Speech-to-Noise Levels and Conversational Intelligibility in Hypophonia and Parkinson's Disease

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The purpose of the present study was to examine the effect multi-talker background noise on speech-to-noise levels and conversational speech intelligibility in individuals with hypophonia due to Parkinson's disease (PD). Twenty five individuals with hypophonia and PD and 15 normal control (NC) subjects were engaged in conversation while they experienced no noise and 3 levels of multi-talker background noise (60, 65, and 70 dB). PD subjects had significantly lower (2-3 dB) speech-to-noise levels than the control subjects during each of the multi-talker noise conditions. In addition, PD subjects had significantly lower (20-30%) conversational intelligibility scores than the control subjects during all of the multi-talker noise conditions. As the multi-talker noise increased there was a significant decrease in the subjects' speech-to-noise levels and transcribed conversational speech intelligibility scores. In general, when the PD subjects' speech-to-noise levels fell below 1.8 dB they resulted in conversational speech intelligibility scores that were below 50%. These results provide preliminary information about the negative effects of background noise on speech-to-noise levels and conversational intelligibility in individuals with hypophonia and PD.