• Posters •

Adaptation to European Portuguese of the Questionnaire Early Listening Function (ELF) – Função Auditiva Precoce (FAP)

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Introduction: In children, hearing loss has adverse effects on the development of communication, in vocabulary, syntax, and expressive language, in speech production, and social and emotional development. Assessment of hearing loss can be performed quantitatively with psychoacoustic audiometric testing, such as pure tone audiometry, or physiological tests, such as otoacoustic emissions, and electrophysiological tests like auditory evoked potentials of the brainstem that allow quantitative assessment and topographic diagnosis. Qualitative assessment of hearing loss can use specific scales, such as Early Listening Function (ELF) developed by Anderson (2002), which is used by parents or caregivers of infants and children from 4 months to 3 years old.

Objectives: The main goal was to translate and adapt the ELF questionnaire into European Portuguese and test the reliability/internal consistency (Cronbach's alpha) and the validity for publication of the final European Portuguese translation.

Methods: The tool was translated into European Portuguese by a forward and backward technique, as established by the International Quality of Life Assessment (IQOLA) project. There was double translation and adaptation of the European Portuguese ELF questionnaire, double retroversion to English, and a consensus version. The work was done by 4 researchers (2 audiologists with previous similar work, one Ear Nose and Throat surgeon who was an American native language speaker, and a secondary school teacher of English). The questionnaire, called *Função Auditiva Precoce* (FAP), was administered as a sample test for semantic validation; later the FAP questionnaire was administered to a larger sample for statistical validation.

Results: The FAP is a self-administered questionnaire composed of 12 sound activities. Its positive attributes are brevity, accessibility, cheapness, simplicity, and ease of interpretation.

Conclusions: The FAP is a valid tool for parents and caregivers of children for hearing loss screening, i.e. in identifying if a child is able to detect certain types of sounds from different distances in both quiet and noise.

Comparison of Attention and Memory Between Smokers and Non-Smokers

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Introduction: Several studies show that nicotine has pharmacological proprieties related to the improved cognitive processing, namely attention and auditory memory. This performance can be evaluated though electrophysiological tests such as the P300, which is highly dependent on cognitive skills, including attention and discrimination, and the Mismatch Negativity (MMN), dependent on auditory memory.

Objective: To evaluate the effect of nicotine through tobacco consumption, in terms of attention and auditory memory, in a group of smokers and non-smokers.

Methodology: The electrophysiological P300 and MMN tests were performed in a group of 15 smoking individuals and a group of 20 non-smokers, both aged between 18 and 28 years old. In the case of the smokers they were asked to smoke a cigarette minutes before performing these tests. To obtain the P300 and MMN, the same protocol was used on all subjects. Both tests were evoked by an *oddball paradigm* and stimulation was binaural. For P300 and MMN, each individual had to mentally count the rare stimulus; in MMN, the individuals had to watch a movie in silence.

Results: A Student *t*-test for independent samples showed there were no statistically significant differences in the results obtained. However, lower latency averages were obtained in smoking individuals, in both ears, on the P300 test compared to the non-smoking group; also the average MMN amplitude was higher in smokers, in both ears, compared to non-smokers. From correlation between the number of years that an individual in the smoking group had smoked and P300 amplitude, we found that P300 amplitude, both in the right and left ear, decreased as the number of years of smoking increased. However, in both ears the average amplitude of P300 in smokers was higher than the average amplitude in non-smokers. It was also found that the MMN average latency was higher in smokers.

Conclusions: Although there were no results with statistically significant differences, we can suggest that nicotine affects P300 and MMN. The average P300 latency in smokers appeared to be earlier and MMN amplitude was higher. The reduction in P300 latency in smokers can be interpreted as a decrease in reaction time, improving attention. In the case of the increase in MMN amplitude in smokers, this may suggest further information decoding, promoting the formation of auditory memory.