participants were from hospitals. because hospitals have dealt with COVID-19 patients more than PHC, and because the number of hospital workers (HCWs) in the MOH is greater than that of PHC personnel (65.1% versus 16.4%) (MOH, 2021^b). Then primary health care is 28.1% and MoH General Directorates 26% and results show that 95.8% from the governmental organization and 4.2% from non-governmental organizations Because governmental organizations broadest in the Gaza strip and dealing with covid 19 cases more than non-governmental organizations. Also, the highest percentage is in the Middle -Zone 30.2%,

followed by Gaza 29.2%, Khan-Younis 18.8%, Rafah 13.5 and the lowest percentage in North Gaza 8.3%.

4.1.2 Analyzing the dimensions of the questionnaire

Table (4.4): Distribution of the study participants according to their perception of the Health Workforce Challenges domain (n= 96)

#	Items	Mean	S. D	%	Rank
1.	Increased workload.	4.34	0.77	86.88	1
2.	Longer working hours.	4.04	0.89	80.83	5
3.	Shortage of the staff.	4.27	0.80	85.42	2
4.	Misunderstanding about their roles and responsibilities during COVID-19 response.	3.16	1.10	63.13	6
5.	Fatigue and psychosocial stress.	4.07	0.92	81.46	4
6.	Violence and stigma against health workers.	3.09	1.10	61.88	8
7.	Increase risk of infection for medical staff.	4.24	0.88	84.79	3
8.	Absenteeism & early retirements.	3.11	1.13	62.29	7
9.	Inability to train on using personal protective equipment.	3.06	1.08	61.25	9
10.	Inability to train medical staff on preventive and therapeutic protocols for COVID.	3.04	1.04	60.83	10
11.	Non-compliance of medical staff with infection prevention and control protocols.	3.00	1.07	60.00	12
12.	Difficulties to follow up on the updated knowledge of COVID-19.	3.01	1.10	60.21	11
	Health Workforce Challenges	3.54	0.47	70.75	

Table (4.4) shows the percentage for the domain of Health Workforce Challenges (mean=3.54, S.D.=0.47) with total relative weight (70.75 %). which means the participants agree about the challenges faced the health workforce during working on COVID-19. The researcher believes that domain of workforce domain got in first place in the six blocks because of the newly experience of the pandemic in the Gaza strip.

The results show that items number 1 "increased workload" and 3—"Shortage of staff"—have the highest percentages, coming in at 86.8% and 85.4%, respectively. This indicates that respondents agreed with these items because the mean degree of response to these items

is higher than the degree of neutrality. The finding of this study confirms with the Netherlands in different 6 hospitals that covid 19 caused a high nursing workload, because of an increase in both number of patients per nurse and the nursing activity score per nurse in the intensive care unit.

And confirm the study of Iranian healthcare workers after evaluating the impact of covid 19 pandemic on workers load and mental health of Iranian medical staff by using general health questions and (NASA-TLX) task load index questionnaire between march and April 2022 work had more task load compares to those who had no catch with the covid patient at work place and nurse had significantly more workload compare to the other jobs. And (C) confirms with the study done in Spain and China that the main challenges for nursing professionals' was workload during a covid pandemic for frontline health workers.

Then a shortage of staff is confirmed with study in across Sub Saharan Africa and South Asia by using Institute for Health Metrics and Evaluation (IHME), that large gaps in healthcare and health worker shortage in physicians, nurses and midwives, dental personnel and pharmaceutical personnel, researchers estimate that over 130 countries had shortages of physicians and more than 150 had a shortage of nurse and midwives. And over 43 million additional health workers are needed to cover the health worker shortage globally due to political unrest, violence, and lack of training.

While the lowest three items are paragraph number (11,12,10) respectively "Non-compliance of medical staff with infection prevention and control protocols" with a percentage of 60.0%, followed by "Difficulties to follow up the updated knowledge of COVID-19" with a percentage of 60.21%, followed by "Inability to train medical staff on preventive and therapeutic protocols for" with percentage 60.83%.

The researcher explains this result that the manager increased supporting the delivery of infection prevention and control and provision of essential training to healthcare workers for

protocols and implementation in the workplace before, during, and after the covid 19 pandemic as a part of the emergency plan. and holding several educational courses for the staff to enhance curative prevention by identifying the nature of the disease, the way it spreads, how to protect from it, training on protective clothing and strategies for protection from it, as well as promoting hand washing and enhancing the importance of vaccination, which led to the great demand from medical staff to vaccinate to protect, which contributed to strengthening their therapeutic prevention.

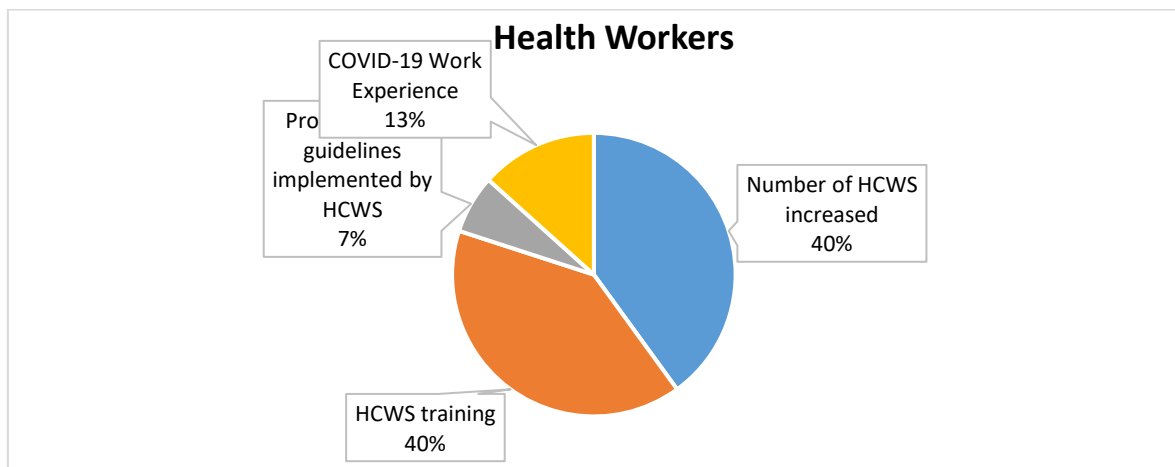


Figure (4.1): Opportunities that health workers gain while responding to COVID-19

In the health workers code, five subcodes were generated (the number of HCWS increased, HCWS training, protocols and guidelines implemented by HCWS, and COVID-19 Work Experience), the most common subcode in health workers was " HCWS training".

About 40% of the participants indicated that the ministry has recruited and increased the number of health staff in main administrations during the Corona pandemic, from doctors with various specialties, especially doctors of the intensive care unit and doctors of the emergency department. In addition, the number of nursing staff in different departments has been increased to support hospitals and health centers to face the Corona pandemic, for example, one of the participant said,

"The Ministry of Health noted the acute shortage of intensive care and emergency doctors, and the shortage increased when new departments were opened. This is what prompted the

Ministry to employ and increase the number of health staff from Anesthesia and ICU doctors and also nursing".

For training participants pointed out that all health staff in various specialties were continuously trained and given basic and advanced courses during the Corona pandemic, regarding receiving cases, treating cases, the importance of oxygen, respiratory sorting, sterilization mechanism, and laboratory tests. Participant noted,

"Training courses for doctors and nurses did not stop during the first two years of the Corona pandemic, and among the courses were oxygen therapy such as continuous positive airway pressure (CPAP) and bilevel positive airway pressure (BiPAP)"

"The health staff, including doctors, nurses and Laboratory Technician, were provided with basic and advanced courses regarding different protocols for Corona patients".

Table (4.5): Distribution of the study participants according to their perception about the Health Services Delivery Challenges domain (n= 96)

#	Items	Mean	S. D	%	Rank
1.	Increase demand for care of people with covid.	4.68	5.25	93.54	1
2.	Maintain access to high-quality non-covid services in the pandemic.	3.68	0.93	73.54	3
3.	Access to health facilities due to lockdowns.	3.19	1.03	63.75	10
4.	The scope and volume of specific health services during the pandemic response are reduced.	3.38	1.04	67.50	7
5.	The capacity of healthcare facilities for mild and moderate COVID cases is limited.	3.42	1.03	68.33	6
6.	Intensive care staff, beds, and disposables capacity during the COVID-19 response.	3.74	1.04	74.79	2
7.	Provision of lifesaving emergency, critical, and operative care.	3.57	1.02	71.46	4
8.	Provision of rehabilitation, palliative, and long-term care.	3.55	0.95	71.04	5
9.	Provision of mother and child health care services (antenatal, postnatal, and family planning).	3.28	1.04	65.63	9
10.	Provision of essential health services for immunization.	2.81	1.12	56.25	13
11.	Limited provision of essential health services for communicable diseases.	3.11	1.00	62.29	11
12.	Provision of essential health services for non-communicable diseases.	3.08	1.03	61.67	12
13.	Provision of essential health services for mental, neurological, and substance use disorders.	3.34	1.11	66.88	8
	Health Services Delivery Challenges	3.45	0.77	68.97	

Table (4.5) shows that the weighted mean for the perception of health services delivery challenges domain was 68.97 %. According to the results, the highest item was the number (1) "Increase demand for care of people with covid" with a percentage of 93.54%, this is close to the WHO report "The COVID-19 pandemic has significantly reduced the ability of health systems to continue providing crucial healthcare services. Although the rising demand for COVID-19 patient care is challenging health systems worldwide, it is crucial to sustain preventive and curative services" (WHO,2020^d). Studies confirm that since the COVID-19 epidemic started, the provision of prevention and treatment services for noncommunicable diseases (NCDs) has been significantly affected (WHO,2020^d).

Then followed by the number (6) "Limited of Intensive care staff, beds and disposables capacity during COVID-19 response" with a percentage of 74.79%, An rise in the number of patients admitted to adult ICUs during the COVID pandemic put a significant strain on the available critical care resources. This study finding because of health care system in Gaza have a severe shortages in ICU Beds.

The finding of this study supported study in the Greek healthcare system that specialized in 13 hospitals to deal with covid 19 patients, then clinics have been closed, and some wards have been converted into COVID-19 ICU beds, as a result of the increased number of covid patients and limited of ICU beds, scheduled surgical operations, and out-patient specialist hospital appointments have been canceled and the focus move to the health care system attention in dealing with the COVID-19 pandemic, principally at the level of hospitals and ICU beds, in addition to disruption the daily services provided in hospitals (Ioanna, G., & George, T.2020).

