Prevalence of Motor Impairment in Autism Spectrum Disorder: Analysis of a Population-Based Cohort

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INTRODUCTION

Motor impairment is not currently included in the diagnostic criteria or evaluation of autism. This reflects the lack of large-scale studies demonstrating its prominence to advocate for change.

We examined the prevalence of motor impairment at time of diagnosis in a large sample of children with autism utilizing standardized assessment, and the relationship between motor impairment, core autism symptomology and other prominent clinical features.

METHOD

Vineland Adaptive Behavior Scales were administered to children from the Western Australian Register for Autism Spectrum Disorders aged ≤ 6 years (N = 2084; 81.2% males, 18.8% females). Prevalence of motor impairment was quantified based on scores from the motor subscale of the Vineland and then compared to other domains of functioning within the Vineland (communication, daily living, socialization), DSM criteria, intellectual level, age, and gender.

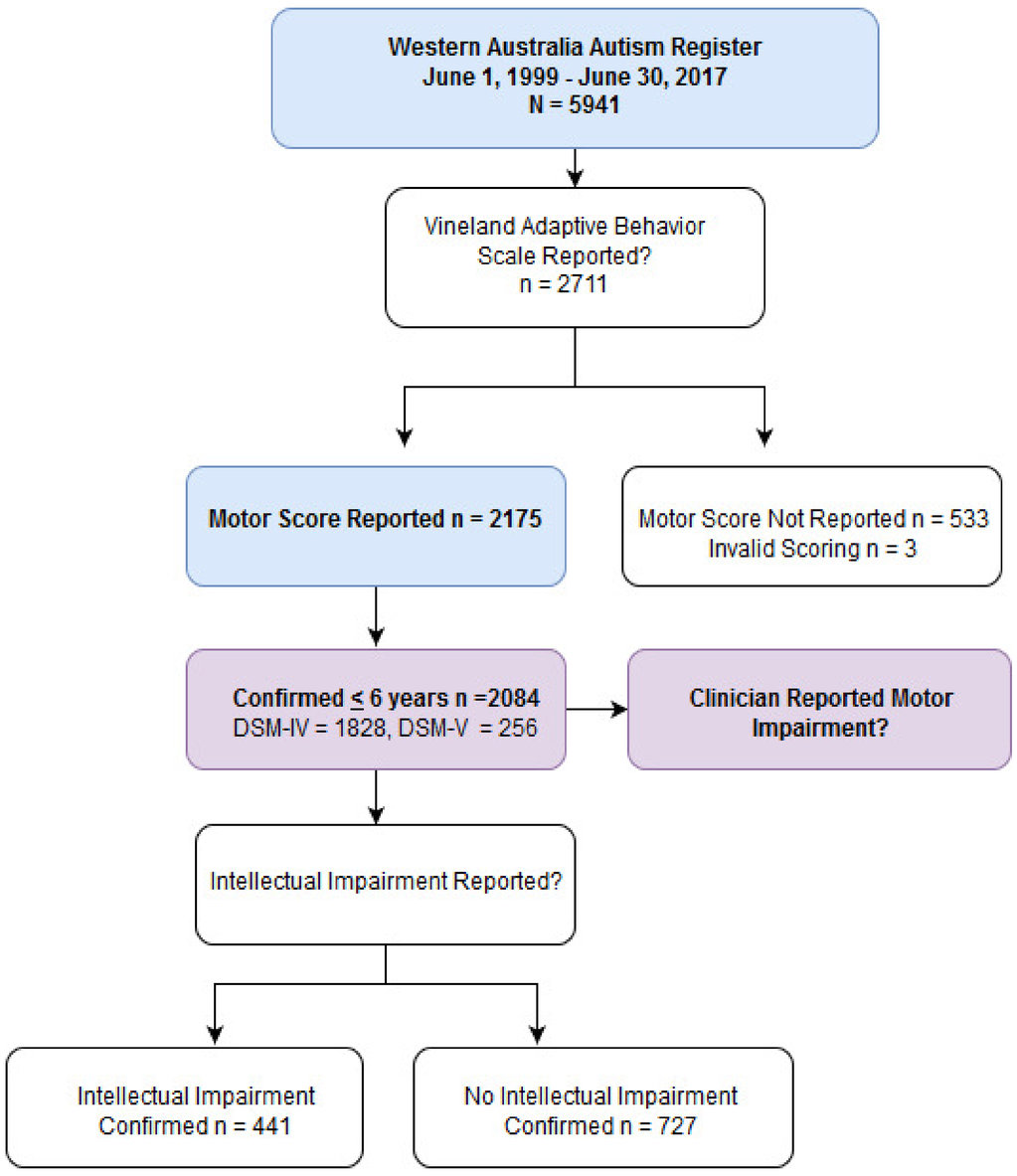

Figure 1. Sample extraction from the Western Australian Autism Register

DISCUSSION

Motor impairment is:

- A prominent and overlooked feature of the autism phenotype
- Related to atypical non-verbal behavior (e.g., body postures and gestures) and repetitive and restricted behavior (e.g., motor stereotypies) symptoms
- More pronounced with increasing age of diagnosis, likely reflective of the impairment becoming amplified as the complexity of motor skills increase with age
- More prevalent in children with intellectual impairment, but still common in children without intellectual impairment

RESULTS

A total of **35.4% of the sample met criteria for motor impairment** (standard score <70), and a further **43.7% scored in the moderately low range** (standard score 70-84). Motor impairment was reported by diagnosing clinicians in 1.34% of cases.

