Deanship of Graduate Studies Al-Quds University



# Patient's perspective of outpatient clinics services

delivery during COVID-19 outbreak in East-Jerusalem

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## Patient's perspective of outpatient clinics services delivery during COVID-19 outbreak in East-Jerusalem

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## **Thesis Approval**

## Patient's perspective of outpatient clinic services delivery during Covid-

## 19 outbreak in East-Jerusalem

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### Dedication

This thesis is proudly dedicated my mother and father, without their patience and support nothing would be done.

To my brother and sisters especially Rami.

To my dear wife Amal.

To my friends and teachers.

Firas Daghlas

### Declaration

I certify that this thesis submitted to the degree of master is the result of my own research, except where otherwise acknowledged, and that this thesis or any of its parts has not been submitted for higher degree to any other university or institution.

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To my friends in Jerusalem

To my best friend Hamza

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#### Abstract

**Background**: Corona viruses are called zoonotic viruses that are transmitted from animals to humans, at the end of 2019, the appearance of a new Coronavirus disease COVID-19 in Wuhan China. The state of emergency was declared by Palestinian Minister of Health in 5 march 2020, and in 11 March 2020, the 'World Health Organization' (WHO) declared COVID-19 as a "pandemic". The COVID-19 pandemic has the same implications on health system due to reduced accessibility and availability of health resources. During COVID-19 pandemic the quality of care suffered and the virus stretched some health systems to breaking point and intensive care units being overwhelmed. Patient's attitude toward healthcare has shifted during COVID-19 pandemic, and out-patients have reduced their regular visits to the clinics. Understanding of patient's preference leads the care to be cheaper, more effective and closer to the individuals' desires. The COVID-19 morbidity and mortality indicators were higher in Palestine in comparison with the global level. Furthermore, social gathering and lack of readiness of the fragmented health system were risk factors in the spread of COVID-19.

**Aim:** To assess the patient's perspective of outpatient clinics services delivery during COVID-19 outbreak in East-Jerusalem.

**Methodology**: A cross sectional study was conducted by using convenience sampling technique and self-administered questionnaires which consisted of the socio-demographic data sheet and patient's perspective of health care system delivery on accessibility, availability of resources quality of care, and patient's attitude and preferences during COVID-19 outbreak scale which developed based on Jadoo (2014) study. The sample included 300 participants from outpatient clinics in East- Jerusalem hospitals which were Al-Makassed hospital, Augusta Victoria Hospital and Saint-Joseph hospital. Statistical analysis was done using T-test, one-way ANOVA, the statistical significance was defined as a P-value of (0.05).

**Results**: The results showed that the most of the participants (98.6%) had negative opinion when the current situation is compared with before the COVID-19 period in terms of accessibility, availability of resources, quality of care, attitudes and patient's preference. Only 5.55% of participants had a positive opinion regarding the preference of the health care system during the COVID-19 outbreak. The relationship between the dependent and

the independent variables showed that there was a statistically significant relationship between patient's perspectives of health care system delivery items and occupation, p-value is equal to  $0.036(\alpha \le 0.05)$ .

Moreover, there was no significant relationship between medical history variables and patients' perspectives, since ( $\alpha \le 0.05$ ). Multivariate analysis indicated that there was no significant relationship between occupation and participant's opinion (p= 0.089) prevalence odds ratio [POR] = 1.98, 95% CI 1.225-3.215).

**Conclusion**: This study revealed that the most of the participants had a negative opinion when the current situation is compared with before the COVID-19 period in terms of accessibility, availability of resources, quality of care, attitudes and the patient's preference. Only 5.55% of participants had a positive opinion regarding the preference of the health care system during the COVID-19 outbreak. Most of the participants reported that there is a decrease in the accessibility to health services that were provided during the COVID-19 outbreak in East Jerusalem. Policy makers should pay attention to the accessibility to health care, availability of health resources, quality of healthcare, patient's attitudes and patient's preference during COVID-19 pandemic and other pandemics. Also, policymakers should investigate the reasons behind increased waiting time and more money consuming to get health care services. Moreover, should pay attention to the importance of patient's prespective and their opinion in health care system which leads to better understanding of patients needs and preferences. There is a need to conduct a qualitative study to understand the issues in more detail ,the reasons why patients do not prefer the health services (now) during the COVID-19 outbreak period.

تقييم منظور المريض حول تقديم خدمات العيادات الخارجية أثناء تفشي فيروس كورونا في القدس الشرقية.

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الملخص

خلفية: فيروسات كورونا هي فيروسات تسمى فيروسات حيوانية المصدر تنتقل من الحيوانات إلى الإنسان، في نهاية عام 2019، ظهر مرض فيروس كورونا الجديد 19–COVID في مدينة ووهان الصينية. أعلنت وزارة الصحة الفلسطينية حالة الطوارئ في 5 / مارس 2020، وفي 11 / مارس 2020، أعلنت "منظمة الصحة العالمية" (WHO) أن فيروس كورونا "جائحة". كانت مؤشرات المرض والوفيات من فيروس كورونا أعلى في فلسطين بالمقارنة مع المستوى العالمي. علاوة على المرض والك، كان التجمع الاجتماعي وعدم استعداد النظام الصحي المجزأ من عوامل التي شكلت خطرا في انتشار فيروس كورونا.

**الهدف**: تقييم منظور المريض حول تقديم خدمات العيادات الخارجية أثناء تفشي فيروس كورونا في القدس الشرقية.

منهجية الدراسة: تم استخدام المنهج الوصفي في الدراسة باستخدام استبيانات ذاتية تتكون من ورقة البيانات الديموغرافية ومقياس تقديم الرعاية الصحية والتي تم تطويرها بناءً على دراسة (2014) Jadoo اشتملت عينة الدراسة على 300 مشارك من ثلاثة مستشفيات في القدس الشرقية وهي مستشفى المقاصد ومستشفى أوغستا فيكتوريا ومستشفى سانت جوزيف. تم إجراء التحليل الإحصائي باستخدام اختبار ANOVA،T-test، وتم تعريف الدلالة الإحصائية على أنها قيمة P تساوي (0.05).

النتائج: أظهرت النتائج أن معظم المشاركين لديهم رأي سلبي عند مقارنة الوضع الحالي مع قبل فترة جائحة كورونا من حيث إمكانية الوصول، وتوافر الموارد، وجودة الرعاية، والمواقف وتفضيل الناس. أظهرت العلاقة بين المتغيرين التابع والمستقلين وجود علاقة ذات دلالة إحصائية بين وجهة نظر المرضى حول عناصر تقديم نظام الرعاية الصحية والوظيفة.

علاوة على ذلك، أظهرت العلاقة بين متغيرات التاريخ الطبي لمنظور المشاركين والمشاركين باستخدام اختبار T-testو ANOVA، أنه لا توجد علاقة ذات دلالة إحصائية بين متغيرات التاريخ الطبي ووجهات نظر المرضى بينما أشار التحليل متعدد المتغيرات إلى وجود علاقة ذات دلالة إحصائية بين المستوى التعليمي ورأي المشاركين وكانت هناك علاقة ذات دلالة إحصائية بين فترة المرض ورأي المشاركين.

الخلاصة: كشفت هذه الدراسة أن معظم المشاركين كان لديهم رأي سلبي عند مقارنة الوضع الحالي قبل فترة 19–2000 من حيث إمكانية الوصول، وتوافر الموارد، وجودة الرعاية، والمواقف وتفضيل المريض. فقط 5.55 ٪ من المشاركين لديهم رأي إيجابي فيما يتعلق بتفضيل نظام الرعاية الصحية أثناء تقشي 19–2000. أفاد معظم المشاركين أن هناك انخفاضًا في إمكانية الوصول إلى الخدمات الصحية التي تم تقديمها خلال تفشي فيروس كورونا في القدس الشرقية. يجب على صانعي السياسات الانتباه إلى إمكانية الوصول إلى الرعاية الصحية، وتوافر الموارد الصحية، وجودة الرعاية الصحية، ومواقف المريض وتفضيله أثناء جائحة 19–2000 والأويئة الأخرى. أيضًا، يجب على صانعي السياسات الانتباه إلى إمكانية الوصول إلى الرعاية الصحية، وتوافر الموارد الصحية، وجودة الرعاية صاحية، ومواقف المريض وتفضيله أثناء جائحة 19–2000 والأويئة الأخرى. أيضًا، يجب على صانعي السياسات التحقيق في الأسباب الكامنة وراء زيادة وقت الانتظار واستهلاك المزيد من الأموال للحصول على خدمات الرعاية الصحية. علاوة على ذلك، يجب الانتباه إلى أهمية منظور المريض وآرائه في نظام الرعاية الصحية الذي يؤدي إلى فهم أفضل لاحتياجات المرضى وتفضيلاتهم. هناك حاجة لإجراء دراسة نوعية لفهم القضايا بمزيد من التفصيل، والأسباب التي تجعل المريض يفضلون الخدمات الصحية (الآن) خلال فترة تغشي 19–2000. List of contents

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## List of abbreviations

COVID-19	Corona Virus Disease 2019
WHO	World Health Organization
NGOs	Non-governmental organizations
EJHN	East Jerusalem Hospitals Network
SARS	severe acute respiratory syndrome
VBM	Variants Being Monitored
VOI	Variant Of Interest
VOC	Variant Of Concern
VOHC	Variant Of High Consequence
PCBS	Palestinian Central Bureau of Statistics
МОН	Ministry of Health
SPSS	Statistical Package for Social Science
USA	United States of America
AVH	Augusta Victoria Hospital

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#### Chapter one

#### 1.1. Background

#### Introduction

*Corona viruses* are called zoonotic viruses, that are transmitted from animals to humans, with symptoms ranging from mild "common cold" symptoms to severe respiratory distress syndromes, such as the "Middle East Respiratory Syndrome" (MERS-CoV), discovered in 2012 in Saudi Arabia and is transmitted by camels, the "Severe Acute Respiratory Syndrome" (SARS-CoV), transmitted through civet cats. (McLeod, 2020).

Coronavirus history began in 1960 when it was thought to be nothing more than symptoms of a common cold. In 2001-2002, it was still considered and treated as a mild viral infection that did not cause respiratory distress and was not fatal. In 2012, cases of Coronavirus infection and mortality were reported in Saudi Arabia, with six individuals dying and two surviving (Kuma, 2020).

COVID-19 originates from the new Coronavirus strain. Corona is characterized by the letter CO, virus by the letter VI, and illness by the letter D. This illness was previously known as the '2019 novel Coronavirus,' or '2019-nCoV.' The COVID-19 virus is a novel virus that belongs to the same virus family as Severe Acute Respiratory Syndrome (SARS) and particular common cold and flu (influenza) viruses. Shortness of breath, cough, and fever are all possible symptoms. Infection can advance to pneumonia or breathing difficulties in more severe cases. The disease might be fatal in rare cases. COVID-19 has symptoms similar to the flu or a common cold, which are much more common, and this is why testing is necessary to determine if someone has COVID-19. (Bender, 2020)

While a lot about the virus that causes COVID-19 is unknown, it is transmitted through person-to-person contact with an infected person's respiratory droplets (generated by

coughing and sneezing). People can also be infected by touching surfaces contaminated with the virus and touching their faces (e.g., eyes, nose, mouth).

At the end of 2019, the appearance of a new Coronavirus disease (COVID-19) in Wuhan, Hubei Province, and China has caused worldwide concern. COVID-19 cases had spread to 25 countries by February 2020, and the virus had reached the entire world. (WHO, 2020)

On March 11th, 2020, the World Health Organization (WHO) announced COVID-19 as a "pandemic," Coronavirus(COVID-19) rapidly spread throughout the world; it is a highly contagious virus that can cause no symptoms or mild to severe symptoms, and it can be fatal to high-risk people such as the elderly. Some countries lost control of the pandemic, resulting in high death rates and medical care failures (WHO, 2020).

According to WHO (2020), on April 15th, nearly 9,300 health care workers in the United States contracted COVID-19, and 27 died. In Italy, 20% of responding healthcare workers got infected by February 20th; and in China, 3300 medical professionals were infected by the end of February, with at least 22 (1.1%) deaths. As a result, several risk factors (age, gender, health profession, type of hospital, previous training to deal with COVID 19, inadequate personal protective equipment, and lack of understanding of the virus) put healthcare workers at risk of contracting COVID 19, affecting the health system and resulting in a lack of public health services<del>.</del> (WHO,2020).

Accessibility to contact primary care services is always evaluated based on the organizations' locations, opening hours, physician availability, appointment wait times, and patient access to emergency or urgent care services.(Lamarche et al., 2011). Physical access to health care has a significant impact on a variety of health outcomes which affect morbidity and mortality rates depending on the rate and time of the accessibility to healthcare. (Tanser et al., 2006). During the peak of the pandemic, a significant decline in general physicians appointments,

specialized care, and pediatric emergency department attendance had been reported in many countries resulting in barriers of access to physical and psychosocial support which delayed in seeking treatment and lack of specialized care.(Serlachius et al., 2020)

Providing high quality of care and making things safe for patients will be very challenging during any pandemic.(Matthew et al., 2020). During COVID-19 pandemic the quality of care suffered and the virus stretched some health systems to breaking point and intensive care units being overwhelmed.(Braithwaite, 2021). Also, available resources were deployed away from usual care to the surge in new cases and normal quality and safety activities have been deteriorated in the face of the rapid accelerating and disease transmission trends.(Kutikov et al., 2020). The consequence of the prioritization of COVID-19 patients by health systems is that many routine, non-COVID-19 patients have failed to receive appropriate care. (Matthew et al., 2020)

The pandemic has underlined the crucial need of providing effective, safe, and patient - centered health services. Direct mortality from an outbreak and indirect mortality from treatable illnesses can both be reduced with a concentrated effort to improve the quality of health services. (WHO,2020). Countries around the world are employing a variety of ways to maintain the quality of health care while responding to the pandemic.(WHO,2020)

Patient's attitude toward healthcare has shifted during COVID-19 pandemic, over the COVID-19 lockdown period, out-patients have reduced their regular visits to the clinic as they prefer to avoid exposure and the possibility of contracting the Coronavirus disease. Outpatients with risk are unable to find safe arrangements to continue their routine clinic consultations so they hesitant to continue with their regular physician visits by delaying or avoiding unneeded visits.(oliver & melvin, 2022). Moreover, understanding of patient's preference leads the care to be cheaper, more effective and closer to the individuals' desires.

(Brennan & Strombom, 1998). In order for patient preferences to be effectively used in the delivery of health care, it is important that patients be able to formulate and express preferences.(Brennan & Strombom, 1998)

The PA immediately declared a State of Emergency when the first cases in Palestine were diagnosed on March 5th, 2020, and launched robust national containment measures to encourage the citizens to protect themselves (Hejaz, 2020). According to the monthly referrals report for the Palestinian MOH, the proportion of referrals destined for hospitals within the West Bank outside East Jerusalem increased from 40% on average for the first quarter to 52% in June.

The "Palestinian Minister of Health" declared the emergency on March 5th, 2020, after discovering the first case of COVID 19 in Bethlehem. Medical resource insufficiency in Palestine makes it one of the very high-risk countries, despite the number of cases being low compared with other countries in the state of Palestine (WHO, 2020). However, there are 375 Intensive Care Unit (ICU) beds at the government and private hospitals, 295 ventilators, and these beds service Coronavirus cases and other critical cases, Government of Palestine (GoP) successfully limited community transmission and prevented the uncontrollable spread of COVID-19 and protected citizens during the outbreak. (AlKhaldi et al., 2020)

#### **1.2. Problem statement**

Coronavirusdisease-2019 (COVID-19) is a significant public health crisis threatening society with its rapid spread and mortality rates (Truog et al., 2020). The COVID-19 pandemic undoubtedly amounts to an unprecedented global public health challenge in the twenty-first century. (WHO, 2020). It is the reason for many of the socioeconomic, political, and public health conditions we face today. (McLeod, 2020).

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Transmissible lower respiratory infections remain the cause of the highest mortality rates worldwide; according to previous studies from SARS or Ebola epidemics, the onset of a sudden and immediately life-threatening illness could lead to severe pressure on healthcare workers and the health care system itself. (Ntella et al., 2020)

Since December 31st, 2019, and as of December 12th, 2020, 70 million cases of COVID-19 (following the applied case definitions and testing strategies in the affected countries) have been reported, including 1.5 million deaths. (WHO, 2020)

As the pandemic accelerates, access to personal protective equipment (PPE) for health workers is a key concern. Medical staff is prioritized in many countries, but PPE shortages have been described in the most affected facilities reflecting the shortage of resources. (WHO 2020).

Also, during this pandemic, equity and accessibility are more critical than ever; as the number of patients needing acute hospital care increases, hospitals may be challenged with significant shortages of staff and medical supplies such as protective equipment (PPE), hospital beds, medicines and medical devices such as ventilators. (Truog et al., 2020)

In Palestine, the COVID-19 crisis has revealed significant gaps in the social and public health systems, such as social exclusion, inequalities, fragility, unpreparedness, underinvestment, and weakness in governance and cooperation (AlKhaldi et al., 2020). In addition, the political situation in Palestine threatens the health security of Palestinians at the time of the pandemic, and the 74 year-long ongoing Israeli control of Palestine is causing a dire humanitarian situation. (WHO,2020) Also, the deteriorated living conditions in the West Bank, Gaza Strip, and East Jerusalem, including over crowdedness, building restrictions, raids and arrests, home demolitions by Israel, and the absence of freedom of movement throughout Palestine, made the situation worse during COVID-19 outbreak. (AlKhaldi et al., 2020)

The Palestinian Authority (P.A.) has quickly and effectively responded to the outbreak of COVID-19, using an internationally and nationally coordinated system to contain the spread of the virus within the borders. The P.A. approaches are containment and suppression, designed to protect the citizens from infection while also mitigating the stress on the health care system. (Hejaz, 2020).

