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Introduction

The aim of this study was to describe the characteristics of visual-motor integration in subjects with Prader-Willi Syndrome (PWS) without growth hormone.

Among the clinical characteristics that are relevant for occupational therapy approach, patients with PWS have deficiencies in vision, fine and gross motor coordination, psychomotor development, sensory integration and learning, as well as intellectual disability and hypotonia.

Methods

A total of 17 subjects with diagnosis of PWS between 13 and 39 years old were included. Sixty five percent were male and 35% female. Another 10 cases were excluded from the study due to the intermittent adherence to therapy consisting in concurrence to the SPINE foundation, to ongoing treatment with growth hormone, or due to comorbidity with an autism spectrum disorder.

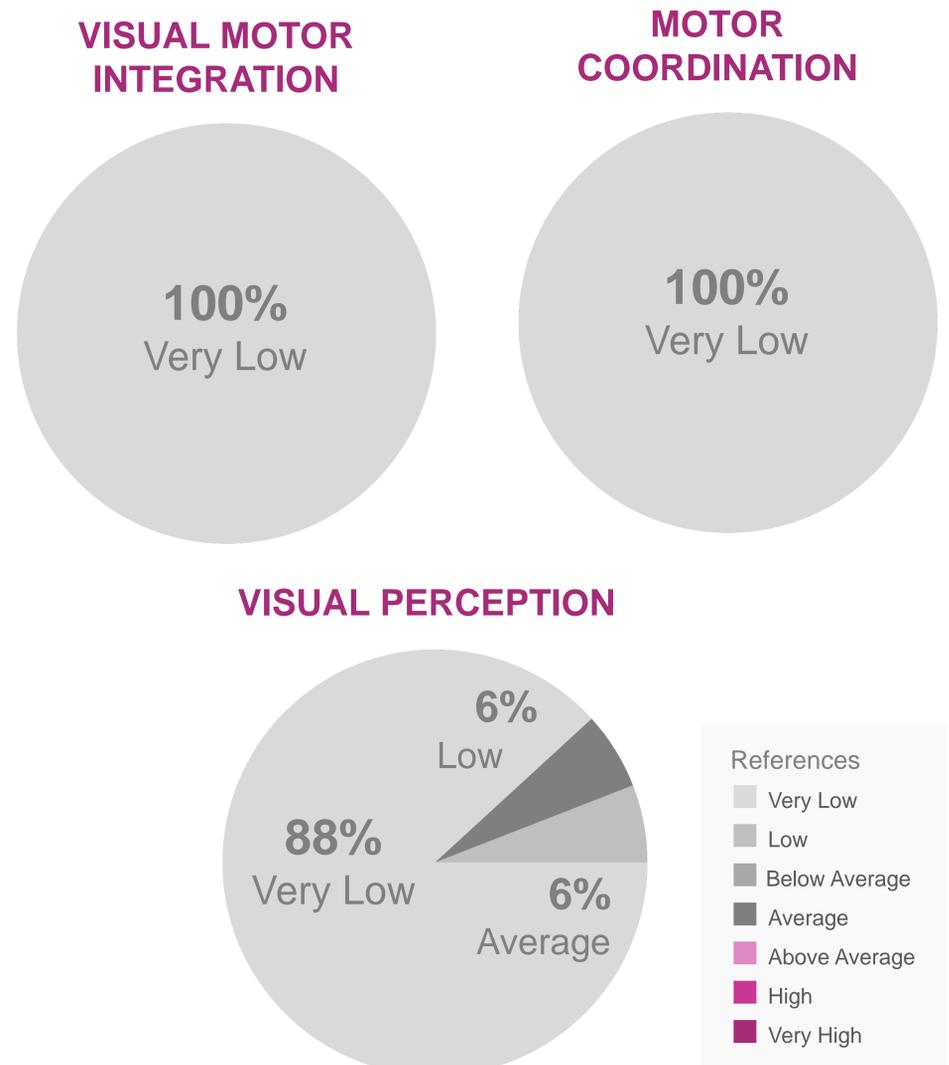
All patients completed the Beery-Buktenica Developmental Test of Visual-Motor Integration test (Beery VMI). This instrument was designed to identify significant difficulties in visual-motor integration, visual perception and motor coordination. Each of these 3 subtests was scored using a scale ranging from very high to very low.

Results

According to the Beery VMI, all subjects were in the very low category in the Visual-motor Integration and in the Motor Coordination subscales. The Visual Perception subscale showed slightly better results, with a very low score in 88% of cases, 6% with a low score and a 6% with average score (Figures).

When analyzing the scores of each section, we found the highest scores among the Visual Perception area (53.7 ± 13.6), compared to the Motor Coordination (47.4 ± 6.1) and Visual-motor Integration (48.9 ± 7.9) areas.

Figures



Conclusions

According to the results obtained through the Beery VMI test, we found that subjects with PWS without growth hormone therapy have a better performance in visual perception, even though they are below the expected results for their different ages. In terms of motor coordination, their scores are even lower, also interfering with the Visual-motor Integration, since motor coordination and visual perception are the skills that influence their visual-motor integration performance.

We envision that regular and specific interventions in visual motor integration among patients with PWS might improve their performance in VMI test results and promote the preservation of the skills that have been incorporated.

In relation with the results obtained in visual perception subtest, it is worth highlighting the importance of investigating the differences between these variables, whether by sex, age, genetics or others.



References

- Butler, M., M Manzardo, A., & L Forster, J. (2016). Prader-Willi syndrome: clinical genetics and diagnostic aspects with treatment approaches. *Current pediatric reviews*, 12(2), 136-166.