An-Najah National University

Faculty of Graduate Studies

ASSESSMENT OF DENTAL MALPRACTICE AND ITS ASSOCIATION WITH INFECTIOUS DISEASE TRANSMISSION: A CROSS-SECTIONAL STUDY IN NABLUS GOVERNORATE

By

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Dedication

This thesis work is dedicated to the sake of ALLAH, my Creator and my Master. My great teacher and messenger; Prophet Mohammed (May Allah bless and grant him), who taught us the purpose of life,

To my beloved father, who had always loved me unconditionally

and whose good examples had taught me to work hard for the things that I aspire to achieve.

To my beloved mother; who has been a constant source of support and

encouragement during the challenges of graduate school and life. I am truly thankful for having you in my life.

To my dear wife and children,

To my supervisor and everyone who supported me in completing this work, and to my supervisor, the respected Prof. Hamzeh Al Zabadi. To everyone who helped me complete this work.

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I also extend my thanks to my family, my respected parents, and my brothers and sisters, who supported me throughout the completion of the thesis. Special thanks to my friends for supporting me and supporting me throughout.

Declaration

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

ASSESSMENT OF DENTAL MALPRACTICE AND ITS ASSOCIATION WITH INFECTIOUS DISEASE TRANSMISSION: A CROSS-SECTIONAL STUDY IN NABLUS GOVERNORATE

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

Student's Name: **Haitham Fawzi Ibrahim Ghanem**

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Date: 07/05/2025

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Abstract

Background: Infectious diseases pose significant health risks globally, and dental clinics are not exempt from these challenges. Inadequate infection control practices continue to pose significant health risks. This study aims to identify malpractices within dental clinics in the city of Nablus.

Methodology: A cross-sectional research design was used in the current study on 90 dentists and 120 patients, who visited dental clinics during March 2024. The sampling technique was convenience. Data was collected using a questionnaire. The study was conducted in all dental clinics in the city of Nablus.

Results: The results indicated that (84.4%) of the dentists received hepatitis B vaccine. Also, 73.3% of dentists were tested for hepatitis B or human immunodeficiency virus (HIV). About 10.0% of participants monitored the health of employees and ensured that there was no infection. Nearly, 97.8% of dentists wear face masks while working and 35.6% reported change their face masks when treating each patient. Almost, 92.2% of dentists indicated that they wear gloves during treatment procedures and 91.1% of reported changing gloves. Only 23.3% of dentists used eye or face protection. While 76.7% indicated that they don't use eye or face protection tools. About, 75.6% of dentists reuse the carpule on another patient, while only 24.4% dispose of the cartridge after one use. The results also indicated that 66.0% of patients have knowledge and awareness about medical practices in dental clinics.

Conclusions: The results highlighted how critical it is to improve training, enforce stricter infection control guidelines, and conduct routine monitoring in order to reduce these risks. In order to raise infection control standards and guarantee patient safety in dentistry clinics in Nablus, policymakers and healthcare professionals can implement the practical recommendations reported in this study.

Keywords: Malpractices, HBV, PPE, HIV, dentists, patients, dental clinics, Nablus.

Chapter One
Introduction and Theoretical Background

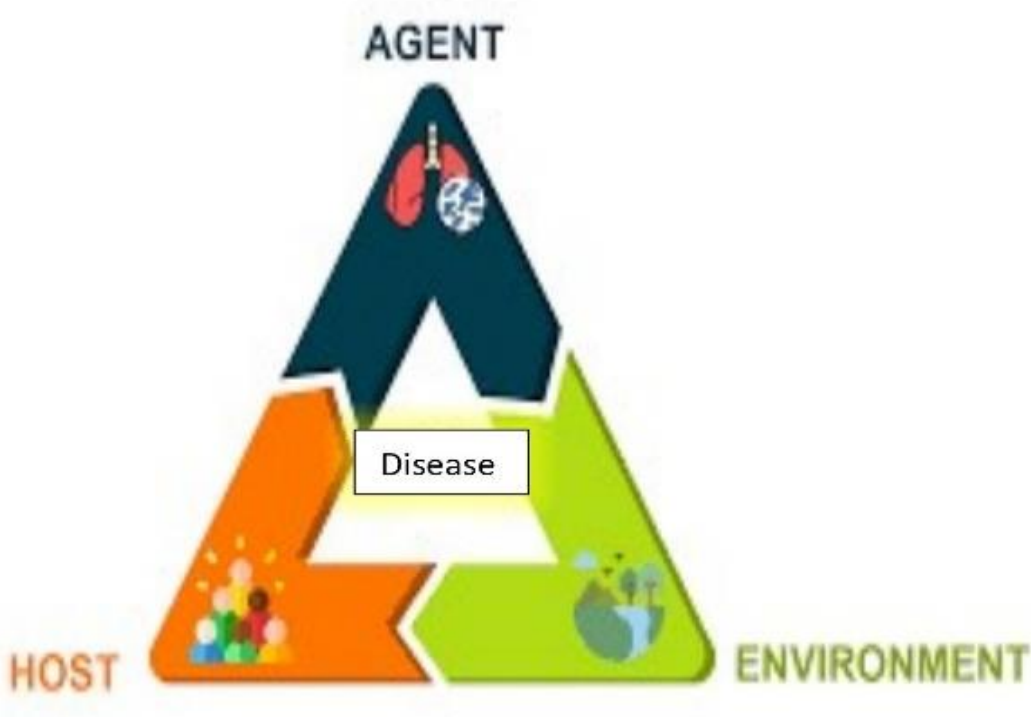
This chapter deals in detail with the problem that this study focused on. It is divided into three parts: The first part, which consists of an introduction to the study, a statement of the study problem, a discussion of the importance of this study, the purpose and objectives, and research questions.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

1.1 Introduction

Recent years have seen an increase in the worry over the spread of infectious diseases in dental clinics, underscoring the importance of closely following infection control procedures (Kohn, et al., 2019). One of the main areas of medical and health study is medical errors in dentistry. In this area, medical errors include misdiagnose Among the most important problems are improper care and patient abuse, but the connection between infectious disease transmission and medical errors is one of the most important. Because many medical procedures involve touch and patients utilize shared devices, dental clinics are a potential setting for the spread of numerous infectious diseases. The danger of infection transmission in dental clinics is also greatly impacted by sterilization and cleanliness procedures', Infections that people contract while receiving medical care are known as health care-associated infections, or HCAIs. Previously known as nosocomial infections, the term "HCAIs" originally only applied to infections associated with admission to acute-care hospitals; however, it is now used to describe infections that occur in a variety of settings where patients receive medical care (eg, long-term care, family medicine clinics, home care, and ambulatory care) (Collins & Hughes, 2008). Numerous studies show that surgical complications, health care-associated infections, and adverse medication events are the most frequent forms of adverse events that hospitalized patients experience (Haque, Sartelli, McKimm, & Abu Bakar, 2018). Over 98,000 hospitalized individuals (one in 17) die as a result of healthcare-associated infections (HCAIs), according to data from the US Centre for Disease Control and Prevention. Each year, nearly one million hospitalized patients get HCAIs while receiving treatment for other medical conditions.8 Hospital-acquired infections (HCAIs) rank among the top 10 causes of death in the United States and are the most common

consequences of hospital care, according to the Agency for Health Care Research and Quality (Haque, Sartelli, McKimm, & Abu Bakar, 2018). In dentistry, "defensive dentistry" refers to avoiding risky or challenging procedures that could harm a patient's health or avoiding treating challenging cases. "The alteration of modes of clinical practice, induced by the threat of liability" is another related idea. Actually, the rise in cases involving medical malpractice and carelessness in dental care led to the development of defense dentistry Medar et al. (2020), as numerous law firms from the United Kingdom (UK), the United States, and Canada made it their public goal to find Epidemiology, the traditional paradigm of infectious disease causation. The Trinity envisions being infected. As seen in Figure (1.1), the agent (pathogen), host, and environmental variables work together to cause the disease. Living parasites (such as helminths or protozoa), fungus, bacteria, or non-living viruses or prions can all be considered infectious agents. The host's exposure to these elements is determined by environmental conditions, and the result of exposure is determined by the agent-host interaction that follows.

Figure 1.1
The epidemiological triad model of infectious disease causation



Oral health is defined by the World Health Organization (WHO) as "being free of diseases and disorders that affect the mouth and oral cavity." Medical, behavioral, and

social variables all affect how oral illness develops (Suwyed, et al., 2021). Although the dental health of their inhabitants has improved in many countries, numerous communities still urgently want additional advancements across all age categories. In both emerging and wealthy nations, oral illness is a major burden for the underprivileged and impoverished population (Milona, -Olszowska , Szmidt, Kłoda , & Olszowsk, 2021).

Dental operations frequently entail intimate contact with bodily fluids such as blood and saliva, which might facilitate the transmission of germs. With an average half-life of roughly 5.6 hours on stainless steel and 6.8 hours on plastic, the virus can live longer on these surfaces. Viable virus was found for up to 72 hours following application to these Surfaces (Amato, et al., 2020). Research has indicated that insufficient sterilization of dental instruments, inappropriate utilization of personal protective equipment (PPE), and {40.00000000000 neglect of hand hygiene are noteworthy factors that contribute to the spread of contagious illnesses in dental environments (Kohn, et al., 2019). A sickness brought on by a pathogen or its toxic byproduct that spreads from an infected or contaminated person, inanimate item, to a vulnerable host is known as an infectious disease. A significant portion of the world's disease burden is caused by infectious diseases .It has an impact on economics and public health systems globally, disproportionately affecting people that are already at risk (Seventer & Hochberg, 2017)

One of the main causes of the spread of infectious diseases in dental offices is inadequate sterilization practices. Inadequately cleaned and sterilized dental instruments can harbour bacteria, viruses, and fungus, which puts patients and dental personnel at considerable risk (Rutala & Weber, 2023).

The use of inadequate sterilization methods can cause patient outbreaks of hepatitis B, hepatitis C, and tuberculosis. In order to avoid cross-contamination, dental clinics must adhere to strict sterilization procedures (Rutala & Weber, 2023). Standard Precautions are the minimal measures for preventing infections that are applied to all patient care in every place where healthcare is provided, regardless of the patient's condition as a suspected or proven infection. Hand cleanliness is one of the standard precautions. (governmen, 2024). Putting on personal protection equipment (goggles, masks, and gloves, for example) .coughing technique and respiratory hygiene Safety (engineering and work practice controls) with sharp objects. Aseptic approach for parenteral drugs is one example of safe injection methods . sterile tools and equipment. A sanitized and

hygienic setting (GLANCE, 2016). Education and training are essential components of Standard Precautions. Since they assist DHCPs (dental health care personal) in making informed decisions and adhering to recommended practices, (Commission, 2023).

Transmission-Based Precautions are added to Standard Precautions when they are insufficient to stop transmission on their own. When a patient has a disease that can be transmitted by contact, droplet, or airborne means (such as skin contact, sneezing, coughing), this second tier of infection protection is utilized. It is always used in addition to Standard Precautions. Not all of the recommended Transmission-Based Precautions (e.g., Airborne Precautions for patients with suspected tuberculosis, measles, or chickenpox) for hospital and other ambulatory care settings can be used in dental settings. However, patients typically do not seek routine dental outpatient care when acutely ill with diseases requiring Transmission-Based Precautions (Rutala & Weber, 2023). Over the previous 20 years, the World Health Organization has In an attempt to coordinate worldwide responses, the World Health Organization has declared seven international public health emergencies of concern: H1N1 influenza (2009), polio (2014), Ebola virus disease in West Africa (2014), Zika virus disease (2016), Ebola virus disease in the Democratic Republic of the Congo (2019), COVID-19 (2020), & monkeypox ,2022,20) (21 tackling these significant international public health issues (Jiang, Miller, & Cao, 2023).

There should be new, inexpensive, and simple-to-use tools available. Controlling infectious diseases should be given top priority given the potential development of resistance against illness vectors and chemotherapy .Furthermore, messenger RNA (mRNA) emergence accelerates the conduction process .swift creation of vaccinations, as demonstrated by evidencethe most effective tool in the +0 against infectious illnesses. In the ongoing fight against conventional vaccines, new ones are constantly needed to new and developing infectious illnesses (Jiang, Miller, & Cao, 2023).

The host's sensitivity, the organism's virulence and infectivity, the dose or number of organisms, the exposure period (time-span), and, lastly, is nearly difficult to control the virulence of all pathogenic organisms or attempt to lessen a patient's innate sensitivity. To break the chain of infection, a practical strategy would be to comprehend the disease processes, transmission pathways, transmission control techniques, and the implementation of suitable infection control and safety measures during practice .

The field of dentistry includes, in general, disease prevention, the use of practical barrier techniques, the use of personal protective equipment, engineering and work practice controls, the sterilization of critical and semi-critical instruments (Yadav et al., 2017), the disinfection of contaminated surfaces, and the application of aseptic protocols during treatment.

HIV/AIDS is known to have a number of causes .signs that appear in the mouth. HIV infections that present orally (OM) affect 30 to 80 percent of HIV-positive individuals. HIV/AIDS and oral lesions are intimately associated. The present state of HIV-associated oral symptoms in industrialized and developing nations was shown in,Taboni's (2019) global review. The proliferations of OM has Dentists, who can be crucial in the diagnosis, place a high value on AIDS; the style varied over the decades and across the globe . All things considered, the illness has a significant impact (Sufiawati, Rafi, & Putri, 2021).

The World Health Organization (WHO) reports that over 2 billion people worldwide have contracted the hepatitis B virus (HBV), and around 257 million people are still chronically infected (classified as having HBsAg, or hepatitis B surface antigen). Every year, an estimated 887,000 people pass away from cirrhosis and hepatocellular carcinoma (HCC), two conditions linked to hepatitis B. Moreover, the hepatitis C virus (HCV) infects around 71 million people globally, and 399,000 of them pass away each year (Nagao, Kimura, & Nagao, 2021).

