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Australian University Students' Attitudes Towards the Acceptability and Regulation of Pharmaceuticals to Improve Academic Performance — Source link

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Abstract

There is currently little empirical information about attitudes towards cognitive enhancement - the use of pharmaceutical drugs to enhance normal brain functioning. It is claimed this behaviour most commonly occurs in students to aid studying. We undertook a qualitative assessment of attitudes towards cognitive enhancement by conducting 19 semi-structured interviews with Australian university students. Most students considered cognitive enhancement to be unacceptable, in part because they believed it to be unethical but there was a lack of consensus on whether it was similar or different to steroid use in sport. There was support for awareness campaigns and monitoring of cognitive enhancement use of pharmaceutical drugs. An understanding of student attitudes towards cognitive enhancement is important in formulating future policy.

Keywords
Cognitive enhancement Neuroenhancement Attitudes Qualitative research Stimulants

Introduction

The use of pharmaceutical drugs by healthy people to improve concentration, memory, attention or other cognitive functions (cognitive enhancement) has recently received much attention in the bioethics literature [1–4]. Particular attention has been paid to the non-medical use of prescription stimulants (such as Adderall and Ritalin, typically prescribed to treat Attention Deficit Hyperactivity Disorder or ADHD) as a 'study aid' by students. Surveys of US college students suggest that around 7% have used such drugs without a prescription, with fewer (around 2%) reporting use in the past month [5]. A recent study of German students showed low levels (less than 1%) of non-medical stimulant use for cognitive enhancement [6], but there is limited data available from other countries including Australia [7].

Debate has focused on whether it is fair and ethical to use prescription stimulant drugs for enhancement [8]. Studies with Canadian students have found that many people identify cognitive enhancement as a form of cheating because it provides an unfair advantage [9, 10]. Students have also expressed concerns that widespread use of drugs for cognitive enhancement may coerce others into engaging in the behaviour and that increased use will place indirect pressure on non-users to take cognitive enhancers in order to avoid being disadvantaged [9]. More overt forms of coercion have been suggested as possibilities in the workplace [11], particularly in the military context [12] and among surgeons [13]. More subtle social pressure may encourage use in order to meet higher levels of performance because of raised expectations about what constitutes 'normal' performance [14]. Despite concerns about unfairness and coercion, qualitative interviews with students have found that they strongly support an

individual's right to free choice about whether or not to take drugs for cognitive enhancement [9].

Studies by DeSantis and colleagues [15, 16] have found that students who use cognitive enhancing drugs justify their behaviour by saying that the drugs are not used regularly, that the use of prescription stimulants is safe [16], and that it is morally acceptable because it is for study rather than recreational use [15].

US college students who use cognitive enhancers have referred to them as being 'like an academic anabolic steroid' [17]. Studies show that Canadian students consider cognitive enhancement to be similar to steroid use in sport, believing that both situations constitute drug improved performance in a competitive environment that amounts to cheating. Some resist the comparison, arguing that there are important differences in the contexts in which these substances are used, and for what reasons [10]. If cognitive enhancement is considered by authorities to be 'academic doping' this could have a direct impact on policies toward enhancement use of stimulants [4, 7, 18].

Proponents of cognitive enhancement have proposed policies that would facilitate the practice, such as allowing easier access to stimulants [19, 20]. Promoting a ban on cognitive enhancement has not been widely discussed, likely due to the fact that the use of a prescription stimulant without a prescription is already illegal in many countries, such as Australia, the UK and USA. These laws are not however widely enforced, and students who use these drugs non-medically appear to be either unaware or unconcerned about the legal implications [15]. A better understanding of student attitudes and knowledge is necessary to assess policy responses to cognitive enhancement.

Only a small number of studies in Canada [9, 10] and the US [16, 17, 21] have explored student attitudes toward cognitive enhancement but interviews with students who engage in cognitive enhancement [16, 17, 21] may not reflect the views of the wider student population. Currently there is no Australian data on the prevalence or attitudes of university students towards cognitive enhancement. This paper examines the views of Australian students towards the acceptability of cognitive enhancement and the regulation of access to prescription stimulants.

Methods

Sample and Recruitment

Participants were 19 Australian university students (15 females and 4 males) from The University of Queensland with an average age of 24 (ranging from 18–31). Advertising for the study was via emails lists within a large metropolitan Australian university, notice board posters and snowball sampling. No incentives were given for participation in the study. Ethics approval was granted by the University of Queensland Ethical Review Committee.

