The Construction of Psychiatric Diagnoses: The case of adult ADHD

Abstract

Psychiatric diagnoses have come to shape the way that people conceive of themselves and their lives. A new diagnosis, adult attention deficit hyperactivity disorder (ADHD), has been strongly promoted by the pharmaceutical industry, but the authors question whether the disorder represents a discrete condition that can be distinguished from ordinary behaviour.

Citation

Moncrieff, J., Rapley, M., and Timimi, S. (2015). 'The Construction of Psychiatric Diagnoses: The case of adult ADHD', *The Journal of Critical Psychology, Counselling and Psychotherapy,* 15 (1), pp. 42-55.

Full-Text

The Construction of Psychiatric Diagnoses: The case of adult ADHD*

Joanna Moncrieff, Mark Rapley & Sami Timimi

SUMMARY: Psychiatric diagnoses have come to shape the way that people conceive of themselves and their lives. A new diagnosis, adult attention deficit hyperactivity disorder (ADHD), has been strongly promoted by the pharmaceutical industry, but the authors question whether the disorder represents a discrete condition that can be distinguished from ordinary behaviour.

KEY WORDS: Psychiatric diagnosis, adult ADHD, pharmaceutical marketing, psy-industrial complex

Psychiatric diagnosis is notoriously pliable. In recent years new diagnoses such as Social Anxiety Disorder, Premenstrual Dysphoric Disorder and Hypoactive Sexual Desire Disorder have been fashioned and promoted by the pharmaceutical industry (Moynihan & Cassels, 2005; Tiefer, 2006; Koerner, 2002) and older diagnoses such as Melancholia or Neuraesthenia have either withered away or, as in the case of Depression and Bipolar Disorder, have expanded beyond recognition (Healy, 2006). Whereas there was once a stigma attached to having a psychiatric label, since the 1990s, drug company funded publicity, and professionally sponsored disease awareness campaigns, such as the UK's Defeat Depression Campaign or Australia's *beyondblue* initiative, have successfully eroded this for many diagnoses. People now frequently arrive at a doctor's office requesting a particular psychiatric label and its associated drug treatment. That is to say, we have recently seen the development of an entirely new, and historically unprecedented, class of psychiatric diagnoses – like PTSD and Asperger's Syndrome – diagnoses that patients actively want to have.

---

*First published in *The Journal of Critical Psychology, Counselling and Psychotherapy, 11*, 1, 16–28

Joanna Moncrieff is a Consultant Psychiatrist and author of *Straight Talking About Psychiatric Drugs* (PCCS Books) Mark Rapley was Director of the Doctoral programme in Clinical Psychology at the University of East London, Sami Timimi is a Consultant Child Psychiatrist.

One recently fashioned – and increasingly popular – diagnosis is Adult ADHD. Building on the propagation of the childhood condition, over the last few years this diagnosis has also been incorporated, almost unquestioned, into the psychiatric canon. Advocates of the 'condition' argue that it is a real but previously unrecognised disorder, that needs to be diagnosed and treated more frequently (Kessler et al., 2006). They argue that the condition can be reliably defined and diagnosed, that it is distinguishable from other conditions, that it predicts significant adverse outcomes, and responds well to stimulant drugs (Asherson et al., 2010). We have argued elsewhere that all these contentions are questionable (Moncrieff & Timimi, 2010), but to date there has been no detailed analysis of the evidence base for the diagnosis.

The practically unchallenged acceptance of Adult ADHD is particularly remarkable because the recommended treatment is medication employing a prohibited class of recreational drugs, namely stimulants. The widespread diversion and illicit use of prescription stimulants has been well documented in the academic literature (Arria et al., 2008) and has been identified as a significant problem by policy makers in some areas of the globe (Government of Western Australia, 2007). The extensive literature on adult ADHD is mostly silent on this issue, however, although supporters of the concept sometimes claim, without citing any factual support, that diversion is not a problem (Moyer, 2005). Not withstanding these claims, it is likely that recreational drugs have not been so easily obtainable on prescription since the widespread prescription of benzodiazepines in the 1980s. Research with drug users suggests they are well aware of how to use a diagnosis of Adult ADHD to acquire their drug of choice (Schubert et al., 2009).

