

Ethical Aspects of Developments in Neuroscience and Drug Addiction – summary

Advances in our knowledge of brain function, and the effects drugs have on this, raise ethical issues. These include the possible use of vaccinations against certain addictive drugs (with consideration of issues which would need to be taken into account before compulsory use could be considered), the ways in which genetic information about vulnerability to addiction could be used, and the possibility of drugs being developed for the enhancement of mental performance.

The Foresight project on Brain Science, Addiction and Drugs asked Benjamin Capps and Alastair Campbell of the University of Bristol and Richard Ashcroft of Imperial College, London, to look at the ethical implications of our emerging knowledge of addiction and neuroscience. They focused on four main areas of research.

Vaccination

Drug addiction causes many problems for individuals, including poor mental and physical health, as well as the social harms associated with drug use and crime. Vaccinating against a drug of addiction would have large potential benefits. But vaccination would raise ethical issues, especially issues of privacy, personal freedom, discrimination and confidentiality. These concerns would have to be balanced against the potential benefits for the individual and for society. Indeed, vaccination itself may have negative effects e.g. it could affect how medicinal drugs work in the body, or encourage users to switch to use other more harmful substances which they have not been vaccinated against. The availability of the technology may raise questions in some quarters about how it could be used in some 'at risk' groups, even in some cases without consent. Key ethical questions on such technology include issues which would need to be taken into account before compulsory use could be considered; use for those at risk of addiction; and vaccinations for children.

What would the social implications be if vaccines were targeted at groups perceived to be at greater risk? The knowledge that a vaccination is available against a drug could reduce the perceived risk of addiction and encourage drug use. Any coerced use of vaccines raises issues of human rights. Vaccination without consent could deprive people of legitimate choices about their own lifestyle, whereas vaccines could bring many benefits from consensual use as a treatment.

Genetics

Our new knowledge of genetics may allow us to predict an individual's susceptibility to the addictive effect of drugs. This would have health benefits when considering the medical use of drugs, and might allow medical treatment to be more cost-effective. But many ethical issues arise from research into the genetics of addiction.

One problem is that, in many instances, the connection between a person's genetic make-up and their susceptibility to an addiction will be indicative rather than definitive. Individuals may also conclude wrongly that they can use drugs safely because they have a low genetic risk of addiction and related harm.

Another open issue is whether people who are predisposed to addiction can be held responsible for the addiction or can claim that it was predetermined. Nor do we know how society would respond to such knowledge about an individual. Medical and legal agencies, as well as family members, especially parents with duties to children, would need an educated and considered approach to coping with such information. A key to using genetic information is to ensure that individuals and the public fully understand that genetic data usually suggests risk rather than predicts actual outcomes.

Neural imaging

Capps and his colleagues point to research on brain imaging, which may show differences between the brains of addicts, potential addicts, and non-addicts. This information may have many benefits in treating addiction, but also raises questions regarding the privacy of such investigations.

Cognitive enhancement

Drugs are already becoming available that promise to enhance the normal and impaired brain. Many medical drugs have unintended side-effects, but these are weighed against the beneficial treatment of a medical condition. The same kind of weighting might not be applicable if the drugs are used to enhance the performance of someone considered to be in the 'normal' range of human capacities. This may occur if an individual wanted to use a drug to get a competitive edge in a test or to function better in some task. There could be an additional dimension if, for example, such a drug was required by an employer.

However, if drugs are available to enhance performance, it might be argued it is unethical not to use them, for example, for people working in hazardous settings or when the use of a drug might improve public safety.

Drugs could also be used to counteract social conditions, such as shyness, and this would bring the risk of medicalising normal human behaviour.

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