Procedure

Semi-structured interviews (between 30 and 45 min) were conducted with participants during 2010 and 2011 by one member of the research team (SB). Before commencing the interview participants were given an information sheet describing the aims of the study. To stimulate discussion, participants were asked to read a short newspaper

article about the use of Ritalin as a study aid and were provided with a vignette describing the use of Ritalin as a study aid (See Box 1). The newspaper story provided participants with a general overview of the topic and the vignette provided a more detailed (but fictional) account of one student's cognitive enhancement drug use. Ritalin was used as an example because it is a well known prescription medicine in Australia which is commonly featured in media reports of cognitive enhancement.

The interview schedule focused on attitudes towards the non-medical use of prescription stimulants (using Ritalin as an example) by healthy students in order to assist their study. Questions were open-ended so that participants were not constrained in their responses. Where appropriate, the interviewer prompted interviewees to elicit more information. Topics covered included: students' beliefs about whether the use of Ritalin for cognitive enhancement was acceptable, their views about the ethical issues that may be raised by such use, comparisons with the use of steroids for performance enhancement in sport, and possible policy responses to cognitive enhancement. Participants were not asked about their own use of prescription stimulants in order to encourage free discussion.
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Coding and Analysis

All interviews were transcribed verbatim and analysed using QSR NVivo (Doncaster, Australia) version 9 software. An inductive process of thematic analysis was employed and data could be coded under more than one theme to provide a rich data set. Thematic analysis allowed the coding of interview data to be guided by theme rather than beginning with pre-established hypotheses that might have limited the scope of analysis [22].

Initial coding was at a broad level of analysis. All transcripts were read and coded by one member of the research team (SB) according to three major domains: 1) acceptability, 2) doping in sport comparison and, 3) policy approaches. Coded segments (which included sentences as well as large sections of text) were reviewed by a second member of the research team (BP) to ensure accuracy. Any discrepant coding was discussed until a consensus was reached.

The coded data for the major domains was then reviewed independently (SB, BP) with a view to establishing sub-domains. Data were then reviewed collectively (SB, BP) and sub-domains agreed upon. This pattern was repeated for the final level of coding to draw out the themes within each domain and sub-domain. The themes were revised by three members of the research team (SB, PB, and JL) in order to ensure accurate interpretation of the interview data.
Results

The major themes from participant interviews are outlined below (Table 1). Themes are labelled with frequency values as has been recommended by Hill [23, 24] to indicate their topicality. Specifically, a theme labelled as 'general,' was expressed by all participants or all except one (18 or 19 participants), as 'typical,' when it was mentioned by more than half the participants (i.e. 10–17) and 'variant' when expressed

by 3–9 participants. Views expressed by fewer than 3 participants are not listed in this table. Quotes reported are direct quotes from participant transcripts and have not been altered for grammar.

Table 1

19 participants total. 'General' = 18–19 participants; 'Typical' = 10–17 participants; 'Variant' = 3–9 participants

Is Taking Ritalin for Study Acceptable?

A typical theme was that taking Ritalin to aid study was unfair. These students viewed the practice as a form of cheating and hence considered it to be unacceptable. The use of Ritalin to 'cram' during assessment time was considered unfair by many participants:

"It's not fair because other people work so hard in other ways to help themselves focus, they'll curtail their social lives to help them concentrate, rather than trying to have everything, and then cheating by taking Ritalin."

The use of drugs for cognitive enhancement was thought to offer an unfair advantage. Students believed that users would be able to work more effectively and for longer, for example "It gives them an advantage, the normal average person can't stay up for 24 hours and study effectively."

Other participants said that the use of Ritalin as a study aid was a quick fix. They believed that the use of drugs as a last minute study aid was a temporary "band-aid" solution to a greater problem, and that using Ritalin to compensate for poor study habits allowed students to maintain the behaviour rather than change it. For example,

"It's a quick fix they resort to every single time, instead of learning strategies that would help them with more than just exams."

"It is a quick fix because you've gone out drinking or partying and then you've got to try and squish it all in at the end. So it is a negative kind of way of doing it."

Cognitive enhancement was also criticised on the grounds that the work produced after taking Ritalin was not a true reflection of the person's ability. Students said:

"It's an enhanced performance. It's not true performance."

"It's an inaccurate representation of what the person's actually capable of doing."