An alternative approach to understanding the phenomenon of Adult ADHD is to view it as the latest creation of the psy-industrial complex (Rose, 1998), like Premenstrual Dysphoric Disorder and Hypoactive Sexual Desire Disorder, constructed by the pharmaceutical industry to market a particular class of drugs, with the support of sections of the psychiatric profession. Nikolas Rose has described the influence of psychological and psychiatric concepts on how people come to construct their own difficulties and how, more recently, we have been encouraged to view ourselves as 'neurochemical selves' (Rose, 2004). He shows how the methodological trappings of science; statistics, experimentation and classification, and the discourse of physical medicine are utilised to construct conceptual frameworks through which people can come to understand and act upon themselves. As he suggests:

> the conduct of persons becomes remarkable and intelligible when, as it were, displayed upon a psychological screen, reality becomes ordered

> according to a psychological taxonomy, abilities, personalities, attitudes and the like become central to the deliberations and calculations of social authorities and psychological theorists alike (Rose, 1998) (p. 60).

In this sense psychiatric diagnoses like Adult ADHD redefine everyday difficulties, whether they be sadness, anxiety, mood swings or inattentiveness as signs of sickness, as disease or disorder in need of treatment. David Healy has argued that a variety of changing diagnoses have been applied to the pool of 'everyday nerves' over the last few decades, driven primarily by the marketing imperatives of the pharmaceutical industry. Hence the market for 'anti-anxiety' medication, the benzodiazepines, was transformed in the early 1990s after the scandals that erupted around benzodiazepine dependence, into a market for 'antidepressants', by the popularisation of a new and broader concept of depression (Healy, 2004). More recently, as many antidepressants have come off patent and atypical antipsychotics have become commercial blockbusters, depression itself has been transformed into a newly expanded concept of bipolar disorder, driven again by disease awareness campaigns run by drug companies (Healy, 2006). The modern notion of depression was itself fashioned alongside the introduction of the first drugs that were labelled as 'antidepressants' in the 1950s and 1960s (Moncrieff, 2008).

Increasing numbers of women are being diagnosed with adult ADHD, and in many countries women outnumber men (Castle et al., 2007), despite the fact that the diagnosis of childhood ADHD is strongly associated with being a boy (Timimi, 2005). Much promotional material now targets women, and suggests that adult ADHD may be the latest framework offered to women through which to express their distress and dissatisfaction (Usher, 1991). However, advocates have argued that ADHD is merely under-recognised in girls (Staller & Faraone, 2006; McGee & Feehan, 1991).

In contrast to the presentation of benzodiazepines as non-specific 'tranquilisers', the marketing of the new antidepressants of the 1990s was based on the idea that depression was caused by a chemical imbalance that drugs could help to rectify. Rose has argued that the popular acceptance of this message has fundamentally altered the way people think about the nature of being human (Rose, 2004). Being human is, under this conception, to be little more than our brain chemicals and hence, in theory, we can use drugs to adjust or rectify our neurochemical state to achieve an ideal level of functioning.

Like schizophrenia, depression and bipolar disorder, adult ADHD is presented in the dominant psychiatric literatures as a neurodevelopmental or neurobiological disorder that responds in a specific way to a particular type of chemical treatment. Because that treatment is a recreational (and presently

illicit) drug, adult ADHD not only has the potential to transform the way we think about various everyday experiences, like forgetfulness, but also to simultaneously normalise and mystify the use of psychoactive substances. The official ratification of the existence of Adult ADHD is then potentially transformative of our understanding of how people use recreational substances, including caffeine and nicotine, for example, and turns the ordinary human inclination for substance use into a medical treatment for an underlying disease.

Here we argue that, in contrast to the notion that it is a recently discovered pre-existing disease, adult ADHD is better understood (*pace* Rose), as one of a number of recent constructs, devised to market a particular class of pharmaceuticals that has started to shape the way in which people think and talk about themselves and their experiences. In order to support our case we examine the evidence base for adult ADHD, to see whether it supports the disease-based concept of adult ADHD as a specific disorder, a disease in the sense of a condition that can be clearly distinguished from other conditions, that has a predictable and homogenous course and outcome, and that responds to specific treatment. Finally, we examine the implications of the popularisation of a disease concept that is linked to the prescription of prohibited substances.

The rise of adult ADHD

In recent years ADHD has been diagnosed with increasing frequency in adults as well as children. Although adult ADHD is conceptualised as a continuation of childhood symptoms, the diagnosis is increasingly being applied to adults who were never diagnosed as children and prevalence studies estimate that between 5% and 9% of the adult population may suffer from the disorder at any one time (Kessler et al., 2006) (Simon et al., 2009). Whereas ten years ago, adult ADHD was a little known and rarely used diagnosis, it is now the focus of increasing academic attention (Figure 1.) and *soi disant* experts are urging that more should be done to identify and treat people with the diagnosis (Kessler et al., 2006). In Europe, the United States and the United Kingdom, special 'adult ADHD' services have been set up to provide specialist diagnostic assessments and treatment, to raise awareness of the condition and screen various populations for its presence (Edwin & McDonald, 2007). Many clinical guidelines, including the United Kingdom's recently published National Institute for Health and Clinical Excellence (NICE) guidelines, have endorsed the disorder and recommended treatment with stimulant drugs (National Institute for Clinical Excellence, 2008). NICE have recently produced a commissioning guide to help local health organisations obtain funding for and set up further adult ADHD services (National Institute for Health and Clinical Excellence, 2010).