Physicians provide patients with liver diseases a lot of care, because the liver is essential to several metabolic processes, such as the release of bile, which is required for fat absorption, the conversion of sugar into glycogen, and the secretion of bilirubin. Employees in dental healthcare are susceptible to infection . The primary causes of liver disease globally are hepatitis B and hepatitis C viruses (HCV and HBV, respectively). Health policy makers should be aware of this . They are attempting to manage this virus in communities through their tactics (Dahiya, Kamal1, Sharma, & Kaur, 2015). Dental health care workers (DHWs) frequently come into touch with patients' blood and saliva, making infection prevention in dental medical facilities a crucial concern. Patients with the hepatitis B virus, hepatitis C virus (HCV), and HIV have a 3–30, 3–and 0.3% chance of transmission, respectively (Nagao, Kimura, & Nagao, 2021).

the transmission of infectious diseases in dental clinics is a multifaceted issue influenced by various malpractices such as inadequate sterilization, improper use of PPE (Personal protective equipment), and poor hand hygiene. Addressing these malpractices through stringent adherence to infection control protocols, continuous education, and regular monitoring can significantly reduce the risk of disease transmission and enhance patient safety in dental care settings.

The importance of this research lies in raising awareness of the legal and medical issues related to dental errors, and identifying effective preventive measures to limit the spread of infectious diseases. This research also helps highlight the importance of continuous training for medical and dental staff on sterilization and prevention techniques.

1.2 Problem statement

Because of the invasive nature of dental operations and the close proximity of dental clinics to their patients, infectious illnesses continue to be a major global public health concern. Regarding the adherence to infection control methods, there is growing concern in Nablus city, a city with a high density of dental clinics serving a big population. There may be a chance for the spread of infectious illnesses in these therapeutic settings because of complaints of malpractice and violations of infection control procedures that have appeared, despite the existence of rules and regulations. The purpose of this study is to look at the specific malpractices that dental clinics in Nablus engage in that lead to the spread of infectious diseases. Anecdotal data and preliminary observations suggest a number of serious areas for concern, such as poor personal protective equipment (PPE) use, inadequate sterilization of instruments, and a lack of knowledge and training among oral healthcare professionals. These mistakes worsen the region's public health problems by putting patients at danger in addition to dental professionals and support personnel. This study aims to thoroughly identify, record, and analyses the malpractices that are common in dental clinics in Nablus, measure the effect that these malpractices have on infection rates, and offer practical suggestions for improving infection control procedures. In doing so, this research hopes to support the creation of stronger and more efficient infection control procedures, which would ultimately lessen the spread of infectious diseases and protect the health of patients and medical personnel in Nablus city.

1.3 significance of study

The significance of this study rests in its ability to close the knowledge gap regarding infection control in dental clinics between theory and practice. It seeks to advance theoretical knowledge while providing useful strategies to reduce the dangers connected to the spread of infectious illnesses, thereby improving public health outcomes in Nablus and possibly beyond.

First: Theoretical significance

- Knowledge Advancement about infection control procedures in dental facilities, particularly in relation to Nablus. Through the identification and documentation of common malpractices seen in neighborhood dentistry clinics, this study will shed light on the particular difficulties and variables that contribute to the spread of infectious diseases in these settings.
- contribute to the creation and improvement of theoretical frameworks about healthcare-associated infections (HAIs) in dentistry offices. Comprehending how infection rates, malpractice, and current infection control practices interact can result in more complete models that are applicable in comparable environments around the world.
- improve on current public health ideas on disease transmission by examining the relationships between particular malpractices and infection rates. This helpcomprehend how individual dental clinic behaviors and systemic problems relate to larger public health concerns.

Second: Applied significance

Beyond just pointing out malpractices, this study has practical applications because it actively advances the creation of safer, more efficient dental care settings. The study has the potential to have a major influence on the health and well-being of the Nablus community through better clinical practices, informed policy, improved education, and higher public trust**.**

- Identifying and addressing dental practices that may contribute to the spread of infectious diseases, this research is crucial for improving public health in Nablus. The study's identification of certain malpractices can aid in the development of focused

treatments aimed at enhancing safety procedures in dental offices and lowering the risk of disease transmission between patients and medical personnel.

- Clinical guidelines and standards in dental practices can be updated and improved using study results. Dental clinics can ensure a higher standard of clinical practice by implementing better hygiene standards, sterilization procedures and comprehensive patient care protocols by knowing the most common and harmful malpractices.
- Important information from this study can be used by regional health authorities and regulatory agencies. Using this data, stricter rules and guidelines for infection control in dental settings can be created and implemented. In order to guarantee adherence to best practices, it can also help with the creation of continuing education courses for dental professionals.
- The findings of this study can be included into dentistry schools' and dental professionals' training programs' curricula in Nablus. The study can assist in developing instructional materials that emphasize preventing these mistakes and encouraging best practices from the beginning of a dental professional's career by identifying the specific malpractices that contribute to the development of infectious illnesses.
- Reducing malpractices in dental clinics significantly increases public confidence in the medical system. Patients therefore seek regular dental care, which is crucial to overall health and well-being, when they have faith that dental clinics adhere to the highest standards of safety and infection control.
- Empirical evidence supporting evidence-based dentistry practice is presented in this study. Dental practitioners can adopt more efficient and scientifically established ways to stop the spread of infectious diseases, improving patient outcomes, by based clinical judgements and protocols on sound research findings.
- This study can be used as a starting point for further investigation and ongoing efforts at improvement. The dental community in Nablus may promote a culture of continuous quality improvement by routinely assessing and resolving malpractices in dental clinics. This will guarantee that infection control procedures change to meet new challenges.

1.4 Aim of study

The aim of this study was to identify the mal-practices within dental clinics in Nablus city that contribute to the transmission of infectious diseases.

1.5 Objectives

- To examine the association between age group and the various healthcare practices (receiving the Hepatitis B vaccine, being tested for Hepatitis B or HIV, testing employees for infections, taking the patient's medical history, asking patients directly about viral infectious diseases, wearing a lab coat while working, and performing dental implant procedures) in Nablus city -Palestine
- To evaluate association between gender and the practices of receiving the Hepatitis B vaccine or using disinfectants to clean the clinic floor among healthcare professionalsin Nablus -Palestine.
- To evaluate the association between years of practice among healthcare professionals and the following health and procedural practices: receiving hepatitis B vaccine, changing face masks between patients, using disinfectants to clean clinic floors, and performing dental implant surgeries in Nablus - Palestine.
- To study the relationship between university location (Palestine vs. outside Palestine) and practices of using disinfectants to clean clinic floors among dentists in Nablus - Palestine.
- To assess association between workplace setting and adherence to infection control practices among dental professionals, including testing employees for infections, asking patients about viral diseases, changing face masks between patients, daily clinic floor cleaning, equipment used for instrument sterilization, performing dental implant procedures, and methods for sterilizing dental implant instrumentsin Nablus -Palestine.
- To investigate association between specialization in dentistry and adherence to infection control practices among dental professionalsin Nablus -Palestine.
- To assess the relation between patients' age groups and health-related behaviors, including the prevalence of infectious diseases and HBV-B vaccine uptake in dental clinicsin Nablus -Palestine.

- To evaluate the relation between gender and the likelihood of accurately and transparently informing the doctor about medical history, as well as knowledge about infectious disease transmission in dental clinicsin Nablus -Palestine

1.6 Study hypothesis

H0: There is no association between age group and the various healthcare practices investigated (receiving the Hepatitis B vaccine, being tested for Hepatitis B or HIV, testing employees for infections, taking the patient's medical history, asking patients directly about viral infectious diseases, wearing a lab coat while working, and performing dental implant procedures).

H0: There is no association between gender and the practices of receiving the Hepatitis B vaccine or using disinfectants to clean the clinic floor among healthcare professionals

H0: There is no association between Years of Practice among healthcare professionals and the following hygiene and procedural practices: receiving the Hepatitis B vaccine, changing face masks between patients, using disinfectants to clean clinic floors, and performing dental implant procedures.

H0: There is no association between university location (Palestine vs. Outside Palestine) and the practices of using disinfectants to clean the clinic floor among dental professionals.

H0: There is no association between workplace setting and adherence to infection control practices among dental professionals, including testing employees for infections, asking patients about viral diseases, changing face masks between patients, daily clinic floor cleaning, equipment used for instrument sterilization, performing dental implant procedures, and methods for sterilizing dental implant instruments

H0: There is no significant association between specialization in dentistry and adherence to infection control practices among dental professionals.

H0: There is no significant association between patients' age groups and health-related behaviors, including the prevalence of infectious diseases and HBV-B vaccine uptake in dental clinics.

H0: There is no association between gender and the likelihood of accurately and transparently informing the doctor about medical history, as well as knowledge about infectious disease transmission in dental clinics.

1.7 Concepts and Operational Definition

This study can systematically examine the improper behaviors that lead to the spread of infectious diseases in Nablus dental clinics by defining these terms and providing their operational definitions.

Concepts Definition

Infectious diseases: are illnesses brought on by microorganisms like parasites, bacteria, viruses, or fungi. These illnesses can spread through a vector, from one person to another, either directly or indirectly. Hepatitis, COVID-19, and TB are common examples (Seventer & Hochberg, 2017).

Dental Clinics: are medical clinics that specialize in treating, diagnosing, and preventing disorders and diseases of the mouth. A variety of dental services are offered by these clinics, including as examinations, cleanings, extractions, fillings, and more specialized procedures like root canals and orthodontics (WHO, 2022).

Mal-practices: In the context of medicine, "malpractices" refers to unethical, unlawful, or careless professional behavior or treatment, particularly on the part of a public official, attorney, or medical practitioner. This can occur in dentistry when equipment are not properly sterilized, infection control procedures are not followed, and patients are not given enough information about what to do after a treatment (Kumar, et al., 2020).

Transmission: The process by which an infectious agent moves from a source or reservoir to a vulnerable host is known as transmission. In healthcare environments, transmission modes can involve droplet dissemination, aerosol transmission, direct contact, and indirect contact through contaminated objects or surfaces (Seventer & Hochberg, 2017).

Sterilization: is the process of removing any living thing from a surface, piece of equipment, or biological medium, including transmissible agents like bacteria, viruses, fungi, and spores. Usually, techniques like autoclaving, chemical disinfection, or radiation are used to accomplish this (Mohapatra & Prabhakar, 2017).

Operational Definition

Infectious diseases: Infectious diseases are those that are known to spread in medical environments, particularly dental offices. These comprise, but are not restricted to, HIV, tuberculosis, hepatitis B and C, and bacterial diseases such staphylococcus aureus. Information pertaining to these infections will be gathered from staff reports, patient records, and test findings.

Dental Clinics: Dental care is provided through licensed facilities. A representative sample of these clinics, stratified on the basis of patient volume, services provided, and clinic size, was included in the study. Surveys, site visits, and interviews with clinic staff and management were used to collect data.

Mal-practices: Malpractices encompass actions like not sterilizing dental equipment sufficiently, washing hands incorrectly, using disposable instruments more than once, and disregarding infection control protocols. They were ascertained by means of a survey and an examination of clinic procedures.

Transmission: The study's method of measuring transmission of infection was to find out how infectious pathogens spread within dental clinics. This covers interaction between people, airborne transmission, contaminated objects, and surfaces in the environment. Swab testing has been used on dental instruments.

Table 1.1

Concepts Definitions and Operational Definitions

Concept	Conceptual Definition	Operational Definitio
Infectious Diseases	Illnesses caused by microorganisms like parasites, bacteria, viruses, or fungi. These diseases can spread directly or indirectly through a vector. Common examples include hepatitis, COVID-19, and TB. (Seventer & Hochberg, 2017)	Infectious diseases that spread in medical environments, especially dental offices, such as HIV, tuberculosis, hepatitis B and C, and staphylococcus aureus. Data gathered from staff reports, patient records, and test results.
Dental Clinics	Medical clinics specializing in diagnosing, treating, and preventing disorders and diseases of the mouth, offering services like examinations, cleanings, extractions, fillings, root canals, and orthodontics (WHO, 2022).	Dental care provided through licensed facilities. A representative sample of clinics stratified by patient volume, services, and clinic size. Data collected via surveys, site visits, and interviews with staff.
Mal-practices	Unethical, unlawful, or careless professional behavior or treatment, particularly in the context of medicine. In dentistry, it includes improper sterilization, ignoring infection control, or insufficient patient information (Kumar, et al., 2020).	Actions like insufficient sterilization of dental equipment, improper hand hygiene, reusing disposable instruments, and disregarding infection control protocols. Data collected via surveys and an examination of clinic procedures.
Transmission	The movement of an infectious agent from its source or reservoir to a vulnerable host, which can occur through droplet dissemination, aerosols, direct or indirect contact via contaminated surfaces or objects (Seventer & Hochberg, 2017).	Study method focuses on how infectious pathogens spread within dental clinics, including person-to-person interaction, airborne transmission, and contaminated objects or surfaces. Swab testing of dental instruments used for data collection.
Sterilization	The process of eliminating all living organisms, including bacteria, viruses, fungi, and spores, from surfaces, equipment, or biological media. Methods include autoclaving, chemical disinfection, or radiation (Mohapatra & Prabhakar, 2017).	Sterilization procedures in dental settings aim to eliminate pathogens from equipment and surfaces. Methods include autoclaving and chemical disinfectants. Measured by ensuring sterilization protocols are followed and by testing equipment.

1.8 Previous Studies and Theoretical Background

The study title, objectives, and keywords were taken from previously published articles. Which provides access to a large database. The database search was performed using the following keywords: infectious diseases, dental clinics, malpractice, and transmission. A pre-defined list of keywords related to the study title and objectives was generated. Reviewing scientific research literature is considered a basis for clarifying the

researchers' approach to topics related to the subject of the study. Previous studies serve as the basis for developing scientific frameworks for research. Without previous studies, scientific research cannot be conducted. Below are the most important studies currently available to researchers from the studies previously discussed. The subject of this research, some of which are directly related to it, and others are related to its elements. The basic objectives of the studies and the most important findings have been highlighted so that we can compare them with the results of the current research. The studies were presented in three different formats: local, Arabic, and Western

1.8.1 Global studies

A study was conducted in Romania by Caministeanu et al. (2023), To evaluate the attitudes, knowledge and practices of Romanian dental professionals in managing geriatric HIV/AIDS. From October 2022 to January 2023, a self-administered analytical and cross-sectional observational survey of dental professionals in Romania was conducted. The findings showed that the average age was 39.09±0.36 years (range: 19–75), that 364 (33.06%) had more than twenty years of experience, and that 991 (90.01%) were primarily from dental clinics in urban areas. A total of 517 (46.95%) respondents said they would not undertake dental treatments for people living with HIV/AIDS (PLWHA) and that they had an unprofessional attitude. Of the dental practitioners, 89 (8.08%) declined to provide care to those living with HIV/AIDS. Merely 363 (32.97%) had collaborated with one earlier. In remote locations, dental professionals sometimes declined to treat HIV/AIDS patients,6.76% (n = 67) of urban dental specialists and 20% (n = 22) of rural dental professionals refused to treat HIV/AIDS patients (OR = 0.30; 95% CI: 0.16). -.56. After stepwise selection, the 1,101 participants were subjected to logistic regression, which showed that previous exposure to HIV during dental practice was the most important factor that influenced their refusal to work with HIV in our study group (odds ratio = 14.45; 95% CI: 8.55). 0.000; p = 24.42). On the other hand, a study conducted in Japan by (Saka et al., 2023) aimed to determine whether dental procedures performed in private dental clinics are associated with the occurrence of COVID-19 clusters and the precautions taken to prevent possible infection among patients and clinical staff on dentists in private dental clinics in Nagano Prefecture. In Japan during the epidemic (February 2020 to September 2021).

