



## TITLE: The Effect of COVID19

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### ABSTRACT

**Background:** Cochlear implantation (CI) has successfully provided speech perception for patients with sensorineural-hearing loss, but the perception of music has always been limited for them.

**Methods and Materials:** We sought to investigate adult CI users' ability in differentiating the pitch and perception of melody in Amir Alam Hospital. The possible effect of background variables in this regard was also investigated. Data were collected using a questionnaire and a music test, which includes the following four sections: 1, The slightest pitch perception; 2, Ability to differentiate two melodies by one-octave distance; 3, Ability to differentiate rhythmic melodies from non-rhythmic ones; and 4, Ability to differentiate between two Iranian phrases of Mahoor and Shour.

**Results:** Twenty CI users with the mean age of  $21.7 \pm 2.9$  were evaluated. Of these, 10 received professional musical training, and 9 played an instrument. The shortest distance of pitch perception between two tones in 5(28.2%) was a quarter-tone, in 8(44.4%) was half-tone, in 4(22.2%) was a tone, and in 1(5.6%) was 3-tones.

All participants distinguished two melodies with one-octave interval, 94% of rhythmic melodies from non-rhythmic ones, and 76% of individual differentiate Mahoor and Shur phrases. Among the factors studied, the duration of deafness, inclination to classical western music, having musical training, playing an instrument, and duration of daily playing affected the ability to understand the quarter-tones. Moreover, the ability to differentiate between Mahoor and Shur phrases was significantly dependent on the quarter-tone perception.

**Conclusions:** We showed that CI users had an extreme desire for music. As a result of this tendency, they have an excellent ability to differentiate the pitch of short-distance sounds, which has made it possible for many of them to perceive the slight differences between the Mahoor and Shur phrases.



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### **BIOGRAPHY (upto 200 words)**

Shayan Dasdar has completed his M.D. from the Tehran University of Medical Sciences, Iran. He is now a post doctorate researcher at the department of ENT at a tertiary hospital, Amir A'lam. His research focus has been on cochlear implantation in the past few years.

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