Parallel with the acceptance of the diagnosis of adult ADHD, there has been a phenomenal rise in the prescription of stimulants, and related drugs, which has been particularly marked in certain parts of the world including the United States, the United Kingdom and Australia. Dexamphetamine prescriptions dispensed to children in Western Australia, for example, increased by 2400 percent, and those for methylphenidate by 620 percent between 1991 and 1998 (Mackay & Kopras, 2001). Data from England show that overall prescriptions for stimulants increased by more than 500 thousand between 1998 and 2008, an increase of 235%, with costs increasing over ten times (Information Centre for Health and Social Care, 2009; Information Centre for Health and Social Care, 1999). In the United States, prescriptions of stimulants issued to adults alone doubled between 2000 and 2005 (Castle et al., 2007).

The pharmaceutical industry appears to have been instrumental in the rise of adult ADHD and associated prescribing. Pharmaceutical marketing companies have explicitly identified Adult ADHD as an 'expanding and lucrative market' for stimulants and related drugs (Lead Discovery, 2004). Several companies have run direct to consumer advertising campaigns in the United States, which market the disorder by suggesting that common behaviours (such as forgetting car keys) may be symptoms (Food and Drug Administration, 2005). Company websites also contain screening questionnaires that encourage people to seek help if they think they have the diagnosis. Moreover, it has been revealed that some of the researchers who most vigorously promoted the concept of adult ADHD, and conducted many of the drug trials, failed to disclose millions of dollars of income they had received from pharmaceutical companies (Harris & Carey, 2008).

Many studies report higher rates of adult ADHD in women than men, in contrast to the situation in children where boys outnumber girls by a factor of 4 (BUPA, 10 A.D.) The growth in stimulant prescriptions has also been far larger in women (Castle et al., 2007) and educational and promotional material aimed at women is burgeoning. The health.com website, run by Integrated Solutions, a company that offers 'smart, strategic advertising opportunites' to its clients prominently features up-to-date medical information on topics such as *Celebrities Living With Adult ADHD* and describes adult ADHD to women as 'a neurobehavioural condition marked by poor memory, the inability to concentrate on important tasks, and tendency to fidget and daydream, among other symptoms.' The website encourages women to consider the diagnosis by describing how symptoms may be 'more subtle and easily missed' in women (health.com, 2010). *ADDITUDE* magazine's website, a commercially sponsored magazine for sufferers of ADHD, also worries that 'Too often ADD women and girls go undiagnosed and untreated' and carries an article to help them 'learn how to recognise symptoms and get help' (Connolly, 2010).

The validity of adult ADHD

The reason that Adult ADHD is so appealing to drug companies can be readily deduced from both the official diagnostic criteria that are said to define it and the 'symptoms' contained in commercially available 'do-it-yourself' checklists (see for example *Quiz: Do You Have Adult ADHD?* at the health.com website: http://www.health.com/health/gallery/0,,20343014,00.html). All lists of proposed symptoms of adult ADHD contain multiple experiences and behaviours that are nigh on human universals, including forgetfulness, lack of organisation, a tendency to delay important tasks, to be distracted by noise, difficulty waiting to take a turn, irritability and so on. Box 1 shows the *NHS Choices* website's diagnostic criteria, which are similar to other lists of criteria, including the criteria for the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2010). The latter provide numerous examples of the behaviour that might qualify as symptoms, including failing to pay attention to detail, difficulty 'remaining focused during lectures, conversations or reading lengthy writings,' showing reluctance to engage in 'homework … preparing reports, or reviewing lengthy papers,' frequently losing objects such as 'keys, paperwork, eyeglasses or mobile telephones,' 'starting tasks without adequate preparation or avoiding reading or listening to instructions' and 'impulsively buying items, suddenly quitting a job, or breaking up with a friend'.

It is not clear why such diverse phenomena should be grouped together, and it is clear that the overdetermined, inclusive and general nature of the symptoms allows many problems that might have been given a different diagnosis, or none, to be re-interpreted as constituting adult ADHD. Although the *DSM-5* proposals specified that 'There must be clear evidence that the symptoms interfere with or reduce the quality of social, academic, or occupational functioning' (American Psychiatric Association, 2010), it is difficult to think of circumstances in which someone seeking help would not fulfil, or believe they fulfil, this criterion.

