

The impact of the COVID-19 Pandemic on Tinnitus

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The COVID-19 pandemic has disrupted nearly every dimension of life. To reduce the transmission of the virus, restrictive measures were enforced that changed the way we socialise, interact, and access medical care. Although such measure reduced the spread of the virus and saved lives, accumulating evidence indicates the negative impact they have on well-being.¹ As tinnitus has been known to be initiated or exacerbated during stressful periods,² concerns for the tinnitus population were expressed during the pandemic and questions were raised regarding the effect of the pandemic on tinnitus. As a number of viruses are known to effect the auditory system, questions regarding the impact of COVID-19 on auditory-related symptoms were also raised. This article explores these questions and the implications of these findings for healthcare professionals.

Can contracting COVID-19 cause tinnitus?

Initially COVID-19 symptoms were thought to be confined to respiratory failure, fever, headaches, and the loss of taste and smell. Soon further long-term effects were noted, including hearing-related symptoms. More and more studies reported of tinnitus initiation after contracting COVID-19 in individuals who had no prior tinnitus were published.³ Although prevalence rates are still not clear (ranging from 0.4-23%) these initial exploratory studies have provided a foundation on which further robust research can be designed to have a better idea of the incidence of tinnitus post COVID-19. The mechanisms of tinnitus

initiation post COVID-19 is furthermore not known and should be a further focus of future research to determine if it can be directly attributed to the virus or to other factors such as the impact of receiving critical care, ototoxic medications, and/ or the stress of being hospitalized.

Can contracting COVID-19 change tinnitus?

As numerous case studies also highlighted tinnitus worsening post- COVID-19, a larger study was initiated by Beukes and colleagues⁴ asking those with pre-existing tinnitus who contracted COVID-19 what the effect was on their tinnitus. Out of the participants, 237 reported experiencing COVID-19 symptoms. Tinnitus remained stable for 54% of these, improved for 6% and was significantly exacerbated for 40%. Further longitudinal research is required to understanding the mechanisms behind these heterogeneous effects.

Can the pandemic affect pre-existing tinnitus and why?

Recognizing that people with tinnitus might be experiencing an increased levels of tinnitus as a result of the added stress and anxiety brought on by the pandemic, Beukes and colleagues⁴ asked 3,103 individuals what the effect of the pandemic was on their tinnitus. At the time of the study (May-June 2020), the majority (67%) reported that the pandemic had not altered their tinnitus, 31% reporting the tinnitus was exacerbated during the pandemic, and 2% found their tinnitus was better. Females and younger adults were more likely to report bothersome tinnitus, and it is suspected this may be due to the pandemic having a greater impact on work and lifestyle changes for these individuals.

Mediating factors that significantly exacerbated tinnitus included loneliness resulting from decreased social interactions, the necessity of self-isolation, poor sleep, and reduced levels of

exercise. Increased levels of depression, anxiety, irritability, and financial worries also contributed significantly to tinnitus being more bothersome during the pandemic period. These results are important as they point to factors that should be addressed as they may negatively affect tinnitus.

What tinnitus to remain stable during the pandemic?

As many individuals with pre-existing tinnitus reported that their tinnitus was unchanged or even improved, during the pandemic Beukes and colleagues,⁵ explored what factors contributed to this. When comparing the coping used by individuals with different level of tinnitus severity measured on the Tinnitus Handicap Inventory - Screening version (THI-S), it was found that tinnitus distress was less for individuals that received support from family and friends, spent time outdoors or in nature, and those doing active relaxation. Other activities for coping included: arts and crafts, woodworking, cooking, reading, online courses, pet therapy, music, prayer, movies, gardening, house/yard maintenance, and other projects. Some respondents reported that the calmer lifestyles, having more time to sleep, eating healthy meals, meditating, and doing yoga during the pandemic all helped their tinnitus to remain stable during the pandemic. These findings illustrate the importance of social contact, relaxation, and enjoyable life activities that underpin and improve quality-of-life experiences and can help coping with tinnitus. Joining support networks such as tinnitus support groups as well as being involved in activities that aid relaxation and exercise should be promoted.

Implications of these findings for Hearing Healthcare Professionals

Healthcare professionals should be aware of the effects of COVID-19 and the pandemic on tinnitus. As tinnitus has worsened for some during the pandemic, healthcare centres reported an influx of tinnitus patients reporting more bothersome tinnitus on reopening after the first

wave.⁶ Such an influx may also be expected as many healthcare services, including audiological services were severely limited during the first wave of the pandemic. Beukes and colleagues⁵ compared help-seeking for tinnitus before and during the pandemic in North America for 1,522 individuals. The findings revealed that significantly less support was sought during the pandemic compared with before the pandemic. Of those seeking help, 8% sought professional help, 7% sought self-help resources, 3% from tinnitus patient associations, and 2% from Internet interventions. It was found that tinnitus distress was significantly less for those who sought help via their usual clinics, had ongoing support, or had remote support. This indicates the importance of accessible support for those with tinnitus distress despite the restrictions imposed by the pandemic.