Dentists at private dental clinics in Nagano Prefecture, Japan, participated in an online questionnaire-based survey on clinical activities, infection control protocols, and confirmed or suspected COVID-19 cases among patients and clinical staff during the pandemic (from February 2020 to September 2021). The majority of dentists have success using common safety measures. The results indicated that nine confirmed cases and eighteen probable cases were treated in twenty-seven dental clinics. However, there was no transmission from staff to patients. Although there were ten clinics with affected employees, none of them showed signs of transmission of the disease from patient to staff. On the otherwise, the study was conducted in Nepal by Joshi et al. (2023).

The purpose of this study was to ascertain dental interns' attitudes and behaviors regarding the use of rubber dams. A pre-structured questionnaire was used to perform a questionnaire-based study with 138 dental interns from three distinct colleges connected to Kathmandu University in the Kathmandu District. According to the study's findings, 97.1% of participants said rubber dams provided good safety, moisture management, and isolation. When it came to using rubber dams for all treatments, 55.1% of interns had a positive attitude, and 64.5% of them did so during root canal therapy. Of the total, 92.2% were willing to accept additional training, while 73.2% felt they lacked it. The majority of interns (85.5%) think rubber dams are useful tools. While, a study was conducted USA by Obadan-Udoh et al. (2024), to discover patient-centered solutions to aid lower the likelihood of dental diagnostic failures (DDFs) in the future, as well as to comprehend the perspectives of dental patients who have had DDFs .In order to gather information about the impact of incorrect diagnosis, missed diagnosis, or delayed diagnosis on patient life, we recruited participants through social media and performed 67 individual patient interviews, a screening survey, and an initial assessment. The study employed a hybrid theme analysis approach to transcribe audio recordings of patient interviews and gather information on four primary domains of interest: the patient's DDF experience, contributing factors, impact, and actions to reduce future recurrence. The results indicated that dental patients with rheumatoid arthritis suffered for a long time, the disease worsened, they had to undergo unnecessary procedures, and they developed new symptoms. The most common factors that patients believed led to the development of DE were insufficient time spent with the provider, poor communication between provider and patient, and lack of health literacy and patient advocacy. Patients suggested that better caregiver ethics, more comprehensive diagnostic procedures for patients, and

increased self-advocacy, as well as improved reporting mechanisms, should help prevent DE in the future. In another context, A study carried out in China by (Ling et al., 2023) provided concise, actionable advice for dental facilities in the Asia-Pacific area to follow in order to meet high standards for staff and patient safety as well as infection prevention and control procedures. An appointed workgroup of experts from the Asia Pacific area prepared the guidelines after reviewing already published international guidelines and suggestions pertinent to each part. The outcomes showed Standard precautions are advised as a bare minimum of preventive steps to safeguard workers and stop transmission. It is advised to use surgical aseptic approach for lengthier, more technically complex procedures. Reprocessing dental instruments is a job best left to competent professionals. A dental facility's layout and architecture play a significant role in effective infection control.

In Romania the study was conducted by Medar & Cristache (2020) the study discussed thar Evaluating defensive practices in dentistry to reduce the risk of medical malpractice lawsuits. A comparative study of defensive patterns among dentists in private and traditional practices. The study found that dentists use defensive methods, such as continuous review of clinical procedures, to reduce the risk of medical malpractice lawsuits. on the other hand , in Canada the study was conducted by Barbeau, J. (2007). to Investigation of a legal case involving an eye infection caused by a water treatment device in a dental clinic. Judicial review and scientific analysis of the potential association between the infection caused by the water treatment device. Evidence was presented of a relationship between the device and the infection, leading to a lawsuit against the doctor.

1.8.2 Regional studies

In India a study was conducted by Meshram et al. (2024). The study discussed that anesthesiologists may not be well-versed in oral health-related anatomy, symptoms, and dental prosthetics.200 patients of various genders, 10 years of age or older, with physical statuses ranging from ASA 1 to ASA 3, and scheduled for elective surgery participated in an 18-month observational study. Participants in the study had an average age of 41.65±11.85 years, with the majority of them being in the 40–50 age range. Roughly 58% of the participants were men. The results of the study showed a statistically significant correlation between addictive behaviors and oral health issues, including

tooth loss, gum bleeding, painful chewing, foul breath, and tooth extraction. It was discovered that those who smoked and used frying pans rarely visited the dentist. Additionally, bleeding gums, chewing pain, and tooth extraction have all been linked to the usage of specific drugs. Patients with poor oral health often reported systemic problems like diabetes, cancer, and liver disease. in addition the study was conducting in indeia by Yadav et al. (2017). Evaluating infection control practices in private dental hospitals.

Surveys and field reports were used to collect data on sterilization methods in private clinics. The study found that most private hospitals follow good sterilization standards, but there are variations in the levels of implementation of these practices. On the other wise study in Pakistan by Haque et al. (2018) indicated that infections that arise during medical treatment, that develop in a hospital or other health care facility, and appear 48 hours or more after admission to the hospital, or within 30 days after medical treatment, are known as associated infections. Healthcare products (HCAIs). According to several studies, surgical complications, healthcare-associated infections, and adverse drug events are the most common adverse events experienced by hospitalized patients. According to data from the US Centre for Disease Control and Prevention, every year over 1.7 million hospitalized patients get HCAIs while receiving treatment for other conditions, and over 98,000 of them—or one in every 17—die as a result of these infections. Numerous studies indicate that basic infection-control practices, such washing hands with an alcohol-based hand rub, can help prevent healthcare-associated infections (HCAIs), save lives, lower morbidity, and save money on medical expenses. Health care personnel can alter their hand-washing habits to stop the spread of illness with regular educational interventions. Another study on dentists' knowledge, attitudes, beliefs, and practices around the informed consent process was carried out in South India by Peter, Narayan, & Baiju (2023). The methodology employed was phenomenological based on a flexible thematic guide, a semi-structured telephone interview was done until data saturation. The findings showed that participants are worried about how social media will affect the new doctor-patient relationship model and how specialists' growing desire to avoid legal action will safeguard them. Its routine application has been hindered by the ambiguity surrounding the approval process.

1.8.3 Arab studies

In Baghdad a study was conducted by Atshan, Fawzi, Hasan , & Abudlrazak (2023), to ascertain the knowledge, attitudes, and practices of medical professionals at Al Salamiya Al Amriya Hospital in Baghdad on preventing hepatitis B infection and getting immunized against it. In October and November of 2022, a cross-sectional study was carried out with the participation of 154 health service providers regarding their work in different health institutions in the city of Princess Baghdad. These institutions included Al-Salama Hospital, which employed 90 people, primary care offices, which employed 44 people, and specialized dental care centers, which employed 20 people. A questionnaire was used to gather data, including demographics, vaccination history, and health practitioners' knowledge, attitudes, and practices surrounding hepatitis B infection. There were 154 health service providers in our study (59). Only 15% of the medical personnel underwent testing, whereas 95% of the assistant medical staff had total knowledge (68%), general behavior (75%), and overall practice (58%). On the other side of the room, (67%) finished the three doses for the hepatitis B virus without having previously tested positive for it, whereas (37%), on the other side, finished the three doses. On the other wise, A study on the attitudes and practices of Egyptian dentists about the prescribing patterns of antibiotics was carried out by El-Geleel, Gamal, & Wahba (2021). 500 dentists participated in an electronic cross-sectional survey that was completed in three months. as closed-ended inquiries The findings showed that when antibiotics were needed, participants were given prescriptions for amoxicillin and clavulanic acid. A comparable portion of respondents favored a five-to-seven-day course of therapy. 96% of respondents agreed that antibiotics should be prescribed in cases of severe clinical illness, including face cellulitis. But different proportions of the sample decided to administer antibiotics for conditions like "localized abscesses inside the mouth" that do not call for them.

1.8.4 Local studies

In Palestine The study was conducted by (Bassan et al. 2021), it was A study of infection prevention practices across clinics in the Nablus and Tulkarm areas.

A survey was conducted on a sample of clinics in the aforementioned areas using questionnaires for doctors and nurses.

The study showed that most clinics rely on basic sterilization methods, but there is a need to improve awareness of infection prevention practices.

Chapter Two
The Methodology

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

2.1 Study Design

A descriptive cross-sectional study. data were collected from participants (dentist and patients) using a convenience sampling method. while a random sampling method was used to choose the location for the study.

2.2 study setting

In Palestine, the number of dentists registered with the Health Professions Syndicate reached 4,978 doctors. Of these, there were 3,643 doctors in the West Bank and 1,335 doctors in the Gaza Strip. PCBS (2019) Dental clinics are widely spread in the West Bank. There are 33 clinics affiliated with the Ministry of Health, in addition to UNRWA clinics, military medical services, charitable organizations, and private clinics spread throughout the governorates. In Nablus Governorate, there are now approximately 80 dental clinics. The study included all dental clinics in the city of Nablus and the surrounding villages and camps, regardless of whether they were run by the government, the private sector, ornon-governmental organizations (Private Clinics, Military Medical Services, Charity Organization, UNRWA Clinics and Government Clinics under the Ministry of Health).

2.3 Study Population

The study population was split into two groups: the first group consisted of 504 dentists in the city of Nablus, and the second group consisted of 600 patients who visited the dental clinics under investigation in March 2024.

Inclusion criteria.

- Dental clinics located within Nablus city boundaries.
- Licensed dentists and dental hygienists working in the selected dental clinics.
- Patients who have received dental treatment in Nablus clinics within march -2024

- Dental professionals with at least one year of practice experience.
- Participants (both dental professionals and patients) who give informed consent to participate in the study.

Exclusion Criteria

- Dental clinics located outside of Nablus city.
- Dental professionals with less than one year of practice experience.
- Patients who do not consent to participate.
- Dental professionals or clinics that do not provide informed consent for the study.

2.4 Study sample

In order to select participants relevant to the research design, two types of research design were worked on. First, dentists were selected randomly. As for patients, a non-probability convenience sampling technique was used by all hospital nursing staff receiving training during their experiences included in this study. With a confidence level of 95% and a margin of error of 5%. Based on the sample size formula, 80 dentist participants were reached according to the formula (Raosoft sample size calculator, available at raosoft.com/sample size), and 120 patient participants were recruited in a non-random manner

2.5 Study time frame

The study was conducted in (March ,2024) in all dental clinics in the city of Nablus and the surrounding villages and camps, regardless of whether they were run by the government, the private sector, or non-governmental organizations.

2.6 Data collection tool

Two research tools were used in this study: dentists' questionnaires to measure their practices in the clinic, while the second tool assessed the extent of patients' knowledge and awareness of the medical practices followed in dental clinics. The researcher made a great effort in preparing the questionnaire. The data was distributed to both study populations in the presence of the researcher. To ensure the reliability of the two study tools and their suitability to Palestinian culture, a pilot study was conducted that included thirty participants. So that the results of the experimental study are not included with the results of the study. Data was gathered using the Arabic translation of the study

instrument. Both Arabic and English were used to provide informed consent. In this study, participation was entirely voluntary. The goal of the study was explained to the participants, and they were made aware that they might leave the study at any moment. Throughout the study period, it was underlined that the study was conducted for scientific research goals and that participant privacy was respected.

The first tool for dentists and is divided into two parts:

First: Demographic data (age, gender, length of practice, university where he obtained his dental degree, and current place of work)

Second: Dentist practices in Eiddah Dental Center include:

- Infection Control Practices Among Dental Professional.
- Personal Protective Equipment (PPE).
- Hygiene Practices in Dental Clinics.
- Surface Barriers.
- tool Sterilization and Disinfection in Dental Clinics.
- Patient Assessment and Medical History.
- Patient Medical History.
- Direct Inquiry About Viral Infectious Diseases.
- Implant procedures and tool sterilization.
- Performance of Dental Implant Procedures.
- Handling Unavailability of Sterilized Implant tool.
- Methods of Sterilizing Dental Implant tool.
- Anesthesia and Medication Handling.
- tool Sterilization and Equipment Usage

The second tool Patients awareness into medical malpractices in dental clinics Divided into two parts:

First: Demographic and Personal Information (age, gender)

Second**:** Patient questionnaire includes:

- Health Behavior and Medical History of Patients.
- Knowledge and Awareness.
- Patient Preferences and Actions Regarding Dental Clinic Hygiene.

2.6.1 Validity and Reliability

1. Validity

Validity of Instruments How precisely something is measured by a procedure. A method is deemed valid if it yields results that closely align with real-world values and measures what it purports to measure (Middleton., 2019). The questionnaire was sent in its first form to the supervisor of the thesis and to the public health team at (An-Najah University), which evaluated the adequacy of the tool to measure what it planned to measure. The validity of the tool has been verified. A pilot study was conducted on an external sample of the original study sample for each of the two tools (dentists and patients), consisting of (20) dentists and (20) patients.