Moreover, it is unclear how adult ADHD relates to the childhood condition, since there appears to be a consensus that people with adult ADHD have a different spectrum of symptoms from children supposedly afflicted with the same disorder. Suggested features of adult ADHD include numerous aspects of mental functioning and behaviour that are not even examined in children including lability of mood, irritability, stress intolerance, anger and risk taking and, in contrast to the childhood condition specifications of adult ADHD place little emphasis on hyperactivity. Some commonly used assessment scales for adults include whole new domains such as 'problems with self concept' (Conners et al., 1999), and some exclude hyperactivity altogether (Brown, 1996).

Since adult ADHD is thought to involve lower levels of the core features of childhood ADHD and the presence of different symptoms, there seems to be little basis for concluding that childhood and adult ADHD are the same disorder. The NICE guideline endorsed the concept of adult ADHD on the basis of the *absence* of consistent evidence of a difference between childhood and adult ADHD in terms of symptom profiles, rather than any positive evidence suggesting similar symptoms in adults and children (National Institute for Clinical Excellence, 2008).

The well-documented rates of 'co-morbidity' in people diagnosed with adult ADHD confirm the difficulty of viewing adult ADHD as a discrete disorder. In the North American National Comorbidity Survey, 38% of adults diagnosed as having ADHD also fulfilled criteria for a mood disorder, 47% for an anxiety disorder, 15% had a substance abuse disorder and 20% were diagnosed as having intermittent explosive disorder (Kessler et al., 2006). Another study found that 87% of adults diagnosed with ADHD had at least one other psychiatric diagnosis, and 56% had two (McGough et al., 2005). The recently published NICE guideline noted the overlap with various personality disorders, including antisocial, borderline and emotionally unstable personality disorders as well as depression, anxiety and the modern conceptions of bipolar and bipolar spectrum disorder (National Institute for Clinical Excellence, 2008).

Other aspects of the validity of adult ADHD have not been adequately addressed. It has not been established for example, that the so called symptoms reliably cluster together or that they predict specific patterns of impairment and outcome. Even the enthusiasts admit that the course and developmental trajectory of the 'disorder' is hugely heterogeneous (Asherson et al., 2007). It is not surprising that some research suggests that symptoms of adult ADHD are associated with reduced academic, work and driving performance (de Graaf et al., 2008; Fried et al., 2006; Biederman et al., 2006), since the diagnostic criteria themselves describe various difficulties in functioning. The diagnosis is therefore another example of the tautological nature of psychiatric diagnoses (Pilgrim, 2007). The diagnosis is defined by behavioural impairments, but is then said to predict other similar functional difficulties. In addition, the research on associated impairments of adult ADHD has not adequately controlled for the impact of the numerous co-occurring conditions and problems. Evidence from structural and functional brain studies and genetic associations is also cited to support the validity of the diagnosis (Asherson et al., 2010). These studies have been extensivley critiqued elsewhere (Timimi et al., 2009), but there are anyway very few studies involving adults.

Drug treatment

The strongest claim that adult ADHD has to validity as a neurobiologically-based brain disease is the contention that it responds specifically to stimulant medication. Low dose stimulants are recognised to produce short-term behavioural alterations including increased attention and reduced activity in animals and normal humans (only at higher doses, like those used recreationally, do they start to increase activity) (Arnsten, 2006), but the evidence that they have any worthwhile, sustained benefits, or any specific effects in people with ADHD is weak.

Studies in children show that stimulants can improve attention and reduce activity levels in the short-term, but these effects are not sustained on long-term follow up, where no difference has been found between drug treatment and treatment with other methods (Jensen et al., 2007). No impact on quality of life or academic performance has been consistently demonstrated either and NICE guidelines recommended restricting stimulant use to children with the most severe symptoms, or those in whom other treatments have failed (National Institute for Clinical Excellence, 2008).

In adults, however, NICE recommended stimulants as a first line of treatment in all diagnosed cases. This recommendation was based on three randomised controlled trials, two of which were conducted by the Harvard group, recently revealed to have substantial conflicts of interests. The third was a small cross over study involving forty five subjects. In contrast, a recent meta-analysis of a larger group of methylphenidate studies found that there was no significant difference between the drug and placebo in parallel group studies (Koesters et al., 2008). In addition, results were substantially influenced by studies conducted by the Harvard group, which reported considerably larger effect sizes than other studies, and increased heterogeneity. The authors of the meta-analysis also noted several methodological deficiencies of the studies as a whole, including the fact that the integrity of the double blind was only tested in one study, in which all the participants could correctly identify which tablet they were taking (Gualtieri et al., 1985). In addition, the longest trial included lasted only 14 weeks.