Similarly, referrals within Gaza increased from 7% to 13%. Meanwhile, referrals to East Jerusalem hospitals decreased from 41% to 33%, Israeli hospitals from 5% to 2%, and Jordan from 1% to 0.2%. Nineteen percent (402) of referrals were for patients under 18-year-old, 31% (2,259) were for those aged 60 years or older, and 47% of referrals were for female patients. (WHO,2020)

In addition, morbidity and mortality indicators were higher in Palestine compared to the rest of the world. COVID-19 mortality and incidence rates were higher in East Jerusalem and lowest in Gaza Strip, while case fatalities were around 1% all over the country. Moreover, social gathering and lack of readiness in the fragmented health system were risk factors in the spread of COVID-19. Furthermore, the most risk factors for the spread of the virus were overcrowding in the Gaza strip and the crossings in Israel. Crossing into Israel was also a risk factor in the West Bank and East Jerusalem, especially since many Palestinian workers from the West Bank pass through these crossing points, leading to a higher risk of virus transmission from Israel to the Palestinian territories. In addition, East Jerusalem is entirely controlled by Israel, being isolated with restrictions according to Israeli public health. Regulations were set besides lockdown closures and restrictions, which was a significant factor as residents were unable to access Israeli hospitals. Moreover, political insecurity and socioeconomic unreliability have endangered the health of the population and the capability of Palestinians to make a modern health system, such as intensive care rooms, respirators, and the lack of approach to serve residents in the neighborhoods of East Jerusalem. (Abed et al., 2021)

However, there is a lack of studies in Palestine and particularly in East Jerusalem to assess the health system delivery during the COVID-19 outbreak from the patient's perspective, so it is essential to conduct such a study to assess the patient's perspective of outpatient clinics services delivery during COVID-19 outbreak in East-Jerusalem.

#### 1.3 Study purpose:

This study is selected because there is a lack of studies conducted to assess the outpatient clinics services delivery during the COVID-19 outbreak in Palestine from the patient's perspective, particularly in East Jerusalem.

The COVID-19 pandemic has a negative implications due to reduced accessibility and availability of health resources. A survey was conducted in the USA (CDC, 2020) that included 4,975 participants to assess the accessibility to health care during the COVID-19 outbreak. It showed that adults were unable to receive medical care (including surgery, ongoing treatment urgent care, screening tests, treatment, regular checkups, prescriptions, dental care, vision care, and hearing care) because of the concerns about COVID-19. An estimated 41% of U.S. adults delayed or avoided medical care, with urgent and emergency care at (12%) and routine care at (32%). Negligence of urgent or emergency care was more prevalent for unpaid adult caregivers, ones with underlying medical conditions, Hispanic adults, Black adults, young adults, and persons with disabilities. As an outcome of the Coronavirus pandemic, individuals may not get needed medical care due to canceled appointments, cutbacks in transportation options, fear of going to the emergency room, or an altruistic desire not to burden the health care system. (CDC,2020). In addition, a study was conducted by (Serlachius et al.,2020) to assess psychosocial challenges and opportunities for

the youth with chronic health conditions during the COVID-19 pandemic in the U.S. The study showed that one of the challenges of the COVID-19 pandemic was reduced access to physical and psychosocial support. Also, the study showed other disruptions to healthcare services which included disruptions to routine child health services like developmental screening, well-child visits, and vaccinations that supported psychosocial child wellbeing. (Serlachius et al.,2020)

This study may help policymakers and managers in the Palestinian Ministry of Health recognize the patient's perspective toward delivering the health care system during the COVID-19 outbreak. Moreover, many lessons will be learned for future crisis and this will help in detecting, preventing, and combating future pandemics based on our experience from COVID-19 outbreak. Many countries showed the lack of preparedness of health system for pandemic potential (Khanna et al., 2020). It is clear that we need to improve our approach to all sorts of crises by improving our preparedness, response and recovery for potential public health and environmental crises in the future depending on high degree of understanding and high level of awareness in the population.

#### **1.4 Main objective:**

To assess the patient's perspective of outpatient clinics services delivery during the COVID-19 outbreak in East-Jerusalem hospitals.

#### **1.5 Specific objectives:**

- To assess the patient's perspective of outpatient clinics services delivery during the COVID-19 outbreak in East-Jerusalem hospitals concerning accessibility, availability of resources, and quality of services.
- To assess the patient's perspective of outpatient clinics services delivery during the COVID-19 outbreak in East-Jerusalem hospitals concerning their attitudes, and preferences toward healthcare system delivery.

- 3. To assess the relationship between patients' perspectives of outpatient clinics services delivery during the COVID-19 outbreak in East-Jerusalem hospitals and sociodemographic variables (Age, gender, income status, place of residency, educational level, marital status, and occupation)
- 4. To assess the relationship between patients' perspectives of outpatient clinics services delivery during the COVID-19 outbreak in outpatient clinics in East-Jerusalem hospitals and medical history variables (Patient diagnoses, illness duration, number of visits per month, and history of COVID-19 infection).

#### **1.6.** Feasibility of the study

The researcher himself is working in East Jerusalem at Al-Makassed hospital and has close contact with other East Jerusalem hospitals, Augusta Victoria Hospital and Saint-Joseph hospital, which all facilitated the collection of data.

• Ethical approval and permission to conduct the study were obtained from Al-Quds University.

• Ethical approval was obtained from East- Jerusalem hospital general directors.

#### 1.7. Summary:

This chapter presented the problem statement, the study objectives, research questions, and the feasibility of the study.

The next chapter discussed the literature review of the current study.

#### **Chapter Two**

#### Literature review

#### Introduction

The concepts outbreak, endemic, epidemic, and pandemic refer to the incidence of a health condition with its predicted rate and prevalence in geographic areas. Endemic status occurs at a predictable rate in a population. An outbreak is an unexpected increase in the number of people with health problems or the emergence of cases in a new area. It is an epidemic that is spreading to larger geographic areas. A pandemic is an outbreak that spreads around the world. (Grennan, 2019). The transmission of common human-animal pathogens from animals to humans is an important mechanism that has affected emerging infections in humans throughout history (Wolfe et al., 2007). The potential for transmitting pathogens between species is significantly increased by increasing interactions with animals through hunting, wet markets, animal farming, or exotic pet animals' trade-in (Bengis et al., 2004). The extensive trade between communities has increased human-animal interaction and facilitated the transmission of common human-animal pathogens. As a result, the expansion of cities, large business parks, increased travel, and the impact on ecosystems due to population growth has led to the emergence and spread of infectious diseases, increasing the risk of disease outbreaks, epidemics, and even pandemics (Lindal and Grace, 2015).

Acute respiratory syndrome (SARS) is a viral respiratory disease produced by the SARSassociated coronavirus. It was first discovered in February 2003 during an outbreak in China that spread to four other countries. SARS is a floating virus that can be spread through droplets of saliva, similar to colds and flu. It was the first severe and rapidly spreading disease to emerge in the 21st century and demonstrated an evident ability to spread on international air routes. SARS can also be transferred indirectly through surfaces that a person with the virus has touched. (WHO, 2003)

Coronavirusdisease-2019 (COVID-19) is a severe public health crisis threatening the world with a swift spread and mortality. (Truog et al., 2020). The COVID-19 pandemic indisputably amounts to an unprecedented global public health challenge in the twenty-first century. (Lancet, 2020). It caused many consequences for socioeconomic, political, and public health worldwide. (McLeod, 2020). The process of cross-species transmission of pathogens involves five stages. In stage (1), the pathogen only infects animals under natural conditions; in stage(2), the pathogen develops so that it can be spread to humans, but without sustained human-to-human transmission; in stage(3), the pathogen undergoes only a few cycles of secondary transmission between humans; in stage (4), the disease exists in animals, but long sequences of secondary human-to-human transmission occur without the involvement of animal hosts, and in stage(5), the disease occurs only in humans. Furthermore, land use and climate changes are suggested to play essential roles in the transmission of pathogens from wildlife to humans (El-Sayed &Kamel, 2020)

#### Health Care System

#### 1.1 Components of a health care system

The Healthcare system consists of organizations, medical professionals, and healthcare providers who provide medical care to those in need. Health services serve patients, families, communities, and populations. They cover an emergency, preventative, rehabilitative, long-term, hospital, diagnostic, primary, palliative, and home care. These services are centered around making health care accessible, high quality, and patient-centered. Many different types of care and providers are necessary to offer successful health services. (Rosenstock, 2005). Hospitals are the primary instrument of the health organizations system for care

coordination and integration, supporting healthcare providers, community outreach, and home-based services. They are an educational setting for physicians, nurses, and other healthcare professionals. They ought to be resilient and maintain and scale-up services in emergencies. They can be classified according to their involvement, their roles in the health system, and the educational services they offer to the communities (WHO, 2015).

The World Health Organization identified that the framework for a healthcare system should contain six-building units in order to be a functional system. These building units include leadership and governance, human resources, pharmaceutical management, health financing, health information systems, and health service delivery (WHO,2006). Leadership and governance, each country has a specific context and shapes history the way leadership and governance are exercised. However, standard good practices in leadership and governance can be identified, ensuring that health authorities take liability for steering the entire health sector, public, government, or private, and for dealing with actual and future challenges. In addition, leadership through transparent and inclusive processes, national health policies, strategies, and plans set a clear direction for the health sector. Furthermore, a strategy for translating these policies and goals to be actual and real through different procedures in order to achieve a high level of service delivery, with relevant guidelines, plans, and targets. In addition, sound health information systems in the context of good governance led to the excellent performance of the health system.

Furthermore, health financing can be a crucial policy instrument to improve health and reduce health inequalities because its primary objective is to facilitate universal coverage by removing financial barriers to access and preventing financial hardship and catastrophic expenditure. So, the system should raise sufficient funds for health reasons, pool financial resources across population groups to share financial risks, and clear operational rules to ensure efficient use of funds. Human resources for health represent the health workforce,

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which is central to achieving health because a well-performing workforce is responsive to the needs and expectations of people, is equal and efficient to achieve the best results possible given available resources and circumstances, including the process of recruitment, education, training, and distribution. (Murray & Frenk, 2001)

Health systems have a vital responsibility for people's health throughout their lifespan and the healthy development of individuals, families, and societies worldwide. (Donev et al., 2013). In order to achieve real progress in health toward the "United Nations Millennium Development Goals" and other national health, priorities depend on more robust health systems based on primary health care (WHO, 2003). Improving health status is not only the main objective of each health system. The objective of good health itself is the best attainable average level and the differences among individuals and groups fairness, goodness means a health system responds well to what people expect of it, and fairness means it responds equally well to everyone, without any discrimination (WHO,2000).

According to the "World Health Organization" (WHO), each national health system should be directed to achieve three overall goals: responsiveness to the population's expectations, good health, and fairness of financial contribution. The health care systems carry out four vital functions (service provision, financing, resource generation, and stewardship). While there are minimum requirements that each health care system should meet, equitably access to quality services for acute and chronic health problems, which include effective health promotion and disease prevention services and appropriate response to new threats (emerging infectious diseases, e.g., COVID-19 pandemic, and aging of the population and burden of non-communicable diseases and injuries. (Emanuel et al., 2020). Figure 1: WHO (2007). Building blocks of health systems.



(WHO,2007)

1.2 Evaluation of health systems:

The international funding for health has been accompanied by increased demand for accurately tracking health progress and performance to evaluate the impact and ensure accountability at global levels. Also, an increasing number of stakeholders, including global health partnerships, bilateral donors, UN agencies, and academic institutions, are involved in health- related monitoring and evaluation. (WHO,2009). Evaluation of health care systems necessitates reliable data and indicators on health system inputs, outputs, and processes, and the potential advantages of health systems monitoring and evaluation include reduced costs, increased efficiency, and diminished pressures on countries. (Øvretveit& Gustafson, 2003)

In the following sections the health services accessibility, availability of resources, and quality will be discussed :

#### **Donabedian's model:**

Donabedian's, a physician and health services analyst at the University of Michigan, developed the original model in 1966. The Donabedian's model remains the dominant model for evaluating health care quality. (Hudspeth et al., 2016a). The Donbadian model is a conceptual model that provides a framework for examining health services and evaluating health care quality. According to the model, information on the quality of care can be derived from three categories: (structure, process, and outcome). Donabedian's model can also be solicited to an extensive health system to measure overall quality and work improvement across a hospital, group practice, or the sizable integrated health system to improve quality and outcomes for a population. (Hudspeth et al., 2016b)

Structure describes how health care is delivered, including hospital buildings, staff, equipment, allocation of resources, financing, and funding. The process represents a transaction between patients and healthcare providers during healthcare delivery. Finally, the outcomes relate to the impact of healthcare on the health status of patients and populations. (Tanser et al., 2006)

The structure includes all factors that affect the context in which care is provided. This includes physical facilities, human resources, equipment, and organizational qualities such as staff preparation and payment methods. These components control how providers and patients in a healthcare system act and measure the average quality of care within a system. The structure is often easy to observe and measure, and it can be the root cause of problems identified in the process. (Hudspeth et al., 2016b). The process is the total of all actions that make up health care. It can generally include diagnostic, therapeutic, and preventive care and patient education but can be expanded to include actions taken by the patient or family. This process can be classified as a technical process, care delivery, or interpersonal process. According to Donabedian, the measurement of the process is nearly equivalent to the

measurement of quality of care because the process contains all acts of healthcare delivery. Information about the process can be obtained from medical records, interviews with patients and practitioners, or direct observations of healthcare visits. (Hudspeth et al., 2016a). The outcome includes all the effects of health care on patients or populations, including changes in health status, behavior, or knowledge, and patient satisfaction and quality of life. Outcomes are considered the most crucial quality indicators because improving the patient's health status is the primary goal of health care. However, it is challenging to measure outcomes that can be attributed to health care accurately. Linking process and outcome often requires large population samples and long-term follow-up, as outcomes can take a long time to be observable. (Reeve et al., 2015) as seen in Figure 2.





(Stewart et al., 2016)

#### **Ovretveit model:**

A system for improving healthcare quality based on three dimensions of professional, client, and management quality. Professional quality is based on the professionals' views of whether a professionally assessed consumer's needs have been met using correct techniques and procedures, while client quality is whether or not direct beneficiaries feel they get what they want from the services. Management quality is ensuring that services are delivered in a resourceful-efficient way. (Mosadeghrad, 2012). Maxwell approach: Identified six dimensions of quality ( effectiveness, acceptability, efficiency, access, equity, and relevance). (Curry & Sinclair, 2002)

In addition, the other two components are most important in the evaluation of health systems, accessibility, and availability of health care services. Accessibility to contact primary care services is always evaluated based on the organizations' locations, opening hours, physician availability, appointment wait times, and patient access to emergency or urgent care services. (Lamarche et al., 2011). Moreover, physical access to health care has a significant impact on a variety of health outcomes which affect morbidity and mortality rates depending on the rate and time of the accessibility to healthcare. (Tanser et al., 2006)

Availability of healthcare resources improves the capability of the healthcare systems to meet the demands and expectations of the population based on two significant variables, more resources and good organization. (Lamarche et al., 2011). On the other hand, the quality of patient care and the professional work environment for nurses, therapists, and other healthcare practitioners are negatively affected by a lack of resources in healthcare settings. Moreover, more healthcare resources and the better use of those resources are two approaches that can meet workers' demands while also meeting patients' expectations. (Kabene et al., 2006).

#### The importance of patient's perspective in health care:

Decision-making in relation to health care must consider a scientific evidence based on patient participation and their perceptive toward health care system, which contributes to shared decision-making and patients' engagement that leads to best understand of patients' needs which leads for better quality of healthcare(Rodrigues et al., 2022). Moreover, considering the patient's perspective on the care provided in health institutions during the Covid-19 pandemic allowed us to identify important gaps arising from care such as gaps are determinant aspects of quality that interfere with patient satisfaction. (Rodrigues et al., 2022).

The participation of sick people represents a significant change in the care model and a vital understanding regarding what is most important to patients. This leads to trust relationship and enable patients to share their preferences with their providers which leads to better decision making (Kelley et al., 2015)

#### The Palestinian health-care system

The Palestinian health system consists of four central departments: the Ministry of Public Health (Palestinian Ministry of Health and Military Medical Services), the United Nations Relief and Works Agency for Palestine Refugees, NGOs, and the private sector. These different sectors are involved in delivering health services to citizens at all levels: primary health care, secondary health care, and tertiary care. The Palestinian Ministry of Health attaches great importance to maintaining the continuity of the Palestinian health system and providing comprehensive and high-quality health services to all citizens. (MOH,2020)

The Palestinian health care system is complex, fragmented, and has less coordination between its components. The Palestinian Ministry of Health is considered to be the primary provider of secondary and tertiary health care services in Palestine, with 3.590 beds in 27 hospitals from the total of 87 hospitals working in Palestine. Hospitals are divided based on the source of financing into two categories: the government hospitals managed and financed by the government and MOH. The second category is nongovernmental hospitals, which can be private or managed by a charitable society. The governmental hospitals cover almost all specialties, including general surgery, services, and sub-specialties, internal medicine, pediatrics, emergency, hemodialysis, psychiatric and other specialties. However, rehabilitation and physiotherapy units are offered by nongovernmental organizations such as the Arab Society for Rehabilitation. Moreover, in 2018 the total number of patients referred to treatment outside MOH facilities inside and outside Palestine was 89133, 20685 patients, respectively, with an estimated cost of 724 million NIS (MOH, 2018).

In addition, the private sector owns 17 hospitals with a bed capacity of 631 beds which comprised 9.8% of the total hospital beds in Palestine. Also, the Nongovernmental organizations (NGOs) had 35 hospitals, with a total beds capacity of 2,141 beds, 33.2% of the total hospital beds. The Palestinian Medical Military Services manage three hospitals, UNRWA operates one hospital with a bed capacity of 63, and there are seven referral hospitals in Jerusalem with a bed capacity of 716 beds (MOH, 2020).

