

Evaluation of dental emergency during the COVID-19 pandemic in the Social Rehabilitation Centre of San Francisco Kobén (Campeche, Mexico)

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ABSTRACT

Introduction: During the COVID-19 pandemic, access to dental treatment by persons deprived of their liberty (PPL) was affected due to dentist-patient proximity and the risk of generation of aerosols in dental procedures and treatments. The risks of infection for oral health personnel are considered high, mainly from cross-infection between patients.

Objectives: Differentiate between a true and false dental consultation emergency during the SARS-CoV-2 outbreak for a better and effective screening of inmates of the Social Rehabilitation Center (CERESO) of San Francisco Kobén (Campeche, Mexico).

Material and method: An observational, cross-sectional, descriptive, and prospective study was designed for a sample of 100 inmates of the CERESO San Francisco Kobén, the data was collected in the prison's dental office, the participants signed a letter of informed consent to be voluntarily included in the study during the SARS-CoV-2 outbreak. The questionnaire "Assessment of a true Dental Emergency" previously validated for the Mexican population was applied, the personnel was standardized and an intra-examiner and inter-examiner reliability of $k = 0.98$ was obtained. To prepare the database and the analysis of the information collected, the Statistical Package for Social Science v. 21 (SPSS v.21) was used.

Results: When evaluating emergencies at the dental clinic, 84% were determined according to the instrument as a false emergency and 16% were a true emergency.

Discussion: In the population of CERESO of San Francisco Kobén, the figures for medical-dental care show that inmates face a proportionally low dental morbidity-mortality.

Key words: medical emergency; SARS-CoV-2; dentistry; prisons.

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INTRODUCTION

Figures for the medical and dental care of the population of the Francisco Kobén Social Rehabilitation Centre (CERESO) showed that the inmates face a proportionally lower rate of dental morbidity and mortality when compared to the data provided by the World Health Organisation (WHO)¹ and the official data of Campeche State². This is probably due to greater access to healthcare, given that there are little or no limitations on conventional dental, medical and mental healthcare provisions thanks to the presence of a clinic inside the centre supported by the State and Federation, while members of the general public are obliged to attend a clinic.

Inmates are entitled to comprehensive healthcare, which constitutes one of the responsibilities of the State, from the moment they enter prison³.

Inmates of the CERESO – with or without mental disorders –, receive high quality preventive and corrective medical and dental care linked to social rehabilitation during imprisonment. The Francisco Kobén Social Rehabilitation Centre offers a medical and dental care programme, supported by the department of special programmes of the Secretary of State for Health, which offers access to the service for all inmates. As soon as they enter the centre, they undergo an initial assessment, after which the patient is informed about his/her medical-dental health and is shown intraoral images used as content for education on dental health (preventive activities). The images also enable us to create additional evidence to complement diagnosis and prepare an adequate treatment plan.

The State and the Federation are committed to offering an effective response to inmates' health problems, given that many of these persons rarely make use of traditional public health resources once they are released.

It is our obligation as health professionals to educate inmates and their families about prevention, diagnosis and treatment, to do away with social myths and panic related to newly emerging diseases such as SARS-CoV-2 (COVID-19)⁴ and provide adequate dental care through effective screening in prisons.

The dental health services progressively adapted to the COVID-19 pandemic. The SARS-CoV-2 virus severely disrupted dental procedures around the world. The risks of infection to dental care personnel and cross infection between patients and any person in the dental care setting were high during this period of the pandemic, due to the close proximity of the dentist and patient and the generation of aerosols

created during commonly used procedures and treatments^{5,6}.

Almost all dental procedures involve a high risk of infection for dentists and patients due to the propagation of aerosols. As a result, public health agencies issued guidelines to improve the control of infection, the use of personal protective equipment and limited care provision to the emergency services⁷.

This article arose from the need for scientific evidence that would support dental health personnel in prisons, given that at the most critical moments of the pandemic there were inmates who filed legal remedies for dental care considered by the health personnel themselves to be basic and not urgent, placing the health of the personnel and their families at risk for not respecting the medical-dental criteria for a real dental emergency.

Therefore, distinctions were made between a false and real dental emergency during the SARS-CoV-2 outbreak for an improved and effective screening of inmates at the San Francisco Kobén CERESO.