More recently, a further large parallel group trial has been conducted by Janssen-Cilag, makers of the long-acting preparation of methylphenidate known as Concerta (Medori et al., 2008). A six month trial of the stimulant-like drug atomoxetine, conducted by the Harvard group and colleagues, has also been published (Adler et al., 2008). The Janssen trial, which lasted for five weeks, reported a modest difference in favour of methylphenidate. Reductions in the 54-point Conners' Adult ADHD rating scale scores differed by 3 to 6 points between drug-treated and placebo-treated subjects.

The only longer term data come from the randomised, placebo-controlled trial of atomoxetine, which involved 410 patients (Adler et al., 2008). This study

found no difference between atomoxetine and placebo on its primary measure of work productivity at six months, and found no difference in overall ADHD-related quality of life. One out of four sub-scores of the quality of life rating scale showed a significant difference between drug and placebo at six months, and one out of four symptom measures. However, the absolute difference in change scores on the 54-point symptom scale was only 1.6 points, a difference that is unlikely to have clinical significance. There were no differences on other outcomes which included the Clinical Global Impressions (CGI) scale and Driving Behaviour Survey scores.

The moral to the medical, and back again

The analysis presented here suggests that the validity of the diagnosis of Adult ADHD is questionable, and that the drug treatments that are meant to improve its symptoms have not clearly demonstrated efficacy. The concept does not fulfil any conventionally accepted medical criteria of a disorder or a disease, in that it is not easily distinguishable from 'normality', there is a large overlap with other conditions, outcome is heterogeneous and there is little evidence that drug treatment is specific or effective. Moreover, there is such a discrepancy between childhood and Adult ADHD, with a mismatch in symptoms, and a different gender profile, that makes it difficult to conclude that there is any relation – other than in nomenclature – between the childhood 'condition', and the proposed condition of adults.

In a recent editorial in the *British Journal of Psychiatry*, Asherson, *et al*, suggest that:

> ADHD symptoms start early in life ... and are persistent and non-episodic. They are therefore more trait-like than symptom-like, since there is no clear change from a premorbid state, and can therefore be mistaken for character traits that may be deemed resistant to psychopharmacological intervention ... Many adults with ADHD have other problems: antisocial personality, alcohol misuse, substance dependence, dysthymia, cyclothymia, anxiety disorders and general and specific learning difficulties. Early-onset and persistent antisocial behaviour is a particularly common association that sometimes leads to persistent impulsive antisocial behaviour in adult life ... ADHD comes first and may then lead to development of antisocial behaviour, a trajectory thought to be mediated by prominent shared environmental influences ((Asherson et al., 2007) (p. 5).

This quotation illustrates the moralism that many critics have long argued is actually constitutive of the professional psy project *tout court* (Sarbin & Mancuso, 1980; Szasz, 1970). Asherson et al's suggestion that the manifestations of adult

ADHD may be more 'trait-like,' indicates the overlap with concepts such as personality disorder, and indeed, many people who receive a diagnosis of adult ADHD may previously have been given a diagnosis of personality disorder, or be said to have abnormal 'personality traits'. Personality disorder has its origins as a way of medicalising 'immoral' conduct (Rimke & Hunt, 2002) and current criteria for the various personality disorders continue to be strongly imbued with moral judgments about culturally acceptable and appropriate behaviour (Bourne, 2010). Although proponents present adult ADHD within a much firmer disease framework, moral judgements are as intrinsic to its conception as they are to that of personality disorder. The criteria for ADHD concern the failure to achieve an implicitly desirable level of social functioning, and occasionally make reference to the sorts of positively bad or foolish behaviour that suffers may exhibit. Thus the proposed *DSM-5* criteria offered as an example of symptoms of 'hyperactivity and impulsivity' the suggestion that adults with ADHD 'may commit to a relationship after only a brief acquaintance or take a job or enter into a business arrangement without doing due diligence' (American Psychiatric Association, 2010). On this reading, Asherson *et al*'s (2007) assertion that ADHD symptoms predate antisocal behaviour, but that they arise from the same influences, suggests that the two sets of behaviours are simply manifestations of the same problem, namely behaviour that is not ideally suited to the requirements of modern capitalist society. ADHD in children has been said to indicate a lack of the docility required for modern schooling (Timimi, 2005), and in the same vein, adult ADHD appears to describe behaviour that fails to conform to economic demands for competitiveness and efficiency and the ideals of bourgeois morality.