Others claimed that people who used Ritalin for study purposes were only "cheating themselves…If I did that I would just feel that I wouldn't really deserve those marks…It wouldn't be truthful."

In contrast to the typical view, a variant theme was that taking Ritalin to help with focus and concentration when studying was fair and acceptable. Students espousing this view

often suggested that cognitive enhancement was not a new phenomenon and that the use of Ritalin was simply the latest form of cognitive enhancement. For example;

"I don't think it's a problem because taking substances to help you concentrate or focus, man has been doing that for ages now, so I don't think there's any real problem with it."

Some students likened the behaviour to drinking coffee or alcohol, for example:

"It's fair enough…It's not too different from someone using caffeine or drinking to help them relax, I mean it's just one way to study. Everyone has their own ways of studying."

Students of this view did not consider it cheating and believed that cognitive enhancement would not negatively impact others, for example:

"Some people do have difficulty concentrating and if you have something that can help you [why not take it?]. I mean, it's not really hurting anyone else."

Many participants placed a high level of importance on an individual's right to free choice. They believed that students should have the right to use substances for cognitive enhancement, and equally the right to choose not to. For example;

"I think that everyone else should be able to make that decision for themselves … I think they have every right to take it as others have a right not to take."

The right to free choice was valued by students even if the choice made was not the one they would make. For example;

"I don't have a problem with other people taking it, but I personally wouldn't take it."

"Who am I to be saying they [others] shouldn't be taking it."

There was a strong tendency for many participants to qualify their views of cognitive enhancement if such use became regular. This suggests that statements of support for cognitive enhancement assumed that such use was not chronic, the drugs were safe to use, and such use did not result in drug dependence or negatively affect others.
Controlled not Chronic Use/Moderation

Participants who accepted cognitive enhancement believed that occasional use was acceptable (referred to 'controlled use'), but regular use was not. For example:

"As long it's not going to be a permanent thing and they're not going to be on it 24/7 and just use it to get through the tough times and then ease back off it, then that's fine."

"I think it's okay if you use it in moderation but then it's not okay if you take it for a week straight."

Competitive Environment

A number of students considered the use of cognitive enhancement drugs to be acceptable in non-competitive environments. Ritalin use was okay, as long as it was "not affecting anyone else's grade." Use in the university setting was therefore justified if one person's results did not affect others'. For example:

"Fortunately, we are in a university system whereby you're not competing against other people. Therefore I deem it okay that someone else can take it."

Students indicated that cognitive enhancement would be less acceptable in a system where marks were assigned relative to the performance of other students because of the negative impact on other students. For example;

"When they had the bell-curve and you were competing against one another in order to get the top 7 spots or whatever then yeah that would be deemed wrong but it's individual effort and it's scaled so nobody really cares."

"If I'm not being ranked I couldn't care less if someone did that."

Steroid Use in Sport Comparison

Some students believed cognitive enhancement was similar to steroid use to enhance physical performance in sport because in both cases people took substances to improve desired performance.

"I think its similar in that it gives them an edge, an unfair advantage, it makes them better in what they are trying to do."

"The use is really for the same reason – just because they are different activities, it makes it seem different … The injection of steroids is obviously quite different from taking an oral tablet, but it's still changing your biochemistry."

On the other hand, many more students felt that the two scenarios were different, believing it would be like comparing "apples and oranges" and that it was not valid to compare the two.

"You can't quantify and compare physical ability with mental ability and the effects of drugs on both. You can't specifically compare them, I think, personally, the mind is a much more complex tool than the body."

Participants identified two major differences. Firstly, steroids would be much more effective in improving physical capabilities than Ritalin was at improving academic performance. For example;

"It's not as if the more and more Ritalin you take, the smarter you become, whereas with steroids, the more and more you're using it – you become bigger and stronger."

"Steroids are very closely linked to how well your body performs…but with things like Ritalin, it's a lot more complicated… it's not as much of a performance enhancing thing as steroids."

Secondly, participants believed that the level of competition was greater in sport than in academia.

"With education, it's not that competitive to get to that first spot."

Sporting success was discussed in a dichotomous way, as winning or losing. Academic success was discussed in terms of a gradient, with a wider range of performances in which any number of people could be highly successful. For example;

"In the sporting field, you are out to win. You gain something over someone else and if your team wins someone's a loser. Whereas in the studying arena it's not really the same, you study you get good grades, you can get a job that you want, it's not really that you're making someone else lose or someone else is missing out because of what you're doing."

