

Functional Motor Disorders in pediatrics: clinical motor correlates and neuropsychiatric profiles

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Introduction

Functional Motor Disorders (FMDs) in pediatric age represent an increasing challenge among acute movement manifestations, mostly for functional tic during the pandemic. The aim of our study was to distinguish possible specific clinical motor patterns as well as neuropsychological vulnerabilities in children and adolescents, by a multidisciplinary approach

Results

53% of cases were referred during the pandemic and in the 75% of them functional hyperkinetic manifestations were reported. Functional gait disorder was reported in 68%, mostly presenting an isolated pattern. During the pandemic years, a relative increase in functional tics-like was highlighted. Neurocognitive profiles were characterized by discrepancies between verbal and perceptual abilities, while anxious and depressive symptoms arose by the psychopathological evaluations. The one-year positive outcome was mainly related to an early diagnosis in the 95%.

Demographic and Clinical Characteristics (n 38)	
Gender, proportion	M:F=2:1
Age at evaluation, years, mean	13,9 (range 9-18)
FMDs diagnosis, months, mean time	18,2
Clinical course, percentage	81,6% Remission 13,2% Episodic course 10,5% Chronicity
Positive medical anamnesis, percentage	68,4%
Positive Life events, percentage	93,3%
Positive medical family history, percentage	63,2 %
FMDs Characteristics (n38)	
FMDs motor pattern, percentage	60,5% Isolated
Motor manifestations, percentage	68,4% Gait disorder 28,9% Tremor 21% Myoclonus/jerks 13,2% Dystonia 13,2% Tic 5,26% Parkinson manifestations
Non motor symptoms, percentage	83,3% Non motor symptoms
FNDs comorbidities, percentage	60% other FNDs
Neuropsychiatric Assessment (n29)	
Neuropsychological profiles, percentage	43% 10-folds scoring VCI > PRI 26% 20-fold scoring VCI > PRI 39% 10-folds scoring PRI > VCI 26% 20-fold scoring PTI > VCI
Psychiatric evaluation, percentage	83% Anxiety -MASC-2 33,3% Depressive symptoms - CDI 13% Somatoform symptoms-A-DES 8% Dissociative symptoms-DISQ

Materials and methods

38 FMD pediatric patients (9-18 years) were enrolled (timeframe 2016-2022) in our Pediatric Movement Disorders clinic of a tertiary center.

Motor patterns as well as neurocognitive and psychiatric profiles were retrospectively analyzed. A prospective study was possible in a subset of patients enrolled during the pandemic, reporting the short-term outcome at one year.

Figure 1. Overall frequency (%) of different FMDs phenotypes and detailed body distribution. Non motor symptoms and comorbid FNDs

