

# Jordan University of Science and Technology

## Prosthetic Rehabilitation of Arabic Speaking Individuals with Velopharyngeal Incompetence: A Preliminary Study

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**Abstract:** Background: Hypernasality is a frequently encountered problem in the speech of individuals with velopharyngeal incompetence. The use of palatal lift appliance (PLA) is the main treatment option for correction of velopharyngeal incompetence. The literature on the outcomes of using prosthetic treatment for Arabic speaking patients is scarce. Objective: The aim of this study was to investigate the effect of using PLA on hypernasality of Arabic speaking patients with velopharyngeal incompetence. Method: Six participants with age ranging from 9 to 61 years (4 males and 2 females) were recruited between October 2013 and August 2014. Written informed consents were taken from all the adult participants/the guardians of under-aged participants. All patients exhibited hypernasality with different etiologies for velopharyngeal incompetence (head injury, cerebrovascular accident, and neurological disorders). They were treated with PLAs which were constructed to elevate the dysfunctional soft palate. Nasalance scores and perceptual speech acceptability ratings were measured/evaluated in both situations; with and without appliances. Paired t-test was used to analyze the perceptual ratings and nasalance scores in order to detect any significant change in hypernasality pre and post insertion of PLA. Results: There was a statistically significant decrease ( $p > 0.05$ ) in nasalance scores (Pa, Pi, Ma, Mi, a, i) after PLA insertion. The subtest /u/ showed insignificant change ( $p = 0.056$ ). Perceptual ratings showed significant reduction in hypernasality which was consistent with nasalance measurements. Conclusion: PLAs can reduce hypernasality in Arabic speaking patients who suffer from velopharyngeal impairment.