

Safe practice of audiologists during the SARS-CoV-2 pandemic in Brazil.

Prática segura de audiologistas durante a pandemia de SARS-CoV-2 no Brasil.

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ABSTRACT

Coronavirus disease (COVID-19) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This virus is transmitted mainly by droplets, sneezes and aerosols and can be transmitted even among asymptomatic patients, so there is a risk of transmission during the audiologist's procedures which, in addition, use and reuse clinical equipment in a wide variety of patients. This article aims to describe the steps that can be taken by the audiologist in order to decrease the risk of cross-contamination in clinical practice during the SARS-CoV-2 pandemic in Brazil. During the COVID-19 pandemic, audiologists are recommended to use personal protective equipment including N95 respirators, clinical gloves, disposable shoe covers, face shields or safety glasses, hair covers and disposable aprons, in addition to strictly following biosafety protocols during audiological care.

Keywords: Coronavirus infections; Pandemics; Audiology; COVID-19; Coronavirus; Speech, Language and Hearing Sciences

RESUMO

A doença de coronavírus (COVID-19) é causada pela síndrome respiratória aguda grave coronavírus 2 (SARS-CoV-2). O vírus é transmitido, principalmente, por gotículas, espirros e aerossóis e pode ser transmitido mesmo entre pacientes assintomáticos, havendo risco de contágio durante os procedimentos do audiologista, que utiliza e reutiliza equipamentos clínicos em uma ampla variedade de pacientes. Este artigo teve como objetivo descrever as etapas que podem ser adotadas pelos audiologistas para diminuir o risco de contaminação cruzada na prática clínica, durante a pandemia de SARS-CoV-2. Recomenda-se, portanto, a esses profissionais, o uso de equipamentos de proteção individual, incluindo respiradores N95, luvas de procedimento, protetores para calçados descartáveis, protetores faciais ou óculos de segurança, gorros e aventais descartáveis, além de seguir, rigorosamente, os protocolos de biossegurança durante os cuidados audiológicos.

Palavras-chave: Infecções por coronavírus; Pandemias; Audiologista; COVID-19; Coronavírus; Fonoaudiologia

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There is evidence regarding the person-to-person transmission of the new coronavirus in healthcare settings and between family members⁽¹⁾. The severe acute respiratory syndrome SARS-CoV-2 spreads mainly through sneezing, saliva droplets and aerosols⁽²⁾ and can be transmitted even among asymptomatic patients⁽³⁾. In the current phase of the pandemic, all patients must be considered potentially infected⁽⁴⁾. Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an ongoing global health emergency⁽⁵⁾. Thus, the level of precaution recommended for audiologists depends on the type of procedure that will be performed, regardless of the patient's evidence or suspicion of COVID-19.

In this sense, many audiologists continue to provide assistance to patients, even during the COVID-19 pandemic, and during these procedures, there is a need to use and reuse equipment, such as specula, probes and headphones, in many patients. These procedures present a risk of transmitting SARS-CoV-2 to patients and are a high occupational risk for audiologists.

To date, there are no published articles on the evidence of the audiologist's performance during the COVID-19 pandemic. Therefore, this article aims to provide guidance, based on current scientific evidence, related to infection control so that the audiologist has greater security in patient care during the current SARS-CoV-2 pandemic. Additional guidance may be needed when the conditions of the COVID-19 outbreak change, including information about the virus, its transmission and impacts.

First, audiologists must prioritize the use of personal protective equipment (PPE). The PPE reduces the risk of transmission but does not fully eliminate⁽⁶⁾. Therefore, the audiologists must be trained by the institution in which it is inserted about when, how and which PPE to use, in addition to know guidelines for disposal procedures, disinfection and correct order to place and remove the PPE in an appropriate and safe way, to avoid contamination.

Protection strategies must be implemented, including temperature measurement, appointment by appointment, and avoiding overcrowding in the flow of common areas and waiting rooms, whether in offices or in an outpatient hospital. Current evidence highlights that proximity and contact between susceptible individuals and patients with confirmed cases of COVID-19 (being around 1.8 m, inside the room or in the area near an infected person), increases the risk of contagion from SARS-CoV-2^(7,8).

