



REVIEW OF AN APD (AUDITORY PROCESSING DISORDER) CLINICAL DATABASE

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BACKGROUND

Flinders University's Speech and Hearing Clinic has provided clinical services in the assessment of auditory processing (AP) abilities in children aged 7 years and above and management of those with an auditory processing disorder (APD) for 15 years. The past 7 years have seen major growth in demand for this service and we average 90 full diagnostic assessments per annum on public and private patients in a part time service. Very long waiting lists are an ongoing problem. The clinical database, developed in 1999, was established to support clinical and research activity in this area. It allows us to:

- monitor local referral patterns and patient demographics
- more broadly describe the epidemiology of APD
- analyse patterns of clinical results of APD assessments and comorbidities
- examine data from review clients to better understand the natural history of APD
- develop research projects and recruit research participants from the database information and patient profiles

OUTCOMES

The database for clinical activity since 1995 comprises 519 patients. The age range of the database was 6.1 to 39.0 years (Mean 9.8, SD = 2.6y). There were 382 males (73.6%) and 137 females (26.4%); these included review patients who were in the same gender proportions. The 59 review patients (all seen at their own request) comprise 12.8 % of the patients. They ranged in age from 6.7 to 15.9 years (Mean = 10.3, SD = 2.0).

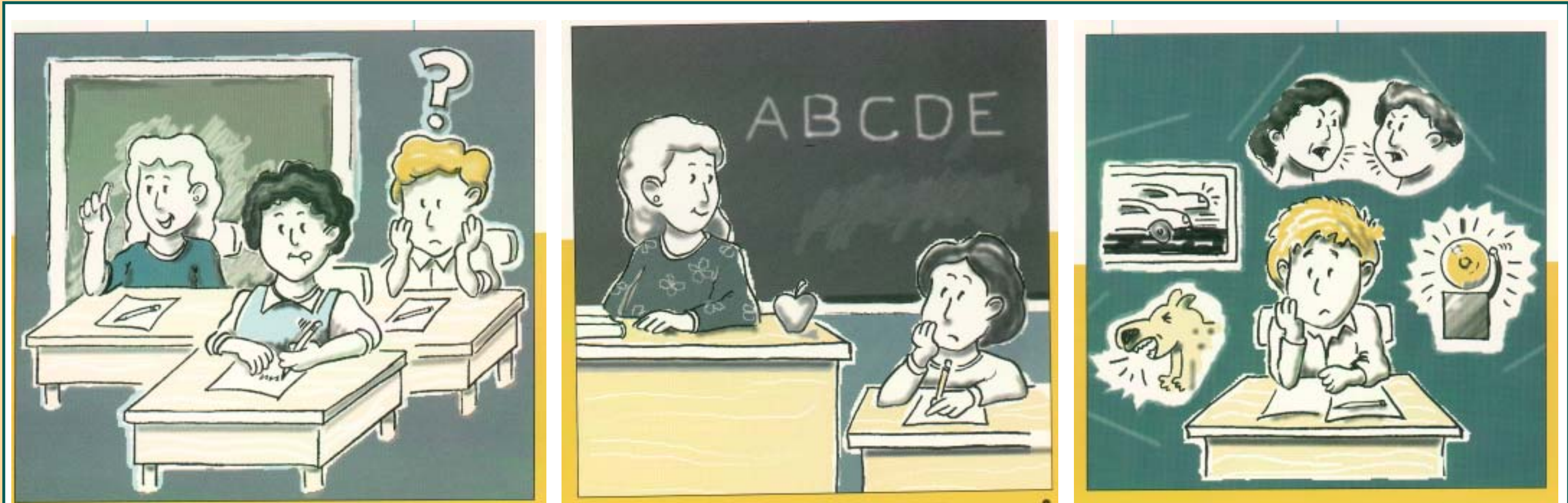
Preliminary analysis of 24 review patients (who may be a biased sample) indicated that of 18 who had APD at review, 11 had APD at first presentation and 7 did not. This is probably a consequence of a narrowing of the variance in normative data with increasing age. One patient who had APD at initial assessment was clear at review. Five review patients did not have APD at either assessment.

Who refers for Auditory processing assessment?

Referral source (% of total)	Likelihood of diagnosis of APD (% referred with APD outcome)
Paediatricians 35	35.4
Speech pathologists 21	54.0
Psychologists 19	32.0
Parents 10	44.0
Educators 6	
Other medical 5	
Other allied health 4	
Total: 100.0	

Based on complete data for 518 patients, 215 (41.5%) were diagnosed with APD. The mean age at diagnosis was 9.9 years (SD = 2.0) and there was no statistical difference in mean age for the non-APD children.

The proportions of boys (74.4%) and girls (25.6%) with APD were not significantly different to the non-APD children.



Images courtesy of **Phonic Ear**®

I have been diagnosed with auditory processing disorder (APD)

Who am I?

I am likely to:

be either a boy or a girl, but more likely to be a boy (ratio 3:1)

In comparison with referred children who did not have APD, I am more likely to:

have had developmental speech and language difficulties (78.6%: 55.2%)(p<.001)

have received speech /language therapy (68.7%: 45.5%) (p<.001)

have received speech/language assistance within the past 12 months (38.2%: 25.6%) (p<.01)

have had a tutor or special education within the past 12 months (75.8%: 55.2%) (p<.001)

have results on the dichotic tests of the AP test battery which are significantly poorer for both the stronger and weaker ear conditions (p<.001)

have a co-morbid language disorder (26%: 8.9%) (p<.001)

be assessed as having a lower relative IQ (p<.001) (see box lower right)

Although I have APD, I am no more likely to have co-morbid Attention Deficit (Hyperactivity) Disorder (ADHD) (NS)

I do NOT differ from referred children without APD in terms of:

- Age
- Handedness
- Current hearing status (normal)
- History of otitis media
- Parental concerns about my hearing in the past
- Having repeated a school year
- A family history of communication, learning and/or behaviour problems

COMMENTS AND CONCLUSIONS

1. Referral sources are appropriately broad and all except speech pathologists are equal as "gatekeepers." Speech pathologists' assessment of a child's phonological and receptive language abilities overlap more closely with areas of AP assessment and a significantly higher proportion of their referrals receive a diagnosis of APD.
2. Diagnosis is made in a significant proportion (41.5%) using stringent diagnostic criteria. These are: results on 2 tests or more in a test battery of 4 tests which are greater than -2 SDs below age mean, using Australian normative data.
3. The mean age of diagnosis is high (9.9 y)
 - this reflects the service issues of long waiting lists in South Australia
 - this may reflect the precedence of other assessments
4. Comorbidity is common. APD is comorbid in 69% of children referred with a language disorder. Forty two percent of children referred with attention deficit disorder (ADHD, ADD or unspecified) had APD. The high comorbidity with language disorder suggests this may be an important area for future research.
5. The developmental and educational impact of APD, as a congenital disorder, with or without comorbidity, is under-estimated.

Relative IQ (psychologist using WISC-R)	APD		No APD	
	n	%	n	%
Below average	26	26.8	14	8.9
Average	69	71.1	105	66.9
Above average	2	2.1	38	24.2
Valid N	97	100.0	157	100.00