

The correlation between auditory processing related disorders and comorbidities in the 2025 cohort at Great Ormond Street Hospital



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Introduction & Aims

Auditory Processing Disorder (APD) is a difficulty in the neural processing of auditory information that cannot be explained by peripheral hearing loss or general cognitive ability, and typically presents as poor listening in background noise, difficulty following spoken instructions, and reduced auditory attention and memory.¹

It is difficult to assess because there is no universally accepted definition, diagnostic criterion or test battery; applying different criteria to the same cohort of children has produced diagnostic rates ranging from 7% to 96%.^{1,2} The behavioural tests used also depend heavily on language, attention and working memory, so an auditory-specific deficit is hard to isolate from wider neurodevelopmental difficulties.^{3,4}

APD therefore remains a controversial diagnosis: each child presents differently and often coexists with a range of neurodevelopmental difficulties, which influences presentation, diagnosis and interventions.^{4,5}

This audit aimed to explore the relationship between APD diagnosis and associated comorbidities in children referred to a quaternary paediatric APD service at GOSH during 2025.

Methodology

A retrospective review was conducted during 2025 where a total of 46 patients were accepted into the GOSH APD clinic.

- Diagnostic categories included:
- Auditory Processing Disorder (APD)
 - Spatial Processing Disorder (SPD)⁶
 - Auditory processing traits alone
 - APD with SPD
 - SPD with auditory processing traits
 - No diagnosis

Documented comorbidities included autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), dyslexia, dysgraphia, misophonia, dyspraxia, and other developmental concerns. The frequency of comorbidities within diagnostic groups was examined.

References

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3. de Wit E, Visser-Bochane MI, Steenbergen B, van Dijk P, van der Schans CP, Luinge MR. Characteristics of auditory processing disorders: a systematic review. J Speech Lang Hear Res. 2016;59(2):384–413.
4. Dos Santos JCC, Arruda MA, Masruha MR. Auditory processing disorder in childhood: a critical appraisal of diagnostic validity, functional assessment and interdisciplinary practice. Front Hum Neurosci. 2026;20:1715787.
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Results

