

## 5. Discussion

This study has presented trends in the prescribing of stimulant medication for the treatment of ADHD in adults in NSW. Although there is very little available data with which to compare these trends, they are generally consistent with reported patterns of stimulant prescribing in Australia and overseas.

Over the 1990s and into the early 2000s in NSW, there was a significant increase in the prescribing of stimulant medication for the treatment of ADHD in adults. A similar upward trend in the overall use of stimulants has been reported for Australia, the United States, Canada, New Zealand, and several European countries.<sup>54</sup> Salmelainen (2002) also showed that prescribing of stimulants for children with ADHD in NSW increased markedly during the decade leading up to 2000.<sup>55</sup>

These increases are likely to be caused by a number of factors. In recent years, ADHD as a disorder afflicting adults has gained greater acceptance, with a variety of scientific evidence supporting the validity of the adult form of ADHD.<sup>14</sup> It is now well understood that ADHD does not disappear as adulthood is attained, but rather persists in a significant proportion of child sufferers.<sup>43-45</sup> This raised awareness and understanding of the disorder has increased the likelihood of people seeking and receiving treatment. Another factor likely to have played a role in the upward trend in stimulant prescribing is the increased availability of specialised services for assessing and treating adult patients.

The trends in the present study indicate that prescribing of stimulant medication for adults with ADHD has changed somewhat with respect to the age and sex of the patient involved. Over the 1990s to the early 2000s, the age profile of patients has generally matured. Whereas in the early 1990s adults first commenced on stimulants were dominated by young adults aged less than 30 years, and particularly in their teens, by 2002 adults aged 30 years and older formed the majority. Similarly, the increases in rates of stimulant treatment over the trend period were greatest for adults aged 30 years and over. As at June 2003 young adults still had the greatest rate of treatment. This is to be expected given that symptoms of ADHD decline with age.<sup>42</sup>

The results of this study suggest a very small proportion of adults with ADHD are receiving stimulant treatment. The rate of stimulant treatment for adults with ADHD in NSW was less than 0.1 per cent as at June 2003. This represents only a fraction of the two per cent of adults estimated to be affected by ADHD. Added to this, two-thirds of the adults on stimulant treatment as at June 2003 commenced stimulants for the first time when they were an adult, while only one-third had been treated as children. Thus, for many adults the treatment they do receive is a long time coming.

Over time, the sex distribution of adults in stimulant treatment in NSW has changed. While males comprised the majority of adults commenced on stimulant medication and evidenced the higher rate of treatment, their majority was reduced somewhat over time. The increased representation of females in adult treatment figures is consistent with trends in prescribing for children in NSW.<sup>55</sup> The ratio of males to females in the present study (about two to one) was much lower than that seen for children (about five to one). A more even gender distribution among adults with ADHD has been reported elsewhere.<sup>51</sup> This occurs for several reasons. As people with ADHD age, the way in which they come to be assessed and

treated changes. Among children, boys tend to attract more attention than girls because they are more hyperactive and disruptive in their behaviour. They may be referred for assessment and treatment by a variety of individuals. Referral for adults is typically self-referral and therefore generally not subject to this gender-based referral bias. Indeed, among the adult population, females may be more willing and likely to seek treatment than males. Also, in recent years, there has been a greater emphasis on the inattentive aspects of ADHD, which are typically predominant among females with ADHD.

The drug most commonly used for the treatment of adult ADHD in NSW is dexamphetamine. A larger proportion of adults are started on dexamphetamine than methylphenidate, and the rate of treatment with dexamphetamine is higher than that for methylphenidate. There is no evidence available to indicate which drug provides better treatment for adults. In the United States, methylphenidate has traditionally been the stimulant of choice. In NSW, the cost of the medication is likely to play a large role in drug choice. A 100 tablet supply of dexamphetamine is presently available for about a third of the cost of the same quantity of methylphenidate. The extended release preparations (only available for methylphenidate) are more expensive again, and as they become more widely used in the future, the cost differential between dexamphetamine and methylphenidate will become more marked.

