



The Effect of COVID 19 Pandemic on Clinical Practices and Education in Cukurova University Faculty of Dentistry

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Abstract

Purpose: The aim of this study was to evaluate the strategy of Cukurova University Faculty of Dentistry in clinical management and education during COVID 19 pandemic and report the effects of the coronavirus outbreak that affected the whole world.

Methods: The number of patients, income and expenditure rates were compared between March–November 2019 and March–November 2020. The effect of COVID 19 pandemic on education was evaluated by comparing the preclinical and clinical course methods and assessment–evaluation methods before and during the pandemic period. Comparisons were made considering the theoretical and the practical training, feedback and student evaluation methods.

Results: The number of patients and income levels in March 2020 was approximately 50% of the income in March 2019. A dramatic decrease was observed in the number of patients and income–expense levels in April and May. Although normalization has started by October 2020, clinics have been working with a performance of approximately 40% compared to 2019. Cukurova University Faculty of Dentistry does the online dental training using Microsoft Teams. Practical applications are thought using videos and photographs. Feedback is important in practical training. For this reason, students are asked to prepare a powerpoint presentation with pictures taken in a pre–determined format and submit the presentation through the software. The lecturer gives feedback using the Microsoft Teams program. Online exams (multiple choice, structured open ended or oral) are conducted using the same software.

Conclusion: Cukurova University, Faculty of Dentistry is affected by COVID 19 pandemic. However, the minimal impact of COVID 19 pandemic has been targeted. Therefore, the effective clinical arrangements and rapid adaptation to the distance learning was needed. Pandemic gave us a new vision for dental practices which will be used in the post pandemic period and help us reconsider our previous working habits.

Key words: COVID 19; Cukurova University Faculty of Dentistry; dental clinic; dental education

Introduction

In December 2019, the disease caused by the severe acute respiratory syndrome coronavirus–2 (SARS–COV–2) virus in Wuhan, China, was named coronavirus disease 2019 (COVID–19) by the World Health Organization. It was declared a pandemic by the World Health Organization (WHO) because it was seen in more than 110 countries and affected the densely populated regions of the World.¹ On March 11 2020, the first COVID 19 case was seen in our country.

Coronaviruses are single stranded, enveloped, rapidly mutating RNA viruses.² The most common symptoms of COVID–

19 infectious disease are fever, dry cough and myalgia. Shortness of breath, fatigue, muscle pain, confusion, headache, sore throat, loss of smell and taste sense, diarrhea and vomiting are also seen in some patients.^{3,4}

The diagnosis of COVID–19 can be accurately made by evaluating clinical symptoms (such as fever and nausea) and laboratory tests (CT findings and reverse transcriptase polymerase chain reaction [RT–PCR] on respiratory tract samples).^{2,5} It has been found that people infected with the virus have COVID–19 virus in their saliva.⁶ During COVID–19 pandemic, the measures to be taken in dental clinics are of great importance to



prevent the risk of cross-infection between patients and dentists and to control the pandemic. Oral and dental health professionals should know the ways of COVID-19 transmission and take precautions.⁷

Dentists, assistants and patients can be exposed to COVID-19 virus found in the oral cavity and respiratory tract during dental treatments and can also act as hosts. COVID-19 enters the cell through the angiotensin-converting enzyme-2 (ACE-2) cell receptor. Cells with ACE-2 receptors are found in the oral mucosa, tongue dorsum, tongue base and mouth floor, salivary gland ducts, lungs and respiratory tract.⁸ Therefore, the oral cavity, where ACE-2 + cells are concentrated, becomes a high-risk area for COVID-19 transmission.⁷

The aim of this study was to evaluate the strategy of Cukurova University Faculty of Dentistry in clinical management and education during COVID 19 pandemic and report the effects of the coronavirus outbreak that affected the whole world.

Methods

With the occurrence of COVID 19 cases in our country, routine dental practice services were immediately terminated in our faculty clinics. Shift charts were created for the lecturers, assistants, nurses, and oral and dental health technicians. Staff were teamed to work in the pandemic dental clinic. Each team consisted a dentist from each department. In the pandemic dental clinic, these employees were planned to work half a day and shift once in approximately 10 days. In this way, the faculty management provided the staff to reduce the risk of COVID 19 transmission in the clinics and minimize the contact between the employees.

Patients filled the "Possible COVID 19 case inquiry guide for outpatients" forms. Patients were admitted to the clinic according to the information provided in the forms. Starting on March 23, 2020, only emergent dental practices (determined by the decisions of the scientific advisory board of the Ministry of Health) were carried out in the pandemic dental clinic.