To identify what support would be helpful Beukes and colleagues⁶ asked those with tinnitus what their specific tinnitus support needs were. Respondents articulated a desire to be able to consult with caring, understanding, multidisciplinary tinnitus experts. They also expressed a need for more patient-centred, evidence-based therapies and greater intervention options. They had a desire for reliable tinnitus information provided by experts online, wanting tinnitus to receive greater research support for intervention development and for finding a cure. Many participants also expressed that hearing difficulties were present, and expressed a need for more affordable hearing aids and hearing protection to address and protect from hearing loss. People also desired more social and peer support indicating that making the public aware of tinnitus difficulties was needed. Lastly, additional support during the pandemic to help coping and deal with the resulting insomnia, loneliness and anxiety was requested. These identified gaps in service provision, summarized in Figure 1, can be used by tinnitus support and clinical services to shape patient-centric tinnitus care. Overall, these observations suggest that the COVID-19 pandemic has clearly highlighted the need for

accessible evidence-based tinnitus interventions especially using the remote care models to ensure that the service delivery is not affected due to external factors such as the pandemic. One such example is the Internet-based cognitive behavioral therapy intervention (www.tacklingtinnitus.org) that was specifically developed for tinnitus.^{7,8} Moreover, there is also a clear and immediate need to develop adequate social support especially by the means of tinnitus support groups and this can be done effectively by using remote technologies even when stay at home orders are in place.

In summary, these COVID-19 related studies have provided much insights into how people with tinnitus are affected by outside influences and the need for accessible meaningful interventions. Patient organizations and professionals should be encouraged to work together to provide improved outlets for tinnitus care. The need for a greater awareness of the toll of tinnitus should be advocated. Health professionals who may be involved with COVID-19 patients should be mindful that contacting COVID-19 may lead to tinnitus and hearing loss, and other audiovestibular difficulties and such individuals should be directed to appropriate care. Additional support should be offered where tinnitus severity has increased due to the health, social, and/or emotional effects of the COVID-19 pandemic. This may include those experiencing loneliness, having fewer social interactions, and who are more anxious or worried. Further studies are required to collate ongoing implications of COVID-19 on tinnitus so that service provision can be structured accordingly.

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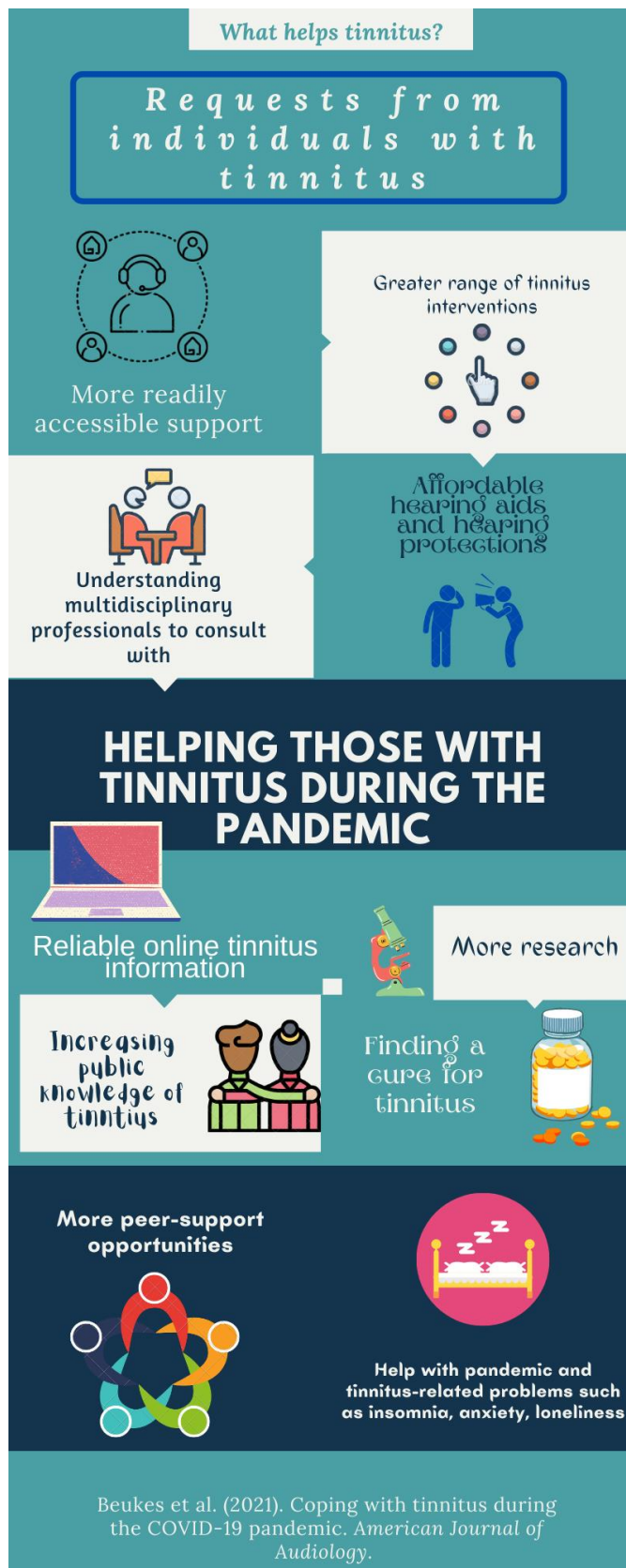


Figure 1: Summary of support requests by those with tinnitus during the pandemic