2. Reliability

The consistency and dependability of the measurement procedure used in a research study are referred to as reliability. To derive meaningful and replicable results from our research on "The Mal-practices That Transmit Infectious Diseases In Nablus Dental Clinics," it is imperative to ensure a high level of reliability. A number of techniques and tools, such as the nominal instrument, were used to assess and improve the reliability of our research. The nominal instrument was essential to our research technique because it helps in counting and classifying instances of specific malpractices. To measure the consistency between different observers using the nominal instrument, an inter-rater reliability test was used. Several observers independently used the nominal instrument to rate malpractice in a sample of dental clinics. The results were then compared using statistical measures such as chi-square and Kendall's W to ensure high agreement between observers,

Table 2.1
Dental Doctors Scale Reliability

Statement	Cronach alpha
Have you received the hepatitis B vaccine?	0.6
Have you ever been tested for hepatitis B or HIV?	0.75
Have you tested your employees for infection?	0.70
Do you take the patient's medical history?	0.73
Do you directly ask the patient if they have a contagious viral disease?	0.72
What is the average number of patients per day?	0.68
Do you wear a medical coat while working?	0.77
Do you wear a face mask while working?	0.80
Do you replace your face mask between each patient?	0.71
Do you use medical gloves?	0.74
Do you replace medical gloves with each new patient?	0.77
Do you use eye or face protection?	0.67
Do you wash your hands after each patient?	0.69
Do you install surface barriers?	0.76
Do you replace surface barriers after each patient?	0.72
Do you use disinfectants to clean the clinic floor?	0.79
Do you clean the clinic floor daily?	0.80
Do you thoroughly clean the dental contraption and chair sink with appropriate disinfectants after each patient?	0.82
What device do you use to sterilize instruments?	0.77
How do you sterilize files and burs?	0.70
Do you perform dental implants?	0.66
How do you sterilize dental implant instruments?	0.76
If a patient comes in wanting dental implants, and sterile implant tools are not available at the time, what will you do?	0.57
If you use Dental Contra during an impacted wisdom tooth procedure, how will you sterilize it before using it on the next patient?	0.69
How do you sterilize your dental scaling machine between patients?	0.87
Do you have disposable dental instruments and contraceptives in case the patient has a serious infectious disease such as AIDS?	0.73
If you use part of the Carpule while anesthetizing the patient, what do you do with the rest of the Carpule? Do you use it for another patient?	0.77

The results shown in Table (2.1) indicate that the Cronach alpha coefficient ranges between 0.60-0.82, which indicates that the scale is stable and measures what it was created to measure.

Table 2.2
Patient Awareness Scale Reliability

Test Statistics	Value
N	150
Chi-Square (Friedman)	543.042
df (Friedman)	9
Asymp. Sig. (Friedman)	0.000
Kendall's Wa	0.402
Chi-Square (Kendall's)	543.042
df (Kendall's)	9
Asymp. Sig. (Kendall's)	0.000

The reliability of the scale is supported by the combined results of the Kappa tests, Friedman test, and Kendall's W test. The Kappa values range from -0.288 to 0.083, indicating varying degrees of agreement, with several negative values suggesting low agreement between certain variables. However, the Friedman test yields a Chi-Square value of 543.042 with an asymptotic significance of 0.000, indicating a significant difference in the ranks assigned to the variables, which is a positive sign of the scale's reliability. Furthermore, Kendall's W value of 0.402 suggests moderate concordance among the rankings. The significant p-values in the Friedman and Kendall's W tests (both 0.000) imply that the scale consistently differentiates between the variables, thereby enhancing its reliability as a measurement tool.

2.7 Statistical Analysis Methods

The data were analyzed using SPSS V.26 including Descriptive statistics were used frequency distribution The number of "yes" answers to each question was counted to understand the distribution of answers. A percentage was used for each question to facilitate comparisons. To examine the relationship between two variables and evaluate whether there is a significant association between two categorical variables using the chi-square test for independence. Below are the results of the pilot study of the two scales.

2.8 Working plane

The study site was chosen in the city of Nablus, which included the Private Clinics, Military Medical Services,Charity Organization, UNRWA Clinics and Government Clinics under the Ministry of Health: 90 questionnaires were distributed to dentists working in the clinics under study, and 120 questionnaires were distributed to patients who visited the clinics under study in March 2024, and a consent form was distributed

stating that participation in the study is voluntary, and that All information is confidential and will be used for scientific research only, for each participant.

2.9 Ethical consideration

Obtaining graduate studies approval. Ethical approval from the Institutional Review Board “IRB” at An-Najah National University in Nablus - Palestine. Approval from the Department of Health Education and Scientific Research in the Palestinian Ministry of Health in Palestine. Approval was taken from the UNRWA Department, the Department of Military Medical Services, and the Department of Charitable Societies to distribute the questionnaire. A consent form to participate in this study was distributed, where the researcher introduced himself and explained the purpose of this study and that the study is voluntary and participants have the right to withdraw from this study at any time and the information is confidential and is for the purposes of scientific research.

Chapter Three
The Result

3.1 Socio-demographic characteristics

To ensure the distribution of variable values, the data was divided into ratios and numbers and subjected to descriptive analysis. In the descriptive analysis, “frequency” refers to the total number of responses provided by participants. In this study, two scales were presented: the first table present the demographic analysis of dentists, and the second present the demographic characteristics of patients.

The first table (3.1) displays the demographic characteristics of dentists, as the study indicated that Dentists between 31-40 had the biggest age response, accounting for 43.3% of the sample. Dental professionals between the ages of 23-30 responded with 15.6%, while those over 50 responded with 14.4%. The age group 41-50 years had a response rate of 26.7%. The results indicated that the highest response regarding years of practice was in favor of more than 16 years, at a rate of 40%, while the lowest response was in favor of years of less than 5 years and 11-15 years, at 14.4%. The results also indicated that the highest response was in favor of males, at 82.2%. The results also indicated that the highest response was in favor of dentists who graduated from universities outside Palestine, at 67.8%. With regard to the current workplace, the highest response was in favor of private clinics, at 84.4%, while the lowest response was among dental clinics affiliated with UNRWA, at 1.1%. Regarding the number of patients visiting Regarding the patient's demographic distribution,

In addition, the second table (3.2) displays the demographic characteristics of patient who visited the dentist clinic, as the study indicated that the result was shown (38.7%), patients' responses were most favorable to those between the ages of 31-45. on the other hand, (52%) of respondents gave the greatest response in favor of female. dental clinics(daily), the highest percentage was 6-10 patients, at (56.7%).

Table 3.1
Distribution of Dental Doctors according to the demographic variables (n=90)

Category		Frequency	Percent
Age	23 – 30	14	15.6
	31 – 40	39	43.3
	41 – 50	24	26.7
	50<	13	14.4
Years of Practice	5>	13	14.4
	5 – 10	13	14.4
	11 – 15	28	31.1
	16 <	36	40.0
Gender	Male	74	82.2
	Female	16	17.8
University where you obtained your Bachelor's degree in Dentistry	Palestine	29	32.2
	Outside Palestine	61	67.8
Current Workplace	Private Clinic	76	84.4
	Military Medical Services	8	8.9
	Charity Organization	2	2.2
	UNRWA Clinics	1	1.1
	Government Clinics under the Ministry of Health	3	3.3
Do you have a specialization in Dentistry?	yes	12	13.3
	No	78	86.7
What is the average number of daily patients?	1 – 5	20	22.2
	6 – 10	51	56.7
	10<	19	21.1
Total		90	100.0

Table 3.2
Distribution of patient according to the demographic variables (n=150)

Variable	Category	Frequency	Percent
Age	15 – 30	53	35.3
	31 – 45	58	38.7
	46 – 60	23	15.3
	61<	16	10.7
Gender	Male	72	48.0
	Female	78	52.0
	Total	150	100%

3.2 Dental doctor scale

Descriptive analysis of frequencies and percentages was used to examine the data in the dentists' scale. The questionnaire sentences were divided and placed into tow domains:

- Infection Control Practices
- Professional Practices

3.2.1 Infection Control Practices

The variables presented cover essential aspects of infection control practices within dental clinics, with an emphasis on personal protective equipment (PPE), hand hygiene and surface disinfection, use of barriers, and instrument sterilization and disinfection.

– Virus testing

The results shown in Table (3.3) demonstrated infection control practices among dental professionals, focusing on vaccination status, personal testing for infectious diseases, and monitoring staff health within dental clinics .

The results indicated that (84.4%) of the participants received the hepatitis B vaccine.

The results also indicated that 73.3% of the participants had been tested for hepatitis B or human immunodeficiency virus (HIV).

The results also indicated that 10.0% of participants monitor the health of employees and ensure that there is no infection.

Table 3.3
Infection Control Practices Among Dental Professional

Question		Frequency	Percent
Have you received the Hepatitis B vaccine?	yes	76	84.4%
	no	14	15.6%
Have you ever been tested for Hepatitis B or HIV?	yes	66	73.3uhhh0068
	no	24	26.7
Have you tested your employees for infections?	yes	9	10.0
	no	81	90.0

– Personal Protective Equipment (PPE):

The results shown in Table (3.4) indicate that (97.8%) of the participants wear face masks while working. Also, 35.6% of participants indicated that they change their own face masks when treating each patient. Also, 92.2% of participants indicated that they wear gloves during therapeutic procedures. The results also indicated that there was a slightly lower commitment to changing gloves among patients, as 91.1% reported doing so.

Only 23.3% of participants indicated that they used eye or face protection. While (76.7%) indicated not to use eye or face protection.

Table 3.4
Personal Protective Equipment (PPE) Usage in Dental Healthcare Settings

Question		Frequency	Percent
Do you wear a face mask while working?	yes	88	97.8
	no	2	2.2
Do you change your face mask between patients?	yes	32	35.6
	no	58	64.4
Do you use medical gloves?	yes	83	92.2
	no	7	7.8
Do you change gloves with each new patient?	yes	82	91.1
	no	8	8.9
Do you use eye or face protection?	yes	21	23.3
	no	69	76.7

- Hand Hygiene and Surface Disinfection

According to Table (3.5) statistics, 74.4% of participant wash their hands following each patient. The findings also showed that 74.4% of the participants cleaned the clinic floor using disinfectants. Furthermore,35.6% of participants they regularly cleaned the clinic floor. The findings also showed that, following each patient, 83.3% of the participants properly cleaned the chair basin and dental hood using the proper disinfectants. The results also indicated that 93.3% of people wear a white coat while working in the clinic.

Table 3.5
Hygiene Practices in Dental Clinics

Question		Frequency	Percent
Do you wash your hands after each patient?	yes	67	74.4
	no	23	25.6
Do you use disinfectants to clean the clinic floor?	Yes	67	74.4
	No	23	25.6
Do you clean the clinic floor daily?	Yes	32	35.6
	No	58	64.4
Do you thoroughly clean the dental contra and chair sink with appropriate disinfectants after each patient?	Yes	75	83.3
	No	15	16.7
Do you wear a lab coat while working?	yes	84	93.3
	no	6	6.7
	Total	90	100.0

- Barrier Use

The results shown in Table (3.6) indicated that 53.3% participants they use surface barriers, while 46.7% reported that they do not use them .The results also indicated that 21.1% change the surface barriers after each patient. This indicates that the majority of clinics (78.9%) do not adhere to the practice of changing surface barriers between patients.

Table 3.6
Use of Surface Barriers and Frequency of Change in Dental Clinics

Question		Frequency	Percent
Do you use surface barriers?	Yes	48	53.3
	No	42	46.7
Do you change surface barriers after each patient?	Yes	19	21.1
	No	71	78.9

– Instrument Sterilization and Disinfection

The results shown in Table (3.7) indicated that with regard to sterilizing the scaler with ultrasound among patients, (77.8%) of the participants indicated that they sterilize it with alcohol or a similar disinfectant. (21.1%) of participants reported cleaning the scaler with alcohol and then sterilizing it in an autoclave, which represents a more stringent approach to disinfection. When it comes to sterilizing dental contras used during the extraction of impacted wisdom teeth, responses highlight different practices. Also, (76.7%) of the participants reported that they cleaned the blood with alcohol and reused it immediately. Another segment (22.2%) chooses to clean the blood with alcohol or any disinfectant solution, indicating a slightly more comprehensive approach compared to immediate reuse without cleaning. Regarding dental impression trays, (80.0%) of participants retrieve them from the laboratory and use them after disinfecting them with alcohol.

Table 3.7
Instrument Sterilization and Disinfection in Dental Clinics

Question		Frequency	Percent
How do you sterilize the ultrasonic scaler between patients?	No sterilization is needed.	1	1.1
	I sterilize it with alcohol or a similar disinfectant.	70	77.8
	I clean it with alcohol and then sterilize it in the autoclave.	19	21.1
If you use a dental contra during an impacted wisdom tooth extraction, how do you sterilize it before using it for the next patient?	I will use them without sterilizing.	1	1.1
	I will clean the blood off with alcohol and use them immediately.	69	76.7
	I will clean the blood off with alcohol or any disinfectant solution	20	22.2
Regarding dental impression trays,	You retrieve them from the lab and use them immediately.	2	2.2
	You retrieve them from the lab and use them after disinfecting them with alcohol.	72	80.0
	You use them for one patient and do not retrieve them.	16	17.8
	Total	90	100.0

3.2.2 Professional Practices

– Patient Assessment and Medical History

Table (E1, Appendixs B) offers insightful information about dental clinic professional practices, with a focus on gathering medical histories and assessing patients. The statistics demonstrate adherence to certain critical practices and deficiencies in others, indicating the need for advancements in particular dental care domains

- Patient's medical history

Table (E1, Appendixs B) displays the results, which reveal that 97.8% of dentists routinely obtain a patient's medical history. This procedure is critical because it gives dental professionals a thorough grasp of the patient's general health, which is necessary to plan dental treatments and spot any possible contraindications. The high percentage of adherence highlights the significance of this practice in the field and shows a dedication to thorough patient care and safety.

- Direct Inquiry About Viral Infectious Diseases

Table (E1, Appendixs B) presents the data, which demonstrate that 15.6% of dentists question patients directly if they have a viral condition that is communicable. However, 82.2% of dentists don't ask their patients whether they have a contagious viral disease.

– Implant Procedures and Instrument Sterilization

Table (E2, Appendixs B) provided an in-depth look at professional practices related to dental implant procedures and instrument sterilization, highlighting how dental practitioners deal with important aspects of dental implant-related treatments.

- Performance of Dental Implant Procedures

The results shown in Table (E2, Appendixs B) indicated that 90.0% of dentists perform dental implant operations, while 10.0% of dentists do not perform dental implant operations.

- Handling Unavailability of Sterilized Implant Instruments

The results shown in Table (E2, Appendixs B) indicated that 4.4% of dentists would continue to perform the implantation procedure regardless of the lack of sterile tools.

While 51.1% of dentists sterilize implant instruments using a chemical sterilizer before proceeding. on the other hand 44.4% indicated their desire to reschedule the procedure to a later date.

- Methods of Sterilizing Dental Implant Instruments

The results shown in Table (E2, Appendixs B) indicated that 91.1% of dentists use an autoclave to sterilize dental implant instruments. While 3.3% of dentists use an oven to sterilize teeth, while 5.6% of dentists use a chemical sterilizer to sterilize dental implant tools.

