Trends in dental visits during the COVID-19 Pandemic in military dental clinics: A Retrospective Study

ABSTRACT

The COVID-19 pandemic has significantly impacted medical practices, necessitating adaptations in dental clinics. This study examines pandemic-induced changes in patient utilization of dental services to help practitioners respond effectively to future public health crises. Understanding these trends can inform healthcare planning. Dentists face high risks of infection, creating challenges in balancing dental care, particularly preventive and non-urgent procedures, with exposure prevention. This study assessed the impact of COVID-19 on monthly appointments at military dental clinics in Israel, comparing pre-pandemic data with different waves of the outbreak.

Data on patient visits from January 2020 to December 2021 were analyzed using descriptive statistics. During the pandemic's peak, monthly emergency dental visits declined as COVID-19 cases rose, likely due to government prevention measures. Over time, as lockdowns eased and perceptions of infection risks changed, dental visits increased. By the end of the first wave, visit numbers returned to pre-pandemic levels. Despite this recovery, prioritizing preventive and restorative treatments is crucial for maintaining oral health. Future crises require meticulous planning, clear guidelines, and proper regulation of dental care to ensure efficient practitioner response and continued patient access to essential services.

Keywords: COVID-19, dental visits, pandemic response, healthcare adaptation

Statistical Analysis

We conducted statistical analysis using SPSS 23 statistical software. The patients were divided into five groups, including:

1. Wave 1 (March 2020- April 2020)
2. Wave 2 (June 2020- October 2020)
3. Wave 3 (December 2020- February 2021)
4. Wave 4 (June 2021- October 2021)
5. No COVID period (between the waves).

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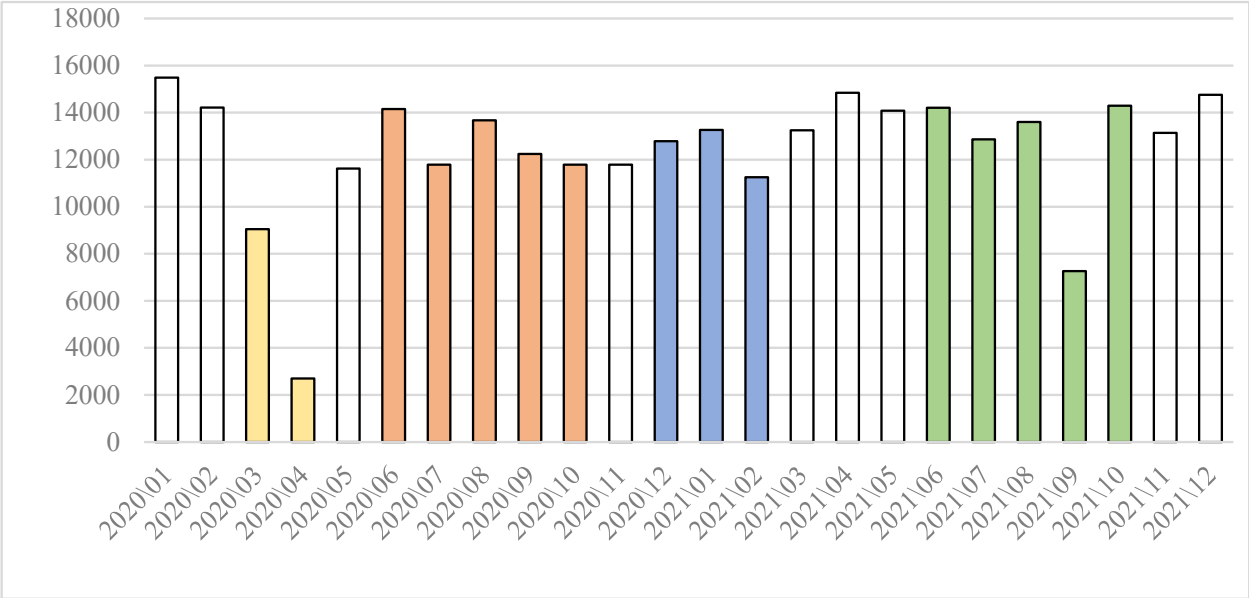

Figure 1 - monthly patient visits to the military dental clinic during non-pandemic (wave 0) and pandemic periods (waves 1-4).

WAVE	Mean	N	Std. Deviation
.00	13845.4444	9	1169.49424
1.00	5878.5000	2	4489.42095
2.00	12485.8000	5	1451.55389
3.00	12438.0000	3	1053.08689
4.00	12449.8000	5	2952.36951
Total	12431.5833	24	2801.41197

Table 1 - average monthly patient visits to the military dental during pandemic periods (waves 1-4) and non-pandemic (wave 0).