Others have started to document the way that the diagnosis of childhood ADHD has come to shape common perceptions about childhood behaviour and how to respond to it (Timimi, 2005; Graham, 2005). Adult ADHD has no less potential to reshape how society views adult experiences and behaviours and how we perceive the use of substances that impact on behaviour. Just as the newly expanded concept of bipolar disorder places mood change at the forefront of people's awareness (Healy, 2006), so adult ADHD encourages people to conceive of their behaviour through the lens of 'attentional deficits.' The link with drug treatment reinforces the notion that we are 'neurochemical selves' in need of pharmaceutical rectification (Rose, 2004). Similarly, the use of recreational substances that might temporarily increase arousal and attention, is transformed into the notion of a medical treatment with the consequence that the user is no longer required to have a responsible relationship with the substance they consume, only to follow the doctor's instructions.

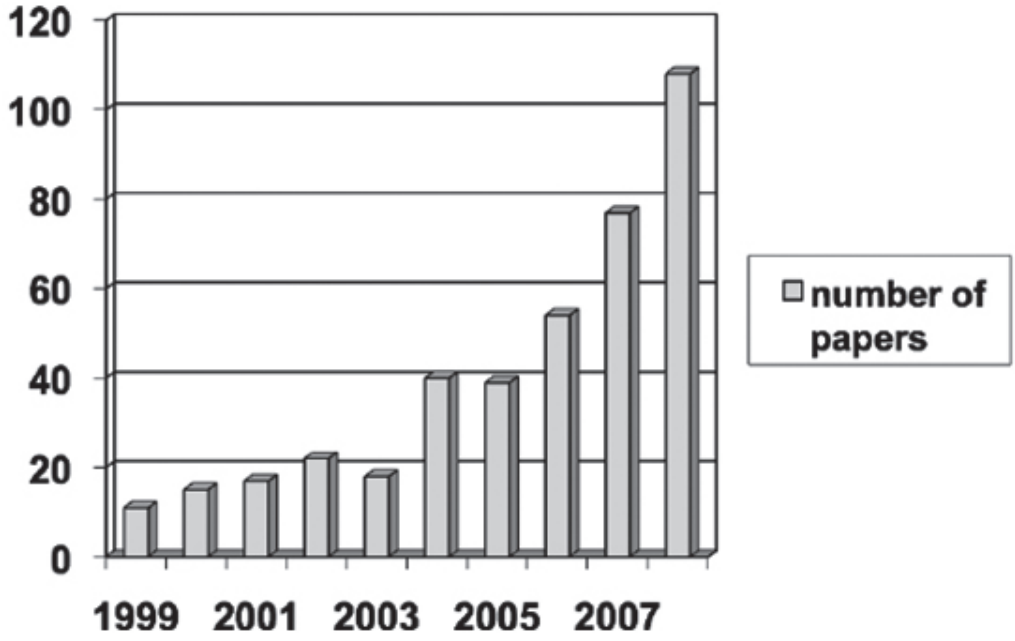

Figure 1: Number of papers published on adult ADHD in Medline since 1999 (retrieved using search terms 'adult ADHD', 'adult attention deficit disorder' and 'adult attention deficit hyperactivity disorder')

Below is a list of symptoms that may be used to recognise adult ADHD:

- carelessness and lack of attention to detail
- continually starting new tasks before finishing old ones
- poor organisational skills
- inability to focus or prioritise
- continually losing or misplacing things
- forgetfulness
- restlessness and edginess
- difficulty keeping quiet and speaking out of turn
- blurting responses, and poor social timing when talking to others
- often interrupting others
- mood swings
- irritability and a quick temper
- inability to deal with stress
- extreme impatience
- taking risks in activities, often with little or no regard for personal safety or the safety of others

Box 1: Criteria listed on NHS choices website.
Available from: http://www.nhs.uk/Conditions/Attention-deficit-hyperactivity-disorder/Pages/Symptoms.aspx

References

Adler, L.A., Spencer, T.J., Levine, L.R., Ramsey, J.L., Tamura, R., Kelsey, D. et al (2008) Functional outcomes in the treatment of adults with ADHD. *J.Atten.Disord., 11,* 720–27.

American Psychiatric Association (2010) Proposed Revisions to the Diagnostic and Statistical Manual. Available online: www.dsm5.org/proposedrevisions/pages/proposedrevision aspx?rid=383 [Publisher's note: This link is no longer available]

Arnsten, A.F. (2006) Stimulants: Therapeutic actions in ADHD. *Neuropsychopharmacology, 31,* 2376–83.

Arria, A.M., Caldeira, K.M., O'Grady, K.E., Vincent, K.B., Johnson, E.P., & Wish, E.D. (2008) Nonmedical use of prescription stimulants among college students: Associations with attention-deficit-hyperactivity disorder and polydrug use. *Pharmacotherapy, 28,* 156–69.

Asherson, P., Adamou, M., Bolea, B., Muller, U., Morua, S. D., Pitts, M. et al. (2010). Is ADHD a valid diagnosis in adults? Yes. *BMJ, 340,* c549.

