Review of: "Preliminary Evaluation of Automated Speech Recognition Apps for the Hearing Impaired and Deaf"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

The subject of this paper is of high importance not only to Audiologists and Healthcare providers, but to technological industry.

The automated speech recognition apps use recorded corpora from different collections of speech that have been recorded in silence and acoustically controlled environments. This fact poses a limitation to using these apps since they do not work well under noisy or reverberating situations.

Recognizing the importance of accessibility of speech recognition through smartphones and other digital devices, the study intended to validate four low-cost apps on a iOS and Android smartphones (AVA, Earfy, Live Transcribe, and Speechy) on their ability to transcribe speech in quiet and in noise. A careful design included a test-retest of the accuracy of the apps.

The study identified that the apps are not as accurate as a normal hearing person, specially in noise and at low level speech (below 65 dB SPL). This fact may lead to communication errors that directly impacts people participation in social or professional meetings and medical appointments. It might be due to microphone orientation, gain settings or sensitivity, and the corpora or the linguistics clues in which the apps are based on.

The manuscript also opens the discussion on scoring audiological performance on keywords. But, if we consider keyword as ´enough´ for a good conversation, it seems to go back to the telegraphic ages and disregard the importance of low-level speech clues, pauses, articles and connective words to avoid miscommunication and misconduct (Molesworth & Estival, 2015; Vermeir et al. 2015). This must be further considered.

The authors identified the need of improvement on the apps, and proposed suggestions on how to do it, improving ideas on applications of personalized apps to perform self-testing, which is the near future of remote assistance and telehealth in Audiology.

Besides evidencing that when transcribing speech-in-noise, the ASR apps performed in the range of CI recipients, the authors might have opened a research door to the CI industry to also improve speech coding strategies, following the built-in technology of ASR transcription.

References

Vermeir P, Vandijck D, Degroote S, et al. Communication in healthcare: a narrative review of the literature and practical recommendations. *Int J Clin Pract*. 2015;69(11):1257-1267. doi:10.1111/ijcp.12686

Molesworth, B & Estival, D. Miscommunication in general aviation: The influence of external factors on communication errors. Safety Science. 2015; 73. 73-79. 10.1016/j.ssci.2014.11.004.