– Anesthesia and Medication Handling

The results shown in Table (E3, Appendixs B) indicated that 75.6% of dentists reuse the remaining carpule on another patient, while only 24.4% dispose of the carpule after one use.

– Instrument Sterilization and Equipment Usage

Table (E4, Appendixs B) provides an overview of sterilization practices and equipment use among dental professionals, highlighting important aspects of infection control.

- Sterilization of Files and Burs:

The results shown in Table (E4, Appendixs B) indicated that (71.1%) of dentists use autoclaves to sterilize files and burs, while (24.4%) of participants reported that they rely on chemical sterilizers. While (4.4%) of the participants reported that they used ovens.

- Sterilization Equipment

The results shown in Table (E4, Appendixs E) indicated that 95.6% of dental clinics use an autoclave to sterilize instruments. The results indicate minimal use of ovens (3.3%) and chemical sterilizers (1.1%).

- Single-Use Instruments for Infectious Diseases

The results shown in Table (E4, Appendixs B) indicate that only 15.6% of clinics have single-use dental instruments designated for patients suffering from serious infectious diseases such as AIDS. While 84.4% do not use disposable instruments for these high-risk patients, which may pose a risk of cross-contamination.

- Dental Implant Procedures:

The results shown in Table (E4, Appendixs B) indicate that 90% of dentists perform dental implant operations.

- Sterilization of Dental Implant Instruments

The results shown in Table (E4, Appendixs B) indicated that 91.1% of participants used autoclave to sterilize dental implant instruments. While (3.3%) indicated that they use ovens to sterilize dental implant tools, while 5.6% of dentists indicated that they use chemical sterilizers to sterilize dental implant tools.

3.3 The association between demographic characteristics and dentists' practices in dental clinics

– Age variable

The data shown in Table (E5, Appendixs B) revealed a significant association between age group and vaccine uptake ($chi^2 = 23.730$, df = 3, $p < .001$). The age groups aged 31-40 years, 41-50 years, and 50 years and older show significantly higher hepatitis B vaccination rates compared to their younger counterparts aged 23-30 years.

Analysis of hepatitis B or HIV testing practices also indicates age-related differences ($ch^2 = 8.191$, df = 3, $p = .042$). While the association is less clear than vaccine administration, 31-40 year olds show higher testing rates compared to other age groups at 36.7%.

Results indicated that examining employee injury testing practices demonstrated another significant association with age ($ch^2 = 8.661$, df = 3, $p = 0.034$). Dentists in the age groups of 50 years and over are 10% more likely to conduct regular infection checks on employees compared to other age groups.

The results indicated that there is no correlation between the practice of taking a patient's medical history and the age variable ($ch^2 = 2.675$, df = 3, $p = .445$).

The results indicated that direct inquiry about the viral disease status of patients reveals a significant association with age ($ch^2 = 12.821$, df = 6, $p = 0.046$). It is in favor of the age group of 50 and above by 6.7%. Compared with other age groups.

The results also indicated that there was a association (ch^2 = 16.030, df = 3, p = .001) between the age variable and the practice of wearing protective lab coats while working for ages 31-40 years at a rate of 43.3% compared to other age groups.

The results also indicated that there was a association (ch^2 = 10.961, df = 3, p = 0.012) between dental implant procedures and the age variable in favor of the 31-40 age group by 43.3% compared to other age groups.

– Years of Practice

First, for the variable "Have you received the hepatitis B vaccine?", the data indicate in Table (E6, Appendixs B) significant variation in vaccination rates across years of practice, with the results of the Chi-Square test indicating statistical significance (Chi-Square = 19.431, df = 3, p <. 001), which indicates that there is a significant association between receiving the hepatitis B vaccine and years of practice among dentists. Those with years of practice of 11-15 years (30.0%) and 16 <(25.6%) favored receiving the vaccine compared to those with fewer years of practice.

Secondly, regarding the practice of changing face masks among patients, there is great variation. The Chi-Square test showed a significant association (Chi-Square = 8.412, df = 3, p = 0.038), indicating that practice varied with years of practice. In favor of dentists whose years of practice range between 11-15 years, as they recorded the highest percentage of commitment (17.8%) compared to the other groups.

Third, regarding the use of disinfectants to clean clinic floors, the data reveal significant differences in practice based on years of practice (Chi-Square = 8.772, df = 3, p = 0.032). In favor of 16 <(30.0%), compared to the other groups

For dental implant procedures, there is a clear trend where the probability of performing such procedures increases with years of practice (Chi-Square = 11.391, df = 3, p = 0.010). Dentists with years of practice between 11-15 years (31.1%) and 16< years (34.4%) reported higher rates compared to those with fewer years of practice.

Summary

Chi-Square in table (E6, Appendixs B) analyzes confirm significant associations between health care practices (vaccination, changing masks, using disinfectants, and performing procedures) and years of practice among dentists in dental clinics.

- Gender variable

First, with regard to the variable “Have you received the hepatitis B vaccine?”, the data show in table (E7, Appendixs B) notable differences in vaccination rates between male and female dentists. 66.7% of males reported that they had received the vaccine, compared to 17.8% of females. The Chi-Square test result (Chi-Square = 3.585, df = 1, p = 0.05) indicates a marginally significant relationship between gender and vaccination status. While the p value (0.05) is slightly higher than the traditional significance level of 0.05, it suggests that there may be a tendency for vaccination rates to differ based on gender.

Secondly, regarding the variable “Do you use disinfectants to clean the clinic floor?”, table (E7, Appendixs B) indicated a difference in practices between genders. A higher percentage of male dentists (57.8%) reported that they use disinfectants compared to females (16.7%). The Chi-Square test result (Chi-Square = 3.812, df = 1, p = 0.051) shows that there is a marginally significant association between gender and the use of disinfectants. This suggests that gender may influence the likelihood of adopting antiseptic practices in health care settings, although the association is not statistically conclusive at the conventional level of significance.

- university location (Palestine vs. Outside Palestine)

The results shown in Table (E8, Appendixs B) indicated that there are differences in changing face masks among patients in favor of dentists who graduated from outside Palestine at a rate of (28.9%). The results also showed that there are differences in the use of disinfectants to clean clinic floors in favor of dentists who graduated outside of Palestine. Palestine by 45.6% compared to dentists who graduated from Palestine by 28.9%. The Chi-Square values of 7.864 for handling implant procedures without sterile instruments indicate a significant association, supported by p =0.02, meaning that practices differ significantly between the two regions. As for the use of carpule during anesthesia for more than one patient, the results indicated in table (3.15) that there is

aassociation Chi-Square = 4.606, p = .032 in favor of dentists who graduated from outside Palestine by 46.7% compared to dentists who graduated from Palestine by 28.9%.

– workplace setting

As for testing employees to detect infection, private clinics favored (5.6%) compared to government clinics (2.2%). Regarding staff testing and patient inquiry practices, the results shown in Table (E9, Appendixs B) indicated that 10.0% of dentists in private clinics asked patients directly about viral infectious diseases. This practice was less widespread in military medical services (2.2%) and government clinics. Affiliated to the Ministry of Health (1.1%). As for changing face masks between patients and daily cleaning of clinic floors. This practice was applied more by dentists working in private clinics, at a rate of 30.0%, compared to only 1.1% in military medical services. While 23.3% of private clinics reported cleaning floors daily, this practice was less common in military medical services (6.7%) and other settings. Regarding methods of sterilizing tools, the results shown in Table (E9, Appendixs B) indicated that participants who work in private clinics use the autoclave, at a rate of 78.9% compared to other work environments. Regarding performing dental implant operations, the results shown in Table (E9, Appendixs B) indicated that this practice is in favor of private dental clinics by 81.1% compared to other work environments. Regarding the practice of "How are dental implant instruments sterilized?", the results indicated that this practice is applied more in favor of private dental clinics that use autoclave by 78.9% compared to other work environments.

– specialization in dentistry

The results in Table (E10, Appendixs B) indicated that compliance with the practices of "changing the face mask between patients" and "using eye or face protection" was in favor of specialized dentists by 10% compared to non-specialized dentists. differences also appear in practices such as "washing hands after each patient" and "used surface barriers" in favor of specialized dentists (13.3%) compared to non-specialized dentists . Chi-square values and associated p-values indicate the statistical significance of these differences. Practices such as "dental sterilization during tooth extraction" and "sterile ultrasonic scaler between patients" show very low p values (0.000 and 0.003,

respectively), indicating very significant differences between specialists and non-specialists in infection control measures.

Summary

Overall, while both specialists and non-specialists adhere to some infection control practices, specialists generally exhibit higher compliance across various measures crucial for preventing cross-contamination and ensuring patient safety.

3.4 Patients awareness into medical malpractices in dental clinics

– Health and Medical History

Table (E11, Appendix B) presents a detailed overview of patient behaviors and health conditions across three main aspects: infectious diseases, patient medical history disclosure, and vaccination status. Regarding infectious diseases, the data reveal that only 4.0% of patients reported having any infectious diseases, while 96.0% indicated that they did not suffer from any infectious diseases .As for patients disclosing their medical history. The results indicated that 80.7% of participants informed their doctors accurately and transparently about their medical history .The results also indicated that 14.7% of patients took the hepatitis B vaccine, which protects against hepatitis B, while 85.3% did not take it.

– Knowledge and Awareness

Table (E12, Appendix B) presented a detailed overview of patients' knowledge and awareness regarding the transmission of infectious diseases and the cleanliness of dental clinics. The results indicated that 60.0% reported having knowledge about how infectious diseases spread in dental clinics.

The data in Table (E12, Appendix B) highlights the impact of the COVID-19 pandemic on patient awareness and behavior. The results indicated that 66.0% of patients said that their awareness of how to prevent the transmission of infectious diseases in dental clinics had increased due to the Covid-19 pandemic.

The results indicated that 93.3% of participants are ready to change their doctor if they see that the clinic is not clean and sterile enough.

– Patient Behavior and Preferences

The results shown in Table (E13 Appendixs B) indicated that 96.7% indicated that they ask dentists to change the instruments if they notice blood on them or suspect improper sterilization from previous use. The results also indicated that 30.7% of patients ask doctors to wear gloves and masks if they are not already using them. The results indicated that 93.3% of patients are willing to change their doctor if they see that the clinic is not clean or sterile enough.

3.5 Association between demographic characteristics of patients and Patients awareness into medical malpractices in dental clinics

– Age variable

Association between patients' age groups and health-related behaviors, including the prevalence of infectious diseases and HBV-B vaccine uptake in dental clinics. With regard to reporting infectious diseases, the results shown in Table (E14 Appendixs E) indicated in favor of 60<, by 4.0% over the rest of the age groups. This discrepancy indicates a significant association between age and infectious disease reporting prevalence rate ($\chi^2 = 13.376$, df = 3, p = 0.004). The results indicated that 14.7% of patients between the ages of 15-30 years had taken the hepatitis B virus vaccine, while its uptake was decreasing in older groups. The chi-square test indicates a significant association between age and vaccine uptake ($\chi^2 = 10.864$, df = 3, p = 0.012), highlighting age-related disparities in vaccine adherence among dental patients.

– Gender variable

Table (E15 Appendixs B) presented data on gender differences with regard to the accuracy of doctors' reporting of medical history and knowledge of the transmission of infectious diseases in dental clinics. The results shown in Table (E15 Appendixs E) indicated that (49.3%) of participants informed their doctors accurately and transparently in favor of females, compared to males (31.3%). This disparity is statistically supported by a Pearson Chi-Square value of 21.025 ($p \leq .001$), indicating a strong association between gender and the likelihood of reporting patients' medical history. Regarding knowledge about the transmission of infectious diseases in dental clinics, the results indicated that (35.3%) of the sample members had awareness about the transmission of infectious diseases in dental clinics, in favor of females compared to males (24.7%).

Statistical analysis shows a significant association between gender and knowledge of infectious disease transmission, with a Pearson Chi-Square value of 4.278 ($p = 0.039$).

Summary

The results shown in Table (E15 Appendixs B) (3.22) was indicated that gender plays a major role in health-related behaviors and knowledge. Females generally showed higher participation in informing doctors of their medical history and a better understanding of the risks of transmitting infectious diseases in dental clinics compared to males.

Chapter Four
Discussion, Conclusion, and Recommendations

In this chapter, a discussion, conclusions, and recommendations were presented.

4.1 Discussion

Transmission of infectious diseases in dental offices remains a serious public health concern because it puts patients and medical staff at risk. Even under the strict standards and procedures implemented by the Ministry of Health, diseases such as hepatitis B and C, and more recently, the Coronavirus, can spread due to violations of infection control methods (COVID-19). The study aims to identify the mal-practices within dental clinics in Nablus city that contributes to the transmission of infectious diseases.

The results indicated that (84.4%) of the participants received the hepatitis B vaccine. The Dental Syndicate Law No. (2) (Legislation, 2022), which stipulates that any dentist must have the ability to practice the profession, and therefore one of the conditions for practicing the profession is to receive all preventive vaccinations with the aim of ensuring the health of workers, was one of the main reasons that led to the high percentage of dentists in the sample. Who have been vaccinated against hepatitis B and HIV in the country. This indicates the policy of the Palestinian Ministry of Health to reduce infection among health workers. The results of this study were confirmed by Mahasneh et al. (2020) a study by which indicated that (82.1%) of the sample received protection against hepatitis, and this was the result of enhancing dental care providers' compliance with infection control guidelines in Jordan.

PEEL style discussion:

Point:

The transmission of infectious illnesses at dental offices is a key public health concern due to the potential hazards to both patients and healthcare staff, despite the Ministry of Health's implementation of strong infection control measures.

Evedencis:

A study in Nablus city found that 84.4% of participants received the hepatitis B immunization. This is consistent with Dental Syndicate Law No. 2 (Legislation, 2022), which requires all dentists to acquire preventive immunizations to ensure worker health and safety. Mahasneh et al. (2020) found that 82.1% of dental providers in Jordan were protected against hepatitis due to improved adherence to infection control guidelines.

Explanation

Dental professionals' high hepatitis B vaccination rates demonstrate the efficacy of laws designed to stop the spread of contagious diseases. In order to lower the dangers of diseases including hepatitis B, hepatitis C, and COVID-19, the Palestinian Ministry of Health has implemented a policy requiring vaccination of healthcare professionals, particularly dentists. Dental practitioners can drastically lower the spread of infections in their clinics by following stringent guidelines. The results of the study demonstrate the value of these regulations and how they can increase vaccination rates and adherence to infection control measures.