Infection prevention and control measures must be implemented to prevent or reduce the transmission of microorganisms as much as possible during any health care provided. The following set of recommendations based on the current evidence will certainly evolve as new knowledge is generated:

- It is recommended to wash your hands with soap and water before and after each service and / or to rub your hands with 70% ethanol or 70% isopropanol⁽⁹⁾, before and after audiological procedures. Audiologists should avoid touching their eyes, nose or mouth when their hands are not clean. SARS-CoV can be inactivated easily with many commonly used disinfectants⁽¹⁰⁾. The effectiveness of some disinfectants against the SARS coronavirus has been evaluated, and the authors concluded that, in all tested preparations, SARS-CoV was inactivated below the detection limit (reduction factor mainly ≥ 4). One study shows that rubbing your hands with 70% ethanol or 70%

isopropanol can be effective against enveloped viruses, including SARS-CoV⁽¹¹⁾;

- Personal protective equipment (PPE) should be used, considering that many patients are asymptomatic and, in addition, diagnostic tests are not completely reliable. In fact, there are about 30% false-negative results with the detection of SARS-CoV-2 by reverse transcription-polymerase chain reaction (RT-PCR) of nasopharyngeal swabs^(12,13). Therefore, surgical masks, N95 respirators, procedure gloves, face shields, safety glasses, caps, hair covers, disposable aprons and disposable shoe covers should be used⁽¹⁴⁾. A surgical mask is a disposable PPE that immediately produces physical resistance in the oral and nasal cavity of the user, in addition to likely contamination agents in the environment⁽¹⁵⁾. PPE must be disposed of in appropriate bags immediately after use;
- It is important to consider the cleaning, disinfection and sterilization of surfaces of equipment and non-disposable instruments, such as speculums, probes and headphones, respecting the recommendations and techniques established by the biosafety guidelines for speech therapists, in addition to the use of appropriate PPE⁽⁹⁾. The high risk of contamination in the audiological assessment environment should also be considered, as well as the offices of audiologists and otorhinolaryngologists, as in many cases these places are primarily sought by patients with symptoms. In such cases, the use of more efficient masks, such as the N95, is recommended. So far, with regard to the survival of SARS-CoV-2, it is known that it has greater stability on plastic and stainless steel surfaces where it can be detected after 72 hours, compared with 24 hours on cardboard and 40 minutes to 2 hours and 30 minutes in aerosol form⁽¹⁶⁾;
- Equipment, such as microphones used in logoaudiometry, bone vibrators and wires inside and outside the booths, must be disinfected with isopropyl alcohol. The importance of using the individual disposable protector on the supraural earphone cushions is also highlighted. It is important to maintain an adequate period between consultations to ensure correct cleaning of the structures of the audiologists' service area. Disinfection measures must be effective and rigorous in clinical settings and in the public area. The clinic settings must be cleaned and disinfected according to the protocols established for the management of cleaning and disinfection of medical surfaces published by National Health⁽³⁾. Evidence also suggests that appliances should be frequently cleaned and disinfected, including door handles, chairs and tables⁽³⁾. Knowing that the materials most used in the internal lining of the of the acoustic cabins are foams of the most varied shapes and models, which are difficult to sanitize and easily absorb fungi, bacteria, odors, among others, it is important to cover the internal cabin walls with transparent plastic film. It is important to consider that the coating surface must be disinfected with a paper towel dipped in 70% ethyl alcohol or gel, before and after each patient's care⁽¹⁷⁾;
- A teleconsultation might be planned if it is likely to be useful and if the patient's condition allows it⁽⁴⁾;

- Toys located in the waiting area or used in children's examinations must also be disinfected daily, as children can put them in the mouth, resulting in the presence of saliva on the surfaces of the toy. The evidence suggests that SARS-CoV can be transmitted indirectly by invading some patients through contact of the mucosa with infected surfaces⁽¹⁸⁾. That is, acute respiratory infection can be caused by contact of the mucosa with articles polluted by COVID-19 in non-occupational situations. Currently, the WHO recommends the use of 70% ethyl alcohol to disinfect small surface areas and reusable equipment⁽¹⁹⁾.

It is still unclear about coronavirus hearing disorders in the literature. On the one hand, studies suggest brainstem involvement in coronavirus infection, hence a neuro-auditory problem is possible^(20,21). However, there are reports in the literature about difficulties that hearing impaired patients face in understanding and communicating with the health team that constantly uses PPE⁽²²⁾ because the mask, despite helping to avoid COVID-19, reduces acoustic transmission and prevents lip reading⁽²³⁾.

Finally, in order to control the spread of SARS-CoV-2, an intense effort by health professionals is needed to face the current challenge presented by COVID-19 and help to prepare us better for future pandemics. In addition to these guidelines, audiologists should guidance on how to use PPE properly, consult local health department policies and regularly review their countries' health guidelines, which are relevant to the context in which they operate.

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