One of the significant challenges to building a functional Palestinian healthcare system is the Israeli Separation Wall between the West Bank, Gaza Strip, and Jerusalem, the restrictions on pharmaceutical imports and exports and their movement on the border crossing, the high cost of transportation to reach hospitals, chronic shortages of medicines, equipment, supplies and services, lack of health insurance and universal health coverage, restrictions on the accessibility of healthcare professionals movement and shortage of human resources, and the limitation of financial resources which are donor-dependent(Divide and Conquer, 2015)

The East Jerusalem Hospitals Network (EJHN) was established in 1997 under the initiative, leadership, and guidance of the late Faisal Husseini, with a strategic vision to unify the health sector in East Jerusalem and consolidate the presence of its hospitals into a network that could highlight their roles collectively within the Palestinian health care delivery system. (Hoare & Hoe, 2013). The East Jerusalem Hospital Network consists of six hospitals: Makassed Islamic Charitable Society Hospital, Augusta Victoria Hospital, Palestine Red Crescent Society Hospital, St John of Jerusalem Eye Hospital Group, Jerusalem Princess Basma Centre, and Saint Joseph Hospital. These hospitals are the primary tertiary health care providers for persons referred by the Palestinian Ministry of Health for services unavailable in the West Bank and Gaza. In addition, the network has played a leading role in developing the overall Palestinian health care system and the training of health care workers and specialists. On an ongoing basis, the network makes collaborative efforts to ensure greater coordination of services and improve the quality of patient care. (EJHN,2018)

Israel's occupation of East Jerusalem and its access restrictions on Palestinians to the essential health services has been a great challenge for many years(WHO, 2008). Approximately 335,000 Palestinian residents in Jerusalem's separated barrier have isolated the city, leading to access restrictions affecting patients, companions, health staff, and ambulances to reach east Jerusalem hospitals. Of East Jerusalem residents, approximately 140,000 live within the Jerusalem municipality on the West Bank side of the separation wall, with entry to the city only possible through a handful of often crowded checkpoints (UNDP, 2014), these areas which include KufrAqab, Shuafat refugee camp, and Anata, are overcrowded and underserved by Israeli municipal services. The main percentage of Palestinian MOH referrals overall is East Jerusalem (39%); referrals that make their way to facilities outside the Ministry of Health are driven by a lack of specific services and equipment within the
Ministry of Health facilities, such as radiotherapy or nuclear medicine scanning (WHO, 2018)

Only a few Palestinian institutions are left and able to operate. This reality makes it difficult for them to fulfill their humanitarian mission of serving Palestinian patients and to remain independent nonprofit institutions without political or other interferences (EJHN,2018)

According to "The East Jerusalem Hospitals Network" (EJHN, 2018), many issues continue to face the EJHN. The most challenging is the ongoing financial crisis resulting from the US administration's cut of its financial support of 25\$ US million annual support for the East Jerusalem hospitals network for payment of bills and treatment of patients referred to these hospitals by the Palestinian Ministry of Health. Moreover, accessibility to these hospitals is unpredictable for patients from the West Bank and Gaza and the medical staff who work in these hospitals from various West Bank regions. The complicated system of permits and barriers imposed by Israel makes it difficult and sometimes impossible for patients to enter Jerusalem for treatment purposes. According to WHO, only about 54 percent of patients from Gaza were granted permits in 2017. Parents from Gaza whose children are sick and sometimes terminally ill with cancer or other diseases are not allowed to escort their children during their treatment period because the Israeli authorities claim: "they present a security threat to the State of Israel." In addition, another challenge is the limited space to handle the increasing number of patients because many of the services provided at East Jerusalem hospitals are unique, increasing the demand beyond available capacity. Also, there needs to be an increase in human resources and expertise in the various medical fields these hospitals specialize in. Hospitals frequently train their doctors, nurses, and technologists. Despite all these challenges, the EJHN continues to make great efforts to fulfill its mission of caring for the sick under occupation. (EJHN, 2018)

Infectious diseases are among the challenges that increase the healthcare system's burden, particularly in pandemics. The following section discusses pandemics in more detail.

## **2.2 Pandemics**

#### Introduction

Infectious diseases cause the largest and most well-known epidemics and pandemics. Common non-communicable diseases like cardiovascular disease and cancer are not involved. An epidemic is the quick spread of disease to large numbers of people in a specific population group within a short period. (Green et al., 2002)

Major pandemics in human history, such as cholera, plague, influenza, HIV / AIDS, malaria, and severe acute respiratory syndrome (SARS), have spread across large territories. Transportation, trade, and travel networks. The invasion of airborne pathogens promotes the emergence of infectious diseases by transportation networks, so pathogens fuel the emergence of infectious diseases in new areas that were previously disease-free, such as malaria in Brazil and dengue in North America. The dynamics of transmission of infectious diseases have been extensively studied using complex network theories in which nodes represent species, groups, individuals, etc. Linked by sexual, social, or commercial contact. (Gómez &Verdú, 2017)

The potential for transmitting pathogens between species is greatly increased by increasing interactions with animals through hunting, animal farming, wet markets, or the trade in exotic pet animals(Bengis et al., 2004). The extensive trade between communities has increased human-animal interaction and facilitated the transmission of common human-animal pathogens. As a result, the expansion of cities, large business parks, increased travel, and the impact on ecosystems due to population growth has led to the emergence and spread of

infectious diseases, increasing the risk of disease outbreaks, epidemics, and even pandemics (Lindal and Grace, 2015).

In addition, the spread of many infectious diseases (such as tuberculosis, malaria, and cholera) over large geographical areas is now raising health concerns for a large proportion of the population. (Morens et al., 2004) These ailments are more common because of the tolerance of vector mosquitoes to insecticides, drug resistance, poor hygiene, land use, climate change, increased mobility, and human travel. In addition, cholera has been reported in areas where natural disasters such as earthquakes and floods have occurred. Monitoring programs should also be in place to control the spread of these pathogens from endemic to non-endemic areas. (Cutler et al., 2010)

#### **2.3 COVID-19 Pandemic**

The COVID-19 pandemic, referred to as the Coronavirus pandemic, is an ongoing global Coronavirus2019 (COVID-19) pandemic caused by acute respiratory syndrome Coronavirus2 (SARS-CoV-2). The new virus was first detected in Wuhan, China, in December 2019. Quarantine in Wuhan and other cities in Hubei failed to contain the epidemic, and it quickly transmitted to other parts of China and around the world. On January 30, 2020, the World Health Organization (WHO) declared a public health emergency. (Lu et al., 2020). WHO announced a public health emergency with international concern. The outbreak spread rapidly from a single city to an entire country in only 30 days; on March 13, 2020, WHO declared it a Pandemic. (Lu et al., 2020).

WHO defines Coronavirus disease (COVID-19) as an infectious disease caused by the SARS-CoV-2 virus caused by a new Coronavirus strain. Corona is classified by the letter CO, virus by the letter VI, and illness by the letter D. This illness was previously known as the '2019 novel Coronavirus,' or '2019-nCoV.' (WHO.,2020)

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Corona viruses are enveloped positive-sense RNA viruses ranging from 60 to 140nm in diameter with spike-like projections on their surface, giving them a crown-like appearance under the electron microscope; hence the name Coronavirus. (Hejaz, 2020) Four corona viruses, namely HKU1, NL63, 229E, and OC43, have circulated in humans and generally cause mild respiratory disease (WHO, 2020). Coronavirus disease 2019 (COVID-19) originated from a new Coronavirus strain first identified in Wuhan, China, in December 2019. Because it is a new virus, researchers are learning more each day. Although most individuals who have COVID-19 have mild symptoms, COVID-19 can also cause severe sickness and even death. Some groups, as well as older adults and people who have particular underlying medical conditions, are at an increased risk of severe illness. (CDC, 2020). On December 31, 2019, WHO was alerted to several cases of pneumonia of unknown origin in Wuhan City in the Hubei region of China. On January 7, 2020, Chinese authorities confirmed that they had identified a new virus as the cause of the pneumonia cluster. (Shereen et al., 2020). The new virus is a coronavirus, belonging to the same family of viruses that cause the common cold and viruses that bring about severe acute respiratory syndromes (SARS) and Middle East respiratory syndrome Coronavirus(MERS-CoV). (Shereen et al., 2020).

The first outbreak started in Wuhan, Hubei, China, in November 2019. COVID-19 was announced a global pandemic by the World Health Organization - WHO on March 11, 2020 (WHO,2020). Official case numbers refer to the number of people who have been tested for COVID-19 and confirmed positive according to the official protocols. Many countries have official policies not to test those with only mild symptoms. COVID-19 situation update worldwide. As of November 20, 2021, 256,692,023 cases had been stated by government agencies around the world to be confirmed as COVID-19 positive (WHO,2021).

Viruses like SARS-CoV-2 continuously develop as changes in the genetic code (genetic mutations) occur during the replication of the genome. A lineage is a genetically closely

connected group of virus variants derived from a common ancestor. An alternative has one or more mutations that transform it from other alternates of the SARS-CoV-2 viruses. As anticipated, multiple variants of SARS-CoV-2 have been recorded. (CDC, 2022)

Given the ongoing advancement of SARS-CoV-2 and our knowledge of the implications of variants on public health, variants may be reclassified based on their attributes and prevalence:

- Variants being monitored (VBM)
- A variant of interest (VOI)
- A variant of Concern (VOC)
- A variant of high consequence (VOHC)

The most important classification is variant of concern. For these variants, clear evidence is available indicating a significant impact on transmissibility, severity, and immunity that is likely to impact the epidemiological situation. (ECDC, 2022)

WHO label	Lineage + additi onal mutati ons	Country first detected (commu nity)	Spike mutatio ns of interest	Year and month first detected	Impact on transmissibility	Impact on immunity	Impact on severity	Transmission in EU/EEA
Delta	B.1.617.2	India	L452R, T478K , D614 G, P681R	December 2020	Increased (v) (1)	Increased (v) (2-4)	Increased (v) (3, 5)	Community
Omicron	BA.1	South Africa and Botswana	(x)	November 2021	Increased (v) (6, 7)	Increased (v) (8-10)	Reduced (v) (11- 13)	Community
Omicron	BA.2	South Africa	(y)	November 2021	Increased (v) (6, 14)	Increased (v) (8)	Reduced (v) (15, 16)	Dominant
Omicron	BA.4	South Africa	L452R, F486V , R493 Q	January 2022	No evidence	Increased (17, 18)	No evide nce	Sporadic/travel

Table 2. 1: Variant of Concern (VOC) (ECDC, 2022)

Omicron	BA.5	South Africa	L452R,	February	No evidence	Increased	No	Sporadic/travel
			F486V	2022		(17,	evide	
			,			18)	nce	
			R493					
			Q					

Globally, as of March 4th, 2022, there have been 440,807,756 confirmed cases of COVID-19, including 5,978,096 deaths, reported by the WHO.

The symptoms of COVID-19 vary and range from mild to severe. Common symptoms are headache, loss of smell and taste, nasal congestion, runny nose, cough, muscle aches, sore throat, fever, diarrhea, and difficulty breathing; people with the same infection can have different symptoms, and their symptoms can change over time (Paderno, Mattavelli, et al., 2020). Three common groups of symptoms have been identified: a group of respiratory symptoms associated with cough, sputum, shortness of breath, and fever. A combination of musculoskeletal symptoms with muscle and joint pain, headache, and fatigue. A group of gastrointestinal symptoms associated with abdominal pain, vomiting, and diarrhea. loss of taste and smell is linked to COVID-19 and has been reported in 88% of cases. (Chabot &Huntwork, 2021)

According to WHO (2021), the clinical presentation resembles any viral infection, and the severity of illness ranges from mild to severe. Reports suggest that illness severity is associated with older age and underlying health conditions. Although the majority of individuals with COVID-19 have uncomplicated or mild illness (81%), some will develop severe illness requiring oxygen therapy (14%), and approximately 5% will require intensive care unit treatment, those critically ill will require mechanical ventilation (Paderno et al., 2020)

According to CDC (2021), the symptoms are categorized as mild to moderate (mild to mild symptoms of pneumonia) in 81% of infected cases. Severe (shortness of breath, hypoxia, or more than 50% of the lungs involved in imaging) in 14% of infected cases, and critical (respiratory failure, shock, or multi organs failure) in 5% of infected cases. (CDC,2021)

The disease is mainly transmitted (human to human) through the respiratory tract when people inhale airborne droplets and small particles that result from infected people exhale out when they breathe, talk, cough, or sneeze (Greenhalgh et al., 2021). People with COVID-19 are to a greater extent, likely to transmit it when they are physically close. However, the infection can occur at longer intervals, especially indoors. (Wang et al., 2021). Current evidence suggests that the duration of the virus shedding and the course of infection in people with mild to moderate COVID-19 are up to 10 days after symptoms appear, and in people with severe COVID-19, up to 20 days, including those with immunocompromised problems. (CDC,2021). The maturation period of COVID-19 is 14 days, and the average time is 4 to 5 days from subjection to the onset of symptoms is 1-3. (CDC,2020)

There is no specific or effective treatment for Coronavirus2019 (COVID-19), a disease caused by the SARS-CoV-2 virus. Therefore, COVID-19 management is supportive treatment, including treatment for symptom relief, fluid therapy, oxygen support, any susceptible disease when needed, and medication or equipment to support other vital organs. (Siemieniuk et al., 2020)

Most cases of COVID-19 are mild. In these cases, supportive care includes medication such as paracetamol or NSAIDs to relieve symptoms (fever, general fatigue, and cough), with adequate oral fluids and rest. A healthy diet and good hygiene are also recommended. In addition to being at home, self-isolation and precautions are also recommended. (CDC,2021). People with severe cases may need hospital treatment. For people with low oxygen levels, glucocorticoid dexamethasone is highly recommended as it can reduce the risk of mortality. Non-invasive ventilation and final ICU admission for mechanical ventilation may be required to assist breathing. External membrane oxygenation (ECMO) has been used to treat respiratory failure, but its benefits are still being explored. (Guan et al., 2020)

According to the CDC (2020), Preventive measures to reduce the risk of infection include vaccinations, staying at home, wearing masks in public, avoiding crowded places, social distances, and washing hands regularly with soap and water for no less than 20 seconds, and avoiding touching the eyes, nose, or mouth with an unwashed hand.

The COVID-19 vaccine is a vaccine intended to provide acquired immunity to SARS-CoV-2 (SARS-CoV-2), the virus that causes Coronavirus2019 (COVID-19). (Li et al., 2020) On December 21, 2020, the European Union sanctioned the Pfizer BioNTech vaccine. The vaccination started on December 27, 2020. The Moderna vaccine was approved on January 6, 2021, and the AstraZeneca vaccine on January 29, 2021. By mid-August 2021, more than 4.6 billion doses of the COVID-19 vaccine had been administered in more than 190 countries all over the planet. The Oxford-AstraZeneca vaccine is the most widely used in the world. (WHO,2021)

Like different countries worldwide, Palestine was affected by the global pandemic of corvid-19, which arrived in Palestine at the beginning of March 2020. In Palestine, as of March 4, 2022, cases were distributed according to table (4). The total number of COVID -19 cases in Palestine was 651,125 cases, of whom 635,346 were recovered, and 5,577 died. Of the total cases, 403,977 were reported in the West Bank, including occupied East Jerusalem, and 247,148 were reported in the Gaza strip. The incidence rate was 124.86 per 1,000 of the population in Palestine. The incidence rate in the West Bank was 129.96 per 1,000 of the population, and in the Gaza strip, 117.31 per 1,000 of the population. (MOH, 2022)

تسية ♦ المطقمين بالكامل**	تسية ♦ المطعمين ـ جرعة اولى	الوقيات لكل \$ 1,000 اصاية	الحالات التشطة لكل 1,000 تسمة	عدد الإصابات لكل ♦ 1,000 تسمة	خد السكان*	الاصايات ♦ التشطة	♦ الوقيات	♦ المتعاقون	اجمالي ♦ الاصايات	♦ المحافظة
		4.00	4.65	245.67	297,883	1,386	293	71,501	73,180	مدينة القدس ***
24%	36%	7.84	3.58	117.31	2,106,745	7,552	1,938	237,658	247,148	قطاع غزة ****
44%	50%	10.62	0.77	143.91	415,006	319	634	58,771	59,724	ئابلس
45%	49%	10.79	0.73	130.73	65,915	48	93	8,476	8,617	طوياس
39%	42%	14.65	0.62	115.53	121,671	75	206	13,776	14,057	قلقيلية
70%	75%	6.26	0.51	161.44	355,202	182	359	56,803	57,344	رام الله والبيرة
49%	53%	11.48	0.41	155.92	198,856	81	356	30,569	31,006	طولكرم
50%	54%	11.53	0.39	79.50	782,227	303	717	61,166	62,186	الخليل
62%	66%	10.31	0.39	125.60	234,802	91	304	29,096	29,491	بيت لحم
49%	56%	8.02	0.38	151.92	53,317	20	65	8,015	8,100	اريحا
48%	53%	9.15	0.37	145.12	82,099	30	109	11,775	11,914	سلفيت
37%	38%	6.80	0.26	92.23	167,390	43	105	15,291	15,439	القدس
37%	41%	12.09	0.22	98.58	333,919	72	398	32,449	32,919	جنين
49.7%	57.3%	8.57	1.96	124.86	5,215,032	10,202	5,577	635,346	651,125	قلسطين

Table 2.2: cases	distribution	according to	MOH March 4	(2022)
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On the authority to the Palestinian Ministry of Health report (2020), Coronavirus(COVID-19) reported cases by age group. The highest number of reported cases was in the age group of 20- 29 years, reaching 22.3% of the total reported cases, followed by the age group of 30- 39 years with a percentage of 17.7% of total reported cases in 2020. The lowest number of reported cases was in the age group above 80 years, stating for 2.2% of the total reported cases, followed by the age group between 70-79 years, accounting for 3% of total reported cases in 2020. Bethlehem Governorate reported the highest mortality rate among the Coronavirus population, reaching 53.1 per 100,000 of the population, followed by Ramallah and Al-Bireh Governorate, with a mortality rate of 50.6 per 100,000 of the population. Moreover, the death rate was 1.1% of the total reported cases in Palestine in 2020. Gaza Strip recorded the lowest mortality rate, reaching 18.3 per 100,000 population, while in West Bank, the lowest death rate from the Coronavirus was reported in Tubas Governorate; 26.4

per 100,000 population in the governorate. Moreover,47.3% of reported Coronavirus cases in Palestine were males, and 52.7% were females, while 58.2% of those who died due to the Coronavirus in Palestine were males, and 41.8% were females.

In East- Jerusalem, according to the (WHO,2020), cases from East Jerusalem are managed by the "East Jerusalem Hospitals Network" (EJHN) and Israeli hospitals, and Israeli health authorities have opened ten testing centers in (Shuafat, Shuafat refugee camp, Silwan, Sur Baher, Jabal Mukaber, Beit Safafa, and Jerusalem). In addition, COVID-19 cases were treated among the EJHN's six hospitals; The Makassed Islamic Charitable Society Hospital, Palestine Red Crescent Society Hospital, Augusta Victoria Hospital, St John of Jerusalem Eye Hospital Group, Jerusalem Princess Basma Centre, and Saint Joseph Hospital. Israeli officials have expressed agitation that the virus can spread in Arab neighborhoods from eastern Jerusalem, but in opposition, the central bank of the inspection.

In east Jerusalem, the total number of cases was 73,180, of whom 71,501 recovered and 239 died, the incidence rate is 245.67 per 1,000, and the death rate is 4 per 1,000. (MOH,2020)

## Previous studies that assess health care system delivery during COVID-19 outbreak:

The modern world faces the challenges of unprecedented disease outbreaks with significant adverse effects on society as a whole and the efficiency of operations and supply chain (S.C.) management (OSCM) business models. Such disruptive impacts frequently yield ripple effects. While S.C.s across the globe have been already suffering from epidemics and pandemics, they have recently been seriously hit by an unprecedented, far-reaching disruptive epidemic outbreak. COVID-19 is considered a new type of highly contagious Coronavirus with destructive impacts. (Queiroz et al., 2020)

According to (World Economic Forum—WEF) (2020), a context where severe restrictions and disruptions, e.g., manufacturers closed or partially closed, airports operating with harsh restrictions, shortages of medical equipment and supplies were recorded in the global S.C.s while a good number of industries increased, e.g., (electronics, medical equipment, automotive, consumer goods, etc.) For example, as China is considered the world's factory, the pandemic's disruptions to S.C.s around the world started there before spreading elsewhere.