The requirement for a huge number of healthcare professionals is also reinforced by research on the Nepalese healthcare system. In Nepal, there were 3.15 healthcare professionals for every 1000 people, including doctors, nurses, and midwives. According to government

statistics, there aren't many ventilators and intensive care beds available. Both COVID and non-COVID patients can use these ICU beds and ventilators. ICU beds and ventilators were so scarce that several patients died in ambulances while trying to find ICU beds (Prajwal. N., Dilip, B.,2021).

While the lowest two were item number (10)” provision of essential health services for immunization” with a percentage of 56.6% then item number (12)” Limited provision of essential health services for the non-communicable disease” with a percentage of 61.67%. covid 19 pandemic pushed patients to demand more care. The finding of the study confirmed with the current health system that still the provision of services during the pandemic restricted some services and move to operate Tele-counseling services for these patients with mild symptoms that do not require hospitalization, this finding confirmed the Greek health care system (‘restructuring’ of PHC services, in ways that will support a more efficiently targeted health care delivery system, was announced. Specific Health Centers in six major urban areas (Athens, Thessaloniki, Patras, Larissa, and Heraklion) have been exclusively designated for the screening of patients with a respiratory infections. These COVID-19 Health Centers will be involved in the early detection, monitoring, and management of possible and confirmed cases with mild symptoms that do not require hospitalization, at home, and will operate Tele-counseling services for these patients diagnosed with COVID-19.). (Ioanna, G., & George, T.2020).

And confirm that at the height of the pandemic, American urgent care centers switched their focus from offering basic on-demand care for minor illnesses and injuries to concentrating on covid 19 triage testing and treatment for millions of Americans. Many primary care physicians also only offered limited covid 19 care. According to a WHO study on the impact of the COVID 19 pandemic on vital health services, disruptions in these services occurred

in virtually all of the countries that responded, and more so in lower-income countries than in higher-income nations. A wide range of services were impacted (WHO,2020).

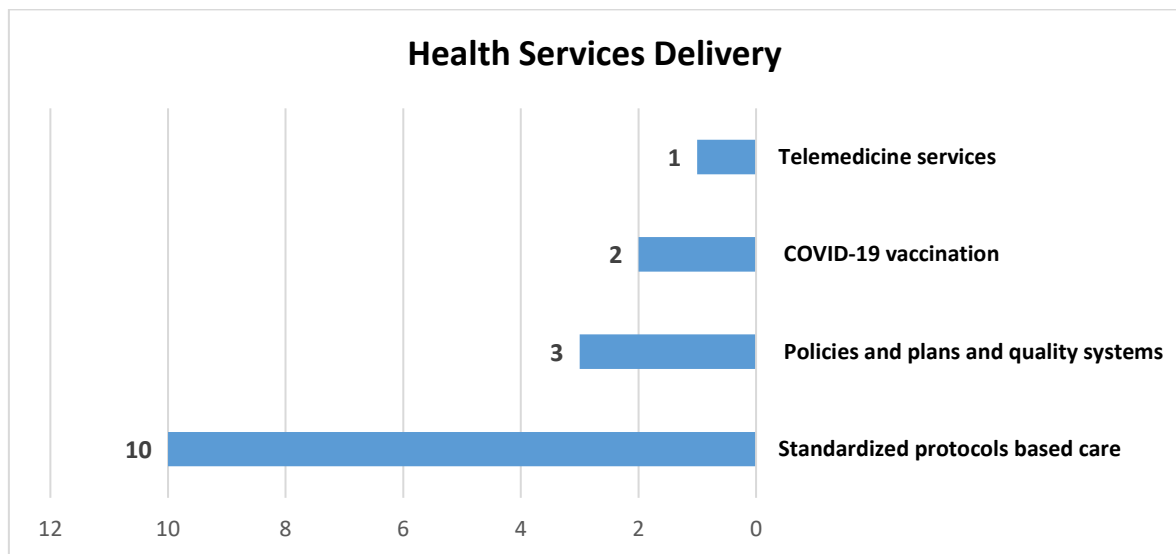


Figure (4.2): Opportunities gained in health services delivery during the response to COVID 19

In the health services delivery code, four subcodes were generated (standardized protocols-based care, policies, and plans and quality systems, COVID-19 vaccination, and telemedicine services), the most common subcode for health workers were "standardized protocols-based care".

Study participants expressed positive attitudes toward opportunities gained through the provision of health services during the response to COVID-19. Nearly three-quarters of respondents said Protocols approved by the World Health Organization and the CDC have been applied, such as therapeutic protocols, oxygen therapy, respiratory triage, how to use personal protective equipment and sterilization mechanisms, and any protocols related to the Coronavirus. Plans and policies have been prepared for work and quality standards have been applied at work. The following comments from the participants explain:

"Protocols have been developed in terms of the treatment plan and the primary responsibility for following up on his condition".

"Introduction of therapeutic oxygen protocols for covid and non-covid cases. The use of a non-breathing mask has become necessary and is required monthly".

"The hospital's oxygen system has been strengthened by increasing oxygen generating stations and continuous monitoring of oxygen, need and consumption".

"Clear protocols have been established in which to treat and deal with Corona patients to improve the performance of the medical staff".

Table (4.6): Distribution of the study participants according to their perception about the Challenges of the Health Information System domain (n= 96)

#	Items	Mean	S. D	%	Rank
1.	Lack of availability of network infrastructure.	3.30	1.05	66.04	1
2.	inability to design a health information system for Covid 19 response.	3.13	1.14	62.50	6
3.	Inability to build a big data information system.	3.22	1.05	64.38	4
4.	Problem of data acquisition and integration.	3.23	1.05	64.58	3
5.	Inability to analyze big data to support decision making.	3.26	0.95	65.21	2
6.	Failure to estimate rapidly the epidemic risk and prevention level.	3.22	1.02	64.38	4
7.	An imbalance in health data security and health information management.	2.95	0.97	58.96	8
8.	Lack of intersectional collaboration and communication.	3.07	1.06	61.46	7
9.	Inactively monitoring and reporting disease trends and impacts.	2.90	1.07	57.92	9
10.	Discontinuity of performance evaluation of information system during pandemic response.	2.86	1.03	57.29	10
	Challenges of Health Information System	3.11	0.80	62.27	

Table (4.6) shows that the weighted mean for the perception of the health information system was 62.27%, Participants perceived items no 1,5,4,3,6 “Lack of availability of network infrastructure”, “Inability to analyze big data to support decision making”, “Problem of data acquisition and integration”, “Inability to build a big data information system” and “Failure to estimate rapidly the epidemic risk and prevention level” were of the first ranks (mean = 3.30, (%) = 66.04, mean = 3.26, (%) = 65.21, mean = 3.23, (%) = 64.58, mean = 3.22, (%)

= 64.38, mean = 3.22, (%) = 64.38 respectively). This demonstrates that the respondents have consensus regarding these issues.

When the Covid 19 pandemic hit, the researcher discovered that there was a gap in the information system in many hospitals and primary care facilities in the Gaza Strip that lacked the necessary infrastructure. It follows that many challenges include the difficulty of obtaining integrated data and the inability to build a big information system, which affects data analysis and decision-making based on accurate information.

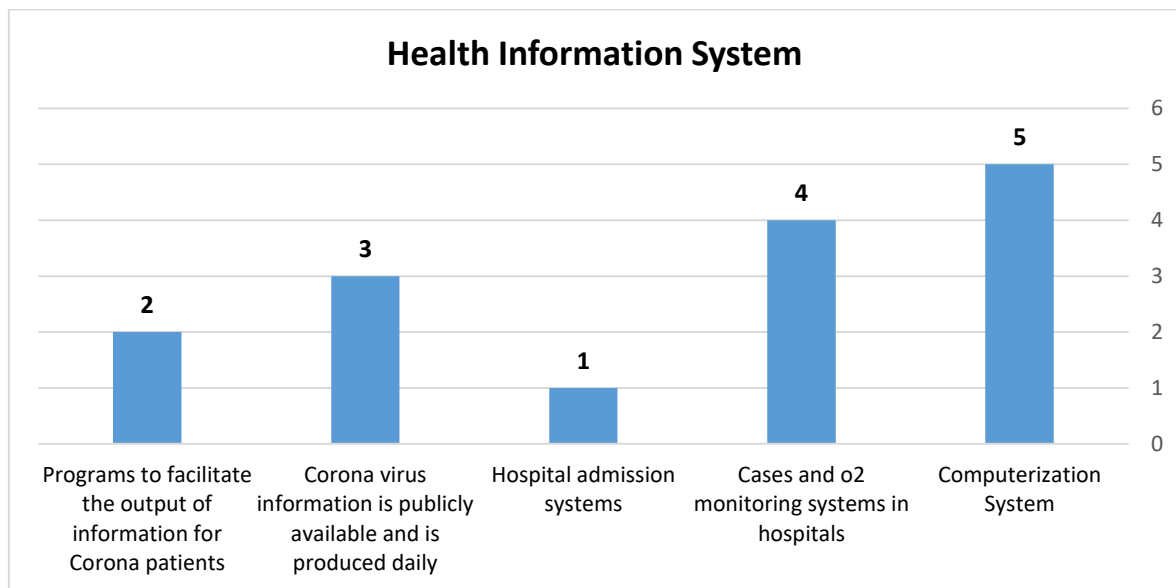


Figure (4.3): Opportunities gained for the health information system during the COVID-19 response

In the health information system code, five subcodes were generated (computerization System, cases and O2 monitoring systems in hospitals, hospital admission systems, coronavirus information is publicly available and is produced daily, programs to facilitate the output of information for Corona patients), the most common subcode in health workers was "computerization system".

When participants were asked about the opportunities gained for the health information system during the COVID-19 response, the responses included the following: Some are positive, such as one of HIS participant said *"Five to six programs were made according to*

the need, to facilitate information output, and the programs were linked centrally and from these programs (epidemiological investigation, sampling, laboratories, home isolation, graph)". Others were negative such as " The system did not improve at the hospital level, so the reality of the system was shocking during the period of Corona, so that we were not able through the available programs to know accurate information on which to base a decision, so we resorted to the manual system (so that we communicate daily with Covid departments to know the number of cases accurately).Hospital director stated:" We did not have confidence in the computerized system and the existing information systems".