Frequency of impairment in the motor subdomain was slightly lower than other Vineland subdomains (Fig. 2); social skills (79.1% low, 17.7% moderately low), communication (65.7% low, 24.9% moderately low), daily living (62.3% low, 29.3% moderately low).

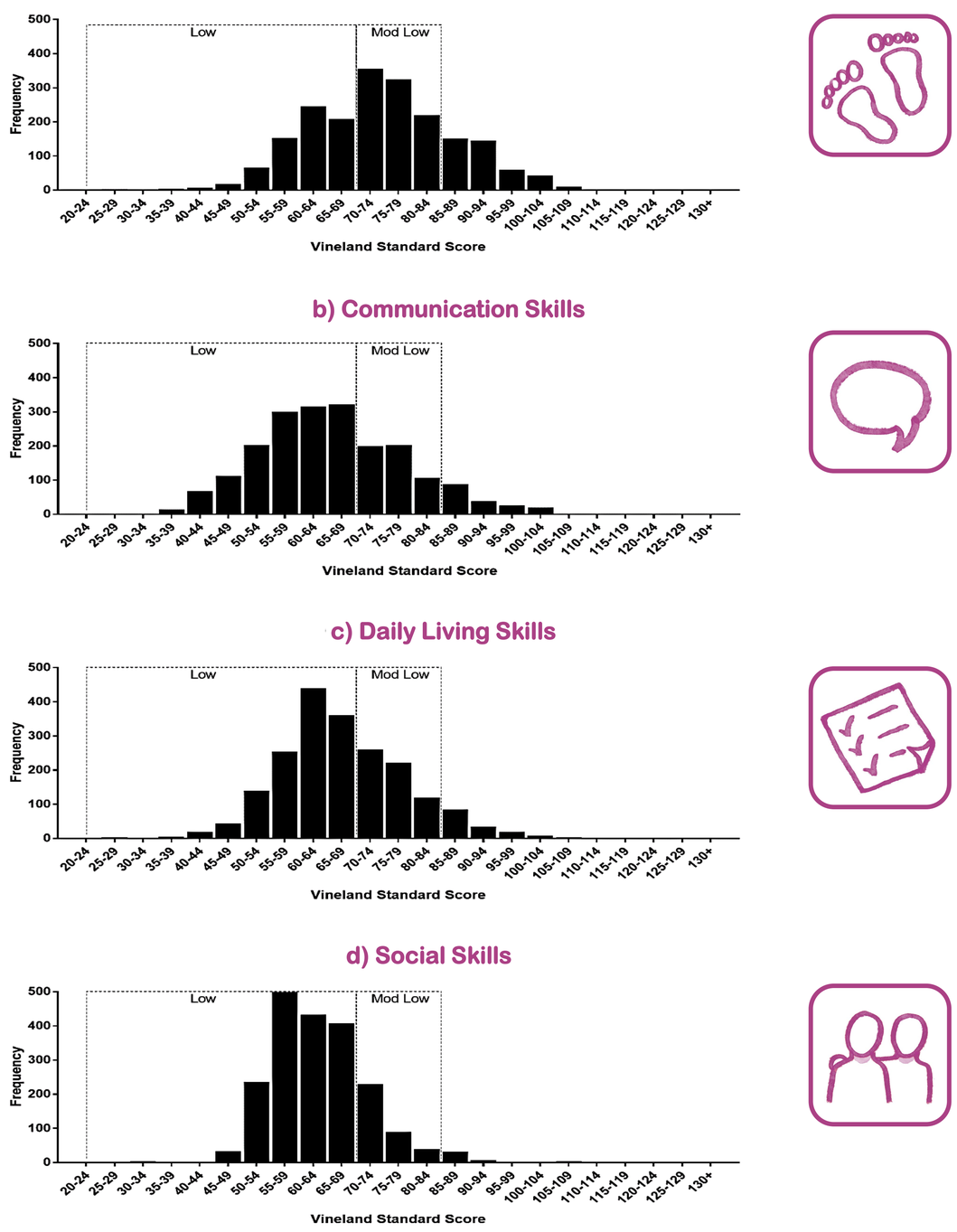

Figure 2. Frequency of scores across Vineland domains

Motor impairment:

- Occurred at a rate almost as common as intellectual impairment (37.7%)
- More prevalent in children with intellectual impairment (52.4% low, 34.9% moderately low) compared to those without intellectual impairment (29.1% low, 42.7% moderately low)
- More common in children meeting diagnostic criteria for impairments in non-verbal behavior and presence of restricted and repetitive behaviors
- More prominent with increasing age of diagnosis (Fig. 3)

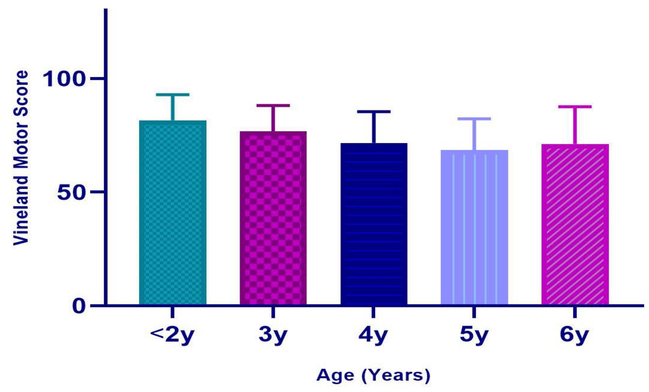

Figure 3. Frequency of motor scores based on age of diagnosis

Findings highlight the need for further consideration of motor impairment as a distinct specifier within the diagnostic criteria and evaluation of autism

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