A quantitative cross-sectional study was conducted in South Africa by (Nyasulu& Pandya, 2020) to assess the effect of COVID-19 on the South African health system. The researchers applied the World Health Organization (WHO) health systems framework to assess the effects of COVID-19 on the South African health system and introduced solutions to address the differences with a basis on the human immunodeficiency virus (HIV) and an expanded program on immunization (EPI). To identify challenges and take measures in a timely manner to strike a balance between managing the emergency while maintaining essential health services. It found that the COVID-19 pandemic had a direct impact on the health system, which negatively affected its functionality and depletion of resources to curb the emergency, diversion of the health workforce, suspension of services, reduced health-seeking behavior, and unavailability of supplies of the noted challenges during the pandemic. Moreover, the study showed that the ability to deliver essential services depended on the baseline capacity of the health system. In order to identify priorities, health services should be restructured to accommodate physical distancing and promote task-shifting at the primary level, which optimizes the use of mobile "web-based technologies" for service delivery, training, monitoring, and involvement of non-health departments and the private sector to increase health system management capacity. Strategic responses could assist in mitigating the adverse effects of the pandemic while preventing morbidity and mortality from

preventable diseases. The study showed that the impact of the COVID-19 pandemic is more challenging in low-income and fragmented, weak health system countries like Palestine and South Africa.

#### Patient's perspective of health care services delivery during the covid-19 outbreak:

Many studies were conducted about the patient's perspective of health care services delivery during the COVID-19 outbreak. For example, one study was conducted by (Armocida et al., 2020) to assess the Italian health system challenges during the COVID-19 outbreak. When the first incident of COVID-19 was documented in Italy, the "National Healthcare Service," which offered universal access to health care, faced increasing pressure, with 41,035 total cases of COVID-19 and 3,405 deaths as of March 19, 2020. In the most affected areas, the National Healthcare Service was close to collapse. As the result of years of fragmentation and decades of finance cuts, privatization, and deprivation of human and technical assets, the National Healthcare Service suffered financial cuts of more than €37 billion, progressive privatization of healthcare services. Public health expenditure as a portion of gross domestic product was 6.6% for 2018–20 and was forecast to fall to 6.4% in 2022.

Moreover, a study was conducted in the USA by (Serlachius et al.,2020) to assess psychosocial challenges and opportunities for youth with persistent health conditions during the COVID-19 pandemic. One of the COVID-19 pandemic challenges was reduced access to physical and psychosocial support. The study showed that during the peak of the pandemic, a significant decline in general physicians appointments, specialized care, and pediatric emergency department attendance had been reported in many countries, including e.g.(China, Italy, the UK, Ireland, Germany, Canada, and Australia, resulting in barriers to access to physical and psychosocial support which delays in seeking treatment. The lack of specialized care will affect children with severe and life-threatening health conditions, including those psychological problems. Also, the study showed another disruption to healthcare services, including disruptions to routine child health services like developmental screening, well-child visits, and vaccinations that support the psychosocial child's well-being.

Also, a cross-sectional quantitative study was conducted in the USA by (Núñez et al., 2021) to map the existing literature on healthcare accessibility after the appearance of COVID-19 to visualize and assess the barriers to access to healthcare. A total of 131 articles were included and considered for mapping in the framework using a systematic approach. The study found that access to chronic treatment has also deteriorated due to the diversion of medical professionals as a "call of duty" for urgent COVID-19 cases. COVID-19 has made facility-based chronic condition care a significant challenge because chronic obstructive pulmonary disease (COPD), hypertension, and diabetes have been the most affected due to the decline in access to health care.

In addition, another study was conducted by (Okereke et al., 2021) to assess the effect of COVID-19 on its surge to healthcare in low- and middle-income countries to view current evidence and give future recommendations for healthcare accessibility. The study found that equitable and fair access to healthcare is an important goal for all countries, regardless of income level, but it is highly challenging and complex in low and middle-income countries. Moreover, the current COVID-19 pandemic has placed more consequences on patients who require surgical care during these times, leading to the cancellation of surgeries. In addition, the rising demand for ventilators, hospital space, and staffing, combined with lockdown regulations, are preventing surgical services from being extended to critical patients, being a necessity, and this has impacted millions of patients around the world. Also, the safety of medical experts and surgeons on the front lines of the COVID-19 epidemic is a significant worry. Furthermore, proper PPE is essential, but with complicated and volatile supply chains and distribution networks worldwide, it has become a worldwide worry in the context of

scarce medical resources, which could face many obstacles in accessing these healthcare services. Moreover, the study found that COVID-19's characteristics may make some (non-communicable diseases) NCDs more challenging to detect. For example, COVID-19 has been linked to cardiovascular problems, making the proper identification of myocardial infarction more difficult. Also, patients with chronic obstructive pulmonary disease (COPD), asthma, influenza, and other respiratory illnesses, have highly similar symptoms to COVID-19, making it difficult to determine when immediate medical assistance is required.

Another cross-sectional quantitative study was conducted in rural Rwanda by (Nshimyiryo et al., 2021) to describe the barriers and coping mechanisms to accessing healthcare among rural patients with chronic diseases who required chronic care during the COVID-19 pandemic. The study found that a large proportion (44%) of patients reported barriers to accessing healthcare, while about 18% of patients could find positive coping mechanisms that helped them ensure the continuation of care during the lockdown. Also, patients who reported barriers to healthcare access were still more likely to skip appointments and delay treatment which is associated with worse treatment outcomes. Moreover, the study found that 22.7% of Rwanda patients still reported being unable to access emergency care, and 16.8% reported being unable to attend regular clinical appointments. Moreover, these results indicate reduced access to emergency care and attendance of scheduled medical appointments due to the COVID-19 lockdown. Also, the unavailability of public transportation or higher transportation costs were among the reasons for a severe decline in the utilization of emergency care services and low attendance at medical appointments during the COVID-19 pandemic.

In rural South Africa another perspective "longitudinal cohort study" conducted by (Siedner et al., 2020) to assess access to primary healthcare during lockdown measures for COVID-19 in rural South Africa with a total of 36,291 individuals made 55,545 clinic visits during the

observation period. The study established no evidence of a significant drop in overall ambulatory clinic utilization in a rural region of South Africa during the national lockdown of the COVID-19 epidemic. Also, visits for chronic diseases, such as diabetes and hypertension, prenatal care, and family planning remained reasonably constant. However, child health visits for immunizations and growth monitoring dropped immediately by over 50%, increased overtime during the lockdown, and neared their pre-lockdown frequency approximately five weeks later. The study also showed an expected 20% increase in clinic visits for HIV immediately after the lockdown and suspected this might reflect an urgency to get medications prior to an anticipated interruption in-clinic access or availability of these medications.

Furthermore, a survey was conducted in the U.S. by (CDC 2020), which included 4,975 participants to assess accessibility to health care during the COVID-19 outbreak. It showed that adults who were inadequate to receive medical care (including urgent care, surgery, regular checkups, screening tests, ongoing treatment, prescriptions, dental care, vision care, and hearing care) because of concerns about COVID-19. In contrast, an estimated 41% of U.S. adults had delayed or avoided medical care, including urgent or emergency care (12%) and routine care (32%), avoidance of urgent or emergency care was more prevalent among unpaid caregivers for adults, persons with underlying medical conditions, Black adults, Hispanic adults, young adults, and persons with disabilities. As a consequence of the Coronavirus epidemic, people might not get needed medical care due to canceled appointments, cutbacks in transportation options, fear of going to the emergency room, or an altruistic desire neither to be a burden on the health care system, among other reasons.(CDC,2020).

Many studies also showed that children with chronic health conditions had been negatively affected by changes in healthcare systems that prioritize the response to the pandemic first, such as type 1 diabetes. A cross-sectional quantitative study was conducted in India by (Dayal et al. 2020); the study included 228 participants to assess missing and lockdown effects on children with new-onset type1 D.M. during the COVID-19 outbreak. The findings of the study showed that lockdown restrictions and fear of exposure to "severe acute respiratory syndrome Coronavirus2" (SARS-CoV-2) in healthcare settings had forced patients with non-COVID-19 illnesses to stay home and suffer until their illness deteriorates gradually and sometimes irreversibly. Also, it showed that children who developed new time-sensitive non-COVID-19 illnesses during the outbreak are at risk of worsening or death due to compromised access to hospital care. Also, children with "new-onset type 1 diabetes" (T1D) might progress rapidly to "diabetic Keto-acidosis" (DKA); if the treatment with insulin is delayed or not provided, increased and suggested a delay in seeking care by parents as a result of fear from the pandemic. Delayed diagnosis or referral due to closure of neighborhood health facilities probably increased the DKA severity and worsened the situation.

A cross-sectional study was conducted in Latin America by (Vasquez et al., 2020); it included 453 pediatric Onco-haematologists (267 faculty members, 142 medical directors, and 44 residents from public and private institutions) to assess the outcomes of the covid-19 pandemic on pediatric cancer care. The findings of the study showed that indefinite postponement and delayed surveillance consultations came in at (89%), stem-cell transplantation (73%), outpatient procedures (58%), cancer surgeries (45%), radiotherapy schedules (33%), outpatient consultations (26%), and palliative care (19%) were reported. Also, because of a shortage of drugs, 36% of cases required modification of chemotherapy regimens, and nearly 60% of respondents reported a decrease in their pediatric Oncohaematologists staff because of the pandemic situation and the prioritization of care.

In addition, a study conducted in Taiwan by (Chang et al., 2003) to assess the impacts of the "severe respiratory syndrome "(SARS) epidemic on medical service utilization and accessibility in Taiwan during the peak of the epidemic, the study showed significant reductions in ambulatory care with a percentage of (23.9%), inpatient care (35.2%), and dental care (16.7%). Also, the fear of SARS had a strong impact on the access to care and adverse health outcomes due to accessibility barriers. The study results suggested that the fears of SARS significantly influenced people's care-seeking behavior and that this fear seriously compromised their access to quality care (Chang et al., 2003). Also, the COVID-19 pandemic had the same implications due to reduced accessibility and availability of different health resources. Moreover, another cross-sectional quantitative study was conducted in Nigeria by (Awucha et al., 2020) to assess the "impact of the COVID-19 pandemic on consumers' access to essential medicines in Nigeria"; the study had 374 participants. The results indicated that there was an increase in the proportion of those facing difficulties to access essential medicine, from 10.6% before the COVID-19 lockdown to 35.2% during the COVID-19 lockdown, while 84.0% of the participants experienced a deterioration in their chronic health conditions in the light of the difficulty in accessing essential medicines. Also, the study identified some significant barriers to accessing essential medicines in Nigeria, for one, poor transportation (36%), low income and high medicine costs (31%), fear of Coronavirus exposure during hospital visits (19%), scarcity of required medicines and closure of some healthcare facilities (14%), fear of referral to COVID-19 isolation centers (12%), and the refusal of healthcare workers in allowing the entry of patients due to the worry of getting the virus themselves (5%).

Moreover, a quantitative study was conducted by Ahmed et al. (2020), and the study participants were from seven slums of Bangladesh, Kenya, Nigeria, and Pakistan to assess the impact of the societal response to COVID-19 on access to medical care for non-COVID-19 health issues. The researchers explored stakeholder perspectives and experiences of healthcare access for non-COVID-19 conditions in two periods: pre-COVID-19 and during COVID-19 lockdowns, regarding access to essential health care during the COVID-19 pandemic, a perception of access to care with the enforcement of COVID-19 lockdown restrictions.

In Bangladesh, stakeholders across all sites and categories reported disruption to services. Some facilities, including some pharmacists, were no longer operating; they were only providing emergency care (e.g., the non-governmental organization (NGO)-run maternity center in Bangladesh). While a few were operating on reduced or minimal services while opening hours were limited. Also, stocks of medicines and other supplies were compromised, and staff numbers were low (or sometimes none) as staff could no longer get to work due to the lockdown. The outpatient services were reduced because not all staff members were able to come to work. If the ambulance went around to pick up the staff who lived close by, this reflects decreased accessibility to health care and decreased availability of human resources in Bangladesh during the COVID-19 outbreak. Also, regarding preventative services, stakeholders reported reduced availability of some preventive services, including immunization, reproductive, maternal, and child health preventive services.

In Kenya, routine growth observations and health promotion for children under five years were suspended. In Bangladesh and Pakistan, community-based immunization and family planning programs were suspended. In all sites, community health workers' services in household services stopped due to movement restrictions, according to WHO (2020). In addition, the reduction in the provision of immunizations, even if temporary, should be avoided because of the potential for an increase in the incidence of infectious diseases such as measles. Regarding lack of health-related resources during the COVID-19 pandemic, in Kenya, the primary care centers diverted emergency resources to COVID-19 preparedness,

and health facilities were forced to spend their emergency kitty on COVID-19 preparedness. Also, all money had been diverted to the COVID-19 pandemic.

In Nigeria, a medical worker reported the arrival of various resources for COVID-19 preparedness, and support was given to primary care health workers from the local government, Family and Community Development Initiative (FCDI), and Aids Prevention Initiative Nigeria (APIN). These supports were in the form of protection such as (hand sanitizers, hand wash, facemasks, gloves, and a basin for hand washing). Moreover, health workers and managers reported that their national governments had issued guidelines for the prevention of COVID-19 and for acquiring care for COVID-19 cases. Moreover, they were unaware of guidelines for the continuing provision of healthcare for non-COVID-19 illnesses and preventive services in all, except in Bangladesh, some mentioned recommendations for the use of telemedicine and guidance for hospitals. Furthermore, the general reduction in the availability of healthcare to access was exacerbated for many residents because of increased costs of healthcare, increased challenges in physically reaching healthcare facilities, reduced household income, and exacerbated reluctance of residents to seek healthcare due to the worry of infection and stigmatization. In Nigeria, the study found that stakeholders across categories noted an initial increase in the cost of many health-related items, including facemasks, disinfectants, hand sanitizers, and drugs, especially those bought from private providers, affecting the ability of people to buy drugs. In Bangladesh and Nigeria, privatefor-profit pharmacies identified lockdown-related disruptions leading to drug shortages and supply chain issues in the public sector. In some cases, people had to buy drugs through private-for-profit pharmacies and drug stores during the pandemic context of lockdown and low income. Also, regarding lack of income during the COVID-19 pandemic, the study showed that in all sites, stakeholders reported that work for a daily wage was halted during the lockdown, and other residents lost their jobs as companies were shut down or went out of business. In addition, lack of income caused widespread distress, leaving residents unable to buy enough food, pay rent or afford healthcare. In Nigeria, the study found that during the COVID-19 outbreak, stakeholders reported that the lockdown had reduced the capability of people to move around, even for emergencies, so a reduction in local healthcare supply meant people had to travel further for their medical care, but this too was difficult.

In Bangladesh, around 80-85% of the residents were stuck inside the slum with no work or mode of income. So poverty was becoming the main problem. Therefore, people were more at risk of dying of hunger and poverty at this point than the disease itself. Moreover, fear of quarantine and stigma decreased accessibility to health. The study found in all sites; that slum residents refused to go to hospital outpatient clinics for symptoms such as cough and fever from the fear of being suspected of having COVID-19. So fear of being quarantined and stigmatized was also identified as a barrier to care-seeking in all of the sites. In addition, the study found that in all sites, some residents and health workers were using their mobile phones for health consultations, while others were turning to locally accessible healthcare services, often staffed by providers with little healthcare training, and to traditional healers, resulted in a decrease of the quality of services a result of the COVID-19 pandemic. Finally, in the context of lockdown stakeholder engagements, especially in low income and vulnerable health system countries, the study showed that the tremendous challenging and barriers to accessing essential health services during the pandemic were because of the lack of health-related resources, lack of income due to losing jobs, and fear of quarantine and stigma.

## **COVID-19 crisis in Palestine**

The COVID-19 crisis in Palestine is challenging, primarily due to an inadequate Palestinian healthcare system. Gaza and the West Bank have 375 ICU beds and 295 ventilators between

them, for a population of over three million. The lack of accessible resources has severely hindered pandemic response in the territories. (AlKhaldi et al., 2020). The main laboratory in Palestine capable of processing COVID tests was forced to shut down as it lacked sufficient equipment. Household resources such as antibacterial wipes, hand sanitizer, and even soap are scarce in Gaza and the West Bank, and this is due to the lack of financial means. In addition, Palestinians do not have enough space to use social distancing to stop the pandemic spread as the areas are severely overcrowded. (AlKhaldi et al., 2020)

The ongoing Palestinian-Israeli conflict has intensified the severity of the COVID-19 crisis in Palestine. In July 2020, Israeli forces demolished a quarantine faculty in the West Bank, thus further minimizing the number of pandemic-response resources accessible to Palestinians. Moreover, the hospital space that COVID patients could use is largely occupied by the high volume of individuals seeking treatment for injuries acquired from conflict with Israelis. (Mahamid et al., 2021). Israel has also imposed restrictions on medical supplies after reducing treatment capacity in Gaza. In April 2020, Israeli authorities destroyed a Palestinian COVID testing center. It has been issued that water, sanitation, and hygiene facilities are also casualties of Israeli attacks. (AlKhaldi et al., 2020)

One of the most afflicted categories during the COVID-19 pandemic was healthcare providers due to the prompt and continuous exposure to the virus and a lack of sufficient medical equipment. (Mahamid et al., 2021). Palestinian healthcare providers were exposed to several challenges related to their work environment as they worked in war-like conditions. (Hejaz, 2020)

The pandemic and quarantine negatively affect the mental health aftermaths, daily routine, and social relations of healthcare providers. (Asmar et al.,2020). The main issues related to human rights violations faced by the healthcare providers include a lack of sufficient

infrastructure, lack of medical equipment, military occupation, and a shortage of healthcare providers in general, especially those who practice in specialty fields such as neurology, oncology, pediatric surgery, and clinical psychology. (Asmar et al.,2020)

The outbreak of the COVID-19 pandemic further exposed the weakness of the Palestinian health care system with a severe shortage of COVID-19 tests, sanitation and hygiene supplies, ventilators, and ICU beds. (Blank et al., 2021). The West Bank was placed under both an external closure by Israel and an internal lockdown by the Palestinian Authority, which caused severe economic and social life harm. The Palestinian Authority has no budgetary reserves that it can repurpose to provide relief to its citizens. Unemployment and the continued rise in poverty and prolonged cuts in international aid for health care services make the situation in Palestine worse. (Blank et al., 2021)

According to Palestinian MOH (2020), the monthly referrals report for the Palestinian MOH, the proportion of referrals destined for hospitals within the West Bank outside East Jerusalem increased from 40% on average for the first quarter to 52% in June. Similarly, referrals within Gaza increased from 7% to 13%. Meanwhile, referrals to East Jerusalem hospitals decreased from 41% to 33% to Israeli hospitals from 5% to 2%, Egypt from 6% to 1%, and 0.2% to Jordan. Also, 19% of referrals were for patients under 18-year-old, and 31% were for those aged 60 years or older, while 47% were for female patients (WHO, 2020).