Almost three-quarters of adults in the present study were being treated with dexamphetamine as at June 2003. The percentage treated with dexamphetamine was quite low among the youngest adults (around 50 per cent for 18–19 year olds), while somewhat high among the eldest adults (around 85 per cent for people aged 50 years and over). These relative differences contrast with the pattern of prescribing seen for children in NSW. In December 2000, just under half of all children with ADHD treated with stimulants in NSW were prescribed dexamphetamine. Across age groups, the percentage variation was much smaller, going from about 43 per cent (four year olds) to about 54 per cent (9–11 year olds).<sup>55</sup>

The relatively low rate of dexamphetamine treatment among young adults (as compared with older adults) is largely explained by the fact that many of these individuals initially received treatment when they were children. The tendency for more children to be treated with methylphenidate than dexamphetamine thus appears to carry over into young adulthood for those individuals for whom treatment is commenced during childhood. Overall differences between children and adults in the type of stimulant medication used in treating ADHD may relate to the cost of treatment and/or variations in drug effectiveness and tolerance. They may also relate to prescriber differences, such as specialty (paediatrician versus psychiatrist).<sup>61</sup>

As has been noted in other studies,<sup>54–57,59</sup> there are regional differences in rates of stimulant treatment. In the present study, five out of 17 area health services in NSW had rates of treatment higher than the State average. In two area health services, the rate of stimulant treatment was no more than a third of the State average. It should be noted that the area health service with the lowest rate (the Far West Area Health Service) is a geographically remote area and has very limited specialist health services compared with other areas in NSW.

It is interesting that the geographical pattern of prescribing seen for adults in this study was not the same as that previously reported for children in NSW.<sup>55</sup> Whereas in this study the Wentworth Area Health Service recorded the highest rate of

treatment in NSW, it ranked as the fifth highest area for rate of stimulant treatment for children. The second highest ranked health area for adults, Northern Sydney Area Health Service, was the eighth highest area health service for rate of stimulant treatment for children. The Far West Area Health Service had the lowest rate of treatment for both adults and children, lending further support to the notion that limited service availability contributes significantly to its low rate. Availability of services may also contribute generally to regional differences in rates of treatment. Among other factors, regional and age differences in treatment rates may also be influenced by different rates of disorder persistence, differences in treatment retention rates, socioeconomic factors, and variations in prescriber practices.

With ADHD being a chronic disorder, it is not surprising that a considerable number of adults were found in the present study to be receiving stimulant treatment for relatively long periods of time. About one-fifth of adults on treatment as at June 2003 had been on medication continuously for more than five years.

As has been observed for children commenced on stimulant medication,<sup>55</sup> a relatively high proportion of patients do not continue with stimulant treatment after initial treatment. For adults examined in this study, about one in four discontinued treatment after their first episode. There is some evidence to suggest that this rate of attrition may be higher for younger age groups than older age groups. An attrition rate of the magnitude found in this study is consistent with reports that stimulant treatment is not effective in about one-quarter of adults with ADHD.<sup>63,64</sup>

The present examination of individuals commenced on stimulant medication for the first time indicates that stimulant treatment is effective for many adult ADHD sufferers. Of the 58 patients commenced on medication for the first time in November to December 2002 and for whom information on treatment effectiveness was available, 53 reported improvements in their symptoms. The remaining five patients reported a mixed response to medication. Unfortunately, information on treatment effectiveness for 40 of the 98 patients who commenced treatment for the first time was not available.

The analysis of the sample of adults with ADHD treated with stimulant medication for the first time found many features commonly reported for adults with ADHD. Comorbidity, or a history of other disorders, was quite prevalent. More than half (55.1 per cent) were reported to have a history of some type of mental health problem other than ADHD. About 45 per cent of the adults had current or previous depression. Almost one in five experienced anxiety at some time. Differential diagnosis and management of comorbidity can be complex. For example, some adults, having experienced ADHD symptoms most of their lives, fail to recognise that their ADHD symptoms are problematic or treatable. It is not until they experience acute mood or anxiety symptoms that they present for assessment and treatment. Because the mood or anxiety problem is the most salient, the clinician may not detect the underlying ADHD. Treatment of these salient symptoms only, and not the underlying ADHD, may lead to a partial response including a continuation of impairment. Stimulant medication, either alone or in conjunction with other psychotropic medication, may relieve the comorbid symptoms, as well as the ADHD symptoms, especially if the comorbid symptoms are a consequence of the untreated ADHD.<sup>1,94</sup>

