

NEUROPSYCHOLOGY AND AGING IN DOWN SYNDROME

Roser Fernández¹, Olga Bruna², Glòria Canals¹, Sara Signo² & Judit Subirana²

¹ Fundació Projecte AURA.

² Facultat de Psicologia, Ciències de l'Educació i de l'Esport Blanquerna. Universitat Ramon Llull

Introduction

The increase of life expectancy in subjects with Down syndrome (DS) arises many questions about the aging process, given the early onset and the high probability of developing cognitive impairment. This, may be due to neurobiological reasons among others.

Several indicators of cognitive, behavioral and emotional changes can be subtle in early stages of cognitive impairment. Therefore is crucial a rigorous and longitudinal monitoring taking into account the premorbid functioning and the personal history of each subject (Auty and Sciora, 2008).

Due to the difficulty of finding appropriate neuropsychological assessment tools for people with intellectual disabilities (Flórez, 2000), we developed the Monitoring Protocol Neuropsychological Aura (PAS-NPS), from which there can be obtained a baseline for cognitive and adaptive functioning of each evaluated subject.

This is a pilot study which is part of a longitudinal multicentre project involving 9 institutions of Spain who offer a service of social inclusion and employment for people with intellectual disabilities.

Auty, E. i Scior, K. (2008). Psychologists' clinical practices in assessing dementia in individuals with Down syndrome. *Journal of Policy and Practice in Intellectual Disabilities*, 5, 259-268.
Flórez, J. (2000). El envejecimiento de las personas con Síndrome de Down. *Revista Síndrome de Down*, 1-18.

Objectives

- Describing the process of aging in individuals with DS and other intellectual disabilities based on indicators of cognitive, behavioral and emotional.
- Detecting neuropsychological changes related to cognitive impairment and make an appropriate differential diagnosis.
- And intervene effectively to prevent cognitive and functional level to promote active and healthy aging.

Method

Participants / Methods: The sample consisted of 36 subjects, between 23 and 45 years matched for cognitive level. All participants in AURA Project Foundation working in ordinary companies following the methodology of Supported Employment.

Protocol: Protocol Monitoring Aura PAS-NPS Neuropsychological assessment includes indicators of cognitive, emotional, behavioral and adaptive functioning.

Procedure: To analyze the quantitative data obtained from tests in this pilot phase, we used the statistical program SPSS 18.0.

Results

Results 2010	Mean	SD	Range
Raven	22,391	4,0136	11-30,5
Attention	6,25	1,951	3-11
Span	3,44	0,759	2-5
Memory Retrieval	4,84	1,139	2-7
Memory Recognition	9,75	1,191	7-15
Visual Memory	2,75	0,672	0-3
Cats & Dogs Executive	4,25	1,107	0-5

The results of neuropsychological tests administered and the information will allow monitoring and a longitudinal tracking of the most important neuropsychological and adaptive indicators of the participants from the 9 institutions of the multicenter study.

In the table, there can be seen the first data describing the sample. A wider sample base will produce a profile for each of the cognitive functions evaluated which will lead to having a consistent base for future neuropsychological assessments in people with DS.

Discussion & Conclusions

After this first pilot phase, we can conclude that:

- It is of great importance having **neuropsychological assessment tools** adapted for people with Down Syndrome
- It is necessary to evaluate all the cognitive functions, not only the classical ones (visuospatial and language). In this study, also **memory, attention and executive functions** have been included.
- The necessity of having a **cognitive pattern** of deterioration in people with Down Syndrome