Table (4.7): Distribution of the study participants according to their perception about the Challenges of Leadership and Governance domain (n= 96)

#	Items	Mean	S. D	%	Rank
1.	Difficulties in planning and evaluating processes during the response to COVID-19.	3.48	3.22	69.58	2
2.	Ineffective communication between partners.	3.10	1.03	62.08	9
3.	Inability to adopt mitigation and containment measures during phases of response.	3.15	1.05	62.92	4
4.	Difficulty in the enforcement of a national health strategic plan for the response of covid 19.	3.24	1.07	64.79	3
5.	Failure to establish mechanisms to support transparency and accountability.	3.65	5.39	72.92	1
6.	Health Emergency Preparedness & Response Plan during COVID-19 is ineffective.	3.11	1.14	62.29	6
7.	Infection identification, management, and prevention are ineffective.	2.96	1.10	59.17	11
8.	Difficulty in flow rules and regulations to control of covid 19 pandemic.	3.11	1.06	62.29	6
9.	Lack of collaboration and engagement of relevant ministries and partners to respond to COVID.	3.11	2.21	62.29	6
10.	Lack of coordination and cooperation process in carrying out governmental health policies.	3.04	2.23	60.83	10
11.	Preventive and therapeutic protocols in response to COVID-19 are not standardized.	2.68	0.97	53.54	13
12.	Inability to take effective preventive measures at the Points of Entry in Gaza.	2.78	1.14	55.63	12
13.	Inability to maintain a healthy and sufficiently trained workforce.	3.14	1.08	62.71	5
	Challenges of Leadership and Governance	3.12	0.94	62.39	

Table (4.7) shows that the weighted mean=3.12, S.D.=094 for the perception of leadership and governance challenges domain was (62.39 %). According to the results, the highest item was number (5) “Failure to establish mechanisms to support transparency and accountability” with a percentage of 72.92%, followed by item number (1) “Difficulties in planning and evaluating process during the response to COVID-19” with percentage 69.58%, followed by item number (4) “Difficulty in enforcement national health strategic plan for the response of covid19” This indicates that these items received a high mean degree of reaction leadership and governance faced challenges during the Covid pandemic because the level of severity of the crisis that accompanied the pandemic is unconventional and unseen.

(Arnout et al., 2020) confirm (COVID-19) its rapid spread, the rise in infections and fatalities throughout the world, and the World Health Organization (WHO) declared on March 11th, 2020 that COVID-19 represents a pandemic to control this crisis and deal with its serious economic, health, educational, and social ramifications.

It poses many challenges as it allows decision-makers little time to form an opinion, make a decision, and act on it. It includes life or death decisions where effective decision-making requires that everyone be able to speak and express their opinion, which made leaders shuffle and reshuffle all the cards for health and economic concerns.

In addition, the leadership was focused on accomplishing the task as opposed to those concerned with developing people's skills, and despite these challenges, we witnessed how leaders were able to recognize the threat posed by this virus at an early stage. Those leaders were ready to move quickly and take unpopular but necessary measures, such as closing the crossings and imposing a complete closure.

While the lowest item was number (11) ”Preventive and therapeutic protocols in response to COVID-19 are not standardized” with a percentage of 53.54% followed by item (12)

“Inability to take effective preventive measures in the Points of Entry in Gaza” followed by item (7)“Infection identification, management and prevention are ineffective”.

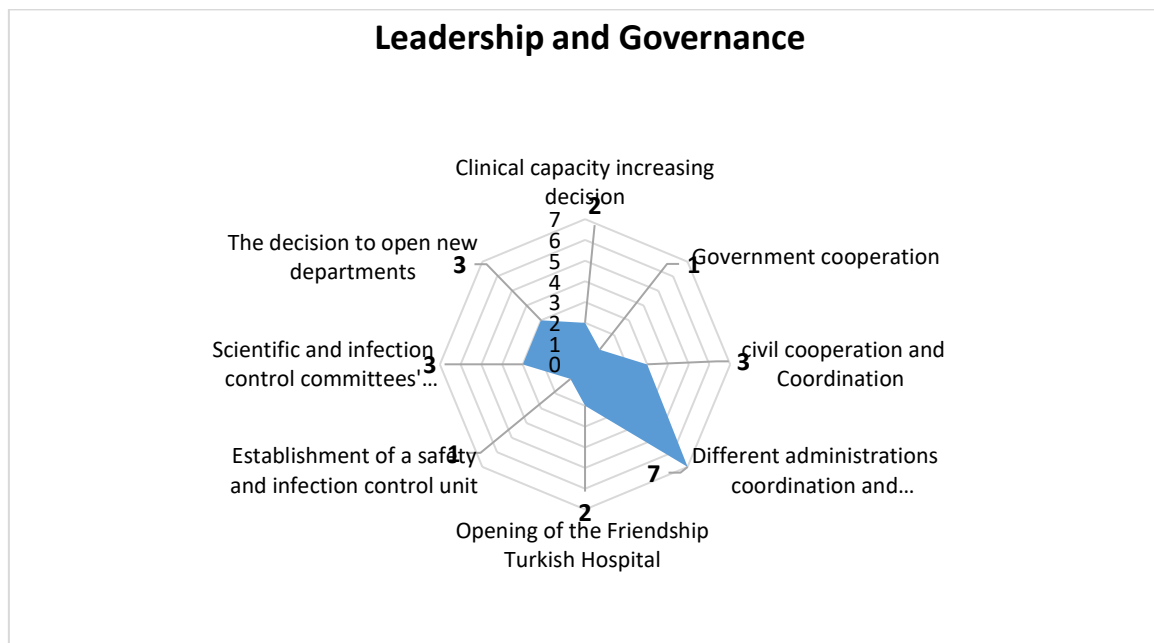


Figure (4.4): Leadership and governance opportunities gained during the COVID-19 response

In the Leadership and governance code, eight subcodes were generated (clinical capacity increasing decision, the decision to open new departments, scientific and infection control committees' activation, the establishment of a safety and infection control unit, opening of the Friendship Turkish Hospital, different administrations coordination, and cooperation, civil cooperation and Coordination, government cooperation), the most common subcode in health workers was " different administrations coordination and cooperation".

The majority of participants, when asked about the opportunities gained in leadership and governance, indicated that during the pandemic, there was coordination and cooperation from all health service providers from civil and other institutions, and there was cooperation and joint coordination between all administrations of the Ministry of Health. participant said,

"There was coordination and cooperation between stores, finance, pharmacy, administrative affairs, and all institutions and ministries through the covid pandemic".

All participants indicated that hospitals have been opened to deal with and treat Corona patients, new departments have been opened and bed capacity in hospitals has been increased. participant said,

"During the first and second waves, a hospital was allocated for Corona patients during the first and second wave (European Hospital and Turkish Friendship Hospital). The third was the integration of the services in all the hospitals".

About a third of the participants said that an infection control unit has been established and scientific committees have been established for infection control measures and the development of protocols for the Coronavirus. participant said,

"During the pandemic, the Safety and Infection Control Unit was established, which clarified the plans and procedures for COVID-19 that must be implemented in the facilities of the Ministry of Health".

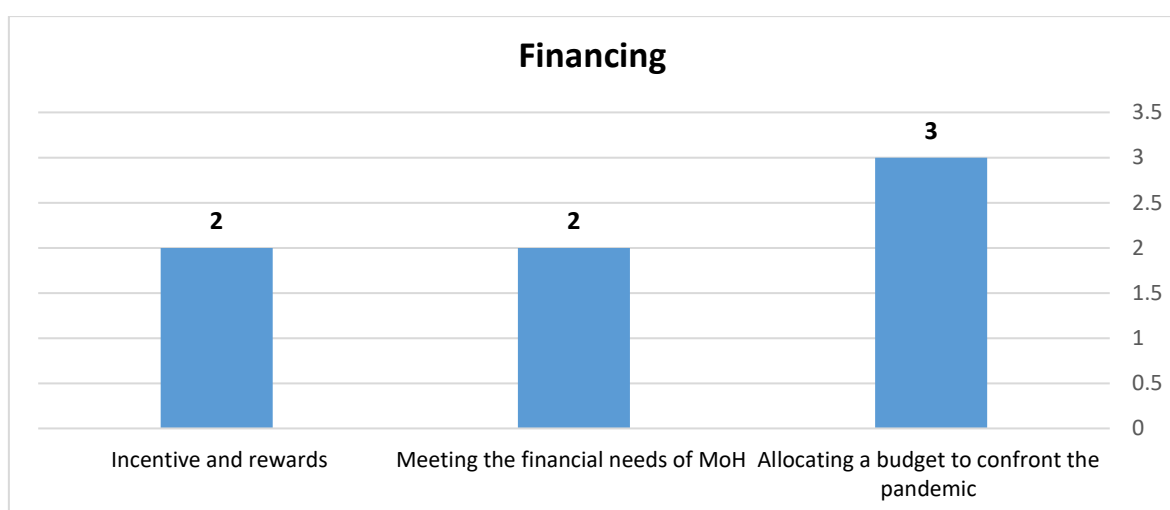
Table (4.8): Distribution of the study participants according to their perception about the Challenges of health care system financing domain (n= 96)

#	Items	Mean	S. D	%	Rank
1.	Failure to balance between financial risk protection and equity during covid19 response.	3.34	0.90	66.88	6
2.	Failure to establish effectiveness and efficiency in service provision.	3.18	0.95	63.54	8
3.	Ineffective equitable use & provision of health services relative to the need.	3.15	1.07	62.92	9
4.	Poor maintenance of healthcare infrastructure.	3.43	0.91	68.54	5
5.	Inability to pay worked overtime for medical staff.	3.84	1.01	76.88	1
6.	Failure to allocate budget for resources and management.	3.76	0.94	75.21	2
7.	High disease burden and non-prioritization of health activities.	3.69	0.93	73.75	3
8.	Health care system weakness and fragmentation.	3.31	1.06	66.25	7
9.	Lack of community participation.	3.68	1.00	73.54	4
	Challenges of health care system financing	3.49	0.63	69.72	

By using one sample t-test this table (4.8) shows that the weighted mean for challenges of health care system financing was 3.49 with 69.72% the highest three percentage of challenges items of financing is No. (5)” Inability to pay worked overtime for medical staff”, followed by No. (6)” Failure to allocate budget for resources and management” followed by No. (7)” High disease burden and non-prioritization of health activities”, this finding results because the majority of health care system financing is based on donation and is not considered to be a continuous source, this led to failure to allocate a special budget for resources and management, this appeared big gap during covid 19 preparedness and response. High disease burden, led to an increase in the need for protective equipment, and health workers, a decrease in the number of beds, especially intensive care, and consequently a shortage of equipment needed to provide the service with effectiveness and efficiency provision.