Asherson, P., Chen, W., Craddock, B., & Taylor, E. (2007) Adult attention-deficit hyperactivity disorder: Recognition and treatment in general adult psychiatry. *Br.J.Psychiatry, 190,* 4–5.

Biederman, J., Petty, C., Fried, R., Fontanella, J., Doyle, A.E., Seidman, L.J. et al. (2006) Impact of psychometrically defined deficits of executive functioning in adults with attention deficit hyperactivity disorder. *Am.J.Psychiatry, 163,* 1730–38.

Bourne, J. (2010) From 'bad character' to BPD: The medicalisation of 'personality disorder'. In M. Rapley, J. Moncrieff, & J. Dillon (Eds), *Demedicalising Misery: Psychiatry, psychology and the human condition.* Basingstoke: Palgrave Macmillan.

Brown, T.E. (1996) *Brown Attention-Deficit Disorder Scales (Manual)*. San Antonio, TX: The Psychological Corporation.

BUPA (2009). Attention deficit hyperactivity disorder (ADHD) in children. Available: http://www.bupa.co.uk/health-information/directory/a/attention-deficit

Castle, L., Aubert, R.E., Verbrugge, R.R., Khalid, M. & Epstein, R.S. (2007) Trends in medication treatment for ADHD. *J.Atten.Disord., 10,* 335–42.

Conners, C.K., Erhardt, D. & Sparrow, E. (1999) *Conners' Adult ADHD Rating Scales (CAARS) (Technical manual).* New York: Multi-Health Systems.

Connolly, M. (2010) ADD Women and Girls: Late diagnosis, little treatment. *ADDITUDE Magazine*.

De Graaf, R., Kessler, R.C., Fayyad, J., ten Have, M., Alonso, J., Angermeyer, M. et al. (2008) The prevalence and effects of adult attention-deficit/hyperactivity disorder (ADHD) on the performance of workers: Results from the WHO World Mental Health Survey Initiative. *Occup.Environ.Med., 65,* 835–42.

Edwin, F. & McDonald, J. (2007) Services for adults with attention-deficit hyperactivity disorder: National survey. *The Psychiatrist, 31,* 286–88.

Food and Drug Administration (2005). FDA warning letter RE: NDA 21-411 Strattera (atomoxetine HCl) MACMIS ID#: 13282. Pharmcast.com [On-line]. Available: http://pharmcast.com/WarningLetters/Yr2005/Jun2005/EliLilly0605.htm

Fried, R., Petty, C.R., Surman, C.B., Reimer, B., Aleardi, M., Martin, J. M. et al. (2006) Characterizing impaired driving in adults with attention-deficit/hyperactivity disorder: A controlled study. *J.Clin.Psychiatry, 67,* 567–74.

Government of Western Australia (2007) *Australian Secondary Students Alcohol and Drug Survey 2005, Summary of Western Australia Results, Statistical Bulletin Number 37* (Rep. No. 37). Perth: Drug and Alcohol Office, Government of Western Australia.

Graham, L J. (2005) The incidental 'Other': A Foucaultian interrogation of educational policy effects. In *Proceedings of the American Educational Research Association 2005*, Montreal.

Gualtieri, C.T., Ondrusek, M.G., & Finley, C. (1985) Attention deficit disorders in adults. *Clin. Neuropharmacol., 8,* 343–56.

Harris, G. & Carey, B. (2008) Researchers Fail to Reveal Full Drug Pay. *New York Times,* June 8.

health.com (2010). ADHD affects women differently: What to look for and how to fix it. Available: www.health.com/health/condition-article/0,,20283301,00.html

Healy, D. (2004) Shaping the intimate: Influences on the experience of everyday nerves. *Soc. Stud.Sci., 34,* 219–45.

Healy, D. (2006) The latest mania: Selling bipolar disorder. *PLoS.Med., 3,* e185.

Information Centre for Health and Social Care (1999) *Prescription Costs Analysis 1998.* London: Department of Health.

Information Centre for Health and Social Care (2009) *Prescription Cost Analysis 2008.* London: NHS Information Centre.

Jensen, P.S., Arnold, L.E., Swanson, J.M., Vitiello, B., Abikoff, H.B., Greenhill, L.L. et al. (2007) 3-year follow-up of the NIMH MTA study. *J.Am.Acad.Child Adolesc.Psychiatry, 46,* 989–1002.

Kessler, R.C., Adler, L., Barkley, R., Biederman, J., Conners, C.K., Demler, O. et al. (2006) The prevalence and correlates of adult ADHD in the United States: Results from the National Comorbidity Survey Replication. *Am.J.Psychiatry, 163,* 716–23.

