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ADHD guidelines

Flaws in the literature and the need to scrutinise the evidence

On 25 October 2011, the National Health and Medical Research Council (NHMRC) announced that the draft Australian guidelines on attention deficit hyperactivity disorder (ADHD) remain unendorsed.¹ The status of the draft guidelines has been in limbo since November 2009, when conflict of interest sanctions were announced against a key United States based researcher whose work had been heavily referenced in the provisional document. As an interim measure until questions about the integrity of the research are resolved, the NHMRC is developing clinical practice points to assist concerned parents and medical professionals.²

The potential for compromised research raises serious concerns in any area of medicine. In the area of ADHD, the heightened vulnerability of the paediatric population requires that these events be taken particularly seriously. Nonetheless, flaws within the ADHD literature are even more fundamental than the current impasse would suggest, and should serve as a timely reminder for all medical professionals to carefully scrutinise the quality of evidence that their clinical decision making is based on.

Attention deficit hyperactivity disorder affects approximately 355 600 Australian children, making it one of Australia's most frequently managed paediatric disorders.³ At present, first line interventions include the use of pharmacological stimulants such as methylphenidate. These drugs pose challenging ethical issues relating to the medication of children and have been associated with significant short and long term side effects.^{4,5} Critics also argue that medication discourages children and their parents from building problem solving skills, and that psychosocial intervention would be more effective.⁶ This controversy has

the potential to cause significant distress among Australian families. Nonetheless, it is unlikely to be resolved soon, due to the emerging consensus that the published research into ADHD is too unreliable to afford meaningful guidance.

A recent systematic review of ADHD interventions concluded that evidence relating to efficacy and safety is consistently 'low' or 'very low quality'.⁴ These concerns have been echoed by a number of authors^{7,8} who highlight deficiencies in design methodology and research generalisability. Specifically, criticism of the literature can be divided into five key areas:

- Population bias: Most studies are biased toward a population of boys aged 6–12 years.⁴ Nonetheless, alternative population subgroups (including girls, preschool children, adolescents and adults) often present with atypical features, and evidence regarding their response to conventional interventions is unclear.⁴ This is a disturbing omission considering that nearly half of all Australian children treated for ADHD fall into this 'atypical' category³
- Inconsistent outcome measures: One of the major limitations of existing ADHD research is the use of heterogeneous outcome measures to quantify treatment response. Some studies document the core symptoms of ADHD (inattention, hyperactivity and impulsivity).^{7,8} Others document secondary indices of functional impairment (including poor academic progress, dysfunctional peer relationships and strained parent-child dynamics).^{7,8} Arguably, this reflects a widespread confusion over what the goals of ADHD treatment should be
- Short term focus: Although ADHD is a chronic condition, conventional follow up for pharmacological interventions typically average less than 25 days.⁷ Even studies of 'long term interventions' often follow patients for less than 1 year.⁷ While there are notable

exceptions to this pattern, more evidence is clearly needed regarding the long term effects of treatment and adverse events

- Small sample size: The data for most ADHD interventions is based on very few studies, many with a small sample size.^{4,7} This is a particular problem for nonpharmacological interventions
- Comparing the incomparable: Although many systematic reviews conclude that pharmacological interventions are more effective than psychosocial interventions,^{7,8} the diversity of interventions that are conventionally categorised 'psychosocial' makes meaningful conclusions difficult. For example, parent-child therapy teaches parents discipline strategies and boundary management within the home, while educational interventions target learning activities in an academic setting. The efficacy of these interventions cannot be interchangeably quantified, and will vary significantly depending on a child's developmental stage.

The flaws identified in the ADHD literature have parallels in almost all other areas of practice. This deserves careful consideration by medical practitioners. Lack of evidence for efficacy does not equal evidence that an intervention lacks efficacy. Nonetheless, it does place a greater onus on clinicians to educate patients about all available treatment options and to obtain genuinely informed consent. Accordingly, we have an ethical, professional and legal obligation to make ourselves aware of these potential shortfalls, and to regularly engage in a robust assessment of evidence based medicine.

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