While the lowest rankings were items No (3,2)” Ineffective equitable use and provision of health services relative to the need” and “Failure to establish effectiveness and efficiency in services provision”.

Figure (4.5): Major financing opportunities gained during the response to COVID-19



In the financing code, three subcodes were generated (allocating a budget to confront the pandemic, meeting the financial needs of MoH, and Incentives and rewards), the most common subcode for health workers was " allocating a budget ".

The answer of almost of the participants, when asked about the funding opportunities gained during the response to COVID-19, was that a budget had been allocated to confront the Corona pandemic and to meet the various financial needs of all the Ministry's facilities such as equipment, materials, devices, etc.

A participant from Finance department said,

" A budget of 6 million dollars has been allocated by a decision of the Council of Ministers to be disbursed in installments to confront the pandemic so that the required needs are provided after studying and approving them".

A participant from the laboratories said,

" The pandemic was positively reflected in the financing system, for example, The laboratory supplies were covered 85% by donations from financial resources that were from donations and not from the budget".

Participants from engineering and maintenance said

" At the time of the emergency at the beginning of the crisis, there was a great response from the ministry in terms of meeting the needs, as it worked on the scale of speed and put some laws and procedures to speed up the progress of work".

Table (4.9): Distribution of the study participants according to their perception about the Challenges of Access to essential medicines and equipment domain (n= 96)

#	Items	Mean	S. D	%	Rank
1.	Shortage of oxygen generators, sources, and distribution for COVID-19 treatment centers.	3.47	0.99	69.38	4
2.	Shortage in machines, equipment, medical device, and supplies.	3.65	1.03	72.92	1
3.	Shortages of personal protective equipment	3.06	1.14	61.25	6
4.	Unavailability of vaccines for COVID-19.	2.34	0.99	46.88	9
5.	Unavailability of testing kits and other essential supplies in laboratories.	2.82	1.05	56.46	8
6.	Unavailability of consumable medical supplies.	3.00	1.14	60.00	7
7.	Unavailability of essential drug list for COVID-19.	3.47	1.20	69.38	4
8.	Shortage of essential drug lists to treat vulnerable groups (children, pregnant women, and elderly people).	3.63	1.17	72.50	2
9.	Shortage of non-essential drug lists to treat vulnerable groups (children, pregnant women, and elderly people).	3.59	1.13	71.88	3
	Challenges of Access to essential medicines and equipment	3.23	0.78	64.51	

Table (4.9) shows that the weighted mean for the perception of challenges domain of access to essential medicines and equipment was 64.51 %. According to the results, the highest three items were number (2) "Shortage in machines, equipment, medical device and supplies" with a percentage of 72.92%. The finding of this study was supported by the report of WHO on 3 March 2020^{c)} that WHO called on industry and governments to increase manufacturing by 40 % to meet rising global demand and WHO has supplied nearly half a million sets of personal protective equipment to 47 countries to cover the shortage, but supplies are rapidly depleting.

Since the start of the COVID-19 outbreak, prices of PPE have surged to many fold increase WHO modeling, an estimated 89 million medical masks, 76 million examination gloves, and 1.6 million international demands for goggles stands are required for the COVID-19

response each month .Also known as To protect healthcare workers, industry and governments must move swiftly to increase supply, relax export restrictions, and implement measures to prevent speculation and stockpiling. This is confirmed by a study (Nayyereh A., Parisa S., Shekoufeh N., 2020) that covid 19 global pandemic had major challenges and effects on the health market, the pharmaceutical sector, and was associated with numerous short- and long-term impacts on the health market, trend changes in consumption of health-market products along with ethical dilemma, mainly the pharmaceutical sector from both global and local perspectives.

As confirmed with a study (Bauchner H, Fontanarosa PB, Livingston EH.,2020) healthcare systems across the US have reported substantial personal protective equipment (PPE) shortages, Since the start of the COVID-19 pandemic the increased PPE use, lead to intensifying demand and compromising their ability to keep health care professionals safe.

Then followed by number (8)” Shortage of essential drugs list to treat vulnerable groups (children, pregnant women, and elderly people)” with a percentage of 72.50% then followed by item number (9)” Shortage of non-essential drugs list to treat vulnerable groups (children, pregnant women, and elderly people)” with percentage 71.88%. this finding, maybe, because of Gaza Israel’s siege declares rapid spreading of coronavirus infections in the Gaza Strip characterized as one of the most crowded places on Earth with 2.1 million Palestinians, with increased the burden of pandemic and number of covid 19 patients, Gaza hospitals were not fully prepared to deal with COVID-19 patients that led to a lack of ventilators, PPE, medicine.

While the lowest three items are number (4,5,6)” Unavailability of vaccines for COVID-19”,

“Unavailability of testing kits and other essential supplies in laboratories” and “Unavailability of consumable medical supplies” with percentages of 46.88%, 56.46%, and 60.00 % respectively.

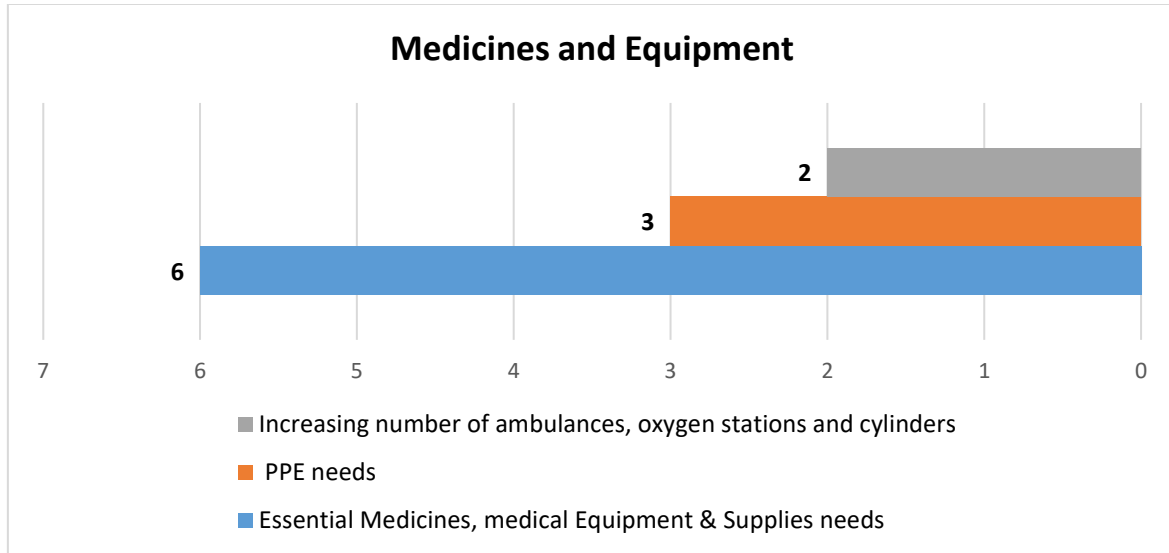


Figure (4.6): Opportunities gained for essential medicines and equipment during the COVID-19 response

In the essential medicines and equipment code, three subcodes were generated (essential Medicines, Medical Equipment & Supplies needs, PPE needs, increasing number of ambulances, oxygen stations, and cylinders), the most common subcode in health workers was " Essential Medicines, Medical Equipment & Supplies needs".

When the participants were asked about the opportunities gained for devices and medicines during the Corona period, all participants mentioned that all the needs of their administrations of modern devices and equipment, medicines, sterilizers, and personal protective equipment have been met by several parties. For example, one of the participants from the hospitals said:

"(We took the lion's share) and picked the fruit of Corona"

"More modern devices were received, more than 70-80 one modern device, regarding Corona, non-Corona and children and neonate"

Another participant from primary health care said,

"Medicines and equipment are currently better than before Covid, as some of the basic lists of medicines have improved and become available 70% after they were 20%"

Table (4.10): Total study mean perceptions, SD, and ranking of Challenges Domains for HCS (n=96).

No.	Challenges Domains	No. of items	Mean	S.D.	%	Rank
1	Health Workforce	12	3.54	0.47	70.75	1
2	Health Services Delivery	13	3.45	0.77	68.97	3
3	Health Information System	10	3.11	0.80	62.27	6
4	Leadership and Governance	13	3.12	0.94	62.39	5
5	Health care system financing	9	3.49	0.63	69.72	2
6	Access to essential medicines and equipment	9	3.23	0.78	64.51	4
Total		66	3.32	0.79	66.4	

Table (4.10), show the total perceptions of the challenges domains (mean = 3.32, S.D. =.79) with a total relative weight (66.4%). The results also showed that health workforce domain gets the first rank (mean = 3.54, S.D. =.47) with relative weight equals 70.75%, followed by health care system financing domain with relative weight (69.72%), the (mean = 3.45, S.D. =0.77), access to essential medicines and equipment domain with relative weight (64.51%), the (mean = 3.23, S.D. =0.78), leadership and governance domain relative weight (62.39%), the (mean = 3.12, S.D. =0.94) and last rank domain was health information system domain with relative weight (62.27%), and the (mean = 3.11, S.D. =0.80), This reflects the period of the preparatory period before the entry of Covid-19 into the Gaza Strip, approximately seven months.

4.1.3 Differences between demographic characteristics of perceptions and all Challenges domains

Table (4.11): Comparison between mean scores of gender perceptions of all Challenges domains (n = 96)

Gender		N	Mean	S. D	%	t	p-value
Health Workforce Challenges	Male	74	3.58	0.47	71.67	1.76	0.08
	Female	22	3.38	0.47	67.65		
Health Services Delivery Challenges	Male	74	3.44	0.81	68.75	-0.26	0.80
	Female	22	3.49	0.63	69.72		
Challenges of Health Information System	Male	74	3.06	0.74	61.19	-1.22	0.23
	Female	22	3.30	0.97	65.91		
Challenges of Leadership and Governance	Male	74	3.12	0.97	62.37	-0.02	0.99
	Female	22	3.12	0.84	62.45		
Challenges of health care system financing	Male	74	3.44	0.63	68.89	-1.19	0.24
	Female	22	3.63	0.63	72.53		
Challenges of Access to essential medicines and equipment	Male	74	3.20	0.77	63.93	-0.66	0.51
	Female	22	3.32	0.83	66.46		
Total mean	Male	74	3.31	0.54	66.24	-0.39	0.70
	Female	22	3.36	0.55	67.27		

(Independent t-test) *significant at 0.05

The mean difference in participant gender across all challenge domains was displayed in Table (4.11). Independent t-test results showed no statistically significant differences in the gender perception mean scores across all challenge categories ($p > 0.05$). This indicates that gender had no impact on participants across all problem domains. This contradicts what the earlier study discovered.