The presence of ADHD behaviours in adulthood increases the risk for substance abuse disorders.<sup>40</sup> A history of substance abuse or problematic drug use was evident in about 13 per cent of the sample of adults commenced on stimulants

for the first time. In these cases, cannabis was the most commonly reported drug but other substances used included: alcohol, amphetamines, ecstasy, cocaine, heroin, LSD, and therapeutic narcotics. An apparent preference for cannabis among young adult males with ADHD has been reported elsewhere.<sup>10,43</sup>

Although not advocated as an integral part of assessment for ADHD, electrophysiological assessment was commonly employed in relation to adults commenced on stimulant medication. Among the sample of patients examined, just over one-third had undergone (or were referred for) such assessment. In many of these assessments (seemingly conducted by a single specialist centre), the patient also appeared to have undergone assessment with a variety of other tools, including the Wender Utah Rating Scale. That a notable proportion of adults with ADHD undergo such assessment, which is seemingly independent of the doctor treating the patient, suggests that validation of the disorder by some objective means is important to many patients and/or medical practitioners.

A number of adults commenced on stimulants for the first time had undergone non-stimulant treatments. Of the sample examined, about 32 per cent had been treated with a non-stimulant medication. Almost one-quarter had undergone some type of treatment that did not involve medication, such as psychotherapy or cognitive behaviour therapy. It should be noted here that these figures may not include all cases where other treatment was used. The analysis of the sample of adults who commenced treatment for the first time was restricted to information provided by doctors as part of their application for approval to prescribe stimulants. In some cases, they may have failed to provide some details and therefore the prevalence of other treatments, and indeed other characteristics of the sample of adults who commenced for the first time, may be higher than presented here.

It is widely accepted that the treatment of ADHD should not be limited to medication. Although there is very little scientific research to support the use of specific psychosocial or behavioural interventions, there are a variety of strategies that patients can employ to improve their functioning. The more commonly suggested strategies include: joining a support group, environmental restructuring (such as using a daily planner, keeping duplicate keys in accessible locations, obtaining written instructions, using checklists), undergoing communication skills and anger management training, and using a coach. The idea of coaching is to have a person (such as a friend or hired professional) help the individual to solve problems by clarifying goals and developing the skills and strategies needed to achieve those goals. The coach provides encouragement and keeps in regular contact with the individual.<sup>2</sup>

In Australia, the National Health and Medical Research Council has recommended the development of comprehensive treatment management plans for individuals with ADHD.<sup>37</sup> This recommendation is adopted in NSW criteria issued to doctors for the prescribing of stimulant medication for adults with ADHD.<sup>88</sup>

As discussed earlier, ADHD as an adult disorder continues to be controversial, partly because of issues relating to its diagnosis and partly because stimulant medication is the mainstay of treatment. The key to addressing any concerns regarding the use of stimulant medication is to ensure that comprehensive assessment procedures are used. Given the high prevalence of comorbidity and the overlap of ADHD with other disorders, the assessment procedure is vital for differentiating patients who have ADHD and those who don't, and ensuring only those who require stimulant medication are treated with such. Considered

assessment is also necessary to identify those adults who may be at risk of drug misuse.

For patients at risk of substance abuse, stimulant medication may still be appropriate, but requires the doctor to be more prudent. In such cases, the doctor might limit the number of tablets with each prescription and carefully record what he or she has prescribed. The doctor should maintain frequent contact with these patients and document their improvement with established rating instruments. Urine toxicology testing can be used on a scheduled and random basis. To limit the potential for abuse, extended release or long-acting stimulant preparations can be prescribed.<sup>74</sup>

In conclusion, while this report has shown that in NSW there has been a marked upward trend in the prescribing of stimulant medication for adults in the last 10 or so years, the prescribing has not been excessive. Further, data suggest that stimulant prescribing for adults has levelled off somewhat in recent years. Relative to the number of children with ADHD who are already undergoing stimulant treatment, and the likely number of adults with ADHD in the community, only a minority of adults with ADHD are undergoing stimulant treatment. The challenge for the mental health system is to ensure that those adult individuals who require assistance are identified and provided with appropriate treatment, and therefore given the opportunity to maximise their potential.