Cognitive functioning of the prelingually deaf adults

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Impairment of one sense influences brain responses to other sensory inputs, further reorganizing brain function in a feedback manner. Prelingual deafness is a model of brain adaptation during sensory deprivation, which concerns not only sensory, but also cognitive domain, due to the use of visual communication skills such as sign language. This study seeks to determine the level of emotional intelligence, as based on the ability to discern emotions from facial expressions, quality of visual and mental attention, and non-verbal fluency in the prelingually deaf people as compared with the hearing counterparts. Participants were 29 prelingually deaf persons, with a hearing loss of >70 dB, communicating only in sign language, and 30 hearing persons. The age of all subjects ranged between 40-50 years. Psychometric tools consisted of the Emotional Intelligence Scale - Faces, the d2 Test of Attention, and the Figural Fluency Test. Since gender may bear on the psychological results, data also were broken down by gender in the analysis. The findings were that both deaf women and men defined significantly fewer emotions as known, compared with the hearing counterparts. That held true for emotions seen in both female and male faces. The deaf men were able to properly recognize a higher percentage of emotions associated with a definite face look, among the emotions they knew, compared with the hearing counterparts. That was not the case in the deaf women whose agility in face recognition was definitively worse. There were no appreciable differences in the attention and concentration indices between the deaf and hearing men, but deaf women’s total performance on attention was worse. On the positive side, the deaf women performed better than both deaf men and the normally hearing women in non-verbal fluency. Thus, the findings were mixed, with deaf adults being more agile in some psychocognitive domains compared with the hearing persons, and there were gender differences in the deaf persons. Thus, prelingual deafness, in general, does not impede cognitive functioning in adult age. There seems to be a plastic reorganization of brain networks to preserve the nature of detecting and executing of cognitive tasks, although there are task-specific variations. In particular, visuospatial coordination is enhanced in hearing impairment, compensating for the lack of auditory input.