

Introduction

In January 2020, The World Health Organization (WHO) officially declared an outbreak of the novel coronavirus, SARS-CoV-2, as a global health emergency. Within a month the status of the COVID-19 virus changed to a global pandemic.

COVID-19 is an emerging pandemic which is viral in nature necessitating research into its impact on the audiological system as COVID-19 has the potential to cause a hearing loss based on known manifestations of other viral infections (Mustafa, 2020).

Viral infections such as cytomegalovirus, rubella, measles, HIV and AIDS are known to cause hearing loss (Cohen et al., 2014).

South Africa was one of the first countries to identify variants in the stain of COVID-19 (Duong, 2021). The current study aimed to explore the impact of the multifaceted COVID-19 virus on the audiological system by the means of preliminary investigation into the associated signs and symptoms.

Aims

Main aim: To document the acute and non-acute, current and post-recovery signs and symptoms of COVID-19 on the audio-vestibular system of individuals who are diagnosed with COVID-19 between March 2020 – July 2021.

Sub-aims:

- To explore and document any audiological signs, present in symptomatic or asymptomatic individuals diagnosed with COVID-19 during their diagnosis and post recovery.
- To explore and document any audiological symptoms present in symptomatic or asymptomatic individuals diagnosed with COVID-19 during their diagnosis and post recovery.
- To document any changes in audiological signs and symptoms in individuals who have a pre-existing hearing loss before the diagnosis of COVID-19.
- To explore if individuals underwent any audiological assessments and management related to COVID-19.

Methodology

Research design: Cross-sectional descriptive research design.

Sampling Approach: Participants were recruited through non-probability and convenience sampling.

Description of Sample: The current study comprised of 306 participants who tested positive for COVID-19 between March 2020 to July 2021. Participants ranged from 18 to state the oldest

Data Collection: A self-administered online questionnaire was administered for data collection.

Data Analysis: Data were analysed using descriptive statistics and qualitative content analysis.

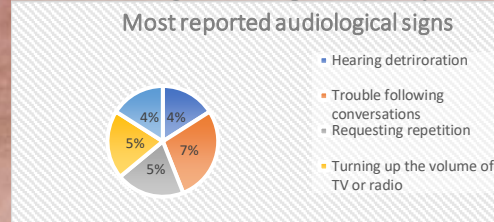
References

- Cohen, B. E., Durstenfeld, A., & Roehm, P. C. (2014). Viral causes of hearing loss: a review for hearing health professionals. *Trends in hearing*, 18, 2331216514541361.
- Duong, D. (2021). What's important to know about the new COVID-19 variants?
- Mustafa, M. W. M. (2020). Audiological profile of asymptomatic Covid-19 PCR-positive cases. *American Journal of Otolaryngology*, 102483.

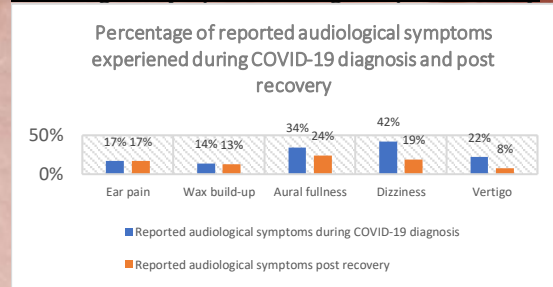
Results and Discussion

Audiological signs during and post recovery

Twenty three percent and 31% of participants experienced audiological signs during their COVID-19 diagnosis and post recovery respectively. There were 48% of participants who experienced audiological signs both during and post recovery. The most reported audiological signs experienced during their COVID-19 diagnosis and post recovery included:



Audiological symptoms during and post recovery



This preliminary study identified audiological symptoms to be experienced during the participants' COVID-19 diagnosis and post recovery. Participants experiences of the audiological symptoms indicate that COVID-19 could have persistent long term audiological effects on individuals.

Changes in audiological signs and symptoms in individuals who have pre-existing hearing loss

There was only one participant (P23) out of the 17 participants with pre-existing hearing loss who noticed a decrease to their hearing after being diagnosed with COVID-19. This finding is significant when compared to existing literature of individuals with pre-existing hearing losses to worsen after being infected with COVID-19.

Assessment and management for COVID-19

Sixteen percent of participants visited a doctor or audiologist for audiological signs experienced and 25% of participants visited a doctor or audiologist for the audiological signs. Participants who did not consult a medical professional for the signs or symptoms they presented with either during or post COVID-19 preferred the use of home or natural remedies such as traditional medicine as opposed to seeking treatment.

Conclusion, Limitations & Future Implications

- The data from the current preliminary study concludes the presence of both audiological signs and symptoms in individuals diagnosed with COVID-19, during the diagnosis and post recovery.
- There is a noticeable trend of the audiological signs and symptoms as a result of COVID-19 when compared to the audiological consequence of previous pandemics.
- Limitations** of the study included: a restriction to South African participants only and not an international based study; direct audiological assessments were not conducted to confirm hearing loss influencing reliability, a large sample of participants may have been excluded as the questionnaire was only made available online, and the questionnaire was only administered in English.
- Findings from the current study highlight **implications** for the clinical response of audiologists, to COVID-19 in SA. Thus, allowing for more insight into a directed assessment, management and treatment protocols that should be utilized by audiologists.