Table (4.12): Comparison between mean scores of Marital status perceptions of all Challenges domains (n = 96)

Marital status		N	Mean	S. D	%	T	p-value
Health Workforce Challenges	Married	88	3.53	0.48	70.64	-0.35	0.73
	Non married	8	3.59	0.39	71.88		
Health Services Delivery Challenges	Married	88	3.44	0.78	68.71	-0.57	0.57
	Non married	8	3.60	0.60	71.92		
Challenges of Health Information System	Married	88	3.07	0.80	61.36	-1.87	0.06
	Non married	8	3.61	0.61	72.25		
Challenges of Leadership and Governance	Married	88	3.12	0.96	62.31	-0.14	0.89
	Non married	8	3.16	0.77	63.27		
Challenges of health care system financing	Married	88	3.48	0.63	69.65	-0.19	0.85
	Non married	8	3.53	0.66	70.56		
Challenges of Access to essential medicines and equipment	Married	88	3.20	0.79	64.04	-0.98	0.33
	Non married	8	3.49	0.63	69.72		

(Independent t-test) *significant at 0.05

The table shows the participants' mean differences for all challenges areas according to their marital status (4.12). displays the findings of independent t-test to compare mean differences between perceptions of study domains' marital status. As shown by the lack of statistically significant differences in mean scores across all challenge domains ($p > 0.05$), marital status did not have an impact on participants across all challenge domains of working conditions.

Table (4.13): Differences between all challenge domains and study participant age categories (n = 96)

Age		N	Mean	S. D	%	f	p-value
Health Workforce Challenges	40 and less	23	3.54	0.43	70.80	0.00	1.00
	41-50	58	3.54	0.48	70.78		
	more than 50	15	3.53	0.55	70.56		
Health Services Delivery Challenges	40 and less	23	3.60	0.54	71.97	2.66	0.08
	41-50	58	3.31	0.54	66.21		
	more than 50	15	3.75	1.46	75.08		
Challenges of Health Information System	40 and less	23	3.27	0.97	65.48	0.73	0.49
	41-50	58	3.04	0.70	60.79		
	more than 50	15	3.15	0.90	63.07		
Challenges of Leadership and Governance	40 and less	23	3.35	0.72	66.96	0.91	0.41
	41-50	58	3.06	1.05	61.11		
	more than 50	15	3.02	0.71	60.31		
Challenges of health care system financing	40 and less	23	3.71	0.63	74.30	2.04	0.14
	41-50	58	3.41	0.61	68.20		
	more than 50	15	3.43	0.68	68.59		
Challenges of Access to essential medicines and equipment	40 and less	23	3.67	0.70	73.33	5.37	0.01*
	41-50	58	3.11	0.78	62.18		
	more than 50	15	3.00	0.70	60.00		
Total mean	40 and less	23	3.51	0.52	70.29	2.07	0.13
	41-50	58	3.25	0.48	64.94		
	more than 50	15	3.33	0.71	66.59		
	Total	96	3.32	0.54	66.48		

(One-way ANOVA test) *significant at 0.05

Table (4.13) displayed the Mean Difference between Study Participants of the Challenge's Domains and Study Age Categories. A one-way ANOVA test revealed there are statistically significant differences between age categories and in a sixth domain (Challenges of Access to essential medicines and equipment) ($p = 0.01$). The remaining domains do not differ in a statistically significant way.

Table (4.14): Comparison between mean scores of types of organization perceptions of all Challenges domains (n = 96)

Type of organization		N	Mean	S. D	%	T	p-value
Health Workforce Challenges	Governmental	92	3.52	0.47	70.42	-1.65	0.103
	Non-governmental	4	3.92	0.61	78.33		
Health Services Delivery Challenges	Governmental	92	3.45	0.77	68.96	-0.03	0.973
	Non-governmental	4	3.46	0.66	69.23		
Challenges of Health Information System	Governmental	92	3.08	0.78	61.59	-2.04	0.044
	Non-governmental	4	3.90	0.96	78.00		
Challenges of Leadership and Governance	Governmental	92	3.13	0.95	62.51	0.30	0.764
	Non-governmental	4	2.98	0.81	59.62		
Challenges of health care system financing	Governmental	92	3.49	0.63	69.86	0.49	0.624
	Non-governmental	4	3.33	0.65	66.67		
Challenges of Access to essential medicines and equipment	Governmental	92	3.22	0.80	64.37	-0.42	0.672
	Non-governmental	4	3.39	0.41	67.78		

(Independent t-test) *significant at 0.05

The table shows the average difference in how each organization approaches each difficulty domain for their organization (4.14). displays the findings of an independent t-test to examine mean differences between study challenge domains with different organizational types. The organization type did not effect all challenge domains in the study, as there is statistically significant variations in mean scores between the organization and Challenges of Health Information System ($p=.044$) the other challenge domains there are no statistically significant variations in mean scores ($p>0.05$).

Table (4.15): Differences between all challenge's domains and study participant qualification categories (n = 96)

Qualification		N	Mean	S. D	%	f	p-value
Health Workforce Challenges	Bachelor	56	3.50	0.49	69.94	0.72	0.49
	Master	30	3.56	0.49	71.28		
	PhD	10	3.68	0.35	73.67		
Health Services Delivery Challenges	Bachelor	56	3.44	0.91	68.74	0.06	0.94
	Master	30	3.49	0.56	69.74		
	PhD	10	3.40	0.40	68.00		
Challenges of Health Information System	Bachelor	56	3.12	0.87	62.32	0.08	0.92
	Master	30	3.08	0.73	61.60		
	PhD	10	3.20	0.62	64.00		
Challenges of Leadership and Governance	Bachelor	56	3.14	0.81	62.77	0.03	0.97
	Master	30	3.10	1.24	61.95		
	PhD	10	3.08	0.55	61.54		
Challenges of health care system financing	Bachelor	56	3.52	0.58	70.36	0.71	0.49
	Master	30	3.38	0.73	67.63		
	PhD	10	3.62	0.61	72.44		
Challenges of Access to essential medicines and equipment	Bachelor	56	3.28	0.76	65.60	0.32	0.72
	Master	30	3.14	0.79	62.81		
	PhD	10	3.18	0.92	63.56		
Total mean	Bachelor	56	3.33	0.56	66.60	0.05	0.95
	Master	30	3.30	0.57	66.02		
	PhD	10	3.36	0.31	67.15		
	Total	96	3.32	0.54	66.48		

(One-way ANOVA test) *significant at 0.05

One-way ANOVA test of the participants' means across all challenge domains connected to their qualification categories and highlighted in table (4.15) displayed the findings from a comparison of the mean differences across qualification categories and an examination of all challenge domains. The study's challenge domains were not affected by the categories of qualification because there were no statistically significant changes in mean scores between the qualification and all of the challenge domains ($p > 0.05$).

Table (4.16): Differences between all challenge's domains and study participant managerial position categories (n = 96)

Managerial Position		N	Mean	S. D	%	F	p-value
Health Workforce Challenges	General director	23	3.57	0.39	71.45	2.89	0.04*
	Supervisor	12	3.58	0.50	71.53		
	Head Dept	52	3.45	0.46	68.91		
	Other	9	3.93	0.56	78.52		
Health Services Delivery Challenges	General director	23	3.42	0.53	68.49	2.89	0.04*
	Supervisor	12	3.47	0.70	69.36		
	Head Dept	52	3.34	0.53	66.75		
	Other	9	4.13	1.78	82.56		
Challenges of Health Information System	General director	23	3.20	0.67	64.00	0.33	0.81
	Supervisor	12	3.24	0.80	64.83		
	Head Dept	52	3.04	0.84	60.85		
	Other	9	3.13	0.95	62.67		
Challenges of Leadership and Governance	General director	23	3.09	0.70	61.81	0.49	0.69
	Supervisor	12	3.35	1.66	66.92		
	Head Dept	52	3.04	0.83	60.89		
	Other	9	3.32	0.86	66.50		
Challenges of health care system financing	General director	23	3.49	0.54	69.86	0.03	0.99
	Supervisor	12	3.46	0.65	69.26		
	Head Dept	52	3.48	0.66	69.57		
	Other	9	3.54	0.73	70.86		
Challenges of Access to essential medicines and equipment	General director	23	3.09	0.81	61.84	1.21	0.31
	Supervisor	12	3.26	0.66	65.19		
	Head Dept	52	3.20	0.82	64.02		
	Other	9	3.67	0.58	73.33		
Total mean	General director	23	3.32	0.42	66.31	1.41	0.25
	Supervisor	12	3.40	0.64	68.01		
	Head Dept	52	3.26	0.50	65.10		
	Other	9	3.64	0.81	72.79		
	Total	96	3.32	0.54	66.48		

(One-way ANOVA test) *significant at 0.05

Table showing the Mean difference in participants' managerial positions in relation to each challenge domain in the health care system (4.16). A one-way ANOVA test revealed statistically significant differences between the second domain (Health Services Delivery Challenges) and the first domain (Health Workforce Challenges), which are both related to managerial positions (p-value = 0.04). The remaining domains do not differ in a statistically significant way.

Table (4.17): Differences between all challenge domains and study participant years of experience categories (n = 96)

Years of Experience		N	Mean	S. D	%	F	p-value
Health Workforce Challenges	1-10	8	3.57	0.40	71.46	0.33	0.80
	11-20	52	3.55	0.45	70.93		
	21-30	29	3.48	0.51	69.60		
	more than 30	7	3.67	0.64	73.33		
Health Services Delivery Challenges	1-10	8	3.61	0.37	72.12	3.81	0.01*
	11-20	52	3.37	0.58	67.34		
	21-30	29	3.34	0.58	66.84		
	more than 30	7	4.32	1.93	86.37		
Challenges of Health Information System	1-10	8	3.53	0.72	70.50	1.65	0.18
	11-20	52	3.07	0.83	61.42		
	21-30	29	2.98	0.74	59.59		
	more than 30	7	3.51	0.75	70.29		
Challenges of Leadership and Governance	1-10	8	3.42	0.33	68.46	0.57	0.64
	11-20	52	3.06	0.86	61.18		
	21-30	29	3.08	1.19	61.54		
	more than 30	7	3.40	0.80	67.91		
Challenges of health care system financing	1-10	8	3.71	0.36	74.17	1.04	0.38
	11-20	52	3.53	0.66	70.60		
	21-30	29	3.33	0.63	66.59		
	more than 30	7	3.56	0.59	71.11		
Challenges of Access to essential medicines and equipment	1-10	8	3.92	0.38	78.33	4.39	0.01*
	11-20	52	3.31	0.74	66.11		
	21-30	29	2.90	0.83	57.93		
	more than 30	7	3.21	0.68	64.13		
Total mean	1-10	8	3.61	0.28	72.16	2.17	0.10
	11-20	52	3.31	0.50	66.16		
	21-30	29	3.20	0.54	63.95		
	more than 30	7	3.64	0.86	72.81		
	Total	96	3.32	0.54	66.48		

(One-way ANOVA test) *significant at 0.05

Table showing the Mean difference in participants' years of experience in relation to each challenge domain in the health care system (4.17).The second item, "Health Services

delivery Challenges," and the sixth item, "Challenges of Access to Essential Medicines and Equipment," both had statistically significant differences in mean scores, according to a one-way ANOVA test (p-value = 0.01). This indicates that years of experience have an impact on the framework for the health system challenges. The remaining domains do not differ in a statistically significant way.