The isolation of each of our dental units in our clinics was provided for routine dentistry services in our faculty. Patients were accepted in the clinic, with social distance rules and dental units not facing each other or side by side. In our faculty clinics, the clinics were disinfected by creating an aerosol mist with fine spray technique using cold fogging devices Ultra Low Volume. In addition, since most of the dental procedures create aerosol, an extraoral suction device was placed in the dental units. Routine dental treatment procedures were initiated in our clinics only after all required health standards were established.

The number of patients, income and expenditure rates were compared between March–November 2019 and March–November 2020, with the permission of the Dean's Office of Cukurova University, Faculty of Dentistry (number E-42498749-622.03). The effects of COVID 19 pandemic on education was evaluated by comparing the preclinical (theoretical and practical) and clinical course application methods, assessment-evaluation methods before and during the pandemic period. Comparisons were made considering the theoretical and practical training, feedback and student evaluation methods.

Results

COVID 19 pandemic period income–expense and the number of patients applying to Cukurova University Faculty of Dentistry clinics are presented in Table 1 in comparison with 2019. Our

Table 1. Number of patients, income and expenditure rates

2020/2019	Number of patients	Income	Expenditure
March	52/100	48/100	78/100
April	2/100	4/100	0/100
May	4/100	2/100	4/100
June	21/100	7/100	17/100
July	20/100	6/100	11/100
August	32/100	22/100	50/100
September	18/100	15/100	21/100
October	37/100	29/100	63/100
November	38/100	41/100	41/100

faculty switched its theoretical and practical courses to distance learning process by using Microsoft Teams program infrastructure. Demonstration videos were created for preclinical applications during the pandemic period. And these videos were shared with the students via Microsoft Teams program. In the 2020–2021 academic year, only 5th grade students were allowed to perform clinical applications. 5th grade students were divided into subgroups, taking into account the social distance during the clinical applications.

Discussion

Bioaerosols formed during dental applications have very small particle diameters. For this reason, contact of aerosols with oral, nasal and eye mucous membranes of physicians and dental assistants were prevented by using appropriate personal protective equipment. Miller stated that 15–83% of aerosol particles varying between 0.06–2.5 μm pass through the filters of the surgical masks.⁹ Using standard medical masks during dental practices is not enough to prevent COVID-19 transmission. For this reason, dentists and auxiliary staff use masks with smaller pore diameters during dental treatments. The use of masks that cover only the mouth and nose areas is not sufficient. It is necessary to use shields that cover the eye areas and to use surgical caps that cover the hair.⁷ In their clinics, physicians and auxiliary staff pay maximum attention to minimize contamination during the clinical study.

When Table 1 is examined, it is seen that the number of patients and income levels of our faculty during the March 2020 period was approximately 50%, since COVID 19 pandemic was declared on March 11, 2020. It is observed that there is a dra-

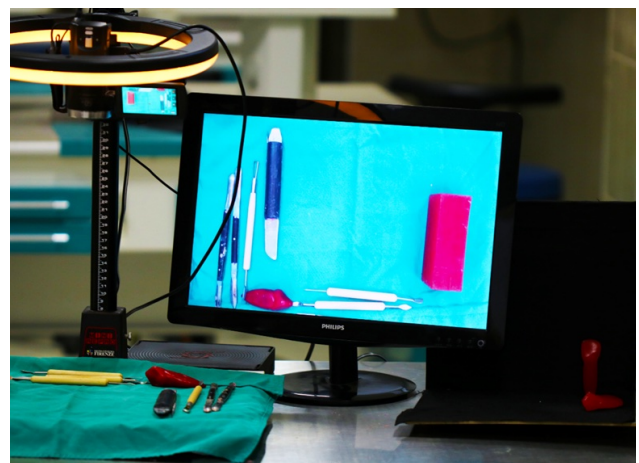


Figure 1. Photo and video recording setups used in preclinical education applications