In East-Jerusalem Legal Aid and Human Rights Centre (JLAC) and Medical Aid for Palestinians (MAP) exposes how systematic neglect and development of Palestinian healthcare have left Palestinian communities in East -Jerusalem extremely vulnerable to the COVID-19 (coronavirus) pandemic and how Israel's discriminatory response to COVID-19 in East-Jerusalem, coupled with long-standing failures to fulfill fundamental human rights, has compounded Palestinians' susceptibility to the pandemic. (Alhaq,2020.) The situation in East Jerusalem became worse before the outbreak of COVID-19, including the impact of ongoing occupation, illegal annexation, and structural discrimination in the holy city. Moreover, lack of COVID-19 testing facilities in East Jerusalem, inaccurate and unreliable data to track the spread of the disease, and the arrests, harassment, and persecution of Palestinian health activists working to prevent the further spread of the disease.

It also warns that the volume of Palestinian hospitals in East Jerusalem, the leading distributors of medical care for Palestinians inside the West Bank and Gaza, to counter a widespread disease outbreak, has been chipped away by decades of occupation and financial constraints, leaving them at a near breaking point. (Alhaq,2020.)

Finally, a study conducted by Abed et al. (2021) aimed to explore variations of the COVID-19 spread, risk factors, and intervention activities in East Jerusalem, West Bank, and the Gaza strip. The study showed that morbidity and mortality indicators were higher in Palestine; in comparison with the global level, COVID-19 incidence and mortality rates were higher in East Jerusalem and lowest in the Gaza Strip, while case fatalities were around 1% all over the country.

Furthermore, social gathering and lack of readiness in the fragmented health system were risk factors in the spread of COVID-19. In addition, the most risk factors for the spread of the virus were overcrowding in the Gaza strip and crossings with Israel. Border crossings were also risk factors in the West Bank and East Jerusalem, especially since many Palestinian workers from the West Bank pass through these crossings' points, leading to a high risk of the virus transmission from Israel to the Palestinian territories. Moreover, according to Israeli public health regulations, East Jerusalem is entirely controlled by Israel and isolated with restrictions. Besides lockdown with closures and restrictions, this is a significant factor as residents could not access Israeli hospitals. In addition, political insecurity and

socioeconomic instability have impacted the health of the population and the capability of Palestinians to develop a modern health system, particularly intensive care rooms, respirators, and the lack of access to provide for residents in the neighborhoods of East Jerusalem.

#### **Chapter three**

## **Conceptual framework**

## **3.1. Introduction**

A *conceptual framework* is a structure that the researcher believes can best explain the natural progression of the phenomenon to be studied (Camp, 2001). Also, a conceptual framework has different purposes. It helps researchers see the study's variables; clearly, it provides researchers with a general framework for data analysis, and it is essential in the preparation of a research proposal using cross-sectional design methods. The conceptual framework also summarizes the primary dependent and independent variables in the research, giving direction to the study (Camp, 2001).

The conceptual framework describes the relationship between the main concepts of a study. The framework makes it easier for the researcher to easily specify and define the concepts within the problem that the researcher works to study (Luse et al., 2012). It refers to specific or narrower ideas a researcher utilizes in his/her study. (Adom& Hussein, 2018)

The aim of the current study is to assess patients' perspectives of outpatient clinics services delivery during the COVID-19 outbreak in East Jerusalem to identify the changes in the healthcare system. The major concepts of the framework focus on the patient's perspective of the health system during COVID-19 as a dependent variable, and the independent variable are the socio-demographic variables which include (age, gender, place residency, marital status, educational level, occupation, and income status), and the patient's medical history which includes (patient diagnose, illness duration, number of clinic visits per month and COVID-19 infection). As seen in figure (**3.1**).



# Figure (3.1): Framework of the current study including patient's perspective of health system delivery and other independent variables

### **3.2 Dependent variables:**

The patient's perspective of the healthcare system delivery during the COVID-19 outbreak.

Health care services are defined as any medical or remedial care or service, including supplies delivered in connection with the care or service recognized under state law. (Hannigan et al. 2016)

In this study patient's perspective was assessed by using a self-administrated questionnaire developed by Jadoo et al. (2014), and the scale measures five variables as follows:

<u>Accessibility to health care:</u> Accessibility simply refers to how easy it is to get to a site, and can be measured in terms of travel time or distance. Health care accessibility is widely recognized as a critical component of the overall health system. It has the capability of promoting socio-economic growth and development of a nation as well as reducing disease burdens by improving the quality of physical and mental well-being. Accessibility is related

to travel impediment (time or distance) between the spatial location of the user and services. (Surage et al., 2009)

Accessibility to health care was assessed in the current study by the following five questions:

Q1. Health care is easier to get as compared to before the COVID-19 outbreak period.

Q2. Drugs and treatment are more difficult to get than before the COVID-19 outbreak period.

Q3. Having to pay more for medical treatment compared with before the COVID-19 outbreak period.

Q4. Medical treatment is more accessible now for everybody than before the COVID-19 outbreak period.

Q5. Patients have to wait longer for medical treatment now as compared with before the COVID-19 outbreak period.

#### Availability of resources: this

refers to the extent to which the provider has the requisite resources, such as technology and personnel, to meet the client's needs. (Mosadeghrad, 2014)

Limited resources are a reality to which health care systems respond in very different ways. The availability of resources influences the quality of healthcare services. The resource shortage also increases employees' job stress, which affects their work quality. Managers and policy-makers recognize financial resources as the most crucial factor affecting healthcare quality. (Mosadeghrad, 2014)

The availability of resources was assessed in the current study by the following three questions:

Q6. There are enough doctors in this area compared to before the COVID-19 outbreak period.Q7. There are enough doctors in the area who specialize compared to before the COVID-19 outbreak period.

Q8. There are more hospitals in the area compared to before the COVID-19 outbreak period.

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<u>Quality of services:</u> The level to which individual and population-based health services increase the likelihood of desired health outcomes while remaining compatible with current professional knowledge (Mosadeghrad& Mohammad.,2014). Providing high-quality health care services is one of the most important objectives of each medical entity. The concept of quality comprises the correct delivery of medical services in the light of current knowledge and existing standards. (Akin et al. 1995)

Quality of services was assessed in the current study by the following four questions:

Q9. The quality of care improved as compared to before the COVID-19 outbreak period.

Q10. Doctors are much friendlier as compared to before the COVID-19 outbreak period.

Q11. Doctors give more information as compared to before the COVID-19 outbreak period.

Q12. A doctor's office has everything needed to provide complete care compared to before the COVID-19 outbreak period.

<u>Attitudes:</u> defined as the way people think and feel about something or someone or a feeling or method of thinking that affects a person's behavior, and this attitude may be positive or negative depending on the changes that affect people's lives. (Eagly&Chaiken, 1993).

Attitudes were assessed in the current study by the following three questions:

Q13. People feel more responsible for their health than before the COVID-19 outbreak period.

Q14. The population is less informed about health risks and healthy behavior than before the COVID-19 outbreak period.

Q15. Health care gets more attention from politicians than before the COVID-19 outbreak period.

<u>Preference</u>: is defined by the US Food and Drug Administration in 2017 as the "relative desirability or acceptability to patients of specified alternatives or choices among outcomes or

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other attributes that differ among alternative health interventions. Beliefs, attitudes, and personal values seem to offer essential insights into drivers of consumer preferences. Values results are correlated with preferences (Russo et al., 2019).

Preference was assessed in the current study by the following two questions:

Q16. Would one like to go back to the health care system as it was before the COVID-19 outbreak period?

Q17. Would one prefer the health services now than as they were before the COVID-19 outbreak period?

#### **3.3 Independent variables**

In the current study, independent variables include the **socio-demographic** variables (age, gender, place of residency, marital status, educational level, income status, and occupation) and **medical history** variables (patient diagnosis, illness duration, number of clinic visits per month and COVID-19 infection).

#### 3.3.1 Socio-demographic variables:

These variables were in section one of the questionnaire. (Questions number 1 to 6). (see appendix I).

<u>Age:</u> the duration of the measure of time of a person's existence. It changes as a result of the passage of time. Achievement age is a measure of achievement expressed in terms of the chronologic age of an average child showing the same degree of attainment. Chronologic age is the time elapsed since a person's birth. (Medical Dictionary, 2003)

In the current study, age was assessed classified as the following:

- I. 18-40 years
- II. 41-50 years
- III. >50 years

<u>Gender:</u> It refers to the roles and responsibilities of men and women created in families, societies, and cultures. (Palestinian Central Bureau of Statistics. 2014). In the current study, gender was assessed by question

Q.2 What is your gender?

- I. Male
- II. Female

<u>Marital status</u>: Is defined as the status of those older than 12 years old in terms of marriage traditions and laws (Palestinian Central Bureau of Statistics, 2012). In the current study, marital status was assessed by question 3, which consisted of 4 categories as the following:

Q3. What is your marital status?

- I. Single
- II. Married
- III. Other (Divorce/Widow)

<u>Educational level</u>: Educational level: refers to the highest level of education that a person has completed. Successful completion of a level of education refers to the achievement of the learning objectives of that level, typically validated through the assessment of acquired knowledge, skills, and competencies. At the primary and secondary school level, educational attainment refers to the highest grade completed or whether or not the person has obtained a secondary school (high school) diploma or equivalency certificate. At the postsecondary level, it refers to postsecondary certificates, diplomas, or degrees awarded by accredited educational institutions. (Palestinian Central Bureau of Statistics. 2013).

In the current study, educational level was assessed by question (2) as the following:

Q4. What is your educational level?

- I. 12 Study years or less
- II. More than 12 study years

<u>Place of residency</u>: Place of residency: refers to the name of the locality in which the person spends most of his time during the year. It also means the place where the family of any person permanently resides in this state and the place where any person having no family generally lodges also (lawinsider.2020). In the current study place of residency was assessed by question (5) as the following:

Q5.where do you live?

- I. City
- II. Village
- III. Camp

<u>Income status</u>: Defined as cash or non-monetary revenues for an individual or household within a period that reflects individual financial status. The income side can include salaries or wages, earnings from investments, and rents on properties. It also includes direct benefits, or transfers, received from the state. Some measures of disposable income also include non-cash benefits from the state, such as education or healthcare – an essential benefit for many families (Keeley and Brian, 2015)

In the current study, income status (monthly income for a family) was assessed by question (6) as the following:

Q6. What is your monthly income?

- I. No income.
- II. Less than 3000 NIS.
- III. 3000 NIS and more

#### 3.3.2. Medical history variables

These variables were assessed in section two of the questionnaire. (Q 7-Q13) which includes:

Patient diagnosis: determines which disease or condition explains a person's symptoms and signs. It is most often referred to as a diagnosis, implicit in the medical context. The information required for diagnosis is typically collected from a history and physical examination of the person seeking medical care (Thompson and Dowding,2009).

In the current study, patient diagnosis and clinic were assessed by question (7) and question (8) as follows:

Q7.What is the chronic disease you are suffering from? ------

Q8. The treatment clinic you received:

- I. Internal Medicine Clinic
- II. Diabetes Clinic
- III. Cancer Clinic

<u>Illness duration</u>: The average time people have the disease starts from diagnosis until they are either cured or die. (Rijken et al. 2013)

In the current study, illness duration was assessed by question (9) as following:

Q9. What is the duration of your disease?

- I. Less than one year
- II. 1-3 years
- III. More than three to six years

<u>Number of clinic visits per month</u>: it is the number of times the patients attend the clinic for different health services. Depending on the disease process and patients' requirements, the patients attend the outpatient clinics for many needs. (Corner, 2009)

In the current study, the number of clinic visits per month was assessed by question (10):

Q10. How often do you visit the clinic per month?

- I. Once per month
- II. Twice and more per month
- III. At least once every two months
- IV. At least once every three months and more

<u>COVID-19 Infection</u>: Coronavirus disease (COVID-19) is defined as an infectious disease caused by the SARS-CoV-2 virus that is caused by a new Coronavirus strain. (WHO.,2020)

Corona is represented by the letter CO, virus by the letter VI, and illness by the letter D. This disease was previously known as the '2019 novel Coronavirus,' or '2019nCoV.'(WHO.,2020)

In the current study COVID-19 infection was assessed by question (12) as the following:

Q12. Were you infected by (COVID-19)? ------

## **3.3. Summary**

This chapter presents the conceptual framework developed based on the literature review. A conceptual framework is a structure that the researcher believes can best explain the phenomenon's natural progression. It consisted of two major concepts: the patient's perspective of health system delivery as a dependent variable and the socio-demographic data (age, gender, residency, marital status, educational level, and economic status) and patient medical history as an independent variable. The next chapter discussed the methodology of the current study.

## **Chapter four**

## Methodology

## **4.1 Introduction**

This study assessed the patients' perspective of outpatient clinics delivery during the COVID-19 outbreak in East Jerusalem hospitals. To achieve the purpose, a cross-sectional design was used. Instruments, data collection, data processing, and analysis were discussed in this chapter.

## 4.2 Study design

Quantitative research is a formal and systematic scientific process for gathering information or investigating phenomena and relationships. It involves collecting numerical data where there is often considerable control and analysis of data by using statistical procedures. (Hoare & Hoe, 2013)

A cross-sectional design was utilized using self-administered questionnaires in the current study because it is beneficial for descriptive purposes.

Advantages of a cross-sectional design are that they are neither costly to perform nor require a lot of time, they capture a specific point in time, contain multiple variables at the time of the data snapshot, and the data can be used for various types of research, and the many findings and outcomes can be analyzed to create new theories or studies (Wang &Cheng,2020).The disadvantages of a cross-sectional design, are that it cannot be used to analyze behavior over some time and does not help to determine cause and effect (Wang & Cheng, 2020).
### **4.3 Setting of the Study**

It was conducted in three hospitals in East Jerusalem which are Al-Makassed hospital, Augusta Victoria Hospital, and Sant-Joseph hospital. These hospitals were selected because the

- Al-Makassed Islamic Charitable Society Hospital in Jerusalem Palestine: is a Palestinian hospital in East Jerusalem that operates under the auspices of the Makassed Islamic Charitable Society. Founded in 1968 with 60-bed units, the Hospital has expanded to its current size, licensed for 250 beds. It is one of the main referral hospitals for the Palestinian community of Jerusalem, West Bank, and Gaza Strip providing a range of specialties including internal medicine, general and specialty surgery, adult and pediatric open-heart surgery, vascular and thoracic surgery, obstetrics & gynecology, fetal medicine, neonatology, pediatrics with its various specialties including genetic diseases, thoracic, gastrointestinal diseases, endocrinology, rheumatic and metabolic diseases, radiology department, emergency, out-patients, central laboratory, blood bank and a pathology lab with a total number of 15597 admitted patients in 2019, and 42271 patients attending the outpatient clinic in 2019. In addition, Al-Makassed also serves as a main teaching and training hospital for participants from Al-Quds University as well as providing research facilities. (Hospital, 2020)
- Augusta Victoria Hospital (AVH): Augusta Victoria Hospital (AVH) is a major medical facility in Jerusalem built after the 1948 war in order to care for Palestinian refugees. Today, most of the patients served by AVH continue to be in social need and thus seek life-saving specialized care. Specialty departments that account for the majority of work at the hospital are the cancer care center, the hematology, and bone marrow transplantation care center, the artificial kidney unit (dialysis), the surgical care and ear, nose, throat center, the diabetes care center, the specialized center for child care, and the

skilled nursing and long-term (Sub-Acute) care facility. These care centers provide specialized treatments that are not available in the majority of hospitals in Palestine. The hospital currently has 118 inpatient beds and 52 ambulatory beds and stations, and 403 staff. In 2019 it admitted 12,910 patients, and did 28,616 dialysis sessions and 20,088 chemotherapy sessions and 25,585 radiation sessions. In addition to many outpatient clinics (surgical, oncology, internal medicine, and endocrine clinics). (Hospital.2020)

- The "French" Saint Joseph Hospital: It was established in 1948 in the heart of Jerusalem, "Sheikh Jarrah," by the Sisters of Saint Joseph to appear and provide excellent health care to all the Palestinian people from different cities of historic Palestine for more than sixty-eight years providing care with 154 beds.
- Because the hospital carries a good reputation for the health services it provides due to the medical and health staff working in it, this became competing in its specifications and standards with the largest hospitals in the region, which in turn made it easier for Palestinian patients to receive their treatment, as they no longer had to go to Israeli hospitals when they needed treatment. Hospital vision and leadership provide integrated health care by providing the best medical services of the highest quality. In addition to many outpatient clinics in this hospital (surgical, internal medicine, and endocrine clinics) and 15942 patients attended the outpatient clinics in 2019. (EJNH. 2020)

### 4.4. Study population

The target population of the current study was the patients who attended outpatient clinics in three major hospitals in East Jerusalem. The hospitals were Al-Makassed hospital, Augusta Victoria Hospital, and Sant-Joseph hospital. These hospitals were selected because they contained outpatient clinics for different health conditions ( internal medicine clinics, diabetes mellitus clinics, and cancer clinics ), which are considered the major three hospitals in the East-Jerusalem area.

The total population of the current study was taken from patients who attended outpatient clinics in Al-Makassed hospital, Augusta Victoria Hospital, and Sant-Joseph hospital in the last two months before starting the study. These months were September and October of the year 2020. The total number of patients who attended outpatient clinics was taken from the hospital's information technology departments after administration permission, and the total number of patients was 4525.

 Table (4.1): The total population of the three hospitals in September and October of

 2019 is as follows.

Hospital	type	Governorate	Total
Al-Makassed hospital	NGOs	East-Jerusalem	2395
Augusta Victoria Hospital	NGOs	East-Jerusalem	960
Sant-Joseph hospital	NGOs	East-Jerusalem	1440
Total population	4525		

### 4.5 Study sample

The total population from the three hospitals was (4525). The study sample was calculated by the proportional method of each hospital using the computer software using the following formula, and the sample size was 355 participants (www.raosoft.com).