Table (4.18): Differences between all challenge domains and study participant place of work categories (n = 96)

Place of Work		N	Mean	S. D	%	f	p-value
Health Workforce Challenges	MoH General Directorates	25	3.75	0.54	75.00	3.60	0.03*
	Hospital	44	3.45	0.43	69.05		
	Primary Health Care	27	3.48	0.45	69.57		
Health Services Delivery Challenges	MoH General Directorates	25	3.77	1.11	75.45	3.18	0.05*
	Hospital	44	3.35	0.59	67.06		
	Primary Health Care	27	3.30	0.55	66.10		
Challenges of Health Information System	MoH General Directorates	25	3.15	0.78	62.96	0.16	0.85
	Hospital	44	3.06	0.81	61.27		
	Primary Health Care	27	3.16	0.82	63.26		
Challenges of Leadership and Governance	MoH General Directorates	25	3.05	0.79	60.98	0.12	0.88
	Hospital	44	3.12	1.14	62.45		
	Primary Health Care	27	3.18	0.70	63.59		
Challenges of health care system financing	MoH General Directorates	25	3.39	0.58	67.82	0.78	0.46
	Hospital	44	3.47	0.71	69.34		
	Primary Health Care	27	3.60	0.54	72.10		
Challenges of Access to essential medicines and equipment	MoH General Directorates	25	3.32	0.75	66.31	0.48	0.62
	Hospital	44	3.14	0.81	62.83		
	Primary Health Care	27	3.28	0.77	65.60		
Total mean	MoH General Directorates	25	3.42	0.55	68.34	0.60	0.55
	Hospital	44	3.27	0.58	65.37		
	Primary Health Care	27	3.33	0.47	66.55		
	Total	96	3.32	0.54	66.48		

(One-way ANOVA test) *significant at 0.05

The mean difference in the participant place work categories towards challenges domains related to their challenge's domain is pointed out in the table (4.18). One-way ANOVA test showed there were statistically significant differences between participant workplaces of the first domain of working conditions (Health Workforce Challenges) related to their job title (p-value = 0.03) and second domain (Health Services Delivery Challenges) (p-value = 0.05). While there is no statistical significance difference between the rest of the domains.

Table (4.19): Differences between all challenge domains and study participant organization location categories (n = 96)

Organization Location		N	Mean	S. D	%	f	p-value
Health Workforce Challenges	North Gaza	8	3.24	0.41	64.79	1.29	0.28
	Gaza	28	3.65	0.43	72.92		
	Middle	29	3.56	0.47	71.21		
	Khan Younis	18	3.52	0.58	70.46		
	Rafah	13	3.46	0.40	69.10		
Health Services Delivery Challenges	North Gaza	8	3.12	0.49	62.31	1.41	0.24
	Gaza	28	3.34	0.57	66.87		
	Middle	29	3.44	0.53	68.86		
	Khan Younis	18	3.79	1.36	75.73		
	Rafah	13	3.43	0.52	68.52		
Challenges of Health Information System	North Gaza	8	3.13	0.84	62.50	0.78	0.54
	Gaza	28	3.15	0.80	63.00		
	Middle	29	3.04	0.84	60.83		
	Khan Younis	18	3.35	0.76	67.00		
	Rafah	13	2.86	0.75	57.23		
Challenges of Leadership and Governance	North Gaza	8	2.93	0.44	58.65	0.18	0.95
	Gaza	28	3.20	1.27	64.01		
	Middle	29	3.10	0.89	62.02		
	Khan Younis	18	3.18	0.79	63.59		
	Rafah	13	3.02	0.65	60.36		
Challenges of health care system financing	North Gaza	8	3.51	0.64	70.28	0.34	0.85
	Gaza	28	3.46	0.71	69.13		
	Middle	29	3.52	0.51	70.42		
	Khan Younis	18	3.58	0.64	71.60		
	Rafah	13	3.32	0.74	66.50		
Challenges of Access to essential medicines and equipment	North Gaza	8	3.10	0.69	61.94	1.01	0.41
	Gaza	28	3.26	0.86	65.16		
	Middle	29	3.14	0.66	62.84		
	Khan Younis	18	3.52	0.76	70.37		
	Rafah	13	3.02	0.94	60.34		
Total mean	North Gaza	8	3.16	0.29	63.11	0.81	0.52
	Gaza	28	3.34	0.61	66.89		
	Middle	29	3.31	0.43	66.11		
	Khan Younis	18	3.49	0.70	69.76		
	Rafah	13	3.20	0.48	63.92		

(One-way ANOVA test) *significant at 0.05

One-way ANOVA test results for the participants' means for all challenge domains related to their organization location categories as shown in the table (4.19) displayed the findings from a comparison of mean differences between Organization location categories and research on all difficulties domains. Organization location categories did not effect all challenge domains in the study, since there were no statistically significant differences in mean scores between them and all challenge domains ($p>0.05$).

Chapter Five

Conclusion and Recommendations

5.1 Conclusion

After analyzing the findings and outcomes of the evaluation of the opportunities and challenges encountered by the healthcare system in the Gaza Strip, the study conclusion was presented and constructed in this chapter. In an effort to determine the challenges and opportunities in the health system framework during the response to the covid 19 pandemic in the current situation, the study attempted to assess the challenges and opportunities faced by the healthcare system during the covid 19 pandemic through six blocks of health system domains.

5.1.1 Health Workforce

The health workforce faces many challenges during covid 19 response under effected to the increased burden of disease and the number of patients' severity of it that led to a lot of gaps. Increased workload, longer working hours, Shortages of the staff, increase risk of infection for medical staff, and lack of experience in their roles, responsibilities, and training on using personal protective equipment and dealing with the patient during the COVID-19 response as a new pandemic. Many of opportunities gained during response according to study is increased the number of health staff and increase training courses for doctors and nurses, basic and advanced courses regarding different protocols.

5.1.2 Health Services Delivery

Health services delivery during covid 19 pandemic appeared with many challenges obviously with the increasing burden of disease in the Gaza strip through increased demand for care of people with covid19 with limited Intensive care staff, beds and disposables capacity during response.

As work shifted to focus on providing services for Covid patients and reducing services for non-Covid patients with limited provision of essential health services for the non-communicable disease and limited provision of mother and child health care services (antenatal, postnatal, and family planning in the early stage of the disease).

And gained many of opportunities during response, with introduction of therapeutic oxygen protocols and strength of oxygen hospital systems, use of telemedicine has become a viable option for patients to facilitate access to medical care from comfort of their own homes and help to reduce the spread of virus and improved infection control by brought attention to importance of infection control measures in healthcare settings.

5.1.3 Health Information System

The information health system faced a lot of gaps and weaknesses that appeared during covid 19 pandemic preparedness and response and need urgent improvement. Lack of availability of network infrastructure led to the problem of data acquisition, collection, and integration and non-organized information of medical files that lead to increased effort of health workers and decision-makers to analyze big data to support their decisions during the pandemic, through fear of exposure to lost and missed a lot of information report result, that lead to an increase in the possibility to estimate rapidly the epidemic risk and prevention level.

The opportunities gained for the health information system during the covid-19 response, O2 monitoring system in hospitals, and the most common is computerization system, made new programs to facilitate information output and linked centrally with other (epidemiological investigation, sampling, laboratories, home isolation, graph).

5.1.4 Leadership and Governance

Political division has caused Palestine's leadership and government to be fragmented for a long time, this is the opposite of its effect during covid 19 pandemic. A lot of challenges are

faced with difficulties in planning and evaluating processes during the response to COVID-19, followed by difficulty in enforcing a national health strategic plan for the response to covid19. No clear governance can affect decision-making and planning which led to failure to establish mechanisms to support transparency and accountability.

On the advantages in leadership and governance, Clinical capacity expansion, the opening of new departments, the creation of a safety and infection control unit, the activation of scientific and infection control committees, the opening of the Friendship Turkish Hospital, civil cooperation and coordination, and government cooperation are examples of opportunities that were gained during covid response.

And showed that the majority of benefits came through coordination and collaboration across many authorities was coordination and cooperation throughout the pandemic from all healthcare providers from civic and other institutions, as well as cooperation and joint coordination across the Ministry of Health administrations. Throughout the covid pandemic, there was collaboration between the stores, finance, pharmacy, administrative affairs, and all institutions and ministries.

5.1.5 Healthcare system financing

The financing system faces many challenges because the majority of financing is based on donations and it is not considered a continuous source, this led to the failure to allocate a special budget for resources and management, and this appeared big gap during covid 19 preparedness and response. High disease burden, led to an increase in the need for protective equipment, a shortage number of health workers, and a decrease in the number of beds, especially intensive care, and consequently a shortage of equipment needed to provide the service with effectiveness and efficiency provision. All of this is reflected system seeking the provision of health services relative to the need and inability to pay worked overtime for health workers.

The pandemic was positively reflected in the financial system, for example, the laboratory supplies were covered 85% by donations from financial resources that were from donations and not from the budget, a budget of 6 million dollars has been allocated by a decision of the Council of Ministers to be disbursed in installments to confront the pandemic so that the required needs are provided after studying and approving them meeting the financial needs of MoH, and Incentivized Donations were used to cover the remaining 15% of the costs.

5.1.6 Access to essential medicines and equipment

Access to essential medicines as blocks of the health system framework in the Gaza Strip have challenges because affected of the political situation a Shortage of non-essential drugs list to treat vulnerable groups (children, pregnant women, and elderly people), and a Shortage in machines, equipment's, medical device and supplies.

