

Did COVID-19 make tinnitus, 'ringing' in the ears, worse?

March 2 2022



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Tinnitus, most often described as "ringing" in the ears even though no external sound is present, also can be perceived as humming, hissing, buzzing or roaring sounds. According to the United States Centers for

Disease Control and Prevention (CDC), more than 50 million Americans experience some form of tinnitus—2 million have extreme and debilitating cases. Worldwide, about 30 percent of people will experience tinnitus at some point in their life.

Many individuals impacted by COVID-19 experienced changes in their sense of smell, taste, hearing, balance and in some cases, [tinnitus](#). Among the various causes of tinnitus is stress, including tension, anxiety and depression. What's unclear, however, is whether the psychological impacts of the pandemic such as stress actually worsened tinnitus and its impacts.

Researchers from Florida Atlantic University, the Royal Surrey NHS Foundation Trust in the United Kingdom, and the University of Cambridge conducted a study that focused on the potential indirect effects of COVID-19 on the experience of tinnitus. They assessed whether the severity of tinnitus, as measured using ratings of tinnitus loudness, annoyance, and effect on life, was influenced by the lockdown related to pandemic. Although COVID-19 upended so many aspects of society, there is some good news—at least as it relates to tinnitus.

For the study, researchers compared two independent groups of new patients; one group assessed during three months of lockdown in the United Kingdom and one group assessed during the same period in the preceding year. They examined patients' pure-tone audiometry, and their score on visual analog scale (VAS) of tinnitus loudness, annoyance, and effect on life, which were imported from their records. Researchers compared VAS ratings from both groups. All patients were seeking help for their tinnitus for the first time.

Results of the study, published in the *Journal of the American Academy of Audiology*, do not support the idea that the pandemic led to a worsening of tinnitus loudness, annoyance, or impact on life and the

mean scores did not differ significantly for the groups seen prior to and during lockdown. Any changes in psychological well-being or stress produced by the lockdown did not significantly affect ratings of the severity of tinnitus.

"People experienced various types of adversities during the pandemic, including loss of income, difficulty in obtaining services, experience of the virus itself, and the impact of constant bad news and social distancing," said Ali Danesh, Ph.D., co-author, professor, Department of Communication Sciences and Disorders/Communication Disorders Clinic within FAU's College of Education, a member of FAU's Stiles-Nicholson Brain Institute and FAU's Institute for Human Health and Disease Intervention, professor of biomedical sciences, FAU Schmidt College of Medicine, and an affiliate faculty, Department of Psychology, FAU Charles E. Schmidt College of Science. "It's possible that pandemic related factors exacerbate the experience of tinnitus, as tinnitus is linked to general anxiety and psychological well-being. On the other hand, perhaps the effect of COVID-19 on everyday life made individuals with tinnitus realize that there are more important things than tinnitus, putting it into perspective and leading to a decrease of the impact of tinnitus that counteracted any effect of increased anxiety and decreased well-being."

Several studies on tinnitus reported sleep-related problems, poor mental health, and suicidal ideations as consequences of the COVID-19 pandemic and its associated social isolation and economic uncertainties.

"It is questionable whether people are able to judge reliably whether their tinnitus itself has changed or whether their tinnitus-related symptoms such as sleep disturbances or anxiety have changed," said Hashir Aazh, Ph.D., affiliate associate professor at FAU and Honorary Hearing Research Consultant, Department of Audiology, Royal Surrey County Hospital. "Prior studies of the indirect effects of COVID-19 on

the experience of tinnitus have used different methodologies, which may have led to biases."

The current study avoided potential biases by comparing self-reported tinnitus severity between new patients seen during lockdown and another group of patients seen during the same time frame, preceding lockdown.

"If a given respondent felt that their tinnitus was worse during the pandemic than before the pandemic, how could they determine whether this was due to lifestyle changes, health concerns, or social distancing?" said Danesh. "Visual analog scale scores for tinnitus loudness, annoyance, and impact on life did not differ significantly between new patients seen prior to and during lockdown. This may indicate that tinnitus can influence anxiety and well-being, but there is not an effect in the opposite direction."

The retrospective study examined data for 105 consecutive patients who were seen at a tinnitus clinic in an audiology department in the United Kingdom during lockdown and 123 patients seen in the same period of the previous year. The average age of the patients seen during the lockdown was 50 years, while the average age of the patients seen in 2019 was 56 years. The two groups were reasonably well matched in age, gender, and severity of hearing loss.

More information: Hashir Aazh et al, Self-Reported Tinnitus Severity Prior to and During the COVID-19 Lockdown in the United Kingdom, *Journal of the American Academy of Audiology* (2022). [DOI: 10.1055/s-0041-1731733](https://doi.org/10.1055/s-0041-1731733)

Provided by Florida Atlantic University

Citation: Did COVID-19 make tinnitus, 'ringing' in the ears, worse? (2022, March 2) retrieved 25 April 2024 from <https://medicalxpress.com/news/2022-03-covid-tinnitus-ears-worse.html>

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