MATERIALS AND METHODS

We designed an observational descriptive, cross-sectional and prospective study for a sample of 100 inmates of the San Francisco Kobén CERESO. The data was gathered at the prison dental clinic, the male and female participants signed an informed consent letter^{8,9} for voluntary inclusion in the study during the SARS-CoV-2 outbreak from February to October 2020.

A previously validated version of the “Assessment of a True Dental Emergency”¹⁰ questionnaire was used. A pilot test was also used to assess the validity of the measurements, which were found to be highly feasible for application to a Mexican population. The Cohen kappa coefficient was used to assess inter-examiner and extra-examiner reliability, giving a reliability of $k = 0.98$.

All the inmates who went to the clinic to ask for the dental service were included, whole all those who requested other medical services were excluded.

After undergoing triage, all the inmates who went to the San Francisco Kobén CERESO, were given the questionnaire and instructions on how to complete it. Each question was read out loud to persons who could not read or write, and the investigator or a nursing auxiliary filled in the questionnaire. All the information gathered was then dumped in a database with the SPSS v.21 software for analysis.

RESULTS

The study included 100 inmates of the San Francisco Kobén CERESO in Campeche, 96% of whom were male and 4% were female, with an average age of 39 years, at a standard deviation of 11.16, with a minimum value of 20 years and a maximum of 77.

Depending on the offence committed, 20% correspond to federal jurisdiction and 80% to common jurisdiction. At the time of the survey, 51% of the inmates had been sentenced and 49% were awaiting a final ruling.

26% of inmates were single, 27% cohabited with a partner, 36% were married, 9% divorced and 2% were widowed.

10% reported that they were illiterate, 26% had completed primary school, 42% had completed secondary education, 16% had a secondary school diploma and 6% were graduates.

91% declared that they consumed drugs, 58% consumed marijuana and 33% cocaine.

As regards oral hygiene, 42% of inmates reported that they brushed their teeth three times a day, 52% twice a day, 5% once and just 1% stated that they brushed their teeth four times a day. When examined, 4% of inmates showed good, 69% moderately good and 27% bad oral hygiene.

The oral examination showed the following: 26% presented dental caries; 55% supragingival tartar; 8% coronal fracture; 6%, dental abscess; 1% impacted third molar; 2% occlusal wear; 1% cold sores and 1% edentulism.

The figures for slowly progressing chronic-degenerative diseases showed that 14% of the inmates suffered from the following; 7% presented diabetes, 6%, high cholesterol and 1%, human immunodeficiency virus. All the patients who suffered from these diseases were receiving treatment.

23% of the patients who went to the dental clinic at the CERESO were prescribed drug treatment in accordance with their condition.

Assessment of a real emergency showed the following: 59% of patients who requested treatment presented pain while 41% did not. The figures for inmates with pain showed 8% with mild pain, 20% moderate, 8%, severe, 17% very severe and 6% the worst possible pain.

The average period from when pain started to appear was 8.32 days, and figures showed that 50% of inmates reported between one and five days of pain prior to the appointment. 18% presented abscesses,

of which 6% were pulp infections and 12% were periodontal.

15% of the interviewees presented inflamed gums. Only 4% presented facial inflammation, 1% reported facial inflammation of eight days, the remaining 3% just one day; 16% of inmates presented fever, which in this case was considered to be a temperature of over 37 C. The period when symptoms were present ranged from 1 to 30 days. 28% had difficulties in swallowing solids or fluids.

20% of the participants in the study presented difficulties in opening the mouth (lockjaw); 16% reported previous maxillary or mandibular trauma caused by: being struck with an open hand (4%), being struck with a fist (8%), a blow with a blunt instrument (1%), being kicked (2%) and falling to the floor (1%).

Assessment of emergencies at the dental clinic during the SARS-COV-2 pandemic, 84% were found to be a false emergency, and only 16% were real, according to the results of the survey (Figure 1).

The gender variable distribution showed that 4% of the women and 80% of the man reported a false emergency. 16% of male cases were real emergencies (Figure 2).

The inmates who were studied and reported a real emergency at the clinic showed the following: 6% belonged 20-31 year old age group; 5% were 32-41 years old; 3% were 42-51 and 2% formed part of the 52-77 year old group (Figure 3).

DISCUSSION

Studies of COVID-19 in odontology, especially in prisons are very rare, if we consider its impact on global health and the economy, given that the disease is a new one (Coronaviridae Study Group of the International Committee on Taxonomy of Viruses)¹¹.