Link: This emphasizes the necessity of maintaining dental clinics' adherence to immunization and infection control protocols, which are essential for shielding patients and medical staff from the spread of infectious diseases. The danger of infections at dental offices, which remains a significant global public health concern, can be further decreased by making sure that dental personnel are vaccinated and adhere to stringent guidelines.

The findings showed that 97.8% of dentists use face masks when doing their jobs. Additionally, 35.6% swap out their face masks for each patient they treat. This is because dentists are fully aware of the value of wearing a face mask, particularly in the wake of the coronavirus outbreak. The Palestinian Ministry of Health's Licensing Unit enforces stringent regulations for medical clinics in general and dental clinics in particular. One of the licensing procedures involves the requirement to wear a face mask while treating patients. as a safety precaution that will shield both the patient and the dentist. The results of the current study were consistent with a study conducted by Ameena, Ramanarayanan, Kuruvilla, & Latti (2021), which indicated that 76% wear masks as usual as part of their profession. Also, 86% of dentists reported that changing masks between patients will

continue after the epidemic. The results indicated that (77.8%) of the participants sterilize the peeler with alcohol or a similar disinfectant. (21.1%) of participants reported cleaning with alcohol and then sterilizing it in an autoclave. Also, (76.7%) of the participants reported that they cleaned the blood with alcohol and reused it immediately. This result is due to dentists' knowledge of the effectiveness of all disinfection methods. They know that disinfection with ultraviolet rays gives 100% sterilization and sterilization with alcohol disinfectant gives 98%, so the percentage was high. Among dentists regarding sterilization with alcohol. The results of the current study were confirmed by a study by Kac, et al. (2007), which reported that sterilization was 100% for ultraviolet rays, 98.4% for disinfectant wiping, and 87.5% for dry wiping ($P < 0.001$). The results of the current study showed that 91.1% of dentists use an autoclave to sterilize dental implant instruments. While 3.3% of dentists use an oven to sterilize teeth, while 5.6% of dentists use a chemical sterilizer to sterilize dental implant instruments. The reason is that the autoclave uses high-pressure saturated steam at temperatures ranging between 121-134 degrees Celsius to kill all forms of microbial life. Including bacteria and viruses. This method ensures the sterilization of dental instruments. Dentists also comply with the health regulations recommended by the Palestinian Ministry of Health and many health organizations and regulatory bodies, such as the Centers for Disease Control and Prevention (CDC) and the American Dental Association (ADA). These guidelines have been developed to ensure the highest standards of infection control in dental practices. The results of the present study were supported by MANEA, et al. (2018), where both autoclave dry heat and steam sterilization proved effective in the case of sterilization of dental implant instruments.

To discuss the findings, use the PEEL approach (Point, Evidence, Explanation, Link).

Point: The study found a high level of adherence to safety measures in dental clinics, particularly with the usage of face masks and sterilizing procedures. These activities, motivated by an awareness of infectious hazards such as COVID-19, demonstrate the effectiveness of rules imposed by the Palestinian Ministry of Health.

Evidence:

Evidence suggests that 97.8% of dentists use face masks while working, with (35.6%) changing masks between appointments.

(77.8%) of participants sterilized their tools with alcohol or a comparable disinfectant, whereas (21.1%) used combined alcohol cleaning and autoclave sterilization.

(91.1%) of dentists utilize autoclaves to sterilize dental implant instruments, which is consistent with recommendations from health organizations such as the Palestinian Ministry of Health, CDC, and ADA.

The findings are consistent with prior research, including Ameena et al. (2021), who found that 76% of dentists habitually wear masks, and Kac et al. (2007), who validated the efficacy of sterilizing procedures.

Explanation:

These findings show that dentists are very committed to maintaining tight infection control methods, especially after the COVID-19 epidemic. The necessary use of face masks and enhanced compliance with sterilizing methods are in accordance with health-care laws, protecting both patients and dentists from dangerous illnesses. The high use of masks and sterilization methods employed by dentists, such as alcohol disinfection and autoclaving, demonstrate their appreciation of the essential role these measures play in preventing the transmission of infectious diseases. Furthermore, the consistency with past studies suggests that these practices are not only well-established, but are improving in response to new health hazards.

Results indicated that (75.6%) of dentists reuse leftover carpule on another patient. Due to the potential for cross-contamination and infection, reuse of any dental materials between patients is against standard infection control standards. Dental associations and organizations have strict standards that dentists must adhere to. Medical care to ensure patient safety. These recommendations include appropriately sterilizing reusable instruments and using single-use instruments whenever possible. However, this improper practice emerged as a result of lax oversight by the Infection Control Department, which necessitated strict action by the Quality Department regarding the malpractices carried out by some dentists. The results of the current study were supported by a study by Jennifer L. Cleveland, et al. (2016) which indicated that dentists have wrong practices regarding injections and their use for patients.

Here is a breakdown of the results to discuss using the PEEL technique (Point, Evidence, Explanation, Link):

Point: According to the research, (75.6%) of dentists reuse remaining carpules on different patients, which is against infection control guidelines and presents serious risks of infection and cross-contamination. Inadequate monitoring and execution of infection control procedures leads to this inappropriate practice.

Evidence: Reusing leftover carpules on another patient was reported by (75.6%) of dentists.

It is against established infection control procedures to reuse dental materials between patients.

These conclusions are corroborated by a study conducted in 2016 by Jennifer L. Cleveland et al. which shows that many dentists administer injections to patients in an improper manner.

Dental groups and organizations have explicit guidelines for cleaning reusable tools and using single-use materials whenever possible to prevent cross-contamination.

Explanation:

Carpules are meant to be used just once, so reusing them is a major violation of infection control guidelines. Cross-contamination is more likely as a result of this practice since it can spread infectious agents from one patient to another. The continuation of this inappropriate practice indicates that the Infection Control Department, which is in charge of making sure that safe and efficient infection control measures are put into place, is not providing enough oversight. The huge number of dentists involved in this practice highlights the necessity for the Quality Department to monitor and address these practices more strictly. Maintaining patient safety and stopping the spread of illnesses in dental settings requires strict adherence to infection control protocols, which include the use of single-use products.

Link

This observation highlights the crucial need for better enforcement of infection control regulations in dentistry clinics. The existing practices reveal a lack of control of dental procedures, which may jeopardize patient safety. The Quality Department must take stronger action to address these concerns and ensure that dental professionals follow established infection control guidelines. Dental clinics that address this issue can prevent the spread of infections while also maintaining high standards of care for all patients.

The autoclave's sterilization cycles, which vary from 15 to 30 minutes based on the size of the load and the particular instruments being sterilized, explain why 71.1% of dentists, according to the statistics, use one to sterilize their equipment. Because of this, sterilization is a quicker process than other techniques. Additionally, the instruments are safe in the autoclave since it prevents corrosion and damage while preserving their functionality.

The findings of the current investigation were challenged by a reference study by Sasak & Imazato (2019), which suggested that autoclave sterilization is insufficient to completely cleanse the instruments from For reuse. In another study, the results of the current study were supported by Arif, et al. (2019), which indicated that (93.2%) used an autoclave for sterilization, and the majority had comprehensive knowledge of the process involved.

According to the findings, (66.0%) of patients claimed that the Covid-19 epidemic has raised their awareness of the need to stop infectious diseases from spreading in dental offices.

Furthermore, (93.3%) of participants said they would be open to switching doctors if they felt the clinic was not sufficiently sanitary and clean. For a number of reasons, the most significant of which is that patients are constantly informed of their care and treatment plans, this result validates patients' awareness of dentists' procedures. Patients frequently share their experiences and reviews online due to the availability of the Internet and social media platforms. Patients can gain a better understanding of what to anticipate from a specific dental clinic or dentist by reading about other people's experiences.

The following is a breakdown of the findings using the PEEL method (Point, Evidence, Explanation, Link)

Point

The study found that autoclave sterilization is routinely utilized by dental professionals, however its usefulness in thoroughly sanitizing instruments is questioned. Furthermore, due to the COVID-19 epidemic, patients are becoming more aware of infection control practices, and they are likely to switch doctors if they believe hygiene standards are inadequate.

Evidence

The survey demonstrated that 93.2% of participants utilize an autoclave for sterilization, demonstrating its broad use (Arif, et al., 2019).

However, Sasak & Imazato (2019) questioned the notion that autoclave sterilization is sufficient to completely clean instruments, indicating potential gaps in sterilization effectiveness.

Explanation

(66.0%) of patients said that the COVID-19 pandemic has made them more aware of the importance of preventing the transmission of infectious diseases in dental offices.

(93.3%) of patients said they would transfer doctors if they thought a clinic was not clean enough, demonstrating the importance of patient views in their choice of healthcare providers.

The study also underlines the relevance of internet reviews and social media platforms, where patients can learn about other people's experiences with cleanliness and infection control procedures.

(66.0%) of patients said that the COVID-19 pandemic has made them more aware of the importance of preventing the transmission of infectious diseases in dental offices.

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The study also underlines the relevance of internet reviews and social media platforms, where patients can learn about other people's experiences with cleanliness and infection control procedures.

Link

These findings highlight the need for ongoing improvement in infection control methods, notably sterilization practices, in order to meet the concerns presented by both research and patients. To maintain patient trust, dental clinics must not only sterilize instruments properly, but also be transparent about their practices. Furthermore, patient awareness and engagement via online platforms emphasize the importance of maintaining high cleanliness standards to avoid losing customers. Continuous education and investment in better sterilizing technology will be critical in overcoming these issues and achieving patient expectations in the post-COVID future.

4.2 Conclusion

This study clarified two primary issues: first, the unethical behavior of dentists; and second, the degree to which patients at Nablus dental clinics are aware of medical procedures. Concerns raised by the study included incorrect handling, particularly when using a carpule, PPE precautions, sterilization and disinfection procedures, and non-compliance with established infection control methods. principal. Dental professionals are exposed to serious risk as a result of these procedures, in addition to the danger they bring to patient safety. A multidisciplinary strategy is needed to address these problems, one that entails the stringent implementation of infection control protocols, thorough training courses for dental personnel, and continual observation and assessment of clinic operations. Dental offices in Nablus can greatly lower the danger of infectious disease transmission by putting these precautions in place. This will improve the general standard of dental care and guarantee a safer atmosphere for both patients and medical staff. it is also important to educate the public and raise awareness of the significance of infection prevention in dental centers. The study's findings highlight the critical need for coordinated initiatives to advance best practices and safeguard the public's health in dentistry clinics.

In conclusion, while the majority of dental practitioners follow suggested infection control protocols, there are still gaps in compliance and monitoring, notably regarding

the reuse of specific materials and the effectiveness of sterilization practices. The findings emphasize the importance of ongoing education, stricter enforcement of infection control standards, and the use of more modern sterilization technologies to meet both professional norms and patient expectations. Maintaining high standards of cleanliness and infection control will not only protect patients, but will also improve the reputation of dental practices in an increasingly health-conscious culture.

4.3 limitation of the study

Although this study offers insightful information, it is important to recognize some limitations that might have an impact on how the results are interpreted and applied generally:

- The research was done on a small sample of dental clinics in Nablus, which might not be representative of all the dental clinics in west-bank. The limited sample size may restrict the applicability of the results to a larger group of dental clinics.
- Self-reported surveys with dental practitioners and patient impression were the main method used to gather data on malpractices and infection control measures. Biases including social desirability bias, recall bias, and misreporting can affect self-reported statistics.
- Because dental practices might change over time, it's possible that not all malpractice cases were seen throughout the study's monitoring period. An extended period of observation may be required in order to obtain a more thorough grasp of the practices.
- Inconsistent data collection and analysis may have resulted from the absence of uniform instruments or standards for evaluating malpractices and infection control practices among various clinics.
- It's possible that the study concentrated on a certain subset of infectious disorders, thereby ignoring other pertinent infectious agents that can spread in dental clinics.
- The study results may have been impacted by variations in the availability of technology resources and infection control supplies between the clinics. Better-resourced clinics might use different procedures than less-resourced ones.
- The scope of the study may have been limited due to ethical and regulatory constraints that prevented access to extensive patient information or prevented the investigation of specific components of dental practices.

- It is difficult to determine causality or long-term trends in malpractices and infection transmission because the study's cross-sectional approach only records a snapshot of behaviors at one particular moment in time.

These limitations should be taken into account when interpreting the study's findings, and they highlight the need for additional research using more reliable approaches in order to fully comprehend and solve the malpractices that spread infectious diseases in dental clinics.

4.4 Recommendations

Dental clinics are required to follow the basic infection control protocols that are advised by international health agencies like the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO).

To make sure that all staff members are informed of the most recent procedures and best practices, these guidelines should also be updated on a regular basis and distributed to them. Before starting work in the office, all dental health care providers must complete extensive training in infection control procedures. To keep staff members informed about new developments in infection control, emerging infectious illnesses, and technology advancements, continuing education programs ought to be set up.

4.4.1 Recommendations for policy makers

Policy makers can promote best practices for infection control in dental clinics by puttingvarious recommendations into practice, including making strategic investments in developing and improving the practices used in dental clinics in Nablus:

- Establish and implement strict infection control policies by creating thorough infection control procedures tailored to the needs of dental clinics.
- Provide frequent and required infection control training courses for all dental health care workers.
- Incorporate courses on the most recent methods of sterilization, how to wear personal protective equipment, and how to apply local anaesthetic in dental offices as effectively as possible.
- Inspect dental clinics without warning to make sure infection control procedures are being followed.

- For audits, employ a standard checklist that concentrates on important topics including cleanliness, sterilization protocols, and appropriate PPE use.
- To ensure accountability, impose fines or corrective measures in the event of non-compliance.
- Informing the public about the value of infection control in dental clinics by disseminating educational content via social media and other media platforms.
- Urge patients to report any misconduct they observe and ask dentists what infection control procedures they use.
- Encourage cooperation between public health agencies, professional dental associations, and dental clinics.
- Organize regular discussions and gatherings for stakeholders to talk about problems, exchange best practices, and plan initiatives to enhance infection control.
- Create a centralized platform for communication to quickly distribute important information and changes.