A lot of more challenges faced availability access to essential medicines during covid 19 as a new and rapidly spreading pandemic, especially in the Gaza Strip, which led to an increasing burden of disease and raise needs for drugs and equipment, Shortage of oxygen generators, sources and distribution for COVID-19 treatment centers, constant shortage of testing kits and other essential supplies in laboratories. unavailability of vaccines for COVID-19 and shortages of personal protective equipment in the early stages of the pandemic response. The pandemic was positively reflected in access to essential medicines and equipment, with the most advantage gained among health professionals, Essential Medicines, Medical Equipment & Supplies requirements. PPE requirements, an increase in the number of ambulances, oxygen stations, and cylinders, more than 70-80 modern devices, for Corona, non-Corona, children, and neonates, were received. Drugs and equipment was become better than they were before Covid, as some of the fundamental lists of medicines have improved and become available 70% of the time after they were unavailable 20% of the time.

5.2 Recommendation

5.2.1 Health Workforce

- Recruit an adequate health workforce by expanding current capabilities and hiring more health professionals.
- Using flexible and efficient methods to use the workforce.
- Ensuring the financial, emotional, and physical well-being of healthcare professionals.

5.2.2 Health Services Delivery

- Maintaining routine public health services and attempting to increase the quality of services provision by developing alternative plans to deal with disasters and crises.

5.2.3 Health Information System

- Boost the resilience of health information systems during COVID-19 and improve the way they are rebuilt after catastrophes to facilitate decision-making.
- Modifying or reforming the way services are provided while using health information systems by putting in place alternate and flexible patient care pathways and tying them into primary healthcare.
- Scaling up, repurposing, and redistributing existing capacity of health information systems to cope and help with sudden surges in demand for services.

5.2.4 Leadership and Governance

- During epidemic Communicating with the public and stakeholders in a clear and transparent manner Transferring the best available evidence from research to policy.

- Delivering a clear and timely COVID-19 response strategy.
- Steering the response through effective political leadership.
- Strengthening monitoring, surveillance, and early warning systems.

5.2.5 Healthcare system financing

- Making sure there are enough reliable money to meet needs.
- Supporting the removal of obstacles to services and promoting universal health coverage.
- Modifying the payment, procurement, and purchasing systems to accommodate changes.
- Uses economic incentives in a balanced way.

5.2.6 Access to essential medicines and equipment

- Maintaining routine public health services and Ensuring sufficient of Essential Medicines, Medical Equipment & needs Supplies continuously.
- Implementing appropriate nonpharmaceutical interventions through continuing monitoring number of ambulances, oxygen stations, and cylinders.
- Implementing effective COVID-19 vaccination programmes continuously.

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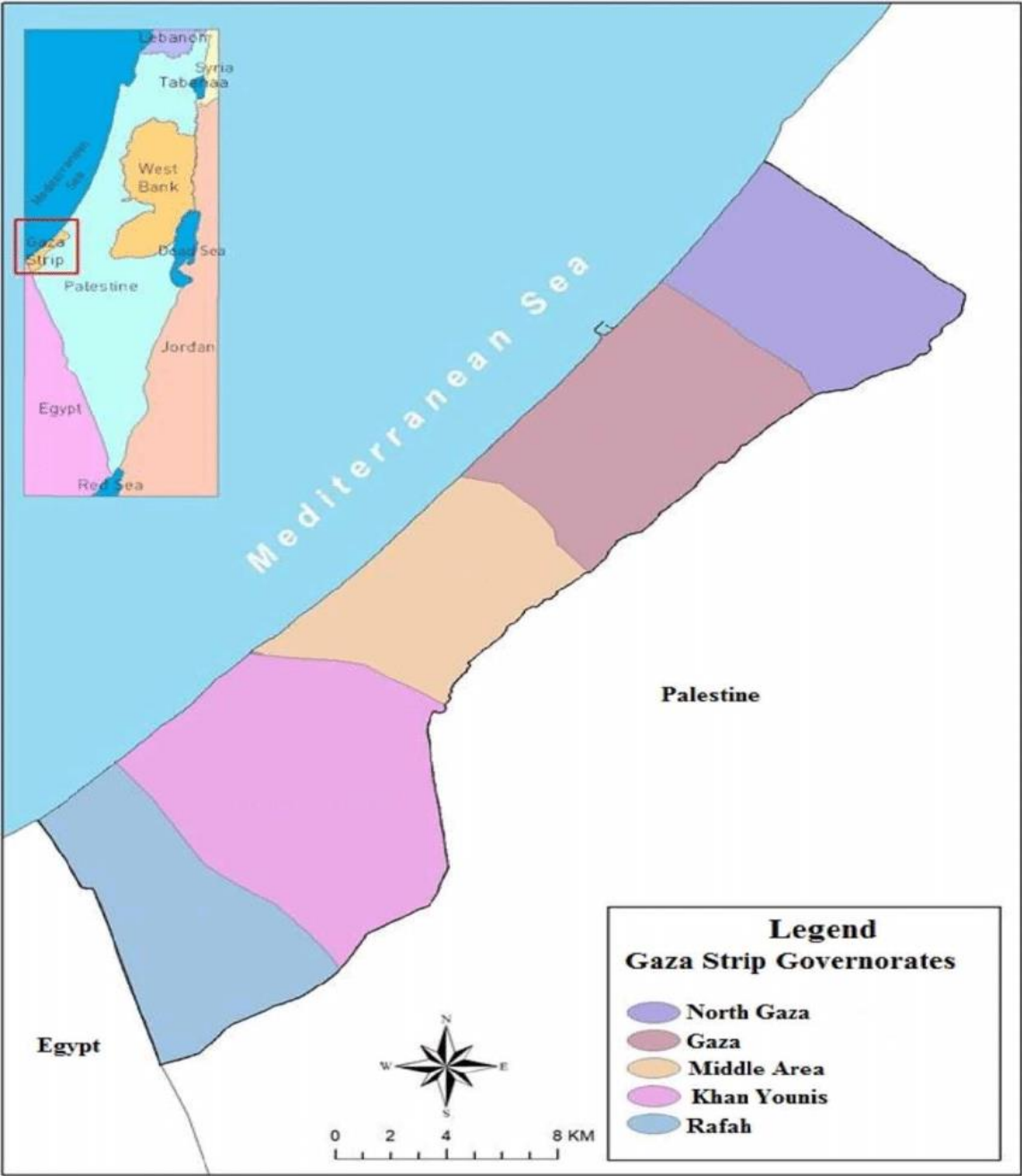
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Annexes

Annex (1): Palestine geographical map



Annex (2): Gaza Governorates distribution map



Annex (3): Questionnaire (English version)



أنا الباحثة/ تسنيم محمد سليم القريناوي أقوم بإجراء دراسة بعنوان:

" Challenges and Opportunities Faced Palestinian Health Care System in the Gaza Strip during Covid-19 Response"

"التحديات والفرص التي واجهت نظام الرعاية الصحية الفلسطيني في قطاع غزة خلال

الاستجابة لجائحة كوفيد – 19"

وذلك كمتطلب للحصول على رسالة الماجستير في تخصص السياسات والإدارة الصحية مسار جودة وسلامة المريض، كلية الصحة العامة من جامعة القدس أبو ديس. تم إعداد استبانة لتقييم التحديات التي واجهت النظام الصحي خلال الاستجابة لكوفيد – 19 في قطاع غزة.

لذا أرجو من حضرتكم المشاركة في الدراسة والاجابة على الاستبانة علما بأن المعلومات سيتم التعامل معها بسرية تامة وسوف تستخدم لغرض البحث العلمي فقط.

شاكرين لكم حسن تعاونكم

الباحثة/ تسنيم محمد سليم القريناوي

ماجستير سياسات وإدارة صحية

QUESTINNAIR

Direction: The researcher is currently conducting research entitled,” Challenges and Opportunities Faced the Palestinian Health Care System in the Gaza Strip During Covid-19 Response”. Please answer the questionnaire by ticking (√) the appropriate boxes or by filling in the blanks. Your responses will be treated with utmost concern and confidentiality.

Section A: Personal demographic Information

1.	Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
2.	Age	-----
3.	Marital status	<input type="checkbox"/> Married <input type="checkbox"/> Non married
4.	Qualification	<input type="checkbox"/> Bachelor <input type="checkbox"/> Master <input type="checkbox"/> PhD
5.	Managerial Position	<input type="checkbox"/> General Director <input type="checkbox"/> Supervisor <input type="checkbox"/> Head of Department <input type="checkbox"/> Other, Define.....
6.	Category of staff	<input type="checkbox"/> Doctor <input type="checkbox"/> Nurse <input type="checkbox"/> Pharmacist <input type="checkbox"/> Lab technician <input type="checkbox"/> Other:-----
7.	Years of Experience	----- Years
8.	Place of work	<input type="checkbox"/> MOH General Directorates <input type="checkbox"/> UNRWA <input type="checkbox"/> Hospital <input type="checkbox"/> Primary Health Center <input type="checkbox"/> Other: -----
9.	Type of health organization	<input type="checkbox"/> Governmental <input type="checkbox"/> Non-governmental
10.	Organization location	<input type="checkbox"/> North Gaza <input type="checkbox"/> Gaza <input type="checkbox"/> Middle <input type="checkbox"/> Khan Younis <input type="checkbox"/> Rafah

Please assessing your intensity of belief and ranges from strongly disagree (Extremely not challenging) to strongly agree (Extremely challenging) on a scale of 5 points on the following criteria in terms of their importance: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Strongly Agree.

No.	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
First: Health Workforce Challenges						
1.	Increased workload					
2.	Longer working hours					
3.	Shortages of the staff					
4.	Misunderstanding their roles and responsibilities during the COVID-19 response					
5.	Fatigue and psychosocial stress					
6.	Violence and stigma against health workers					
7.	Increased risk of infection for medical staff					
8.	Absenteeism & early retirement					
9.	Inability to train on using of personal protective equipment					
10.	Inability to train medical staff on preventive and therapeutic protocols for COVID					
11.	Non-compliance of medical staff with infection prevention and control protocols					
12.	Difficulties to follow up the updated knowledge of COVID-19					
Second: Health Services Delivery Challenges						
1.	Increase demand for care of people with covid 19					
2.	Maintain access to high-quality non-covid services in the pandemic					
3.	Limited access to health facilities due to lockdowns					
4.	The scope and volume of specific health services during the pandemic response are reduced					
5.	The capacity of healthcare facilities for mild and moderate COVID cases is limited					
6.	Limited Intensive care staff, beds, and disposables capacity during the COVID-19 response					
7.	Limited provision of lifesaving emergency, critical, and operative care.					