Introduction

The World Health Organization (WHO) published an updatable COVID-19 interactive timeline that confirmed the viral pneumonia outbreak at the end of December 2019 in Wuhan, China [1]. The WHO declared a COVID-19 global pandemic on 11 March 2020, when millions of people were globally infected with the SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) virus [2]. In Israel, the first coronavirus-infected case was reported on 21 February 2020, and as of 15 January 2022, there were 1.72 million infected individuals and 8,298 deaths confirmed [3,4,5]. As the cases increased, the Israeli government and the MOH (Ministry of Health) declared a national emergency on 11 March 2020, enforcing various restrictions such as social distancing, closure of flights, and limitations on health services, except for emergencies, including dental clinics [6]. These measures caused substantial health impacts and negatively affected dental care.

As dentists work in close contact with patients, initial

studies have shown potential increasing risks related to dental practice, both for dental staff and patients [2, 3]. The transmission of SARS-CoV-2 is mainly due to inhalation or direct contact with contaminated fluids, including saliva droplets. This pathogen can also survive on solid surfaces exposed to contaminated fluids [4–7].

To reduce the risk of contamination in dental practice, in April 2020, the American Dental Association (ADA) and the Centers for Disease Control and Prevention (CDC) recommended that dental healthcare professionals (DHCPs) conduct only urgent and emergency procedures, avoiding any routine dental care that could generate aerosols [8].

All Dental clinics (private, public and military) stopped their activities on 11 March 2020. In the first months of the pandemic, military Dental Clinics limited their activities to nondeferrable emergency care, as did many dental clinics worldwide. After that period, all elective dental treatment procedures were performed for all patients with no suspicion or symptoms of COVID-19 infection. Many clinics stopped or reduced the number of appointments due to scarce personal protective equipment (PPE) availability and adapted to the facilities and protocols [9–11], increasing the number of dental emergencies [12]. But as time went by, the changes suggested by health and professional agencies enabled anticipation of the risks of incoming waves and their seasonality. Biosafety measures in dental offices have been repeatedly revised to protect patients and healthcare workers. Dentists have changed their behavior and adapted their workflows.

In Israel, there were several lockdowns, and a large percentage of the population was vaccinated after the introduction of the vaccine. Although dentistry is essential healthcare, it was difficult at the beginning of the pandemic to find a balance between dental care, especially preventive and other non-urgent dental procedures, and prevention of potential exposure to SARS-CoV-2 infection.

The aim of the present study was to assess the influence of the COVID-19 pandemic on the number of appointments per month at the military Dental Clinics in Israel and to compare it before COVID and during the different waves of the pandemic.

Materials and Methods

This retrospective observational study utilized open data provided by the military dental clinics throughout Israel on a monthly report basis, spanning from January 2020 to December 2021. A total of 298,358 patients were seen at the IDF military Dental Clinic between January 2020 and April 2022.

Results

The study analyzed the impact of the COVID-19 pandemic on the number of dental visits at military dental clinics in Israel. The data set included 298,358 dental visits from January 2020 to December 2021. The study divided the data into five groups, which were based on the waves of the pandemic and a non-COVID period. The first state of emergency, from March to April 2020, saw a 31% and 81.7% decrease in the number of monthly dental visits compared to the corresponding months in 2021. However, during the second, third, and fourth state of emergencies, the number of monthly dental claims returned to normal, except for a slight decrease in September 2021 before a rapid increase.

Discussion

COVID-19 is caused by a coronavirus similar to the SARS virus that circulated in 2003. The virus can spread through saliva, bodily fluids, and airborne droplets when people cough or sneeze, which is the primary route of transmission. Since dental treatment can produce considerable saliva splatter from the patient, it carries a high risk of virus transmission. Several dental practice guidelines have been published since the outbreak of COVID-19, and initially, the suspension of non-emergency dental treatment while providing only emergency dental services was recommended.

During the outbreak period of COVID-19, the number of monthly oral emergency visits decreased as the number of confirmed COVID-19 cases increased. This might be due to the government's implementation of prevention and control measures, such as limiting traffic during the epidemic, which reduced participation in outdoor activities, various sports, and group activities, including visits to hospitals for non-urgent reasons. Additionally, the decrease in the use of various forms

of transportation might have reduced traffic accidents, including those resulting in oral and maxillofacial damage. Sun's questionnaire study results revealed that a considerable percentage of patients thought that the dental environment was more dangerous, and there was a higher risk of infection in dental environments than in other medical departments or places (12); therefore, the number of dental visits was reduced. Moreover, the number of dental visits gradually increased after the pandemic was effectively controlled.

As time went by with the lifting of lockdown measures and changes in the understanding of infection risk at dental visits, an increasing number of people visited the military dental clinics.

Conclusions

This study showed a return of the military dental clinics to its original function after only three months since the outbreak of the pandemic in Israel. There was an inverse relationship between daily visits and daily confirmed COVID-19 cases in Israel during the first 3 months of the pandemic. This occurred due to the public concern from exposure to the virus and the limitations on health services.

health authorities should designate prevention strategies with consultation to military dental professionals. the changes suggested by health and professional agencies after the first wave enabled anticipation of the risks of incoming waves and their seasonality. Biosafety measures in dental offices have been repeatedly revised to protect patients and healthcare workers. Military Dentists have changed their behavior and adapted their workflows.

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