(Standard Sample Size) =Z  $^{2} \times$ (P)×(1–P) / C<sup>2</sup>

=(1.96)<sup>2</sup>×(0.5)×(1-0.5) /(0.05)<sup>2</sup>

Formula description:

SS = Standard sample size

Z = Confidence level at 95% (standard value of 1.96)

P = Percentage picking a choice, expressed as decimal (here 0.5)

C= Margin of error at 5% (standard value of 0.05)

Then the correction for finite population: 4525

Sample size of the study =  $\frac{SS}{1 + (SS-1)/Pop}$ =  $\frac{384.16}{1 + (384.16-1)}$ 

4525

The sample size of participants from each hospital was calculated proportionally according to participant's percentages in the population and the sample size was (355). as seen in table (4.2).

Table :( 4.2) The numbers and percentages of patients from the three hospitals

Hospital	Sample	Percentage
Al-Makassed hospital	188	52.9%
Augusta Victoria Hospital	54	15.2%
Sant-Joseph hospital	113	31.8 %
Total	355	100%

355 questionnaires were distributed, and 300 questionnaires were returned with a response rate of 84.5%

### 4.6 Sampling technique:

The convenient sampling method was utilized in this study. It is a form of non-probability sampling in which the data collected from the study population of individuals who are conveniently available to participate in the study by some purposive method. (HyocholAhnet al., 2017). The advantages of convenience sampling are cheap, simple to implement, and efficient, while the disadvantage of convenience sampling is that the sample lacks clear generalization. (HyocholAhnet al., 2017)

### 4.7 The inclusion criteria:

1) Patients with chronic diseases (internal diseases, oncology, and diabetes).

2) Patients who visited the hospital outpatient clinics, Al-Makassed hospital, Augusta Victoria Hospital, and Sant-Joseph hospital in East Jerusalem and able to read and write.

3) Patients (males and females) above the age of 18 years old.

### 4.8 The exclusion criteria:

Patients with severe mental diseases such as schizophrenia, mania, and severe depression were excluded.

### **4.9 Instrument of the current study**

The instrument used for the data selection was a self-administered questionnaire developed by Jadoo (2014), conducted in Turkey to assess the Turkish health system reform from people's perspective.

The questionnaire consisted of three parts: socio-demographic items (age, gender, marital status, level of education, area of residency, income status, and occupation). The second part consisted of patient medical history variables (patient diagnosis, illness duration, number of patient visits to clinic per month, and COVID-19 infection). The third part consisted of 17

items designed to assess patients' opinions about the healthcare systems delivery during the COVID-19 outbreak. Five aspects were measured: accessibility (five questions), availability of resources (three questions), quality of care (four questions), and patient's attitude (three questions), and patients' preferences (two questions) as seen in table (4.3).

A five-point Likert-type scale was used to score the closed comparative statements. Furthermore, each statement has response categories ranging from (1) "strongly agree" to (5) "strongly disagree."

Negative word questions were reverse scored (like that 1 = 5, 2 = 4, etc.) and these questions were (17,18,20,29,31). Also, the number of respondents was separated into two groups: (negative and positive opinions) on each dimension of the overall scale. The decision was made based on the median split of the results (cut-off point) which represents (2.5) on the scale. This means that the median splits the sample into two categories: the "high" values above the median cut-off point (2.5) represent the negative opinion.

No	Instruments	Number of questions in each instrument category:
1.	Socio-demographic self-	
	administration sheet, age,	
	gender, marital status,	
	education level, living place,	• 6 questions.
	and income status.	
	Patient medical history	
2.	Patient diagnosis, illness	
	duration, number of clinic	• 4 questions.
	visits per month, and	
	COVID-19 infection.	
3.	Accessibility statements	• 5 questions.
4.	Availability of resources	• 3 questions.
	statements	
5.	Quality statements	• 4 questions.
6.	Attitude statements	• 3 questions.
7.	Preference statements	• 2 questions.

 Table (4.3): the Instruments of the current study and the numbers of their questions:

Each one of the study variables is discussed in more detail as the following:

- Socio-demographic variables: It was developed for this study, and it included different questions such as age, gender, marital status, level of education, income status, living place, and occupation.
- Medical history variables: included the medical history-related questions such as patient medical history, patient diagnosis, illness duration, number of clinic visits per month, and COVID-19 infection.
- Health care system accessibility, availability of resources, quality, attitude, and preference-related questions: The third part consists of 17 items designed to assess patients' perspective about the healthcare system delivery during the COVID-19 outbreak. Five aspects were measured: accessibility (five questions), availability of resources (three questions), quality of care (four questions), and patients' attitude (three questions), Patients' preferences (two questions) as seen in table (4.4)

Table 4.4 Health care system accessibility, availability of resources, quality, attitude and preference questions.

No.	l I I I I I I I I I I I I I I I I I I I	Accessibility questions						
Q16	Health care access	Health care is easier to access in comparison to before the						
		COVID-19 outbreak period.						
Q17	Difficult to get drugs and	Drugs and treatment are more difficult to get than before the						
	treatment	COVID-19 outbreak period.						
Q18	Increase health care expenses	You have to pay more for medical treatment in comparison to						
		before the COVID-19 outbreak period.						
Q19	Health care access for	Medical treatment is more accessible now for everybody as						
	everybody	compared with before the COVID-19 outbreak period.						
Q20	Increase waiting time to get	Patients have to wait longer for medical treatment now as						
	treatment	compared with before the COVID-19 outbreak period.						
	Avai	lability of resources questions						
Q21	Availability of doctors	There are enough doctors in this area in comparison to before the						
		COVID-19 outbreak period.						
Q22	Availability of specialized	There are enough doctors in the area who specialize as compared						
	doctors	to before the COVID-19 outbreak period.						
Q23	Availability of hospitals	There are enough hospitals in the area as compared to before the						
		COVID-19 outbreak period.						
	Ouality questions							

Q24	Quality of care	The quality of care improved as compared to before the COVID-					
		19 outbreak period.					
Q 25	Doctors' friendship	Doctors are much friendlier as compared before the COVID-19					
		outbreak period.					
Q 26	Doctors explaining and	Doctors give you more information as compared to before the					
	information	COVID-19 outbreak period.					
Q 27	Availability of resources in	My doctor's office has everything needed to provide complete					
	the doctor's clinic	care as compared to before the COVID-19 outbreak period.					
	Attitude questions						
Q 28	People's responsibility for	People feel more responsible for their own health as compared					
	own health	with before the COVID-19 outbreak period.					
Q 29	People's awareness about	The population is less informed about health risks and healthy					
	healthy behavior	behavior as compared with before the COVID-19 outbreak					
		period.					
Q 30	Attention of politicians	Weather it gets more attention from politicians as compared with					
	regarding health care	before the COVID-19 outbreak period.					
		Preference questions					
Q 31	Preferring health system	I would like it when we could go back to the health care system					
	before COVID-19	as it was before the COVID-19 outbreak period.					
	outbreak						
Q 32	Preferring health system after	I prefer health services now than as it was before the COVID-19					
	COVID-19 outbreak	outbreak period.					

### 4.10 Reliability and validity of the instrument

Reliability refers to whether an assessment instrument produces the same results every time it is used in the same context with the same type of subjects, and it essentially indicates (consistent or dependable results). It is also considered an essential part of the validity assessment. (Sullivan.,2011)

There are two ways by which reliability is commonly estimated:

(1) Test/retest: checks whether repeating the test questionnaire under the same conditions produces the same results or not. (Sullivan, 2011)

(2) Internal consistency is about two to three questions or items created for measuring the same concept, and the difference between the answers is calculated. The correlation between the answers is measured, and Cronbach alpha is a test of internal consistency, and frequently

that is commonly used to calculate the correlation values between the answers on an assessment tool. (Sullivan, 2011)

Cronbach Alpha coefficient, which was utilized in this study, is one of the most prevalent methods of assessing internal consistency. It indicates that the internal consistency reliability is considered excellent when the alpha coefficients level is about 90 or above. When the alpha coefficient level is from 0.80 to 0.89 the reliability is considered good. In this study, the general Cronbach's Alpha reliability test for the overall scale was 0.70 which considered as acceptable.

Validity refers to how accurately the study answers the study question or the durability of the study conclusions. For result measures such as (surveys or tests) the validity refers to the accuracy of the measurement (Heale&Twycross, 2015).

The content legitimacy of the questionnaire was examined by a committee of four experts in public health who hold doctoral degrees (PhDs) from Al Quds University. See (Annex 3): experts reviewers of the study tool P.136.

They required a few changes regarding the language or the content. In addition, the scale was translated into the Arabic language by the researcher, and an English translator did a back translation after doing content validity. Experts confirmed the suitability of the questionnaire items and questions to the patients and that questions measure what they were intended to measure.

#### 4.11 Data collection process

After getting the approval from the Public health faculty at Al- Quds University and the approval from the administration of three hospitals, Al-Makassed hospital, Augusta Victoria Hospital, and Sant-Joseph hospital, ethical approval was obtained from School of Public Health/Al-Quds University and participants were provided with the information sheet about

the study including the aim of the study; objectives, and procedures, and they were informed that they had the right to refuse to participate in the study and their participation was anonymous. Also, the researcher took permission verbally from all the participants of the study. The process of distributing the questionnaire was done, and the researcher himself distributed and recollected the questionnaires from the participants in the same time. The data was collected from April to June of 2020, and the researcher used a convenience sampling approach and all participants filled in the questionnaires by themselves, and the researcher was available to answer any questions from the participants.

### 4.12 Statistical analysis

The data was analyzed by using the statistical package for Social Sciences (SPSS) version 23. The data checked for entry error "data clearance." The Frequencies and percentages were calculated for socio-demographic and medical history related variables and the relationship between socio-demographic data and other instrument variables were tested using (frequency, percentages), T-test, ANOVA, and multivariate analysis to investigate the significant association between the study variables

### 4.13 Ethical considerations

- Ethical approval was obtained from School of Public Health/Al-Quds University.
- Informed consent done: the participants were provided with the information sheet about the study including the aim of the study, objectives, and procedures.
- The participants informed that they had the right to refuse to participate in the study and their participation was anonymous.
- The general directors of the selected hospitals; Al-Makassed hospital ,Augusta Victoria Hospital, and Saint-Joseph hospital were formally approached by a letter that presented information about the proposed study and its purpose.

- Confidentiality and privacy were assured for all participants and the information was used only for the purpose of the scientific research.
- Moreover, the researcher took permission verbally from all the participants who agreed to participate in the current study. Also, they were informed that all information would be kept strictly confidential and data was protected and appropriately stored, all files were stored on a computer and were protected by a password and nobody was allowed to access it except the researcher and the supervisor.

#### summary

A cross-sectional design was utilized in the current study and the data collection tool is a self-administrated questionnaire including socio-demographic data and accessibility, availability of resources, quality of care, patient's attitude, and preferences questions. The data was processed by using SPSS, validity and reliability of the questionnaires were examined. The total population of the study was 4525 and the sample size was calculated using a special scale and different ethical issues including consent forms and confidentiality were discussed.

The next chapter discusses the results of the study.

### **Chapter five**

### **Results**

### **5.1 Introduction**

In this chapter, results of patient's perspectives of outpatient clinics services delivery during the COVID-19 outbreak in East Jerusalem are presented. The first part contained sociodemographic characteristics for patients, the second part contained descriptive statistics for patients' opinions on changes in health care and the third part is the relationship between dependent and independent variables as the following:

- The characteristics of the participants and other medical history related variables.
- Patient's perspective of outpatient clinics services delivery during the COVID-19 outbreak in East-Jerusalem scale.
- The relationship between the dependent and independent variables of the study.

## **5.2. Section one: The characteristics of the participants and other medical history-related variables:**

Table (5.1) presented the socio-demographic characteristics. It showed that (34.7%, n=104) of the participants were males and (65.3%, n=196) of the participants were females. Also, for the age of participants, (37.3%,n=112) were between 18-40 years old ,(33.3%,n=100) were above 50 years old and only (29.3%,n= 88) of participants were between 41-50 years old.

For marital status, the results showed that the majority of the participants (78.3%, n=235) were married, and only (8.3%, n=25) were divorced or widows. Regarding the educational level, (64.2%, n=192) of participants finished 12 study years or less, and only (35.8%, n=107) of participants studied for more than 12 years. Moreover, (53.1%, n=156) of participants lived in cities, and (40.1%, n=118) of participants lived in villages, and only (6.8%, n=20) of participants lived in camps. Monthly income, (36.4%, n=104) of participants

had no income, and only (36.7%, n=105) of the participants had an income of 3000 NIS and more. Finally, (56.7%, n=170) of participants were employed and (43.3%, n=130) were unemployed.

#		Factors	Frequency	Percentage
1	Hospital	Al-Makassed Islamic Charitable Association Hospital	89	29.7%
		Saint Joseph Hospital	97	32.3%
		Augusta Victoria Hospital	114	38%
2	Gender	Male	104	34.7%
		Female	196	65.3%
3		18-40 Years	112	37.3%
	Age	41-50 Years	88	29.3%
		More than 50 Years	100	33.3%
4	Marital Status	Single	40	13.3%
		Married	235	78.3%
		Other(divorce/widow)	25	8.3%
5	Educational Level	12 study years or less	192	64.2%
		More than 12 study years	107	35.8%
6	Living place	City	156	53.1%
		Village	118	40.1%
		Camp	20	6.8%
7	Monthly Income	No Income	104	36.4%
		Less 3000 NIS	77	26.9%
		3000 NIS and more	105	36.7%
8	Occupation	Employed	170	56.7%
		Unemployed	130	43.3%

 Table (5.1): Socio-demographic variables of the participants.

Medical history of the participants were presented in table (5.2). The results showed that more than one-third (36.4%,n= 107) of participants suffered from internal diseases, (32.7% n=96) suffered from cancer diseases and only (31%, n=91) had diabetes mellitus.

Moreover, (44.2%, n=130) of participants received treatment in the internal medicine clinic and (24.8%, n=73) received treatment in the diabetes clinic and (31%, n=91) received treatment in the cancer clinic. Furthermore, the participants were asked about illness duration, and the results showed that (35.8%, n=100) of participants suffered from illness for more than three years and (33.3%, n=93) suffered from one to three years, and only (30.8%, n= 86) suffered for less than one year.

For clinic visits per month, the results showed that (43.5%, n=120) of patients visited the clinic once per month and (31.5%, n=87) visited the clinic twice or more per month, (17%, n=47) visited the clinic at least once every three months and more, and only (8%, n= 22), visited the clinic at least once every two months. For COVID-19 infection, only (24.4%, n= 67) of participants had Coronavirus infection.

When participants were asked about the change in the services provided in these clinics compared with the period before the COVID-19 outbreak, and the results showed that (53.1%, n=137) of participants reported positive (better) changes in the services provided and (24.8%, n=64) of participants reported no changes in these services.

#	Factors		Frequency	Percentage
		-		
9	What disease do you suffer from	Medical Diseases	107	36.4%
		Cancer	96	32.7%
		Diabetes mellitus	91	31%
10	The clinic where you receive	Internal medicine clinic	130	44.2%
	treatment is	Diabetes clinic	73	24.8%
		Cancer Clinic	91	31%
11	How long is your illness?	your illness? Less than One Years		30.8%
		1-3 Years	93	33.3%
		More than 3 Years	100	35.8%
12	Number of visits to the clinic	Once per month	120	43.5%
	each month	Twice and more per month	87	31.5%
		At least once every two months	22	8%
		At least once every 3 months and more	47	17%
13	Have you had Coronavirus	YES	67	24.4%
	Delore	NO	208	75.6%

### Table (5.2): Medical history variables of the participants.

# **5.3 Section two: The results of the patients' perspective of outpatient clinics services delivery during the COVID-19 outbreak scale:**

The third part of the questionnaire is the patient's perspective of outpatient clinics services delivery during the COVID-19 outbreak.

# 5.3.1 The participant's answers to the questions related to healthcare accessibility during the COVID-19 outbreak:

Table (5.3) showed the detailed frequencies and percentages of each question of the healthcare accessibility scale, which consisted of 5 questions ranging from strongly agree to strongly disagree. The results showed that 3 questions of 5 (1,4,5), had negative opinions regarding health care accessibility during the COVID-19 outbreak period, which is presented as the highest means and percentages of (disagreed and strongly disagreed). For example, 54%(n=162) of participants who (disagreed and strongly disagreed) that "Health care is easier to get as compared to before COVID-19 outbreak period" (M=3.53), followed by 43.3%(n=130) of participants who (disagreed and strongly disagreed) that "Medical treatment is more accessible now for everyone in this hospital in comparison to before COVID-19 outbreak period" (M= 3.37), and 38%(n=114) of participants (disagreed and strongly disagreed) that "Patients have to wait longer for medical treatment in this hospital as compared with before COVID-19 outbreak period" (M = 3.13).

Also, the participants were asked about the change in the services provided in these clinics compared with the period before the COVID-19 outbreak, and the results showed that (53.1%, n=137) of participants reported positive (better) changes in the services provided

Moreover, the highest means and percentages of (strongly agreed and agreed) were for question (3), which showed a negative opinion as 47.4%(n=142) of participants (strongly agreed and agreed) that "You have to pay more for medical treatment compared with before the COVID-19 outbreak period" (M= 2.69).

Furthermore, the highest means and percentages of (unsure) participants were for questions (2 and 4), as 39.7%(n=119) of participants were (unsure) that "Medical treatment is more accessible now for everyone in this hospital as compared with before COVID-19 outbreak

period" (M=3.37), followed by 36%(n=108) of participants were (Unsure) that "Drugs and treatment are more difficult to get than before COVID-19 outbreak period" (M=2.89).