What is an Appropriate Policy Response?

The majority of participants believed that cognitive enhancement should neither be promoted nor banned.

Although, a number of students clearly supported the prohibition of cognitive enhancement, stating "I think it should be banned.", many also believed that this was unnecessary and unrealistic, primarily because they believed cognitive enhancement was not prevalent enough to warrant such action.

"It's not that common…so at this point in time, I don't think anything needs to be done about it."

Other students argued that cognitive enhancement was already illegal and hence legislation to ban it was unnecessary. These students argued that it was illegal to use a prescription drug without a prescription or to use it for reasons other than those intended by the prescriber. For example:

"I think it's prescription medication, it is already in a sense banned for the purposes of study because of the fact that only people who have it prescribed to them should be using it."

Increased regulation was seen as unrealistic by others. These students believed that banning the use of these drugs for study purposes, would be very difficult from a practical point of view. For example, "How would you test for it? Logistically it would be a nightmare…they couldn't enforce it," "I'd like to see someone try and monitor it" and "It would be hard to police." One student stated,

"You can't really [ban it]. Well I suppose you could get a lot of people to do a drug test before an exam but it would be very difficult to monitor that… I think it should be banned but I'd like to see someone try and ban it."

The idea of drug testing students before an exam was suggested by a small number of students. One student mocked the idea, while stating:

"I don't know how they would really do that [monitor it] though, it's not like you're drug testing before an exam."

Others spoke about it as a bizarre concept, but a possibility nonetheless. For example, another student asked the question "Are we going to have to pee in cup before an exam? I'm not sure."

A Public Health Approach

A typical response was for participants to endorse a public health and harm reduction approach to cognitive enhancement in Australia. They suggested that public health campaigns should highlight the health concerns because cognitive enhancement was "Like any other drug, they have to just make people aware of the effects." Another participant suggested raising awareness among students: "talk to them and show the side effects."

A common recommendation was to monitor cognitive enhancement at a number of levels, including; the government, health care professionals and universities. Students believed the government should monitor the prescription and purchase of drugs such as Ritalin to limit unnecessary prescriptions. "Obviously the government need to monitor in terms of actual prescription and purchasing process." Students felt that health care professionals should be vigilant in identifying those who tried to gain prescriptions for cognitive enhancement purposes.

"Health care professionals should also be keeping an eye out for people who could possibly fit a description of someone who may use it and monitor that."

It was suggested that universities should not take a "draconian" approach to cognitive enhancement, but shouldn't "totally ignore it" rather, "have it in the back of their mind" and take appropriate action when necessary.

"I think it would have more to do with the actual universities themselves, making students aware of it and making services available so if someone knows someone who is on it, they should be able to tell the university and the university can handle it."

Participants believed that universities also need to support students so that they did not feel the need to take cognitive enhancing drugs, for example:

"Probably firstly the universities to act – to supply more support, student support services to promote more of a balanced lifestyle for students to actually identify that this is going on and say, there are alternative ways you can handle your stress."

Discussion

Students typically believed that cognitive enhancement was unfair and amounted to cheating. They believed that cognitive enhancement should neither be banned nor promoted and they supported a public health response that included monitoring rates of cognitive enhancement and awareness campaigns about the risks.

These findings reflect those of Canadian students [9, 10] who hold similar ethical concerns to those raised in the bioethics literature [3, 8]. A number of students referred to cognitive enhancement as a 'quick fix' solution that could be used to cram study into busy lifestyles. Forlini and Racine [9] found participants made reference to people's desire for a quick fix, reflecting an increasingly fast paced society. Our sample seemed aligned with those students who identified cognitive enhancement as a 'symptom of societal problems' [9].

Focus groups with students who have engaged in cognitive enhancement reported acceptance amongst the student body [9]. These students believed that their peers were not bothered by cognitive enhancement [17] and 'nobody blinks an eye' [9]. It is not clear to what extent these students accepted the practice of cognitive enhancement to justify their own behaviour and to what extent it reflects the general views of their peer group. We need to know more about the attitudes of those who do and do not engage in cognitive enhancement.

