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The Importance of Biosafety in Dentistry and Its Relationship with the Covid-19 Pandemic: A Short Communication



Juliana Campos Pinheiro*¹, Gabriel Gomes da Silva¹, Débora Frota Colares², Igor José de Oliveira Campos¹, Cristiane Kalinne Santos Medeiros¹, Luiz Gustavo Xavier¹, André Azevedo dos Santos¹, Raphael Victor Silva Andrade¹, Eros Ruan de Medeiros¹, Jabes Gennedyr da Cruz Lima¹

¹Federal University of Rio Grande do Norte, Natal, Rio Grande do Norte, Brazil.

²Fortaleza of University, Fortaleza, Ceará, Brazil.

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ABSTRACT

Biosafety involves a set of conducts and technical, administrative, and educational measures that must be employed by health care professionals or the like, to prevent accidents and cross-contamination in biotechnological, hospital, and outpatient clinics. With the increase in the incidence of serious communicable diseases, and more recently, the Covid-19 virus, the need to reflect on such challenges in a systematic way has increased, and the introduction of norms and routines involving assistance and training in Dentistry. The present study aims to emphasize the importance of biosafety in dentistry and its relationship with the Covid-19 pandemic. Dentistry emphasizes that it is necessary to synthesize your clinical routine safely, together with the measures already recommended by the biosafety authorities that must be maintained and strictly followed, including the updates that are constantly produced during the pandemic.

INTRODUCTION:

Biosafety involves a set of conducts and technical, administrative, and educational measures that must be employed by health care professionals or the like, to prevent accidents and cross-contamination in biotechnological, hospital, and outpatient clinics (Pinelli, 2011). As explained by Schroeder (2010), even with technological and scientific advances, infection is still a high risk in medical and dental practices, where microbial control is a complex task involving clinical, microbiological, cultural, socioeconomic aspects, ethical, legal, and political.

In agreement with Ferrari (2001), materials and instruments, as well as dental equipment, can become a vehicle for the indirect transmission of infectious agents, therefore, the personnel responsible for processing dental products must have a clear knowledge of the existing methods for the elimination of microorganisms, to ensure that the items of direct care receive the appropriate procedure to eliminate or reduce the risk of infection. The present study aims to emphasize the importance of biosafety in dentistry and its relationship with the Covid-19 pandemic.

LITERATURE REVIEW:

From the 1980s on, biosafety began to be institutionalized in Brazil, when the country took part in the International Biosafety Training Program provided by WHO, which aimed to establish focal points in Latin America, where from then on, initiation of a series of courses, debates and implementation of measures to accompany technological advances in biosafety (Arantes, 2015).

Currently, this subject has been one of the most discussed and controversial, receiving greater attention from the scientific community, society in general, and the enterprises that have expanded investment in biosafety to achieve considerable improvements in its quality standard (Pinto, 2020; Riatto, 2020).

We can describe Biosafety as a set of studies and procedures that aim to avoid or control the eventual problems raised by biological research or its applications (Cavalcanti, 2020). It is related, according to Arantes (2015), to the preventive behavior of people in different environments, against the risks generated by their activity. According to Pinto (2020), biosafety is a dynamic and balanced process between agent, host, and environment. They are of great

relevance in invasive procedures and high-risk activities for those involved, as in the case of dentistry.

Biosafety began to arouse interest from scientific evidence demonstrating the possibility of cross infections and the improbability of working in a completely sterile environment (Knackfuss, 2010). After the appearance of AIDS, in the early 1980s, health communities were alerted to the real danger of occupational transmission of infectious diseases, starting a strong movement to adopt a program to control cross-infection in health services. (Runnells, 1988).

In dentistry, this practice has become extremely important for both the professional and the patient, since both are exposed to various contaminations, infections, etc. For this reason, in the aforementioned decade, publications also appeared about infection control in dentistry, which alerted the health community about the danger of occupational transmission of infectious agents, forcing this sector to improve the methods of preventing the risk of contamination adopted by patients, dental surgeons, driving greater concern with biosafety (Arantes, 2015).

At this juncture, biosafety patterns have changed significantly to avoid spreading them to patients who had AIDS signs and symptoms and who needed care (Molinari, 2003). The question that arose at that time is the same as that which we are facing today in the pandemic of Covid-19: what to do with patients with the disease? The conclusion was that protection measures should be intensified, from the simplest to the most complex.

Studies on microbial surface contamination have been carried out over several decades showing that significant improvements in infection control procedures have led to a reduction in the level of microbial contamination (Molinari, 2003). As Knackfuss (2010) emphasizes, the prevention of cross-infection in dental offices has been a major challenge for dental surgeons in terms of its control.

The control of the infection of the surfaces leads to a significant reduction in the level of microbial contamination of the same; therefore, changes in the design of the clinic and the equipment, together with the practice of infection control, result in a lower level of bacterial contamination. With the increase in the incidence of serious communicable diseases, and more recently, the Covid-19 virus, the need to reflect on such challenges in a systematic way has

increased, and the introduction of norms and routines involving assistance and training in Dentistry (Silva, 2020).

In this sense, technical standards for Biosafety in dentistry have been developed, encompassing a set of basic behavioral procedures that any health professional, from the dental service, must follow in the course of their daily work in the face of risks to their health and that of the community (Pinelli, 2011). The biosafety technique includes, among others, care for health professionals, handling of materials and instruments, management of the dental environment, use of protective barriers, management of contaminated waste, and basic measures against accidents due to exposure to blood or body fluids (Knackfuss, 2010).

At this juncture, personal protective equipment (PPE) is essential and consists of the use of a set of equipment such as: TNT waterproof disposable cap/cap 30g / m², face shield (face shield), disposable triple surgical mask (type IIR), which must be changed every 4 (four) hours or whenever it is wet, short-sleeved surgical pajamas (to allow correct hand and arm hygiene), disposable apron, specific surgical shoes for use in the clinic (closed, rubberized, waterproof and washable) and thick socks (Pires, 2020).

The face protector, goggles, and waterproof apron (disposable in TNT 40g / m²) on the surgical pajamas reduce the contamination by the respirator. The disposable apron needs to be discarded and changed at each visit (Pires, 2020). Also, measures such as the sterilization of instruments to ensure the elimination of bacteria, spores, and viruses are essential. Sterilization is the process by which all living forms are eliminated from inanimate objects, with which it is possible to destroy the vegetative forms and spores of microorganisms, obtaining as a consequence the antibacterial protection of instruments and materials (Santos, 2020).

According to Knackfuss (2010), biosafety techniques are created so that the best possible achievement is achieved. Therefore, it is necessary not only to design effective and low-cost standards and procedures but also to disseminate and monitor them in their compliance. Therefore, in this pandemic period, studies on biosafety are essential to contribute to the current reality that impacted dental care.

CONCLUSION:

Dentistry emphasizes that it is necessary to synthesize its clinical routine safely, together with the measures already recommended by the biosafety authorities that must be maintained and strictly followed, including the updates that are constantly produced during the pandemic.

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