4.4.2 Recommendations for Further studies

- Perform a comparison analysis of dental clinics in different parts of Palestine or adjacent nations. This would provide a more comprehensive context and knowledge of the problem by assisting in determining whether specific malpractices are exclusive to Nablus or are prevalent.
- Conduct long-term research to monitor variations in infection rates and malpractices over time. This would be useful in evaluating how well the policies and actions put in place to slow the spread of infectious illnesses are working.
- Examine the effects of cutting-edge sterilization techniques and the dental clinics that are implementing them. Research can contrast infection rates between clinics that use more modern technologies and those that use more conventional procedures.
- Examine the financial effects of the spread of infectious diseases in dental settings. This can include lost productivity at work, the expense of treating infections, and the financial strain on healthcare systems.
- To determine which diseases are most frequently spread in dentistry clinics, conduct microbiological tests.
- Examine the behavioral elements affecting dental healthcare personnel' adherence to infection control guidelines.

- Analyze how infectious disease transmission in dentistry clinics affects public health in general.
- Conduct case studies of dental clinics that have excellent infection control procedures.

List of Abbreviations

Abbreviations	Meaning
HCAI	Health care-associated infections
WHO	World Health Organization
DHCP	Dental health care personal
HBV	Hepatitis B virus
DHCW	Dental health care workers
PPE	Personal protective equipment
HAIs	Healthcare-associated infections

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Appendices

Appendix A

Consent form (Arabic version)

أخي/ أختي المشارك/ة:

انا الباحث "هيثم فوزي ابراهيم غانم " طالب ماجستير ادارة الصحة العامة في جامعة النجاح الوطنية يسرني أن أدعوك/ي إلى المشاركة في بحثي بعنوان "**الممارسات الخاطئة في عيادات الأسنان وخطر انتشار الأمراض المعدية: دراسة مقطعية في محافظة نابلس**".

ولك/ي كامل الحرية والإرادة في المشاركة في هذا البحث, ولك/ي الحق في أخذ الوقت الكافي للتفكير في المشاركة من عدمها , وسؤال الباحث اذا كان لديك/ي أي استفسار , والتحدث لأي شخص أو جهة عن هذا البحث مع العلم ان المشاركة طوعية وفي حال قمت/ي بالمشاركة , يحق لك الانسحاب في أي وقت.

كما يمكنك الاستفسار من الباحث عن أي جزء يتعلق في البحث الآن أو فيما بعد, وستجد/ين الوقت والإجابة الكافيتين.

رقم هاتف الباحث: **0566400000**

البريد الالكتروني: Dr.haitham_gh@hotmail.com

هذا ويضمن البحث سرية المعلومات المتعلقة بالمشاركة.

Appendix B

Tables

Table (E1)
"Healthcare Provider Practices Regarding Patient Medical History and Viral Infectious Diseases"

Question		Frequency	Percent
Do you take the patient's medical history?	yes	88	97.8
	no	2	2.2
Do you ask the patient directly if they have a viral infectious disease?	yes	14	15.6
	no	74	82.2
	N/A	2	2.2
	Total	90	100.0

Table E2
Implant Procedures and Instrument Sterilization Practices in dental clinics

Question		Frequency	Percent
Do you perform dental implant procedures?	Yes	81	90.0
	No	9	10.0
If a patient comes for an implant procedure and sterilized implant instruments are not available, how would you handle it?	You will perform the implant procedure regardless of the lack of sterilized tools.	4	4.4
	You will sterilize the implant tools with a chemical sterilant and then proceed with the implant.	46	51.1
	You will reschedule the procedure for a later date.	40	44.4
How do you sterilize dental implant instruments?	Autoclave	82	91.1
	Oven	3	3.3
	Chemical sterilant	5	5.6
	Total	90	100.0

Table E3
Anesthesia and Medication Handling Practices in dental clinics

Question		Frequency	Percent
If you use part of a carpule during anesthesia, what do you do with the remainder? Do you use it on another patient?	Yes	68	75.6
	No	22	24.4
	Total	90	100.0

Table (E4)

Instrument Sterilization and Usage Practices in Dental Clinics

Question		Frequency	Percent
How do you sterilize files and burs?	Autoclave	64	71.1
	Oven	4	4.4
	Chemical sterilant	22	24.4
What equipment do you use to sterilize instruments?	Autoclave	86	95.6
	Oven	3	3.3
	Chemical sterilant	1	1.1
Do you have single-use dental instruments and contras for patients with serious infectious diseases like AIDS?	Yes	14	15.6
	No	76	84.4
Do you perform dental implant procedures?	yes	81	90.0
	no	9	10.0
How do you sterilize dental implant instruments?	Autoclave	82	91.1
	Oven	3	3.3
	Chemical sterilant	5	5.6
	Total	90	100.0

Table (5)

Association Between dentists' practices in dental clinics and Age Groups: Crosstabulation and Chi-Square Analysis

Question	Age	23 – 30	31 – 40	41 – 50	50<	Total	Chi-Square (Pearson)	df	p-value
Have you received the Hepatitis B vaccine?	yes	15.6%	42.2%	20.0%	6.7%	84.4%	23.730	3	.000
	no	1.1%	6.7%	7.8%	15.6%	15.6%			
	Total	15.6%	43.3%	26.7%	14.4%	100.0%			
Have you ever been tested for Hepatitis B or HIV?	yes	12.2%	36.7%	17.8%	6.7%	73.3%	8.191	3	.042
	no	3.3%	6.7%	8.9%	7.8%	26.7%			
	Total	15.6%	43.3%	26.7%	14.4%	100.0%			
Have you tested your employees for infections?	yes	2.2%	6.7%	1.1%	10.0%	20.0%	8.661	3	.034
	no	15.6%	41.1%	20.0%	13.3%	90.0%			
	Total	17.8%	47.8%	21.1%	23.3%	110.0%			
Do you take the patient's medical history?	yes	15.6%	41.1%	26.7%	14.4%	97.8%	2.675	3	.445
	no	2.2%			2.2%	4.4%			
	Total	17.8%	41.1%	26.7%	16.6%	102.2%			
Do you ask the patient directly if they have a viral...?	yes	1.1%	3.3%	4.4%	6.7%	15.6%	12.821	6	.046
	no	14.4%	38.9%	21.1%	7.8%	82.2%			
		3.00	1.1%	1.1%		2.2%			
	Total	18.5%	43.3%	26.7%	14.4%	100.0%			
Do you wear a lab coat while working?	yes	15.6%	43.3%	24.4%	10.0%	93.3%	16.030	3	.001
	no		2.2%	4.4%	6.7%	13.3%			
	Total	15.6%	43.3%	26.7%	16.7%	106.6%			
Do you perform dental implant procedures?	yes	11.1%	43.3%	22.2%	13.3%	90.0%	10.961	3	.012
	no	4.4%		4.4%	1.1%	10.0%			
	Total	15.6%	43.3%	26.7%	14.4%	100.0%			

Table (E6)

Theassociations between years of practice between dentists in clinics and health and procedural practices

Variable	Response	5>	5 – 10	11 – 15	16 <	Chi-Square Value	df	Significance
Have you received the Hepatitis B vaccine?	yes	14.4%	14.4%	30.0%	25.6%	19.431	3	.000
	no	1.1%	14.4%	15.6%	-	-	-	-
Do you change your face mask between patients?	yes	3.3%	3.3%	17.8%	11.1%	8.412	3	.038
	no	11.1%	11.1%	13.3%	28.9%	-	-	-
Do you use disinfectants to clean the clinic floor?	yes	13.3%	13.3%	17.8%	30.0%	8.772	3	.032
	no	1.1%	1.1%	13.3%	10.0%	-	-	-
Do you perform dental implant procedures?	yes	10.0%	14.4%	31.1%	34.4%	11.391	3	.010
	no	4.4%	-	5.6%	10.0%	-	-	-

Table (E7)

Association between gender and practices of receiving hepatitis B vaccine or using disinfectants to clean clinic floors among dentists

Variable	Response	Gender	% Total	Chi-Square Value	df	Significance
Have you received the Hepatitis B vaccine?	yes	male	66.7%	3.585	1	0.05
		female	17.8%			
	no	male	15.6%			
		female	15.6%			
Do you use disinfectants to clean the clinic floor?	yes	male	57.8%	3.812	1	0.051
		female	16.7%			
	no	male	24.4%			
		female	1.1%			

Table (E8)

"Comparison of Practices in Dental Care Between University Locations: Palestine vs. Outside Palestine"

Question	Response Option	%Palestine	% Outside Palestine	Total	Pearson Chi-Square	Asymptotic Significance
Do you change your face mask between patients?	yes	6.7%	28.9%	67.8%	4.127	.042
	no	25.6%	38.9%	64.4%		
Do you use disinfectants to clean the clinic floor?	yes	28.9%	45.6%	74.4%	5.203	.023
	no	3.3%	22.2%	25.6%		
If a patient comes for an implant procedure and sterilized implant	Perform regardless	1.1%	3.3%	4.4%	7.864	.020
	Sterilize and proceed	23.3%	27.8%	51.1%		

instruments are not available, how would you handle it?	Reschedule	7.8%	36.7%	44.4%		
If you use a dental contra during an impacted wisdom tooth extraction, how do you sterilize it before using it for the next patient?	Without sterilizing	1.1%	1.1%	1.1%	6.506	.039
	Clean with alcohol immediately	30.0%	46.7%	76.7%		
	Clean with alcohol or disinfectant	2.2%	20.0%	22.2%		
If you use part of a carpule during anesthesia, what do you do with the remainder? Do you use it on another patient?	yes	28.9%	46.7%	75.6%	4.606	.032
	no	3.3%	21.1%	24.4%		

Table (E9)

Dentists' practices according to the workplace variable

Question	Response Option	% Private Clinic	% Military Medical Services	% Charity Organization	% UNRWA Clinics	% Government Clinics under the Ministry of Health	Total	Pearson Chi-Square	Asymptotic Significance
Have you tested your employees for infections?	yes	5.6%	2.2%	-	-	2.2%	10.0%	14.025	.007
	no	78.9%	6.7%	2.2%	1.1%	1.1%	90.0%		
Do you ask the patient directly if they have a viral infectious disease?	yes	10.0%	2.2%	-	1.1%	2.2%	15.6%	17.630	.024
	no	73.3%	5.6%	2.2%	-	1.1%	82.2%		
Do you change your face mask between patients?	yes	30.0%	1.1%	-	1.1%	3.3%	35.6%	10.209	.037
	no	54.4%	7.8%	2.2%	-	-	64.4%		
Do you clean the clinic floor daily?	yes	23.3%	6.7%	1.1%	1.1%	3.3%	35.6%	14.947	.005
	no	61.1%	2.2%	1.1%	-	-	64.4%		
What equipment do you use to sterilize instruments?	Autoclave	82.2%	7.8%	2.2%	1.1%	2.2%	95.6%	19.178	.014
	Oven	2.2%	-	-	1.1%	-	3.3%		
	Chemical sterilant	-	1.1%	-	-	1.1%	2.2%		
Do you perform dental implant procedures?	yes	81.1%	5.6%	2.2%	1.1%	-	90.0%	37.149	.000
	no	3.3%	3.3%	-	-	3.3%	10.0%		
How do you sterilize dental implant instruments?	Autoclave	78.9%	6.7%	2.2%	-	3.3%	91.1%	35.937	.000
	Oven	2.2%	-	-	1.1%	-	3.3%		
	Chemical sterilant	3.3%	2.2%	-	-	-	5.6%		

Table (E 10)

Dentists' practices according to specialization in dentistry variable

Infection Control Practice	Specialists (Yes)	Specialists (No)	Non-Specialists (Yes)	Non-Specialists (No)	Total %	Chi-Square Value	p-value
Tested employees for infections	4.4%	5.6%	8.9%	81.1%	13.3%	8.376	0.004
Asked patients directly about viral infectious diseases	5.6%	10.0%	6.7%	75.6%	15.6%	10.144	0.006
Changed face mask between patients	10.0%	25.6%	3.3%	61.1%	35.6%	9.402	0.002
Used eye or face protection	7.8%	15.6%	5.6%	71.1%	23.3%	9.482	0.002
Washed hands after each patient	13.3%	61.1%	-	25.6%	74.4%	4.753	0.029
Used surface barriers	11.1%	42.2%	2.2%	44.4%	53.3%	5.007	0.025
Changed surface barriers after each patient	6.7%	14.4%	6.7%	72.2%	21.1%	6.938	0.008
Cleaned clinic floor daily	8.9%	26.7%	4.4%	60.0%	35.6%	5.849	0.016
Handled non-sterilized implant instruments	4.4%	-	4.4%	-	8.9%	8.541	0.014
Sterilized dental contra during tooth extraction	-	73.3%	73.3%	-	76.7%	22.331	0.000
Sterilized ultrasonic scaler between patients	5.6%	-	72.2%	-	77.8%	11.562	0.003
Sterilized dental impression trays	73.3%	-	6.7%	-	80.0%	8.329	0.016
Used single-use instruments for high-risk patients	5.6%	-	7.8%	-	15.6%	7.187	0.007

Table (E11)

Health Behavior and Medical History of Patients

Variable	Category	Frequency	Percent
Do you have any infectious diseases?	Yes	6	4.0
	No	144	96.0
Do you accurately and transparently inform your doctor about your medical history?	Yes	121	80.7
	No	29	19.3
Have you taken the HBV vaccine?	Yes	22	14.7
	No	128	85.3
Total		150	100.0

Table(E12)

Patient Awareness and Preferences Regarding Infectious Disease Transmission in Dental Clinics

Variable	Category	Frequency	Percent
Do you have knowledge about how infectious diseases can be transmitted in dental clinics?	Yes	90	60.0
	No	60	40.0
Has the COVID-19 experience increased your awareness in preventing the transmission of infectious diseases in dental clinics?	Yes	99	66.0
	No	51	34.0
Willingness to Change Doctor based on Clinic Cleanliness	Yes	140	93.3
	No	10	6.7
Total		150	100.0

Table(E13)

Patient Preferences and Actions Regarding Dental Clinic Hygiene

Variable	Category	Frequency	Percent
Do you ask the doctor to change the instruments they intend to use on you if you see blood on them or suspect they were used on a previous patient without proper sterilization?	Yes	145	96.7
	No	5	3.3
Do you ask the doctor to use gloves and a mask if they are not wearing them?	Yes	46	30.7
	No	104	69.3
Are you willing to change your doctor if you feel their clinic is not clean and properly sterilized?	Yes	140	93.3
	No	10	6.7
Total		150	100.0

Table (E14)

Association Between Age Groups and Health-Related Behaviors: Infectious Diseases and HBV-B Vaccine Uptake among Patients in Dental Clinics"

Variable	Category	15–30 (%)	31–45 (%)	46–60 (%)	61< (%)	Total (%)	Chi-Square	df	p-value
Do you have any infectious diseases?	Yes	0.7	1.3	2.0	4.0	8.0	13.376	3	.004
	No	35.3	38.0	14.0	8.7	96.0			
Have you taken the HBV-B vaccine?	Yes	9.3	4.7	0.7	-	14.7	10.864	3	.012
	No	26.0	34.0	14.7	10.7	85.3			

Table (E15)
Gender Differences in Health Knowledge and Communication with Doctors"

Question	Gender	Yes (%)	No (%)	Total (%)	Pearson Chi-Square Value	Asymptotic p-value
4. Do you accurately and transparently inform your doctor about your medical history?	Male	31.3%	16.7%	48.0%	21.025a	.000
	Female	49.3%	2.7%	52.0%		
6. Do you have knowledge about how infectious diseases can be transmitted in dental clinics?	Male	24.7%	23.3%	48.0%	4.278a	.039
	Female	35.3%	16.7%	52.0%		

Study tool

Dental Questionnaire

Socio -demographic

Age

- 23-30
- 31-40
- 41-50
- >50

Gender

- Male
- Female

Duration of practice

- < 5 years
- 5-10
- 11-15
- > 16

The university where you obtained my Bachelor of Dental Surgery degree is located in:

- From Palestine
- Outside of Palestine

Current place of work:

- Private clinic
- Military medical services
- Charitable organization
- UNRWA clinics.
- Government clinics affiliated with the Ministry of Health.