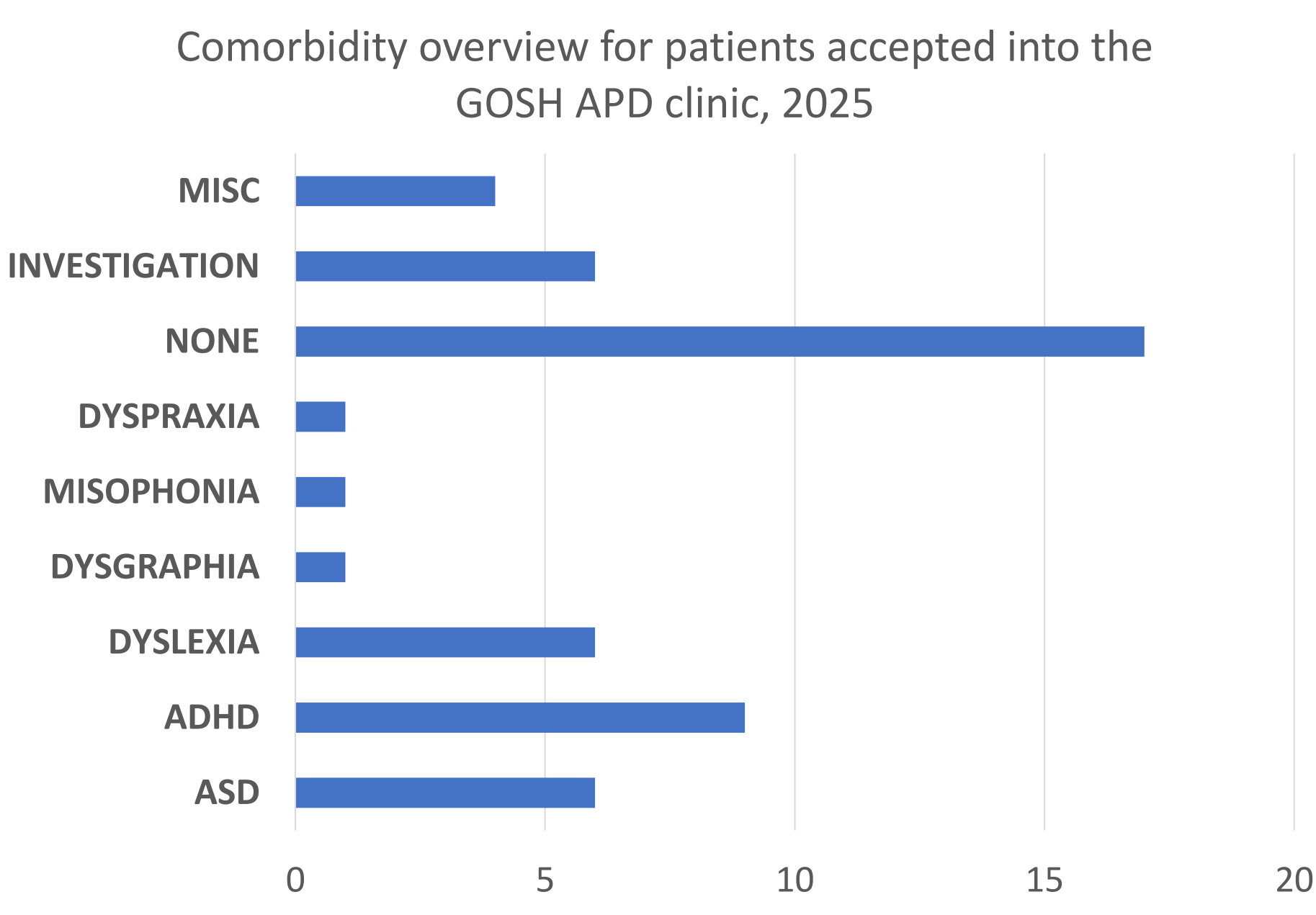
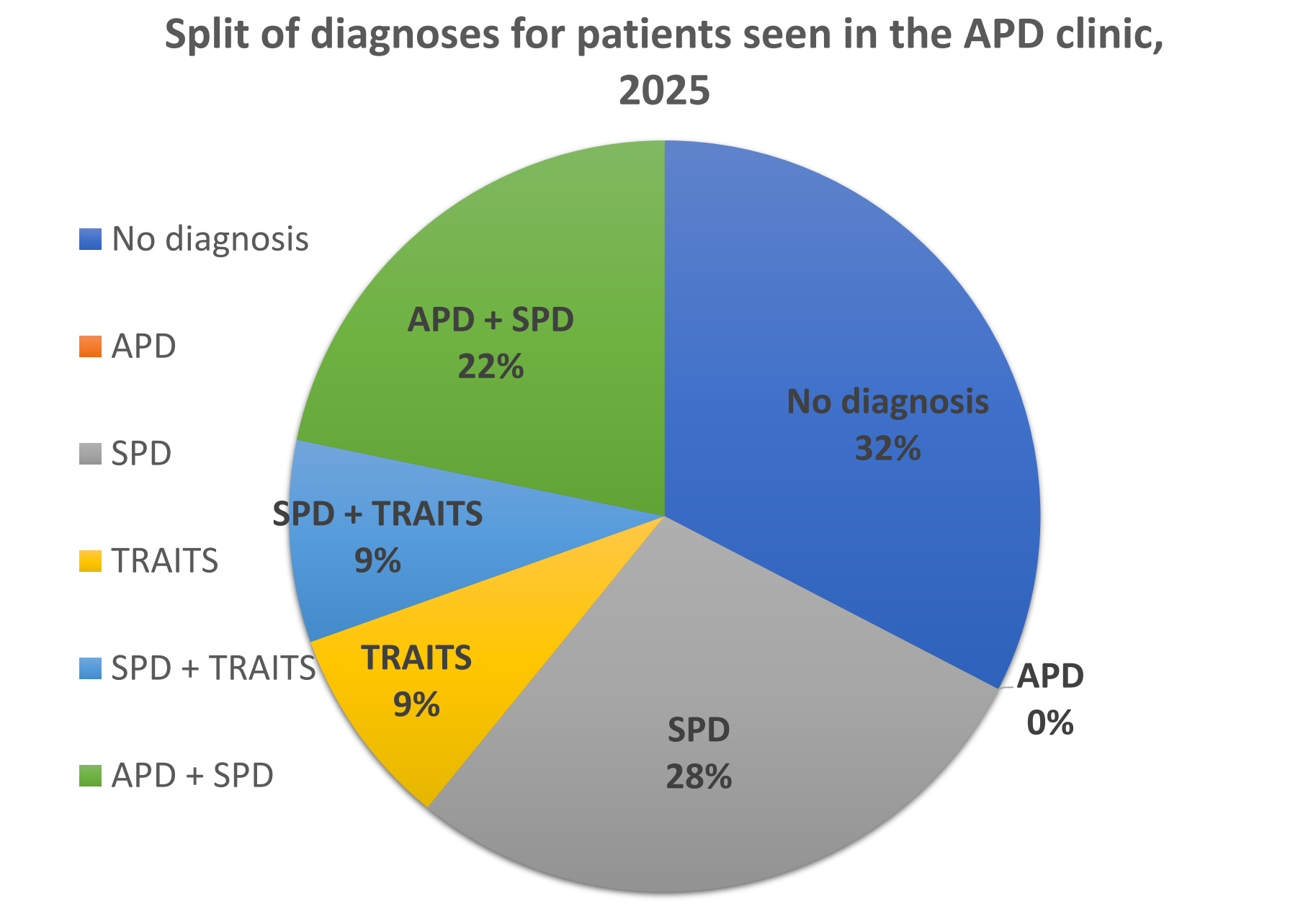
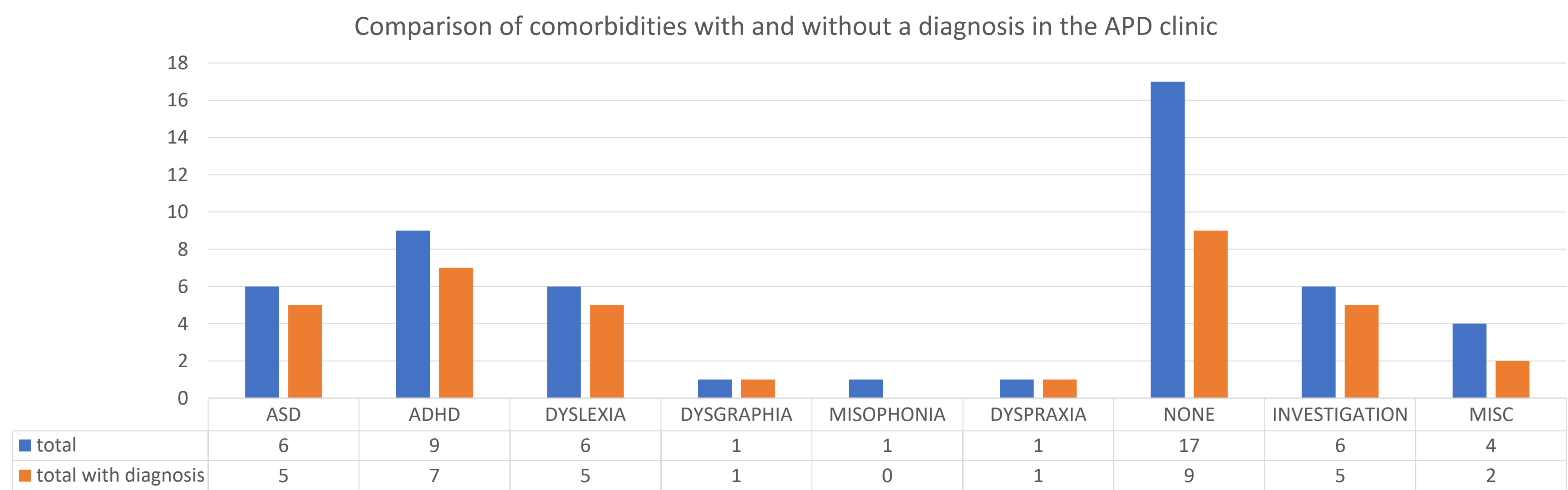
In 2025, total number of patients accepted in the GOSH APD clinic 61% (n=28) received an auditory processing-related diagnosis, comprising 13 SPD (28%), 10 APD+SPD (22%), 4 SPD+Traits (9%), and 4 Traits diagnoses (9%).

Eighteen children (39%) did not have auditory processing related disorders.

37% (n=17) of the total number of patients in 2025 did not have a documented comorbidity.

Nineteen of the 28 diagnosed children (68%) had *at least one* documented comorbidity, compared with nine children (32%) who had no associated condition. ADHD was the most frequently reported comorbidity (n=7), followed by ASD (n=5) and dyslexia (n=5). Smaller numbers presented with dysgraphia (n=1) and dyspraxia (n=1). There was also a category of patients who are under investigation of at least one co-morbidity but have not yet received their diagnosis. Within that group 83% (n=5) received an APD related diagnosis.

Comorbidities were most common within the APD+SPD group, where many children demonstrated multiple overlapping diagnoses. In contrast, children with no APD diagnosis showed fewer neurodevelopmental associations.



Conclusion

The findings demonstrate an association between APD and coexisting neurodevelopmental and learning conditions. Over two-thirds of children receiving a diagnosis had at least one documented comorbidity, with ADHD, ASD, and dyslexia being most prevalent.

These results highlight the importance of multidisciplinary assessment and management when evaluating children with suspected APD.

Recommendations

Further investigation is warranted to determine whether specific comorbidity profiles are predictive of APD subtypes, diagnostic outcomes, and response to intervention.