What studies there are lack homogeneity, randomness and repetition, which makes it difficult to come to decisions about the focuses and actions that are most appropriate for controlling disease transmission and limiting the potential consequences, which means that the articles that have been recently published have gaps and questions that can confuse dentists, especially those who work in general practice (with no speciality). This may be due to the fact that the articles that are published are specific to each dental speciality and are individual in nature¹².

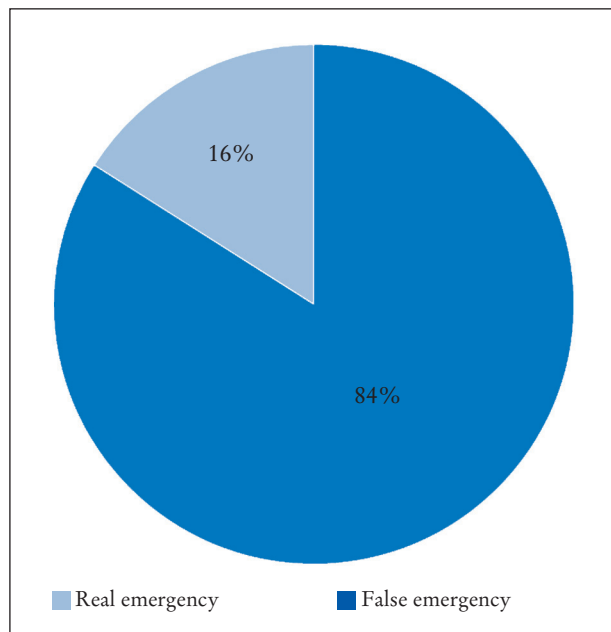


Figure 1. Urgent dental consultation during the COVID-19 pandemic.

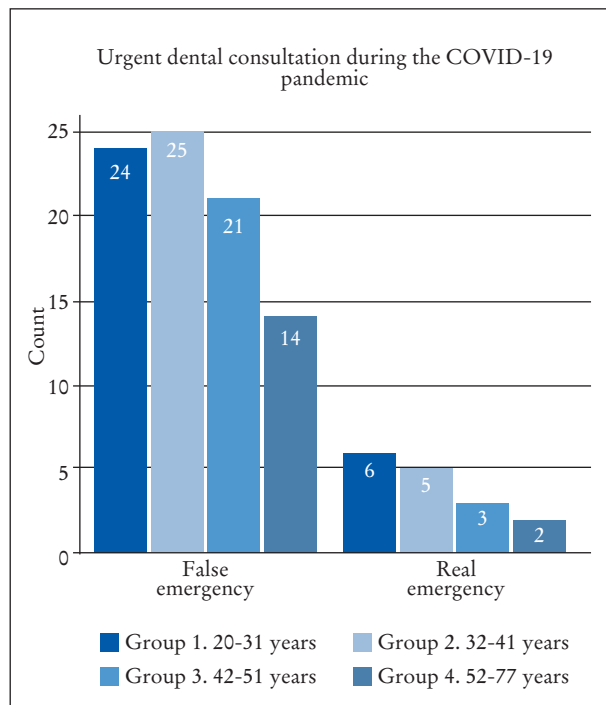


Figure 3. Distribution of dental emergency consultations according to age groups.

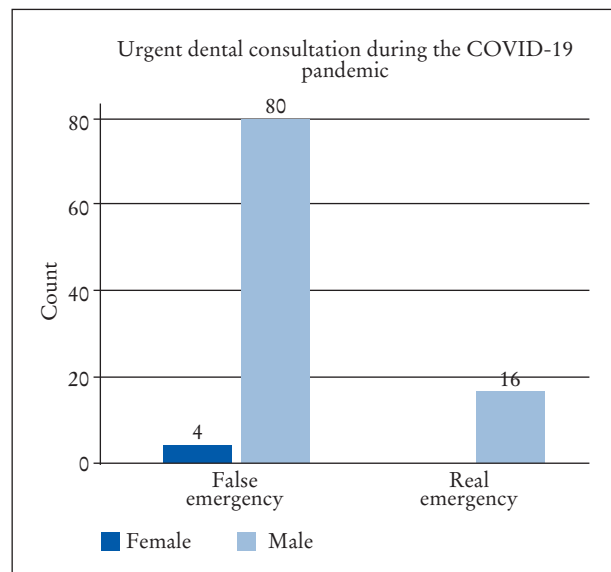


Figure 2. Distribution of dental emergency and gender variables.