No.	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
8.	Limited provision of rehabilitation, palliative, and long-term care					
9.	Limited provision of mother and child health care services (antenatal, postnatal, and family planning)					
10.	provision of essential health services for immunization					
11.	Limited provision of essential health services for communicable diseases					
12.	Limited provision of essential health services for the non-communicable disease					
13.	Limited provision of essential health services for mental, neurological, and substance use disorder					
Third: Challenges of Health Information System						
1.	Lack of availability of network infrastructure					
2.	Inability to design a health information system for Covid 19 response					
3.	Inability to build a big data information system					
4.	The problem of data acquisition and integration					
5.	Inability to analyze big data to support decision making					
6.	Failure to estimate rapidly the epidemic risk and prevention level					
7.	An imbalance in health data security and health information management					
8.	Lack of intersectional collaboration and communication					
9.	Inactively monitoring and reporting disease trends and impacts					
10.	Discontinuity of performance evaluation of information system during pandemic response					
Fourth: Challenges of Leadership and Governance						

No.	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1.	Difficulties in planning and evaluating processes during the response to COVID-19					
2.	Ineffective communication between partners					
3.	Inability to adopt mitigation and containment measures during phases of response					
4.	Difficulty in the enforcement of the national health strategic plan for the response of covid 19					
5.	Failure to establish mechanisms to support transparency and accountability					
6.	Health Emergency Preparedness & Response Plan during COVID-19 is ineffective					
7.	Infection identification, management, and prevention are ineffective					
8.	Difficulty in flow rules and regulations to control of covid 19 pandemic					
9.	Lack of collaboration and engagement of relevant ministries and partners to respond to COVID					
10.	Lack of coordination and cooperation process in carrying out governmental health policies					
11.	Preventive and therapeutic protocols in response to COVID-19 are not standardized					
12.	Inability to take effective preventive measures at the Points of Entry in Gaza					
13.	Inability to maintain a healthy and sufficiently trained workforce					
Fifth: Challenges of healthcare system financing						
1.	Failure to balance between financial risk protection and equity during covid19 response					

No.	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
2.	Failure to establish effectiveness and efficiency in services provision					
3.	Ineffective equitable use and provision of health services relative to the need					
4.	Poor maintenance of healthcare infrastructure					
5.	Inability to pay worked overtime for medical staff					
6.	Failure to allocate budget for resources and management					
7.	High disease burden and non-prioritization of health activities					
8.	Healthcare system weakness and fragmentation					
9.	Lack of community participation					
Sixth: Challenges of Access to essential medicines and equipment						
1.	Shortage of oxygen generators, sources and distribution for COVID-19 treatment centers					
2.	Shortage in machines, equipment's, medical device and supplies					
3.	Shortages of personal protective equipment's					
4.	Unavailability of vaccines for COVID-19					
5.	Unavailability of testing kits and other essential supplies in laboratories					
6.	Unavailability of consumable medical supplies					
7.	Unavailability of essential drug list for COVID-19					
8.	Shortage of essential drugs list to treat vulnerable groups (children, pregnant women, and elderly people)					
9.	Shortage of non-essential drugs list to treat vulnerable groups (children, pregnant women, and elderly people)					

Please, can you comment and add other main challenges from your perspective that face the health care system in the Gaza strip during covid-19 responses?

Thank You

Annex (4): Key Information Interview Questions

Date:	Place:
Name of interviewer:	
Position of interviewer:	
Name of interviewee:	

Questions:

1. As one of the key persons in health: Can you please tell us, what opportunities of health workers gain during the COVID-19 response?
2. Can you tell me about the major opportunity health services delivery gained during the response to COVID?
3. Could you describe the opportunities gained during the COVID-19 response to the health information system?
4. Could you describe the opportunities gained during the COVID-19 response for essential medicines and equipment?
5. Can you talk about the major Leadership and Governance opportunities gained during the COVID-19 response?
6. Can you talk about the major financing opportunities gained during the COVID-19 response?

Annex (5): An official letter of approval from the Helsinki committee in the GS



المجلس الفلسطيني للبحث الصحي
Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال تنمية استخدام المعلومات البحثية في صنع القرار
Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee
For Ethical Approval

Date: 15\02\2021
Number: PHRC/HC/862/21
Name: Tasnim Mohammed Qrinawi

الاسم:

We would like to inform you that the committee had discussed the proposal of your study about:

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:

Challenges and Opportunities Faced Palestinian Health Care System during Covid-19 Response

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/862/21 in its meeting on 15\02\2021

و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member


Member


Chairman


Genral Conditions:-

1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-



E-Mail: pal.phrc@gmail.com

Gaza - Palestine
غزة - فلسطين
شارع النصر - مفترق العيون

Annex (6): MOH Approval letter

State of Palestine
Ministry of Health



دولة فلسطين
وزارة الصحة

التاريخ: 02/11/2021

الرجوع: 02/11/2021

السيد : جهاد عبدالغادر عكاشه المحترم

مدير دائرة الإدارة العامة للوحدات الإدارية المساعدة /وزارة الصحة

السلام عليكم ...

الموضوع/ تسهيل مهمة الباحثة تسليم محمد القريناوي

التفاصيل //

السلام عليكم

لهديكم أطيب التحيات ولود منكم تسهيل مهمة الباحثة/ تسليم محمد سليم القريناوي الملتحق/ة ببرنامج ماجستير السياسات والإدارة الصحية- جامعة القدس أبو ديس في إجراء بحث بعنوان

"Challenges and Opportunities Faced Palestinian Health Care System in the Gaza Strip" "During Covid-19 Response"

حيث الباحثة/ة بحاجة لتعبئة استبانة عشوائية لعدد من العاملين ذوي المناصب الاشرافية في مرافق وزارة الصحة (الرعاية الأولية - المستشفيات - الإدارات العامة)، بما لا يتعارض مع مصلحة العمل وضمن أخلاقيات البحث العلمي، ودون تحمل الوزارة أي أعباء أو مسئولية

وتفضلوا بقبول التحية والتقدير،

ملاحظة / تسهيل المهمة الخاص بالدراسة أعلاه صالح لمدة 3 أشهر من تاريخه

علي حسن البليسي
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غزة

Abstract in Arabic

عنوان الدراسة: التحديات والفرص التي واجهها نظام الرعاية الصحية الفلسطيني خلال الاستجابة لجائحة كوفيد ١٩ في قطاع غزة

إعداد: تسنيم محمد سليم القريناوي

إشراف: د. معتصم سعيد صلاح

الملخص

يعد مرض فيروس كورونا 2019 (COVID-19) أزمة صحية عامة خطيرة تهدد العالم بانتشار سريع للغاية. الهدف الرئيسي من هذه الدراسة هو تقييم التحديات والفرص الحالية التي يواجهها نظام الرعاية الصحية الفلسطيني في قطاع غزة أثناء الاستجابة لوباء كوفيد 19.

كان تصميم الدراسة عبارة عن دراسة مختلطة الأساليب؛ تضمنت بيانات كمية ونوعية. تم جمع البيانات الكمية من خلال استبيان من 120 مشاركًا من مختلف المستويات الإدارية الذين قدموا خدمات صحية أثناء الجائحة في غزة في كل من وزارة الصحة والمنظمات غير الحكومية في قطاع غزة، وتم جمع البيانات النوعية من مقابلة صناع القرار الرئيسيين الذين عملوا في جائحة كوفيد. بالنسبة للبيانات النوعية، تم استخدام طريقة التحليل الموضوعي للترميز المفتوح حيث تم إجراء مقابلات معمقة مع 15 من الإدارة العليا في كل من وزارة الصحة والمنظمات غير الحكومية. تم فحص صحة الاستبيانات من قبل فريق من الخبراء. كان ألفا كرونباخ 0.9. تم تحليل البيانات باستخدام الإصدار 24 من الحزمة الإحصائية للعلوم الاجتماعية (SPSS) وأجري تحليل البيانات الكمية باستخدام برنامج NVIVO. وأظهرت النتائج أن معظم أفراد عينة الدراسة كانوا في سن المتوسط (41-50) سنة، ومعظمهم من الذكور والمتزوجين. أكثر من نصف المشاركين لديهم خبرة تتراوح بين 11-20 سنة (55.2%) ومعظمهم حاصل على درجة البكالوريوس (58.3%). كان إجمالي التصورات للتحديات التي واجهها نظام الرعاية الصحية أثناء كوفيد في مرحلة الاستجابة لـ 66.4%. حصلت النتيجة النسبية للقوى العاملة الصحية على أعلى درجة (70.7%) متبوعة بتمويل نظام الرعاية الصحية (69.7%)، وتقديم الخدمات الصحية (68.9%)، والحصول على الأدوية والمعدات الأساسية (64.5%)، والقيادة والحكم (62.3%). فيما جاء نظام المعلومات الصحية في المرتبة الأخيرة (62.2%). توجد فروق ذات دلالة إحصائية بين الأعمار والوظيفة الإدارية وسنوات الخبرة ومكان العمل ومجالات التحديات المختلفة التي تواجه الرعاية الصحية الفلسطينية. من ناحية أخرى أظهرت النتائج عدم وجود فروق ذات دلالة إحصائية بين الجنس والحالة الاجتماعية ونوع المنظمة والمؤهلات ومكان التنظيم ومجال التحدي. كما أشارت النتائج إلى وجود العديد من التحديات (زيادة عبء العمل، ونقص في طاقم الرعاية الصحية، وصعوبات التخطيط وعملية التقييم أثناء الاستجابة لفيروس كوفيد، والعدد المحدود لموظفي العناية المركزة، وسعة الأسرة، عدم توفر البنية التحتية للشبكة، وعدم القدرة على بناء نظام معلومات كبير للبيانات، ومشكلة في الحصول على البيانات ودمجها، ونقص في الأجهزة والمعدات والأجهزة الطبية والمستلزمات، وعدم تخصيص الميزانية للموارد والإدارة). فيما يتعلق بفرص انتشار جائحة كوفيد، فإن القيادة والحوكمة هي أعلى رمز يليها تقديم الخدمات الصحية والتمويل الصحي هو أدنى رمز.

أوصت الدراسة بتوظيف القوى العاملة الصحية الكافية، وضمان الصحة البدنية والعقلية والدعم المالي للعاملين الصحيين، وتكييف أو تحويل تقديم الخدمات أثناء استخدام نظم المعلومات الصحية، والتواصل بوضوح وشفافية مع السكان وأصحاب المصلحة، وتعزيز المراقبة والمراقبة، وأنظمة الإنذار المبكر.