

# **THE RELATIONSHIP BETWEEN CHANGES IN EFFICIENCY OF PROCESSING AUDITORY INFORMATION AND AUDITORY P300 MEASUREMENT FOLLOWING THE USE OF EDULINK IN CHILDREN WITH AUDITORY PROCESSING DISORDER (APD)**

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This experimental study aimed to measure the changes observed in the efficiency of processing auditory information and auditory P300 measurement in children with Auditory Processing Disorder (APD) following the use of EduLink FM system. This 12 weeks study involved 53 subjects aged from 7; 0 to 9; 11 from a primary school in Kuala Lumpur. The subjects chosen were native Malay speakers with normal hearing, normal IQ of > 80, poor academic achievement and failed in either the Malay Double Dichotic Digit Test (DDDT) or the Pitch Pattern Sequence Test (PPST). Subjects were divided into three groups, which were the control group who were not fitted with the EduLink (15 students), the unilateral EduLink fitting group (19 students) and the bilateral EduLink fitting group (19 students). The Rey Auditory Verbal Learning Test (RAVLT), Digit Span Test (DS) and the auditory P300 measurement were administered pre- and post-12 weeks EduLink fitting period. The Rey Auditory Verbal Learning Test (RAVLT) and Digit Span Test (DS) was used to measure the changes in auditory information processing efficiency and the auditory P300 measurement was used to measure the ability of the working memory and focus of attention for all subjects involved. The changes in auditory information processing efficiency was observed by deducting the score post EduLink usage with the score obtained pre EduLink usage. The results showed a significant improvement in the Best Learning ability in the unilateral group [F (2, 50) = 4.740, p 0.0321] and bilateral group [ F (2, 50) = 4.740, p 0.032] after the usage of EduLink. A significant improvement was also observed in the bilateral group for the Retention of Information ability [F (2, 50) = 4.300, p = 0.019] in the RAVLT after the usage of EduLink. However, no significant improvement observed for the latency and amplitude of P300 measurement in both right and left ear (p > 0.05) in all the three groups after the trial period. There was a significant correlation between the improvement in scores of Best Learning and right ear amplitude of the P300 measurement with  $r = 0.800$ ,  $p = 0.005$  in the bilateral fitting group. The findings suggest that the use of EduLink might help to improve the efficiency of processing auditory information in APD children.

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