Koerner, B. (2002) Disorders made to order. *Mother Jones, 27,* 58–63.

Koesters, M., Becker, T., Kilian, R., Fegert, J.M., & Weinmann, S. (2008) Limits of meta-analysis: Methylphenidate in the treatment of adult attention-deficit hyperactivity disorder. *J.Psychopharmacol. 192*(2), 118–23.

Lead Discovery (2004) Adult ADHD – Therapeutic Opportunities. Available: https://www.leaddiscovery.co.uk/reports/813/Adult_ADHD_Therapeutic_Opportunities

Mackay, P. & Kopras, A. (2001) *Medication for Attention Deficit Hyperactivity Disorder (ADHD): An analysis by the Federal Electorate.* Canberra: Parliament of Australia.

McGee, R. & Feehan, M. (1991). Are girls with ADHD underrecognised? *Journal of Psychopathology and Behavioural Assessment, 13,* 187–98.

McGough, J.J., Smalley, S.L., McCracken, J.T., Yang, M., Del'Homme, M., Lynn, D.E. et al. (2005) Psychiatric comorbidity in adult attention deficit hyperactivity disorder: Findings from multiplex families. *Am.J.Psychiatry, 162,* 1621–27.

Medori, R., Ramos-Quiroga, J.A., Casas, M., Kooij, J.J., Niemela, A., Trott, G.E. et al. (2008) A randomized, placebo-controlled trial of three fixed dosages of prolonged-release

OROS methylphenidate in adults with attention-deficit/hyperactivity disorder. *Biol. Psychiatry, 63,* 981–89.

Moncrieff, J. (2008) The creation of the concept of the antidepressant: An historical analysis. *Social Science and Medicine, 66,* 2346–55.

Moncrieff, J. & Timimi, S. (2010). Is ADHD a valid diagnosis in adults? No. *BMJ, 340,* c547.

Moyer, P. (2005) Diversion and misuse of stimulant ADHD medications uncommon in the absence of comorbid disorders. *Medscape Medical News,* June 1.

Moynihan, R. & Cassels, A. (2005) *Selling Sickness: How the world's biggest pharmaceutical companies are turning us all into patients.* New York: Nation Books.

National Institute for Clinical Excellence (2008) *Attention Deficit Hyperactivity Disorder. Diagnosis and management of ADHD in children, young people and adults. National Clinical Practice Guideline Number 72.* London: NICE.

National Institute for Health and Clinical Excellence (2010). *Commissioning a Service for the Diagnosis and Management of ADHD in Adults.* London: NICE.

Pilgrim, D. (2007) The survival of psychiatric diagnosis. *Soc.Sci.Med. 65*(3), 536–47.

Rimke, H. & Hunt, A. (2002) From sinners to degenerates: The medicalisation of morality in the 19th century. *History of the Human Sciences, 15,* 59–88.

Rose, N. (1998) *Inventing Ourselves: Psychology, power and personhood.* Cambridge: Cambridge University Press.

Rose, N. (2004) Becoming neurochemical selves. In N. Stehr (Ed.), *Biotechnology, Commerce and Civil Society* (pp. 89–128). New Brunswick, NJ: Transaction Publishers.

Sarbin, T.R. & Mancuso, J.C. (1980) *Schizophrenia: Medical diagnosis or moral verdict?* New York: Praeger.

Schubert, S., Hansen, S., Dyer, K., & Rapley, M. (2009) 'ADHD patient' or 'illict drug user'? Managing medico-moral membership categories in drug dependence services. *Discourse and Society, 20,* 499–516.

Simon, V., Czobor, P., Balint, S., Meszaros, A., & Bitter, I. (2009) Prevalence and correlates of adult attention-deficit hyperactivity disorder: Meta-analysis. *Br.J.Psychiatry, 194,* 204–11.

Staller, J. & Faraone, S.V. (2006) Attention-deficit hyperactivity disorder in girls: Epidemiology and management. *CNS Drugs, 20,* 107–23.

Szasz, T. (1970) *Ideology and Insanity: Essays on the psychiatric dehumanization of man.* New York: Anchor Books.

Tiefer, L. (2006) Female sexual dysfunction: A case study of disease mongering and activist resistance. *PLoS.Med., 3,* e178.

Timimi, S. (2005) *Naughty Boys: Anti-social behaviour, ADHD and the role of culture*. Basingstoke: Palgrave Macmillan.

Timimi, S. & Leo, J. (2009) *Rethinking ADHD: From Brain to Culture*. Basingstoke: Palgrave Macmillan.

Usher, J. (1991) *Women's Madness: Misogyny or mental illness?* Amherst, MA: University of Massachusetts Press.