Before carrying out any kind of emergency dental care, the professional involved needs to be aware of the evolution of the pandemic in their area in order to provide effective care. Training of support staff on the importance of precautions and self-care is also recommended. The training should bring together concepts and improve preventive measures that help

to improve dental care while mitigating the spread of this new virus¹³.

Professional public health measures in each country are dynamic; some countries can go as far as to block all dental care while other countries may not. Given the large amount of literature on the possible transmission of the virus in asymptomatic patients^{14,15}, all patients should be treated as potentially infected and all dental practices should include adequate disinfection and control protocols.

Many contexts of dental healthcare, such as mobile dental services for schools, remote communities, residences for the elderly, prisons, refuges for the homeless and refugee camps, and dental services in low-resource settings where lack of supplies is a constant challenge, make protective measures almost impossible. The risks of infectious aerosols are the basic factors behind all the changes made to current dental healthcare practice. This may mean the end of dentistry as we currently know it. At this stage of the pandemic, dentistry needs a concept of ongoing dental services that go as far as possible to avoid procedures that might lead to the production of infectious aerosols.

Current evidence indicates three possible main routes of transmission of the virus in dental care

settings: direct transmission from inhaling the virus via coughing, sneezing or droplets; via ocular, nasal and oral mucous membranes and via contaminated surfaces¹⁶.

All these routes of transmission are made easier and possibly amplified by aerosols created in a wide range of dental procedures^{17,18}.

The Occupational Safety and Health Administration (OSHA) considers that working environments where aerosols can be produced create a high or very high risk of infection from COVID-19¹⁹.

The first experiences in dental care in China during the COVID-19 pandemic were instructive and revealing: they took swift and daring measures to contain the pandemic, including limited emergency services at a tertiary care centre offered under highly stringent precautions²⁰.

The UK and other countries also established emergency care centres specialising in dental treatment^{21,22}.

However, the level of service infrastructure and provision was insufficient for general dental practice or training programmes in oral health in the USA or other parts of the world.

The situations in developing countries are different from those in the first world. Today we know that the dental services of many countries with economic difficulties faced the challenge of a massive outbreak with general dental clinics, which normally (pre-pandemic) carried out all types of treatments ranging from sealants to tooth extraction. Now there is sufficient knowledge of which treatments should be carried out during a pandemic and which should not.

The inmates at our prison received optimal medical, dental and psychiatric care during their incarceration, with or without signs of any orofacial disorder, prior to their social rehabilitation, thanks to the existence of a medical, dental and mental healthcare programme, backed up by the department of special programmes of the Secretary of State for Health. Such programmes enable all inmates to have access to services from the moment they enter prison, to receive a comprehensive medical, psychological and dental assessment, and be informed about their general and dental health status. Clinical evidence is used to offer information about orofacial problems, and clinical evidence is generated from intraoral images to draw up and complete the diagnosis, prepare and adequate treatment plan that backs up a dental health education and welfare programme.

The fact that inmates are incarcerated enables dental care to be regularly and constantly maintained, including primary care services for oral health, via programmed appointments that enable health professionals to offer organised medical and dental care to every inmate.

The first short-term benefit is the acquisition of better oral health habits, while also enabling the provision of basic and necessary dental procedures geared towards recovering oral health. In the mid-term, once the inmate's dental health has been improved, the next stage is to motivate and supervise inmates to enable them to control their own oral health. Finally, in the long-term inmates can enjoy the benefits of good oral health and care for their teeth, which may in turn make their period of incarceration more bearable and enable them to more effectively reintegrate into society, with the corresponding impact on their emotional, economic and social status.

However, the pandemic caused by the SARS-CoV-2 virus made it necessary to modify medical and dental care and, in accordance with the recommendations of the WHO and the Secretary of State for Health, hospitals were converted into centres for COVID-19, and the CERESO was no exception to this rule.

The work of prison health professionals is to guarantee a level of health for inmates that matches that of members of the community, and the willingness of these professionals is not enough to bring about this end is not enough, a commitment on the part of administrative and political authorities is also required²³.

To sum up, a validated version of the *Assessment of a True Dental Emergency* was applied in order to establish priorities for real dental emergencies. By doing so it was possible to delay and reorganise orofacial services without violating inmates' human rights and carry out a real screening process for urgent cases in accordance with the health protocols established by the WHO and the essential oral health services of the Secretary of State for Health, to contribute as much as possible to containing the spread of the SARS-CoV-2 virus in the San Francisco Kobén CERESO.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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