### Table (5.3): Distribution (%) and mean of questions related to healthcare accessibility during

### the COVID-19 outbreak:

Accessibility								
Statement	Strongly agree	Agree	Unsure	Disagre e	Strongly disagree	Mean	Std. Dev.	
1. Health care is easier to get as compared to before	18	26	94	103	59			
COVID-19 out*break period.	6%	8.7%	31.3%	34.3%	19.7%	3.53	1.08	
2. Drugs and treatment are more difficult to get than	25	87	108	55	25			
before the COVID-19 outbreak period.	8.3%	29%	36%	18.3%	8.3%	2.89	1.06	
3. You have to pay more for medical treatment	38	104	94	42	22			
compared with before the COVID-19 outbreak period.	12.7%	34.7%	31.3%	14%	7.3%	2.69	1.09	
4. Medical treatment is more accessible now for	9	42	119	88	42			
everyone in this hospital as compared with before the COVID-19 outbreak period.	3%	14%	39.7%	29.3%	14%	3.37	0.98	
5. Patients have to wait	15	87	84	72	42			
treatment in this hospital as compared with before the COVID-19 outbreak period	5%	29%	28%	24%	14%	3.13	1.13	
	Total							

## **5.3.2** The participant's answers to the questions related to the availability of health resources during the COVID-19 outbreak:

Table (5.4) showed the detailed frequencies and percentages of each question about the availability of healthcare resources, which consisted of 3 questions and the participants' answers ranged from strongly agree to strongly disagree. The results showed that 2 questions

out of 3 (1,2), had negative opinions about the availability of resources during the COVID-19 outbreak period, which showed the highest means and percentages (disagreed and strongly disagreed). For example, 56 %(n=168) of participants who (disagreed and strongly disagreed) that "There are enough doctors in East Jerusalem hospitals as compared to before the COVID-19 outbreak period" (M=3.57), followed by 50.3%(n=151) of participants who (disagreed and strongly disagreed) that". There are enough specialized doctors in East Jerusalem hospitals as compared to before the COVID-19 outbreak period that". There are enough specialized doctors in East Jerusalem hospitals as compared to before the COVID-19 outbreak period" (M=3.49). In addition, the results showed that 46.3%(n=119) of the participants were (unsure) that "There are enough hospitals in the East Jerusalem area as compared to before the COVID-19 outbreak period", (M=3.33).

 Table (5.4): Distribution (%) and mean of questions related to the availability of health

 resources during the COVID-19 outbreak:

Ava	ailability of resources								
#	Statement	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	Mean	Std. Dev.	
1	There are enough doctors in east Jerusalem hospitals as compared to before the COVID-19 outbreak period	9 3%	25 8.3%	98 32.7%	122 40.7%	46 15.3%	3.57	0.94	
2	There are enough specialized doctors in East Jerusalem hospitals as compared to before COVID- 19 outbreak period	7	23 7.7%	119 39.7%	118 39.3%	33 11%	3.49	0.87	
3	There are enough hospitals in east Jerusalem area as compared to before COVID- 19 outbreak period.	6 2%	43 14.3%	139 46.3%	69 23%	43 14.3%	3.33	0.95	
	Total								

**5.3.3** The participant's answers to the questions related to the quality of healthcare during the COVID-19 outbreak:

Table (5.5) showed the detailed (frequencies and percentages) of each question of the quality of healthcare provided during the COVID-19 outbreak period, which consisted of 4 questions and the participant's answers ranged from strongly agree to strongly disagree. The results showed that the highest means and percentages of (strongly disagree and disagree) were for all questions in this part (1,2,3,4), which presented negative opinions regarding the quality of health care during the COVID-19 outbreak. For example, 65.7%(n=197) of participants who (strongly disagreed and disagreed) that "Doctors are much friendlier in this hospital as compared to before the COVID-19 outbreak period"(M=3.78), 65.7%(n=197) of participants who (strongly disagreed and disagreed) that "Doctors give me more information in this hospital as compared to before COVID-19 outbreak period",(M=3.76) and 65.3%(n=196) of participants (strongly disagreed and disagreed) that "The quality of care improved in this hospital as compared to before COVID-19 outbreak period" (M=3.75).

 Table (5.5): Distribution (%) and mean of questions related to the quality of health care

 during the COVID-19 outbreak:

Qua	ality								
#	Statement	Strongly	Agree	Unsure	Disagree	Strongly	Mean	Std.	
		agree				disagree		Dev.	
1	The quality of care	5	18	81	138	58			
	improved in this hospital as	1.7%	6%	27%	46%	19.3%	3.75	0.89	
	compared to before the COVID-19 outbreak period								
2	Doctors are much friendlier	4	17	82	135	62			
	in this hospital as compared	1.3%	5.7%	27.3%	45%	20.7%	2 79	0.00	
	to before the COVID-19						5.70	0.00	
	outbreak period.								
3	Doctors give me more	4	21	78	137	60			
	as compared to before	1.3%	7%	26%	45.7%	20%	3.76	0.89	
	COVID-19 outbreak period	110 / 0	170	2070		_0,0			
4	My doctor's clinic in this	3	26	75	129	67			
	nospital has everything	1%	8.7%	25%	43%	22.3%	3 77	0.92	
	care as compared to before						5.11	0.72	
	COVID-19 outbreak period								
	Total								

### **5.3.4** The participant's answers to the questions related to the attitude during the COVID-19 outbreak:

Table (5.6) showed the frequencies and percentages of each question of the attitude during the COVID-19 outbreak period, which consisted of 3 questions and the participants' answers ranged from strongly agree to strongly disagree and showed negative attitude for all the questions. The results showed that the highest means and percentages of (strongly disagreed and disagreed) were for all 3 questions. For example, 75.7 %(n=227) of participants (strongly disagreed and disagreed) that "People feel more responsible for their health as compared with before COVID-19 outbreak period"(M=4.05). Also, 56.3%(n=169) of participants (strongly disagreed and disagreed) that "Politicians and decision-makers pay more attention to health care and service as compared with before COVID-19 outbreak period"(M=3.59). Furthermore, 46.3%(n=139) of participants (strongly disagreed and disagreed) that "People are less aware of their health risks and healthy behavior as compared with before COVID-19 outbreak period" (M=3.16).

### Table (5.6): Distribution (%) and mean of questions related to the attitude during the

### **COVID-19 outbreak:**

Atti	itude							
#	Statement	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	Mean	Std. Dev.
1	People feel more responsible for their own health in comparison to before the COVID-19 outbreak period.	6 2%	11 3.7%	56 18.7%	116 38.7%	111 37%	4.05	0.94
2	People are less aware of their health risks and healthy behavior as compared with before the COVID-19 outbreak period	32 10.7%	58 19.3%	71 23.7%	108 36%	31 10.3%	3.16	1.17
3	Politicians and decision- makers pay more attention to health care and service as compared with before COVID-19 outbreak period	15 5%	26 8.7%	90 30%	105 35%	64 21.3%	3.59	1.07
	Total							

### **5.3.5** The participant's answers to the questions related to the preference during the COVID-19 outbreak:

Table (5.7) presented the frequencies and percentages of each question of the participant's preference during the COVID-19 outbreak period, which consisted of 2 questions and the results showed negative opinions in the patient's perspective of the health service delivery during the COVID-19 outbreak in East-Jerusalem. For example, 47% (n=141) of participants (strongly disagreed and disagreed) that "I prefer health services now than before the COVID-19 outbreak period" (M=3.37). Also, 43.3% (n=130) of participants (strongly agreed and agreed) that "I would like health services to return as they were before the COVID-19 outbreak period" (M=3.37).

In addition, the results showed that 36%(n=108) of the participants who were (unsure) that " I prefer health services now than before the COVID-19 outbreak period" (M=3.37), followed

by 35.3% (n=106) of participants who were also (unsure) that "I would like health services to return to what they were before the COVID-19 outbreak period" (M=3.37).

 Table (5.7): Distribution (%) and mean of questions related to the preference during the

 COVID-19 outbreak:

Preference							
Statement	Strongly	Agree	Unsure	Disagree	Strongly	Mean	Std.
	agree				disagree		Dev.
I would like health services to return to what	63	67	106	47	17		
they were before the COVID-19 outbreak	21%	22.3%	35.3%	15.7%	5.7%	3.37	1.14
period.							
I prefer health services now than before the	28	23	108	93	48		
COVID-19 outbreak	9.3%	7.7 %	36%	31%	16%	3.37	1.12
		Total				3.37	1.13

## **5.3.6** The participant's overall view (opinion) of outpatient clinics services delivery during the COVID-19 outbreak:

Table (5.8) showed the frequency distribution of the overall view (opinion) of outpatient clinics services delivery during the COVID-19 outbreak, and the scale divided into two groups: (negative and positive opinions), the "high" values above the median cut-off point (2.5) represent the negative opinion and the "low" values below the median cut-off point (2.5) represent the positive opinion.

The results showed that most of the participants (98.6%) had negative opinions when the current situation is compared with before the COVID-19 period in terms of accessibility, availability of resources, quality of care, attitudes, and people preference. Moreover, most of the participants (90.3 %) believed that there is a decrease in the accessibility to health services provided during the COVID-19 outbreak in East Jerusalem.

The highest means and percentages for (negative opinion) were for 4 domains. The first domain is the preference for health care as 94.3 % of participants had a (negative opinion) regarding the preference of health care system during the COVID-19 outbreak, followed by

quality of health care as 93% of participants had a (negative opinion) regarding the quality of the health care system during the COVID-19 outbreak, followed by the availability of health care resources as 90.6% of the participants had a (negative opinion) regarding the availability of health care resources during the COVID-19 outbreak, and finally, accessibility to health care as 90.3% of the participants had a (negative opinion) regarding access to health care during COVID-19 outbreak.

Moreover, the highest mean and percentage for (positive opinion) was for the attitude domain. For example, 26.3% of participants had a positive attitude during the COVID-19 outbreak period. The lowest mean and percentage for (positive opinion) was for the preference of the health care system during the COVID-19 outbreak, as 5.55% of participants had a (positive opinion) regarding the preference of the health care system during the COVID-19 outbreak, as 5.55% of participants had a (positive opinion) regarding the preference of the health care system during the COVID-19 outbreak.

Domains	Mean	Standar	Median	Positive	Opinion	Negative Opinion		
		a Deviatio n		Frequency	Percentage	Frequency	Percentage	
Accessibilit y	15.6	2.84	15	29	9.66%	271	90.3%	
Available resources	10.39	2.29	10	28	9.33%	272	90.6%	
Quality	15.06	3.07	15	21	7%	279	93%	
Attitude	10.80	1.77	11	79	26.3%	221	73.6%	
Preference	6.74	1.25	6	17	5.66%	283	94.3%	
Overall people view	58.61	7.14	58	4	1.3%	296	98.6%	

Table (5.8): Frequency distribution of overall participant's opinion by five domains.

## **5.4 Section three: The relationship between the dependent and the independent variables of the study:**

This section described the relationships between the dependent and the independent variables, included socio-demographic variables such as (gender, age, marital status, educational level, living place, monthly income, occupation), medical history related variables included (the clinic where you receive treatment, illness duration, number of clinic visits and history of Coronavirus infection) and dependent variable (patient's perspective of healthcare system delivery during COVID-19 outbreak scale) in terms of accessibility, availability of resources, quality of care, attitudes and the people preference. Statistical tests were done using a T-test and one-way ANOVA, and the statistical significance was defined as a P-value of (0.05).

The findings in the table (5.9) showed a statistically significant relationship between patients' perspectives of the health care system delivery items and occupation. For example, the unemployed participants had a general (negative opinion) regarding the health care system delivery since the p-value is equal to 0.036,  $\alpha \leq 0.05$ . However, there were no statistically significant relationships between the patient's perspectives of the health care system delivery questions and the other socio-demographic variables such as age, gender, living place, marital status, educational level, and monthly income.

#	Factor			Mean	Standard	f/t	p-value
					Deviatio n		
1	Hospital	Al-Makassed Islamic	89	57.84	7.91	1.28	0.27
		Charitable Association					
		Hospital					
		Saint Joseph Hospital	97	59.49	6.41		
		Augusta Victoria Hospital	114	58.45	7.08		
2	Condon	Male	104	59.13	7.14	0.926	0.355
2	Gender	Female	196	58.33	7.14		
3		18-40 Years	112	58.47	6.81	2.17	0.115
	Age	41-50 Years	88	57.54	6.58		
		Above 50 Years		00 59.70 7.85			
4	Marital Status	Single	40	59.02	7.60	0.40 0.66	
		Married	235	58.66	7.17		
		Other	25	57.44	6.15		
5	Educational	12 study years or less	192	59.22	6.95	1.93	0.054
	Level	More than 12 study years	107	57.57	7.37		
6	Living place	City	156	59.33	7.15	2.49	0.084
		Village	118	57.80	7.04		
		Camp	20	56.45	6.52		
7	Monthly Income	No Income	104	58.48	6.67	0.001	0.999
		Less 3000 NIS	77	58.48	7.98		
		3000 NIS and Above	105	58.43	6.86		
8	Occupation	Employed	170	57.85	7.21	-2.11	0.036
		Unemployed	130	59.60	6.95		

Table (5.9): Relationships between socio-demographic variables and patients'perspectives of outpatient clinics services delivery questionnaire.

Also, the relation between the medical history variables of the participants and the participant's perspective was tested by using the T-test and ANOVA. The results showed that there was no significant relationship between medical history variables and patients' perspectives since the p-value was more than  $\alpha \leq 0.05$  as shown in table (5.10).

Table (5.10): The relationships between the medical history of the participants and the patient's perspective of outpatient clinics services delivery questionnaire (participant's opinions):

#	Factor		Freq.	Mean	Standard Deviatio n	f/t	p-value
9	The clinic where you	Internal medicine	130	58.36	7.16	0.147	0.863
	receive treatment	clinic					
	is?	Diabetes clinic	73	58.91	7.32		
		Cancer Clinic	91	58.70	58.70 7.12		
10	How long is your	Less One Years	86	59.75	7.13	2.203	0.112
	illness?	1-3 Years	93	58.94	7.02		
		Above 3 Years	100	57.570	7.44		
11	Number of visits to the	Once per month	120	58.20	6.68	2.008	0.113
	clinic each month?	Twice and Above	87	59.98	7.34		
		per month					
		At least once every	22	56.22	5.74		
		two months					
		At least once every	47	58.70	8.46		
		3 months and					
		above					
12	Have you had	YES	67	59.98	7.52	1.69	0.092
	Coronavirus	NO	208	58.28	7		
	before?						

Also, a multivariate analysis was done to examine the relationship between dependent variables and socio-demographic variables, as shown in table (5.11). Multivariate analysis indicated that there was no significant relationship between occupation and participant's opinion. And there was a significant relationship between educational level and participant's opinion (p-value< 0.05). For example, the twelve study years or less group agreed that they preferred health services now than before the COVID-19 outbreak period with (p = 0.005), prevalence odds ratio [POR] = 1.98, 95%CI 1.225-3.215).

### Table (5.11) The relationship between socio-demographic variables and respondents'

### opinions. (Multivariate analysis)

#	Factors		Positive opinion (%)		Negative opinion (%)		Wald	p- value	Exp(B)	95% C.I.
			Freq.	%	Freq.	%				
1	Hospital	Al-Makassed Islamic Charitable Association Hospital	50	16.7%	39	13%	0.658	0.417	0.892	0.676- 1.176
		Saint Joseph Hospital	46	15.3%	51	17%				
		Augusta Victoria Hospital	57	19%	57	19%				
2	Gender	Male	51	17%	53	17.7%	0.245	0.621	1.128	0.701- 1.815
		Female	102	34%	94	31.3%				
3		18-40 Years	63	21%	49	16.3%	3.62	0.057	0.768	0.585-
	Age	41-50 Years	47	15.7%	41	13.7%				1.008
		Above 50 Years	43	14.3%	57	19%				
4	Marital Status	Single	19	6.3%	21	7%	0.436	0.50	1.180	0.722-
	Status	Married	120	40%	115	38.3%				1.921
		Other (divorce/widow)	14	4.7%	11	3.7%				
5	Educati onal	12 study years or less	86	28.8%	106	35.5%	7.74	0.005	1.98	1.225- 3.215
	Lever	More than 12 study years	66	22.1%	41	13.7%				
6	Living	City	77	26.2%	79	26.9%	1.40	0.236	1.25	0.863-
	place	Village	62	21.1%	56	19%				1.010
		Camp	13	4.4%	7	2.4%				
7	Monthly Income	No Income	55	19.2%	49	17.1%	0.04	0.834	0.97	0.741-
	meome	Less 3000 NIS	39	13.6%	38	13.3%				1.274
		3000 NIS and Above	54	18.9%	51	17.8%				
8	Occupat	Employed	94	31.3%	76	25.3%	2.88	0.089	0.672	0.425-
	1011	Unemployed	59	19.7%	71	23.7%				1.00

### **Chapter six**

### **Discussion and recommendations**

### **6.1 Introduction**

The major findings of the current study are discussed in this chapter in relation to previous studies found in the literature review. Also, the characteristics of the participants and their responses to the questionnaire items are discussed. Furthermore, the relationship between dependent and independent variables is highlighted by using many statistical analysis tests such as the ANOVA test and T-test analysis as the following:

The results of these statistical tests are discussed in each of the following sections:

Section one: Descriptive statistics for participants.

**Section two:** Patient's perspective of outpatient clinics services delivery during the COVID-19 outbreak results.

Section three: The relationship between dependent and independent variables.

Section four: Limitations and recommendations.

### Section one: Descriptive statistics for participants.

The study targeted male and female patients who visited the outpatient clinics of ages more than 18 years old. The study showed that 34.7% of the total sample was male, and 65.3% were female. These findings were similar to a study conducted by Siedner et al. (2020) in rural South Africa to assess access to primary healthcare during lockdown measures for COVID-19 in rural South Africa. The study found that 29% of the sample were males, and 71% of the sample were females. This may be related to the fact that women visit clinics more frequently than men, especially for primary care and reproductive health, which was reported in the study (Bertakis& Azari, 2005). Also, according to (Hunt et al., 2011), women consult more for common symptoms, especially headaches and back pain. Also, this may be related to our study setting which had more percent of female patients attending the outpatient clinics compared with male patients.

Moreover, 37.3% of patients were aged between 18 and 40 years, and 33.3% were above 50 years. This result is similar to the study of Siedner et al. (2020) in rural South Africa, where results are age concentrated in the groups of 40-45 with a percent of 47.2%, 45 years and above resulted in 28.7%. According to the Palestinian central bureau of statistics (2021), age groups 18-40 years represented 45% of the population, while those aged more than 50 years old were less than 20% of the population. This indicated that the higher the age the higher the likelihood they were to visit the clinics which are also reported in the study (Faiz&Kristoffersen, 2018) concluded that older individuals attended clinics more than their peers.