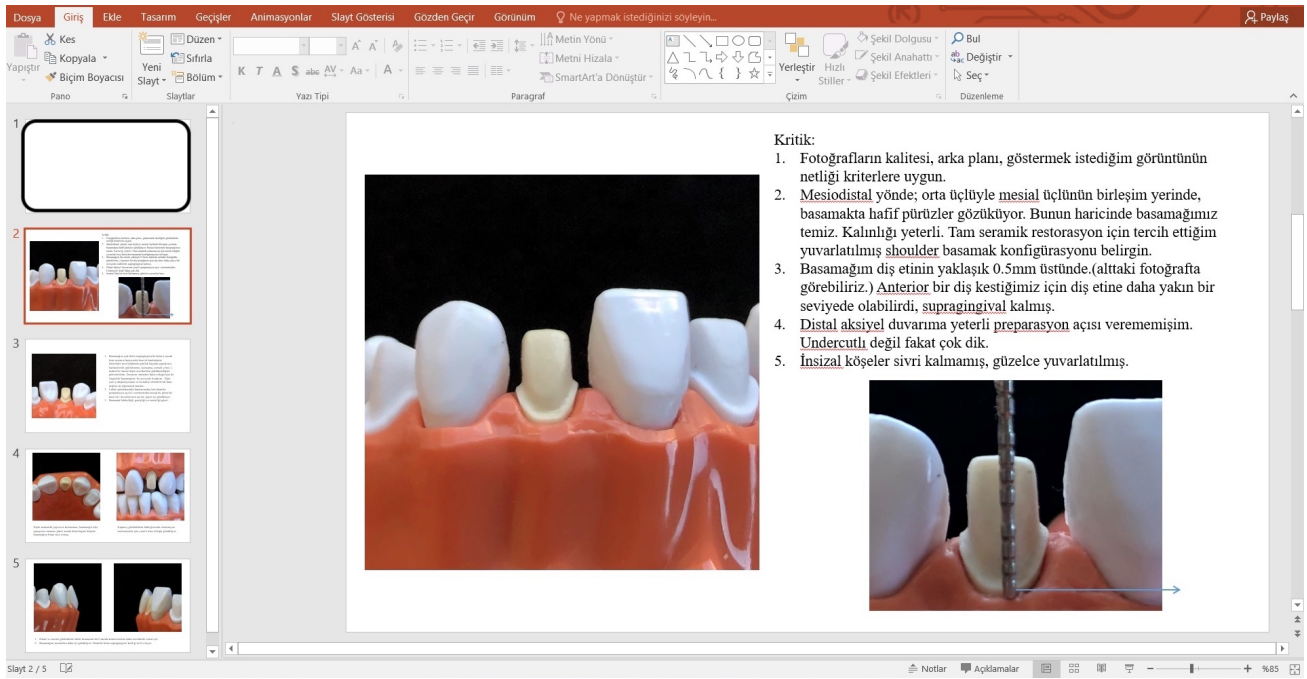


Figure 2. Feedback powerpoint presentation of practical applications

matic decrease in the number of patients and income–expense levels in April and May 2020.

It can be seen from Table 1 that the number of patients and income–expenditure rates in June–September 2020 are around 20% compared to the previous year, since our departments switched from the pandemic clinic to their own clinics in that period while routine dental treatment procedures could not be performed, yet. In our clinics, during routine dental treatment practices, social distance rules and unit disinfection times are considered. Therefore, when the number of patients and income–expense ratios are compared with the previous year, it is seen that the clinical performance is approximately 40%.

With the announcement of COVID 19 pandemic by the World Health Organization, education was suspended. It has been announced by the Higher Education Council of Turkey that as of March 23, 2020, the distance education process will begin with digital facilities in all universities considering the distance education capacity. Cukurova University Faculty of Dentistry switched its theoretical and practical lessons to distance education using Microsoft Teams program infrastructure.

Dental training in Turkey is a 5-year program, where students are enrolled to preclinical courses during the first 3 years, followed by a 2-year clinical program. Some of the preclinical courses include practical applications as well. Students are required to do a certain number of practical assignments like tooth preparation and impression making. During the face-to-face courses students were able to complete the practical work and get some feedback during the practical course time. They were able to get feedback for the work they did out of class time as well. Demonstration videos were created for preclinical courses during the pandemic period (Figure 1) and shared with the students via Microsoft Teams program. Since getting feedback is highly critical for dental training, students are asked to prepare a powerpoint presentation (Figure 2) presenting photographs and videos of the required assignment. The assignments were evaluated and feedback was given on Microsoft Teams.

4th grade students were responsible for conducting clinical applications. However, they are not permitted to do practical work during the pandemic. Therefore, practical applications

are made for these students by sharing videos of the clinical applications. In the 2020–2021 academic year, only 5th grade students were allowed to perform clinical applications by dividing the students into subgroups, taking into account the social distance in the clinic for clinical applications. The 5th grade dental students experienced how to work under pandemic conditions and learn patient management during the pandemic period. Thus, it was ensured that they provide routine dental treatment services.

Conclusion

Cukurova University, Faculty of Dentistry is affected by COVID 19 pandemic. However, the minimal impact of COVID 19 pandemic has been targeted. Therefore, effective clinical arrangements and rapid adaptation to the distance learning was needed. Pandemic gave us a new vision for dental practices which will be used in the post pandemic period and help us reconsider our previous working habits. In addition, the experience we gained during pandemic will guide the preclinical and clinical dental education during the post–pandemic period.

Author Contributions

Koray Soygun: Designed the study, Reviewed literature, wrote manuscript. Yurdanur Uçar: Contributed substantially to discussion

Conflict of Interest

Authors declare that they have no conflict of interest.

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