

THE EFFECT OF SMOKING ON THE FUNDAMENTAL FREQUENCY OF THE SPEAKING VOICE OF LEBANESE MEN

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Smoking related cancers keep increasing in Lebanon. This is partially related to the growing smoking epidemic (Shamseddine et al. 2014). The purpose of our study was to investigate the effect of smoking on the fundamental frequency (F0) of speaking voice. Ninety Lebanese men ($M = 33.35$ years old) were assigned to one of 3 groups according to their smoking habits (non-smokers, cigarette smokers, and water pipe smokers). Participants were matched on the basis of age, height and weight. For each participant, we recorded a sustained vowel /a/, 10 sentences read in French and Arabic, and a sample of spontaneous speech in both languages. F0, Jitter and Standard Deviation (SDF0) were analyzed using Praat and Vocalab. The participants were also asked to complete the Voice Handicap Index. As expected, the VHI scores were significantly different between non-smokers and cigarette smokers and between non-smokers and water pipe smokers. On the acoustic level, results show that the F0 of the cigarette smokers is significantly lower when compared to non-smokers for all 3 tasks ($p < .01$). Surprisingly, the F0 was not significantly different between water pipe smokers and the non-smokers. Also, perturbation measures (i.e., jitter and SDF0) did not differ significantly between groups. While previous studies report contradictory findings, this study clearly demonstrates the effect of smoking on acoustic levels and shows that smokers have more voice complaints when age, height and weight are controlled. Further investigation, at the laryngeal level, is encouraged to corroborate the present findings and disentangle the mechanisms behind such effect.