Our study highlighted that a minority of Australian students believed that cognitive enhancement was acceptable and there are also varying opinions among US [15, 16] and Canadian students [9]. Cultural and contextual differences between samples may have an impact on the strength of views expressed in these qualitative studies. This is particularly the case in relation to the competitiveness of the university culture, the system of assigning marks (whether based on individual performance, or ranked relative to other students), and concern about the competitiveness of the job market after university. Direct to consumer marking of pharmaceuticals [25], which occurs in the US but not Australia may be a contributor to more positive attitudes towards pharmaceuticals in the US. Possible differences such as these reinforce the need for research on pharmaceutical drug use and attitudes towards such use that is specific to different cultural contexts.

Valuing a person's right to free choice was articulated by students in the current study in much the same way as in Canadian studies [9]. This liberal perspective may reflect the opinions of a younger age group and may not be reflective of the wider population. A small number of students expressed concerns about the effects of increasing expectations arising from widespread use of cognitive enhancement. Although this issue has been highlighted in bioethics literature [26, 27], it has not been raised extensively in other studies of student attitudes. Focus groups with health care professionals, parents and students have however highlighted that increasing expectations of students may cause people to feel the need to use cognitive enhancement [9] but not that cognitive enhancement will increase expectations. Irrespective of support or opposition for cognitive enhancement, many of our participants recognised that the potential for unintended effects of cognitive enhancement are important in discussions about appropriate policy responses.

There were differences of opinion on the value of the analogy between cognitive enhancement and steroid use in sport. Forlini and Racine [10] also highlighted ambivalence among students on this issue. As has been previously found [10], some students saw the two as comparable, believing that both provide an unfair advantage. This may reflect the power of media framing [9] with stimulants referred to as a 'brain steroid' in the popular media [28]. Other students saw the two as being significantly different and believed they should be treated differently. Specifically these students believed that steroids were more effective in enhancing sporting performance than stimulants were in enhancing cognitive performance, as highlighted elsewhere [10]. The World Anti-Doping Agency prohibits certain substances in the sporting arena and enforces this ban with random testing [4]. Acceptance of the view that cognitive enhancement is similar to steroid use in sport may result in its regulation being similar to that used for steroid use in sport.

People did not hold strong views on the best forms of regulation for cognitive enhancement. Most participants believed it should be neither explicitly promoted nor banned. This suggests that Australian students do not support legislation that allows cognitive enhancement use of pharmaceuticals as proposed by Greely and colleagues [19]. Rather, our interviewees believed that any regulation of cognitive enhancement should remain within the existing prescription system. Participants were in favour of a public health approach that involved advising potential users about any adverse effects to deter use and to monitor rates of use. This attitude may in part reflect Australian drug policy more generally with its emphasis on a public health approach and harm reduction. Further work on attitudes and community engagement would be necessary to establish if this view is held by a wider sample of Australian adults.

It is possible that more participants would have supported a ban of cognitive enhancement if they had viewed this as easy to implement. Enforcing a ban through drug testing students prior to exams was not considered to be a realistic option by our interviewees, although drug testing for cognitive enhancement has been discussed in the bioethics literature [18].

There are limitations of this study. Ritalin was used as an example to promote discussion. It is possible that participants may have had preconceived ideas about this particular drug that would not generalise to other drugs used for cognitive enhancement. However, using Ritalin provided a context for a form of behaviour that students may not have heard about and it is a drug that many Australian students would be familiar with. Ritalin (methylphenidate) has also been the subject of previous empirical research [9, 10] and discussions in the bioethics literature [19]. We used a media article and vignette to promote discussion, although it should be noted that the language used to describe cognitive enhancement may affect attitudes towards it [9]. Future studies should explore how framing cognitive enhancement impacts attitudes. Furthermore, given the small sample size of this study, further in-depth assessments are needed to assess the reliability and validity of the findings.

This paper provides insight into Australian students' perspectives on cognitive enhancement. It shows that the majority believed cognitive enhancement was unacceptable and unethical, that there was no consensus on whether cognitive enhancement can be compared to steroid use in sport. Despite concerns about

acceptability the majority of students did not support either a ban, or the promotion, of cognitive enhancement. They preferred a public health approach involving education about the risks and monitoring of patterns of use.

A similar understanding of broader community perspectives and attitudes towards cognitive enhancement is necessary. So too is better data on the prevalence of cognitive enhancement use of stimulant medications. Future public engagement and research can be informed by the findings of the current study. It is important to assess whether cognitive enhancement is likely to become more common in Australia and to understand attitudes towards it in order to be prepared to address the issues that cognitive enhancement may raise.
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