Misinterpretations breed misinterpretations

Sinéad Rhodes on ADHD in the news

I was sitting in my office on Wednesday 29 September, ironically revising an ADHD lecture, when I received a phone call from a journalist asking me to comment on a genetic study of ADHD children that had just been press-released and was to appear in *The Lancet*. Although familiar with the research group, I was not aware of the 'in press' paper which, according to the Lancet press release, was claiming to provide the first evidence that ADHD is a genetic disorder. On reading the article in *The Lancet* I was impressed by the study findings, which clearly showed a significant increased rate of copy number variants (CNVs) in ADHD children over controls. The authors found that, for the CNVs they examined, 15 per cent of the ADHD group had large and rare variations compared with 7 per cent in the control group. The authors in particular reported duplications on chromosome 16 in children with ADHD, which has previously been implicated in schizophrenia and other major psychiatric disorders.

The media reporting of the study the following day, following a midnight embargo, was varied and controversial to say the least! Both the Wellcome Trust, who part funded the study, and *The Lancet*, who published the study, distributed press releases that contained a number of controversial interpretations of the study. Both referred to the study as having provided the first direct evidence that 'ADHD is a genetic condition'. This was followed up by a direct quote from one of the lead authors, Anita Thapar, that 'now we can say with confidence that ADHD is a genetic disease'. These references to a genetic condition/disease, much in the same way as the public and professionals commonly refer to Huntington's disease or cystic fibrosis, unfortunately led to a backlash from some psychologists who were quick and ready to point out the social/environmental factors associated with ADHD. Reading beyond the press release it is clear that the study authors do not dispute these environmental factors. Indeed, Anita Thapar, a practising child psychiatrist with ADHD children and their families as well as an academic, has conducted a wealth of research reporting the impact of a range of environmental factors associated with ADHD, such as maternal smoking during pregnancy.

The strength of the press release focus on genetic factors at the level of referring to a genetic condition or disease however seems to have led some psychologists who have focused on social factors in ADHD to attempt to dismiss the study findings almost completely. For example, in a BBC news interview Oliver James pointed to the fact that 'only 57 out of the 366 children with ADHD had the genetic variant supposed to be a cause of the illness. That would suggest that other factors are the main cause in the vast majority of cases. Genes hardly explain at all why some kids have ADHD and not others'. Unfortunately another exaggerated interpretation – the authors of this study only looked at particular (the most obvious) gene variations. The genetic and environmental factors associated with the remaining 306 children who did not show the genetic variation are currently unknown – whether genetic or environmental, or what would commonly be thought by researchers in the area as likely to involve both. As Dorothy Bishop, a leading neurodevelopmental researcher has stated in relation to the study and associated press releases, 'virtually all respectable scientists interested in the causes of neurodevelopmental disorders believe that both genes and environment are important'. Indeed, in follow-up interviews relating to the press-released study, including the *Today* programme, Anita Thapar repeatedly referred to the importance of both genes and the environment in the aetiology of ADHD.

It would be highly unfortunate, if these misinterpretations caused by over-zealous press releases lead to a dismissal of the important and indeed groundbreaking contribution this study has made to our understanding of the causes associated with ADHD. The study will no doubt lead to a wealth of follow-up studies of potential genetic variants in ADHD. The press saga over the study highlights the importance of taking extreme caution when writing/approving press releases covering potentially controversial implications of high news interest. I indeed have personal experience of this. My collaborators and I press-released research a couple of years back showing that children with ADHD who had never received medication before had memory deficits – it was picked up in the media as 'ADHD drugs do not harm memory'. While we had indeed shown this in previous research, the press-released study did not involve any medication trial such as the headline suggests. Academics therefore need to be cautious. That said, it is extremely important that academics increase the public's understanding of disorders and are not put off engaging with the media because they may be misquoted. Clearly, ADHD research, however, like many other areas, provokes controversial interpretations and academics have to be extremely cautious when engaging with the media, and especially when approving press releases. It is clear that this particular study, whether intentionally or not, has received the high level of press interest it deserves, albeit not of the specific focus it expected. Hopefully the more balanced statements and genetically accurate interpretations will be those that are remembered and reread.

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