Are you a dentist?

- Yes
- No

Have you received the hepatitis B vaccine?

- Yes
- No

Have you ever been tested for hepatitis B or HIV?

- Yes
- No

Have you tested your employees for infection?

- Yes
- No

Do you take the patient's medical history?

- Yes
- No

Do you directly ask the patient if they have a contagious viral disease?

- Yes
- No

What is the average number of patients per day?

- 1-5
- 6-10
- > 10

Do you wear a medical coat while working?

- Yes
- No

Do you wear a face mask while working?

- Yes
- No

Do you replace your face mask between each patient?

- Yes
- No

Do you use medical gloves?

- Yes
- No

Do you replace medical gloves with each new patient?

- Yes
- No

Do you use eye or face protection?

- Yes
- No

Do you wash your hands after each patient?

- Yes
- No

Do you install surface barriers?

- Yes
- No

Do you replace surface barriers after each patient?

- Yes
- No

Do you use disinfectants to clean the clinic floor?

- Yes
- No

Do you clean the clinic floor daily?

- Yes
- No

Do you thoroughly clean the dental contraption and chair sink with appropriate disinfectants after each patient?

- Yes
- No

What device do you use to sterilize instruments?

- Autoclave
- Oven
- Chemical sterilant

How do you sterilize files and burs?

- Autoclave
- Oven
- Chemical sterilant.

Do you perform dental implants?

- Yes
- No

How do you sterilize dental implant instruments?

- Autoclave
- Oven
- Chemical sterilant

If a patient comes in wanting dental implants, and sterile implant tools are not available at the time, what will you do?

- Perform the implant procedure regardless of the unavailability of sterile tools.
- Sterilize the implant tools with a chemical sterilant, then implant the patient.
- Reschedule the procedure for a later date.

If you use Dental Contra during an impacted wisdom tooth procedure, how will you sterilize it before using it on the next patient?

- I will use it without sterilization.
- I will clean the blood off it with alcohol and then use it immediately.
- I will clean the blood off it with alcohol or another sterilizing solution, then I will put it in the autoclave immediately before using it on any patient.

How do you sterilize your dental scaling machine between patients?

- It doesn't need to be sterilized at all.
- Sterilize it with alcohol or something similar.
- Clean it with alcohol and then sterilize it in an autoclave.

Do you have disposable dental instruments and contraceptives in case the patient has a serious infectious disease such as AIDS?

- Yes
- No

If you use part of the Carpule while anesthetizing the patient, what do you do with the rest of the Carpule? Do you use it for another patient?

- Yes
- No

Arabic virgin

إستبيان خاص بطبيب الاسنان

- العمر:

1) 23 – 30 2) 31 – 40 3) 41 – 50 4) 50<

- مدة المزاولة :

1) 5> 2) 5 – 10 3) 11 – 15 4) 16 <

- الجنس:

1) ذكر 2) أنثى

- الجامعة التي حصلت منها على شهادة البكالوريوس في طب وجراحة الأسنان تقع في:

1) فلسطين 2) خارج فلسطين

- مكان العمل الحالي:

1) عيادة خاصة 2) خدمات طبية عسكرية 3) جمعية خيرية 4) عيادات تابعة لل انوروا 5) عيادات حكومية تابعة لوزارة الصحة

- هل أنت حاصل على تخصص في طب وجراحة الاسنان؟

1) نعم 2) لا

- هل تلقيت\اي لقاح التهاب الكبد الوبائي B؟

1) نعم 2) لا

- هل سبق أن فحصتاي إذا كنتاي مصابةا ب التهاب الكبد الوبائي أو HIV؟

1) نعم 2) لا

- هل فحصت موظفيك اذا كانوا مصابين ؟

1) نعم 2) لا

- هل تأخذاي التاريخ الطبي للمريض؟

1) نعم 2) لا

- هل تسألاي المريض بشكل مباشر اذا كان مصابا بمرض فيروسي معدي؟

1) نعم 2) لا

- ما هو متوسط عدد المرضى اليوميين؟

1) 1 – 5 2) 6 – 10 3) 10<

- هل تلبساي المعطف الطبي اثناء العمل؟

1) نعم 2) لا

- هل تضعاي قناع على الوجه (mask) أثناء العمل ؟

1) نعم 2) لا

- هل تستبدلاي قناع الوجه بين كل مريض و اخر؟

1) نعم 2) لا

- هل تستخدماي القفازات الطبية (gloves) ؟

1) نعم 2) لا

- هل تستبدلاي القفازات الطبية مع كل مريض جديد؟

1) نعم 2) لا

- هل تستخدماي واقي للعيون أو الوجه ؟

1) نعم 2) لا

- هل تقوماي بغسل يديك بعد كل مريض؟

1) نعم 2) لا

- هل تضع surface barriers الي

1) نعم 2) لا

- هل تستبدل surface barriers بعد كل مريض؟

1) نعم 2) لا

- هل تستخدم معقمات في تنظيف ارضية العيادة؟

1) نعم 2) لا

- هل تنظف ارضية العيادة يوميا؟

1) نعم 2) لا

- هل تنظف جيدا ال dental contra ومغسلة الكرسي بمواد معقمة مناسبة بعد كل مريض؟

1) نعم 2) لا

- ما هو الجهاز الذي تستخدمه لتعقيم الأدوات؟

1) 2) Oven 3) Chemical sterilant Autoclave

- كيف تعقم ال files and burs ؟

1) .Chemical sterilant 3) Oven 2) Autoclave

- هل تقوم بزراعة الاسنان؟

1) نعم 2) لا

- كيف تقوم بتعقيم أدوات زراعة الاسنان؟

1) Chemical sterilant Autoclave 3) Oven 2)

- في حال قدوم مريض يرغب بزراعة أسنان، ولم تتوفر وقتها ادوات زراعة معقمة، كيف ستتصرف؟

1) ستقوم بإجراء الزراعة بغض النظر عن عدم توفر ادوات معقمة 2) ستقوم بتعقيم ادوات الزراعة ب Chemical sterilant ، ثم تزرع للمريض 3) ستقوم بتأجيله لموعد لاحق

- في حال استخدامك لل Dental Contra أثناء عملية ضرس عقل مطمور، كيف ستقوم بتعقيمها قبل استخدامها للمريض التالي؟

1) سأستعملها بدون تعقيم 2) سأنظف الدم عنها بكحول ثم استعملها مباشرة 3) سأنظف الدم عنها بكحول او أي سائل تعقيم، ثم سأدخلها لل Autoclave مباشرة قبل استخدامها على أي مريض

- كيف تقوم بتعقيم جهاز ازالة الرواسب الجيرية بين المرضى؟

1) لا يلزم تعقيمه اصلا 2) أعقمه بالكحول او ما شابه 3) أنظفه بالكحول ثم أعقمه في Autoclave

- فيما يتعلق بصواني الانطباع (Dental Trays) :

1) هل تسترجعها من المعمل و تستخدمها فورا؟

2) هل تسترجعها من المعمل و تستخدمها بعد تعقيمها بالكحول؟

3) هل تستخدمها لمريض واحد ولا تسترجعها؟

- هل تملك أدوات و dental contra للاستعمال لمرة واحدة في حال كان المريض مصاب بمرض خطير معدي مثل ال AIDS؟

1) نعم 2) لا

- إذا إستخدمت جزء من ال Carpule أثناء تخدير المريض، ماذا تفعل ببقية ال Carpule؟ هل تستخدمها لمريض اخر؟

1) نعم 2) لا

Patient questionnaire

Age

- 15-30
- 31-45
- 46-60
- > 61

Gender

- Male
- Female

Are you suffering from any infectious diseases?

1 (Yes 2) No

Do you provide your doctor with your medical history accurately, accurately, and transparently?

1 (Yes 2) No

Have you received the HBV-B vaccine?

1) Yes 2) No

Do you have information about how infectious diseases are transmitted within dental clinics?

1 (Yes 2) No

Has the COVID-19 experience increased your awareness of combating the transmission of infectious diseases within dental clinics?

1) Yes 2) No

Would you ask your doctor to change the instruments they intend to use on you if you see blood on them or suspect they were used by a previous patient and were not sterilized?

1 (Yes 2) No

Do you ask your doctor to use gloves and a mask if they are not used?

1 (Yes 2) No

Are you willing to change your doctor if you do not feel clean and properly sterilized in their office?

1) Yes 2) No

Arabic virgin

إستبيان خاص بالمريض

العمر:

1) 15 – 30 2) 31 – 45 3) 46 – 60 4) 61<

الجنس:

1) ذكر 2) انثى

هل أنت مريض بأي مرض معدي ؟

1) نعم 2) لا

هل تخبر الطبيب بتاريخك الطبي بشكل صحيح و دقيق و شفاف ؟

1) نعم 2) لا

هل أخذت لقاح ال HBV–B ؟

1) نعم 2) لا

هل لديك معلومات عن كيفية انتقال الامراض المعدية داخل عيادات الاسنان؟

1) نعم 2) لا

هل أضافت لك تجربة الكورونا مزيدا من الوعي في مكافحة نقل الامراض المعدية في عيادات الاسنان؟

1) نعم 2) لا

هل تطلب من الطبيب تغيير الادوات التي ينوي استخدامها عليك في حال رؤيتك لدماء عليها او شكك بأنها مستعملة لمريض قبلك ولم يتم تعقيمها؟

1) نعم 2) لا

هل تطلب من الطبيب استخدام ال gloves and mask في حال عدم استخدامها لها؟

1) نعم 2) لا

هل أنت مستعد لتغيير طبيبك في حال لم تشعر بالنظافة و التعقيم الجيد في عيادته؟

1) نعم 2) لا

جامعة النجاح الوطنية
كلية الدراسات العليا

تقييم سوء الممارسة في طب الأسنان وعلاقته بانتقال الأمراض المعدية: دراسة مقطعية في محافظة نابلس

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إشراف
أ. د. حمزة الزبدي

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

2025

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الملخص

الخلفية: تشكل الأمراض المعدية مخاطر صحية كبيرة على مستوى العالم، وعيادات الأسنان ليست مستثناة من هذه التحديات. لا تزال الممارسات غير الكافية لمكافحة العدوى تشكل مخاطر صحية كبيرة. تهدف هذه الدراسة إلى التعرف على الممارسات الخاطئة داخل عيادات طب الأسنان في مدينة نابلس.

المنهجية: تم استخدام تصميم بحث مقطعي في الدراسة الحالية على 90 طبيب أسنان و150 مريضًا، الذين زاروا العيادات في مارس 2024، وكانت تقنية أخذ العينات ملائمة، وتم جمع البيانات باستخدام استبيان. كما أجريت الدراسة في جميع عيادات الأسنان في مدينة نابلس.

النتائج: أشارت النتائج إلى أن (84.4%) من أطباء الأسنان تلقوا لقاح التهاب الكبد الوبائي ب. كما تم اختبار 73.3% من أطباء الأسنان بحثًا عن التهاب الكبد الوبائي (ب) أو فيروس نقص المناعة البشرية (HIV). 10.0% من المشاركين قاموا بمراقبة صحة الموظفين والتأكد من عدم وجود أي عدوى. 97.8% من أطباء الأسنان يرتدون أقنعة الوجه أثناء العمل. 35.6% من الأطباء يغيرون أقنعة الوجه عند علاج كل مريض. وأشار 92.2% من أطباء الأسنان إلى أنهم يرتدون القفازات أثناء إجراءات العلاج. 91.1% من أطباء الأسنان يغيرون القفازات. 23.3% فقط من أطباء الأسنان استخدموا أدوات حماية العين أو الوجه. بينما أشار (76.7%) إلى عدم استخدام أدوات حماية العين أو الوجه. وأعاد 75.6% من أطباء الأسنان استخدام الكاربولة على مريض آخر، بينما 24.4% فقط يتخلصون من الخرطوشة بعد استخدام

واحد. كما أشارت النتائج إلى أن 66.0% من المرضى لديهم معرفة ووعي بالممارسات الطبية في عيادات الأسنان.

الاستنتاجات: تسلط النتائج الضوء على مدى أهمية تحسين التدريب، وفرض إرشادات أكثر صرامة لمكافحة العدوى، وإجراء مراقبة روتينية من أجل الحد من هذه المخاطر. من أجل رفع معايير مكافحة العدوى وضمان سلامة المرضى في عيادات طب الأسنان في نابلس، يمكن لواضعي السياسات والمتخصصين في الرعاية الصحية تنفيذ التوصيات العملية الواردة في هذه الدراسة.

الكلمات المفتاحية: الممارسات الخاطئة، فيروس التهاب الكبد B، معدات الوقاية الشخصية، فيروس نقص المناعة البشرية، أطباء الأسنان، المرضى، عيادات الأسنان، نابلس.