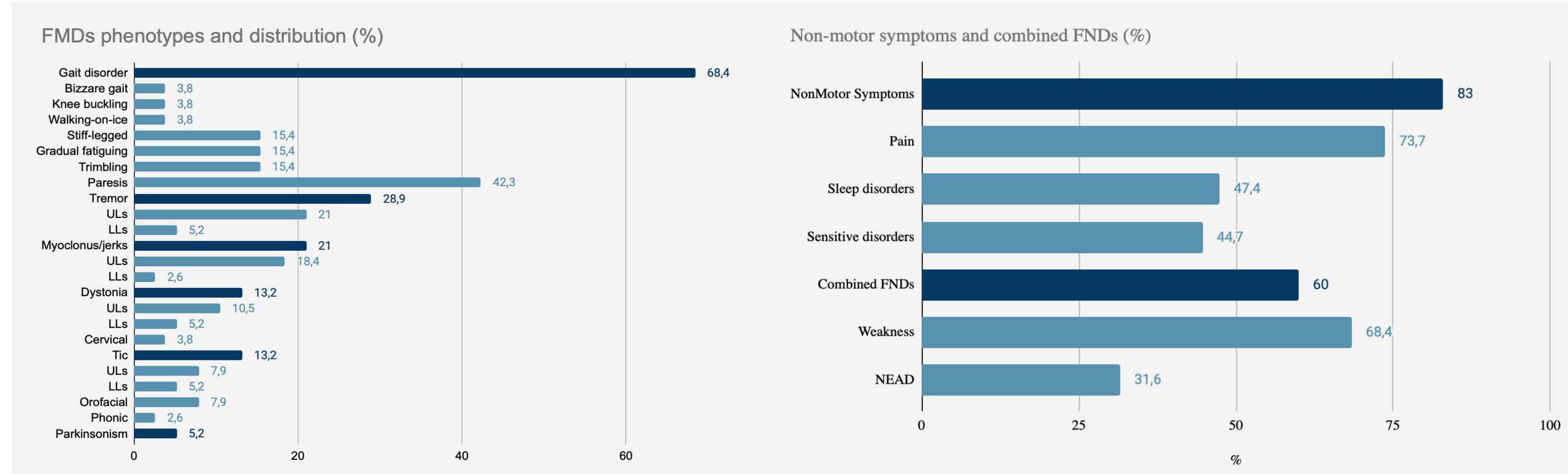
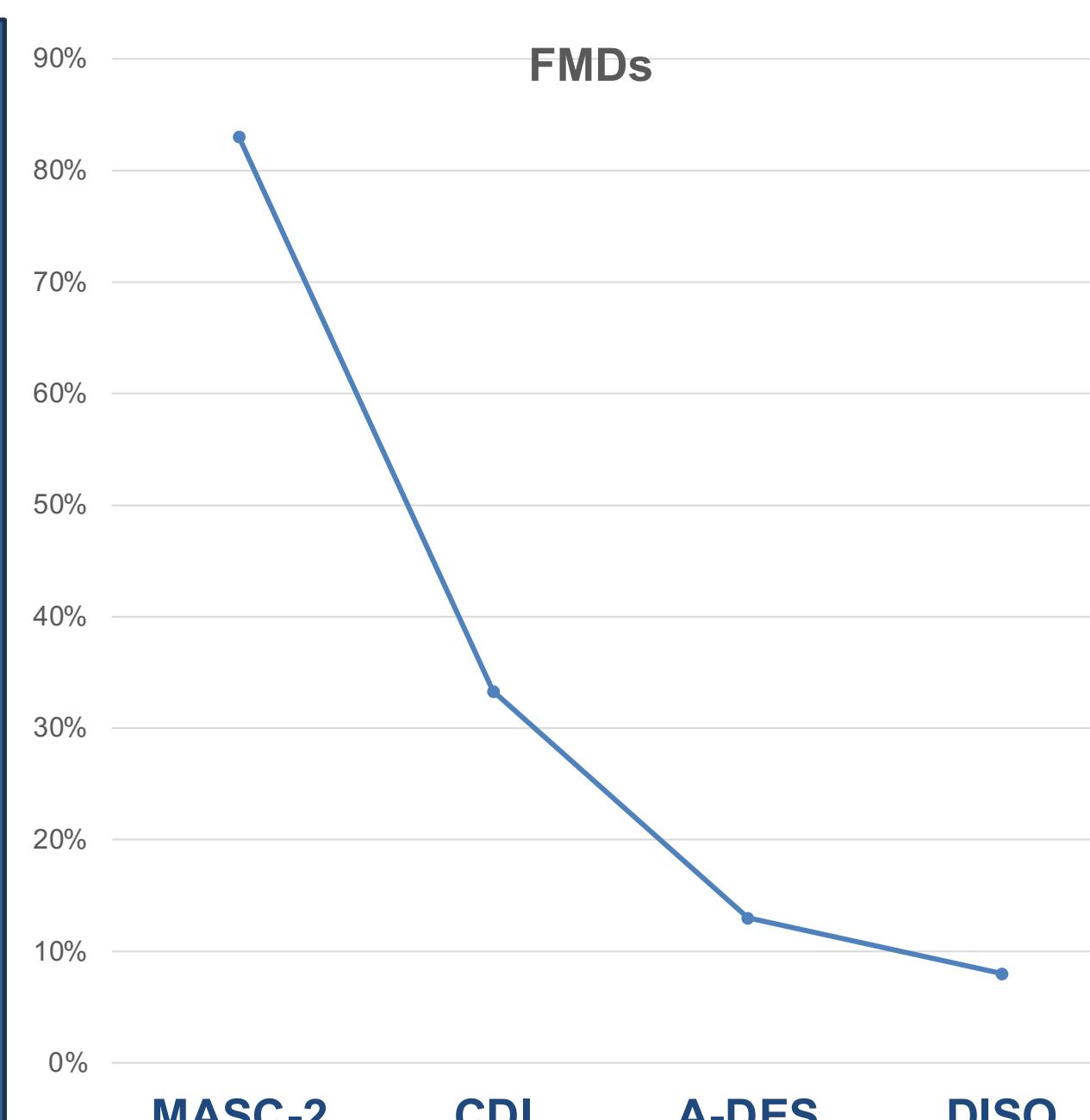
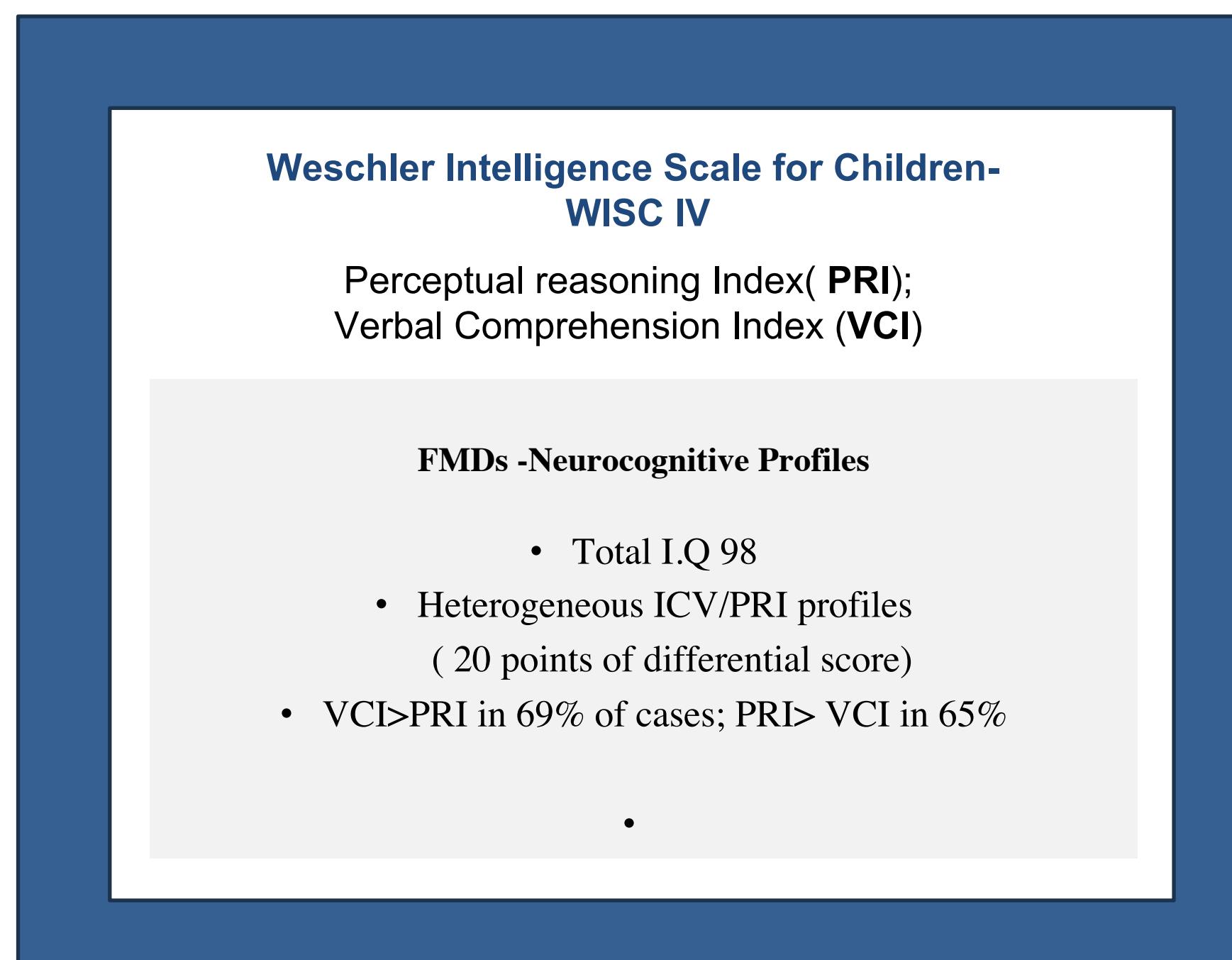


Figure 2-3 Neurocognitive profile at the WISC –IV and Psychaitric evaluation in FMDs



Conclusions

This data expanded the knowledge of FMD motor patterns in the pediatric age, represented mainly by an isolated pattern of functional gait disorders. An overall FMD increase was reported during the pandemic and relatively to Tic-like symptoms¹⁻². Specific neuropsychological and psychopathological profiles underlined the neuropsychiatric nature of FMD disorders in which a multidisciplinary treatment is suggestable, with positive outcomes strictly linked with early diagnosis. Psychopathological Profiles revealed that in our population higher clinical levels of Anxiety and Mood Disorders (83% and 33,3%) than both Somatoform/Dissociative symptoms (13% and 8%). These same symptoms were widely explored in the literature³. The same symptoms of Anxiety and Mood Disorders in the adult population were frequently described but with a lower prevalence percentage (30% and 40%). heterogeneous profiles were reached in our population, with a differential score from 10 to 20 points, between the two domains of the PRI and the VCI (43% VCI>PRI; 39% PRI>VCI). This dissociative functioning in the neurocognitive profiles suggests minor neuropsychological vulnerabilities, probably underling both a possible impairment in visual-perceptual skills and executive functions of these patients and the verbal ability related to alexithymic traits⁴.

References

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