## 6.3 Section two: Patients' perspective of outpatient clinics services delivery during the COVID-19 outbreak results.

In general, the results of the current study showed that most of the participants (98.6%) had negative opinion when the current situation is compared to before the COVID-19 period in terms of accessibility, availability of resources, quality of care, attitudes, and the people's preference. These findings were similar to a survey (Rodriguez, 2021) that showed that American people had a negative opinion of the health system during COVID-19 and did not trust the public health system during the COVID-19 pandemic while the current study findings were inconsistent with the study of Grissom et al (2021), which found that COVID-19 appeared to have had a positive effect on the overall level of patient satisfaction. In addition, the current study findings were inconsistent with a study by BinTraiki et al (2020) which was conducted in Saudi Arabia, found that the satisfaction level of patients was high for all the health domains with overall good surgical outcomes indicating that all the actions

and policies that were implemented during the pandemic were proven beneficial for the patients. The current study results showed that the participants were dissatisfied with accessibility to health care, availability of health recourses, quality of care, attitudes, and preferences during the COVID-19 outbreak period. In the following paragraphs all of these domains results will be discussed.

For **accessibility** to health care, the findings of the current study showed that the highest means and percentages 90.3% were for the negative opinion for health care accessibility with a mean of (M=3.53), followed by the medical treatment accessibility with a total mean of (3.12); also a negative opinion and this indicates a decline and decrease of accessibility to health care during the COVID-19 outbreak, which is similar to a previous study conducted in the USA by Serlachius et al. (2020), who found reduced access to physical and psychosocial support. Similarly ,Nshimyiryo et al. (2021) found that a large proportion (44%) of patients reported barriers to accessing healthcare, while about 18% of patients were able to find positive coping mechanisms that helped them to ensure the continuation of care during the lockdown and a significant decline in general physician appointments, specialized care, and pediatric emergency department attendance has been reported in many countries including, e.g.(China, Italy,UK, Ireland, Germany, Canada, and Australia) resulting in barriers to access to physical support which delays in seeking treatment.

Moreover, the findings of the current study were consistent with a study by Núñezet al. (2021) who found that due to the diversion of medical professionals as a "call of duty" for urgent COVID-19 cases, access to chronic treatment such as COPD, diabetes, and hypertension have been deteriorated due to the decline in access to health care. Furthermore, Okereke et al (2021) study showed that equitable and fair access to healthcare is extremely challenging and complex in low-and middle-income countries because the current COVID-19

pandemic has placed more consequences on patients who require surgical care during these times, so it is difficult to determine when immediate medical assistance is required.

For the **availability** of health resources, the current study findings showed that participants had negative opinions about the availability of health resources during the COVID-19 outbreak in East Jerusalem, and the highest means and percentages were (disagreed and strongly disagreed about enough doctors in East Jerusalem hospitals followed by availability of enough specialized doctors, these findings were consistent with a study of Vasquez et al. (2020) that showed that nearly 60% of respondents reported a decrease in their pediatric Onco-haematologists staff because of the pandemic situation and prioritizing of care. This indicated a significant decline in health resources in the context of the COVID-19 pandemic. In addition, a study by Okerekeet al. (2021) found that the safety of medical experts and surgeons on the front lines of the COVID-19 epidemic is also a major worry and a significant decline in proper PPEs and scarce medical resources which could result in many obstacles in accessing of healthcare services.

Our findings are consistent with Nyasulu& Pandya (2020) study which found that the COVID-19 pandemic had a direct impact on the health system which negatively affect its functionality and depletion of resources to curb the emergency also diversion of the health workforce, suspension of services, reduced health-seeking behavior and unavailability of supplies were some of the noted challenges during the pandemic. Ahmed et al. (2020) found that Bangladesh stakeholders across all sites and categories reported disruption to services, and a general reduction in the availability of healthcare to access was exacerbated for many residents because of the increased costs of healthcare, reduced household income, increased challenges in physically reaching healthcare facilities, and the fear of residents in seeking healthcare due to fear of infection and stigmatization.

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In addition, the current study finding showed that 47.4% of participants reported that they had to pay more for medical treatment in comparison to before the COVID-19 outbreak period and these findings were similar to the study of Ahmad et al (2020), which found that an initial increase in the cost of many health-related items, including facemasks, hand sanitizers, disinfectants, gloves and drugs, especially those bought from private providers, and thus this affected the ability of people to buy drugs. Also, private-for-profit pharmacies identified lockdown-related disruptions that led to drug shortages in the public sector meant that people had to purchase drugs from private-for-profit pharmacies and this was difficult in the context of the lockdown and the low income.

For the **quality of care**, the current study findings showed that 93% of participants had a negative opinion about the quality of care provided and the highest means and percentages of (strongly disagree and disagree) were about "doctors are much friendlier " followed by "doctors give me more information" which is consistent with a study of Kludacz-Alessandri (2021) which showed that the COVID-19 pandemic had disrupted the provision of healthcare services, which results in considerable deterioration in patients' overall health, especially for those with chronic diseases, while remote healthcare solutions cannot completely replace the face-to-face medical assessment, they can ensure the continuity of healthcare services and help protect patients, their families and healthcare professionals from disease transmission. In addition, WHO (2020) reported that the COVID-19 pandemic had challenges and difficulties in delivering health services that are safe, effective, and people-centered, as well as focused effort on improving the quality of health services can lessen direct mortality from an outbreak and indirect mortality from vaccine-preventable and treatable conditions.

For **attitudes**, the current study findings showed that 73.6% of the participants had a negative attitude toward the health systems delivery during the COVID-19 outbreak, the highest means and percentages of (strongly disagreed and disagreed) were about the responsibility of

their health followed by highest means and percentages of (strongly disagreed and disagreed) that politicians and decision-makers pay more attention to health care and these findings were inconsistent with the study of Gopal akrishnan et al (2021) which found that most of the participants 84.2% demonstrated a positive attitude toward COVID-19 and 93.0% of participants practiced safety precautions appropriately. Also, the current study findings were inconsistent with the study of Olum et al (2020), which found that 74% of medical students had a positive attitude toward COVID-19 prevention. Moreover, Bac Nguyen et al. (2021) found that the majority of participants, 93.7% showed sufficient knowledge and 76.3% showed positive attitudes, and over half of the participants, 57.7% maintained the good practice of COVID-19 prevention. Our study findings regarding attitudes showed negative attitude toward the health system during COVID-19 pandemic and these findings were inconsistent with other studies. This may be related to cultural changes and increased the level of awareness in the population as much as politicians and decision-makers give more attention to the health care system, especially during a health crisis. Moreover, a study of Olum et al (2020) was conducted on health workers and doctors at the hospital. Those health workers have sufficient knowledge and this leads to good practices and attitudes toward their health, especially during the COVID-19 pandemic.

For **preference**, the current study findings found that 94.3% of participants had a (negative opinion) regarding the preference of the health care system during the COVID-19 outbreak. In contrast, more than one-third of the participants were (unsure) about their preference for the health care system during the COVID-19 outbreak period. These findings were consistent with a study by Predmore et al. (2021), where only 18.9% still preferred current health system delivery (video visit), and 61.7% of participants switched to an in-person visit. On the other hand, the current study findings were inconsistent with a study by Reicher et al. (2021), which found that around 63% of participants were satisfied with the current health system

delivery by telemedicine services, and most of the participants, around 77% agreed and strongly agreed that they would continue to use telemedicine services in the future.

## **6.3.** Section three: The relationship between dependent and independent variables.

The current study findings showed a statistically significant relationship between patients' perspectives of the health care system delivery items and occupation. For example, the unemployed participants had a general (negative opinion) regarding the health care systems delivery since the p-value is equal to 0.036, less than  $\alpha \leq 0.05$ . There are no similar studies to compare them with our study findings.

Finally, multivariate analysis in the relation between dependent and independent variables in the current study indicated that there was a significant relationship between educational level and participant's opinion on the twelve study years or less group, which had a positive opinion and believed that they preferred health services now than before the COVID-19 outbreak period. These findings were not similar to a study by Jadoo et al. (2014),which found a statistically significant relationship between the characteristics and opinions of the respondents. Those who believe that people are happier now than ten years ago have a more favorable opinion of the changes. At the same time, the single unemployed from the rural region perceived themselves as unhealthy and tend to believe that people are unhappy now compared to ten years ago, showing less positive opinions.

### 6.7 limitations and recommendations.

### 6.7.1 Limitations

There are some limitations in this study:

- The convenience sample included patients who attended outpatient clinics at the East Jerusalem hospitals, which may limit the generalization of the findings to other healthcare hospitals in Palestine.
- The current study utilized a cross-sectional design. This type of design may have limitations in generalizing the results to a broader population because it measures both the prevalence of the outcomes and the determinants in a population at a point in time or over a short period of time.
- Outbreak lockdowns and decreased number of patients attending to the outpatient clinics.

### **6.7.2 Recommendations:**

### 6.7.2.1 Recommendation for policymakers and managers

- Policymakers should pay attention to the accessibility of health care, availability of health resources, quality of healthcare, patients' attitudes, and patients' preference during a COVID-19 pandemic and other pandemics in outpatient clinics, at the same time not only focus on inpatients.
- To develop standard policies and protocols about how to deal with a pandemic situation particularly in outpatient clinics that lead to high level of preparedness for similar crisis in the future.
- Policymakers should develop plans to increase population awareness which leads to positive attitudes toward their health.
- Policymakers should pay attention to the importance of patient's perspective and their opinion in health care system which leads to better understanding of patients needs and preferences.
- Policymakers should investigate the reasons behind increased waiting time and more money consuming to get health care services.
- Policymakers should pay attention to quality of care provided during pandemics and maintain good level of patients satisfaction.
- Only 5.55% of participants had a positive opinion regarding the preference of the health care system during the COVID-19 outbreak and this result considered very low which leads policymakers and managers to give more attention to health care system from al dimensions.

#### 6.7.2.2 Further research

- There is a need for further quantitative and qualitative studies to assess the impact of the COVID-19 pandemic on the health care systems delivery on a broader scale and with larger samples to cover all geographic areas in Palestine.
- There is a need to conduct qualitative studies to understand the reasons behind a patients' negative opinion regarding health care accessibility, availability of health resources, quality of healthcare, patient attitudes, and patient preference in outpatient and inpatient health services.
- There is a need to conduct a qualitative study to understand the issues in more detail ,the reasons why patients do not prefer the health services (now) during the COVID-19 outbreak period.

### **6.8.**Conclusion

This study revealed that the most of the participants had a negative opinion when the current situation is compared with before the COVID-19 period in terms of accessibility, availability of resources, quality of care, attitudes and the patient's preference. Only 5.55% of participants had a positive opinion regarding the preference of the health care system during the COVID-19 outbreak. Most of the participants reported that there is a decrease in the accessibility to health services that were provided during the COVID-19 outbreak in East Jerusalem. Policy makers should pay attention to the accessibility to health care, availability of health resources, quality of healthcare, patient's attitudes and patient's preference during COVID-19 pandemic and other pandemics. Also, policymakers should investigate the reasons behind increased waiting time and more money consuming to get health care services. Moreover, should pay attention to the importance of patient's prespective and their opinion in health care system which leads to better understanding of patients needs and preferences. There is a need to conduct a qualitative study to understand the issues in more detail ,the reasons why patients do not prefer the health services (now) during the COVID-19 outbreak period.

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# Annex 1: Study tool (questionnaire)



جامعة القدس

كلية الصحة العامة

برنامج السياسات والإدارة الصحية/ الجودة

وجهة نظر المرضى حول الخدمات الصحية المقدمة خلال فترة تفشي فيروس كورونا في مدينة القدس

الشرقية.

2021

تحية طيبة وبعد.....

يقوم الطالب فراس دغلس من برنامج ماجستير السياسات والإدارة الصحية/ الجودة في كلية الصحة العامة بجامعة القدس, بأجراء دراسة بعنوان "وجهة نظر المرضى حول الخدمات الصحية المقدمة خلال فترة تفشي فيروس كورونا في مدينة القدس الشرقية " والتي تشمل المرضى في العيادات الخارجية لكل من مستشفى المقاصد، المطلع والفرنساوي.

لذا نرجو من حضرتكم الإجابة على أسئلة هذه الأستبانة علما بأن هذه الدراسة من اجل البحث العلمي والأكاديمي فقط، وسيتم المحافظة على سرية الإجابة، لذلك لا داعي لكتابة الاسم أو ما يشير عليك شاكرا لكم حسن تعاونكم في إنجاح هذه الدراسة .

أطيب التحيات....

الطالب : فراس دغلس إشراف: د.منی حمید

2021

- أرجو اختيار اسم المستشفى الذي تتلقى فيه العلاج حاليا
   مستشفى جمعية المقاصد الخيرية الإسلامية.
  - (ب) مستشفى سانت جوزيف (الفرنساوي).
  - (ت) مستشفى الأوغستا فيكتوريا (المطلع).

القسم الأول : المعلومات الشخصية والمهنية

يتناول هذا القسم البيانات الشخصية الرجاء وضع دائرة في مكان الإجابة الملائمة: 2) الجنس:

- (<sup>†</sup>) ذکر (ب) أنثى
  - 3) العمر:
  - (أ) من18-40 سنة
- (ب) من 41 سنة 50 سنة (ج) أكثر من 50 سنة
  (4) الحالة الاجتماعية:
  (أ) أعزب (ب) متزوج
  (ج) مطلق
  (د) أرمل
  (5) المستوى التعليمي:
  - (أ) 12 سنة أو اقل
  - (ه) الجامعة (أكثر من 12 سنة در اسية)
  - 6) مكان السكن:
     (أ) مدينة (ب) قرية (ج) مخيم
     (د) غير ذالك/حدد \_\_\_\_\_
     7) الدخل الشهري بالشيكل:
     (أ) لأ در حد د ذار \_\_\_\_\_
- (أ) لا يوجد دخل.
   (ب) أقل من 3000 شيكل.
   (ج) 3000 شيكل أو أكثر

القسم الثانى : معلومات التاريخ المرضى: يتناول هذا القسم البيانات التي تتعلق بالتاريخ المرضي الرجاء وضع دائرة مكان الإجابة الملائمة: 8) ما هو المرض الذي تعاني منه :

- 9) العيادة التي تتلقى فيها العلاج هي :
   (أ) عيادة أمراض الباطني
   (ب) عيادة السكري
   (ج) عيادة أمراض السرطان
- **10) ما هي مدة مرضك:** (أ) اقل من سنة (ب) من سنة -3 سنوات
  - (ج)أكثر من 3 سنوات

12) هل أصبت بفيروس كورونا من قبل ؟ \_\_\_\_\_

# القسم الثالث: أرجو الإجابة على الأسئلة التالية والتى تتعلق بالخدمات الصحية من حيث الوصول لها، توافر ها وجودة هذه الخدمات وتفضيلك لها:

لا أو افق بشدة	لا أوافق	غیر متأکد	أوافق	أو افق بشدة	اسأله تتعلق بالوصول
					13) الحصول على الرعاية الصحية في هذا المستشفى أصبح سهلا مقارنه بمرحلة ما قبل انتشار فيروس كورونا.
					14) الحصول على العلاج والأدوية في هذا المستشفى أصبح صعبا مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
					15) عليك أن تدفع أكثر لتلقي العلاج الطبي في هذا المستشفى مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
					16) أصبح العلاج الطبي متاحا للجميع في هذا المستشفى الآن مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
					17) على المرضى الانتظار لفترات أطول لتلقي العلاج في هذا المستشفى مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
	1				اسأله تتعلق بتوافر الموارد
					18) هناك عدد كاف من الأطباء في مستشفيات القدس الشرقية مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
					19) هناك عدد كاف من الأطباء المختصين في مستشفيات القدس الشرقية مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
					20) هناك عدد كاف من المستشفيات في القدس الشرقية مقارنه بمرحلة ما قبل انتشار فيروس كورونا.
	1				اسأله تتعلق بالجودة
					21) جودة الرعاية أو الخدمات تحسنت في هذا المستشفى مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
					22) الأطباء أكثر ودا في هذا المستشفى مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
					23) يزودوني الأطباء بمعلومات أكثر في هذا المستشفى مقارنه بمرحلة ما قبل انتشار فيروس كورونا.
					24) عيادة الطبيب الخاص بيفي هذا المستشفى تحتوي على كل شيء و يزودني بالر عاية الشاملة مقارنه بمرحلة ما قبل انتشار فيروسكورونا.

لا أو افق بشدة	لا أوافق	غیر متأکد	أوافق	أو افق بشدة	اسأله تتعلق بالوصول
					25) تشعر الناس بمسؤولية أكثر اتجاه صحتهم مقارنه بمرحلة ما قبل انتشار فيروس كورونا.
					26) الناس اقل إدراكا حول المخاطر الصحية والسلوك الصحي مقارنه بمرحلة ما قبل انتشار فيروس كورونا.
					27) يعطي السياسيون و أصحاب القرار اهتماما اكبر للرعاية والخدمات الصحية مقارنة بمرحلة ما قبل انتشار فيروس كورونا.
					اسأله تتعلق بالتفضيل
					<b>28)</b> أفضل أن تعود الخدمات الصحية على ما كانت عليه قبل مرحلة انتشار فيروس كورونا.
					29) أفضل الخدمات الصحية في الوقت الحالي عن ما كانت عليه قبل انتشار فيروس كورونا.

## Annex 2: ethical committee of Al-quds university approval

**Al-Quds University** 

Jerusalem

School of Public Health

سهمالقحملم الهدس

كلية الصحة العامة

التاريخ:2021/2/16 المرجع.

عزيزي الطالب فراس دغلس المحترم برنامج: السياسات والادراة الصحية

#### الموضوع: موافقة لجنة اخلاقيات البحث العلمي

قامت اللجنة الفرعية لأخلاقيات البحث التابعة لكلية الصحة العامة بمراجعة مشروع الرسالة بعنوان: (Patients' perspective of health system delivery during COVID 19 outbreak in Jerusalem) المقدم من (مشرف الرسالة/ د.منى حميد). يعتبر مشروعك مستوفيًا لمتطلبات أخلاقيات البحث في

جامعة القدس.

نتمنى لكم كل التوفيق في تسيير المشروع.

فلاقيات البحث Faculty of Public He

د. اسمى الامام

نسخة/ أعضاء لجنة البحث تسخة/ الملف

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### Annex 3: Experts Reviewers of the Study Tool

1. Motasem Hamdan, PhD, Prof. Health Policy and Management. Vice President

for Academic Affairs , Al-Quds University, Jerusalem

- 2. Asma Imam, BSN, MSN, PhD. Associate Professor in Health Management. Coordinator, PhD program in Public Health. Coordinator, Health Policy and Management Masters Program . Al-Quds University
- 3. Hussein Jabareen, PhD, Associate Prof. Community & Public Health. Dean of Nursing College. Hebron University. Hebron-Palestine.

4. Dr Mohamad Khleif. PhD Health Economics & Management Health Economist Assistant professor; Hebron University. Chairman; AL-Sadeel Society for Palliative Care for Cancer and Chronic Diseases