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REVIEW

Coming clean: Saying 'know' to drugs – Part I

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This article is based on a University of Pretoria Pharmacology Grand Rounds conversation on the complexities of drug use and addiction between South African researcher and drug policy activist Shaun Shelly and Nigerian psychiatrist and drug expert Nkereuwem William (Bill) Ebiti. The paper is not a verbatim transcript but highlights salient points and has been edited for clarity. This is the first of three parts.

The medical response to addiction

Bill Ebiti

Recently I have been doing a lot of training for clinicians and advocacy training for policymakers, especially judges, members of the legislature, politicians, law enforcement, media, and the like – and have found a lot of ignorance regarding substance use and how it is approached. Over the years, I think we have embraced the concept that addiction is a brain disease.[1] Many people have begun to over-medicalise the idea of substance use, but it is more complex than that. People have started to look at – with some success – the use of medication to treat substance use. However, we have also seen the failures of this kind of approach to adequately deal with substance use issues over time.

We are now beginning the re-education programme to help people understand the complexity of addiction and substance use, including the social issues that people may be going through – getting people to understand the difference between the use of drugs and the cons of addiction. We are answering the critical questions: *Why* do more people in marginalised communities develop an addiction than people from other settings? *Why* are particular groups of people much more predisposed to developing an addiction?

Answering these questions probably helps us understand some of the issues regarding the best treatment approaches. In Nigeria and many of our countries, a substance use disorder is perceived as a health problem. But if we genuinely accept that it is a health problem, why do we criminalise people who use substances, or addiction? There seems to be a massive disconnect between our understanding of addiction and our approach to dealing with it.

Shaun Shelly

It leads us to ask several questions. If we embrace this brain disease model of addiction, which says that addiction is a disease of free will,[2] (where the substance's pharmacological effects in the brain reduce the user's ability to control their own behaviour), we have a problem when we start looking at treatments that are effective. For instance, contingency management, a reward-based system for helping people use fewer drugs, works.[3,4] Basically, if a person produces a negative drug screen, they get a small reward. And what is interesting is that the reward need not be particularly big. Rather, if it is sufficient and regular, people do really well.[5] Although there are some sustainability problems with these approaches, and they become expensive to implement, they show us immediately that there is something more at play. Further, the work of Dr Carl Hart, Head of Psychology at Columbia University, who conducted a series of tests on people who were using drugs, clearly demonstrates that substances do not totally disrupt everybody's free will. Substance users were admitted to a hospital ward for six weeks where they were offered a hit of crack cocaine or methamphetamine or cocaine every day, depending on which study arm it was. Alternatively, users could have $5 at the end of the six weeks. People accepted the money more than 50% of the time.[4]

Drug, set and setting

Another important aspect is that the same drug may have different effects on a person. For example, diamorphine or heroin, when given in a clinical setting, is used to treat heroin use disorders in Switzerland.[6,7] It has also been used in the UK for several years.[8] There are still about 300 people who access pharmaceutical quality diamorphine in injectable formulations and the vast majority live a good life. The former Swiss president, Madame Ruth Dreyfus, introduced heroin prescribing in Switzerland at the peak of the drug and HIV problem. She told me the problem now is that many people in old-age homes still require heroin. With COVID-19, they have actually stopped insisting that people use the heroin in front of a clinician; they can now take it home and they have had no problems with this approach.[9] So the question is, how can you have the same drug giving such different effects?

In 1984, Zinberg wrote *Drug, Set and Setting*,[10] which explains that taking a drug does not lead to a predictable pharmacological cascade. Rather, it is highly dependent on context and is reliant on one's perception of the drug and individual vulnerabilities.

Just as some people have a bad reaction to nuts, some will react badly to certain drugs, and others will have an affinity. If somebody with ADHD takes methamphetamine, it will likely improve most cognitive functioning indicators.[11] Sleep deprivation will get them eventually, but initially, they will notice significant improvements in their functioning.

One of the familiar narratives is that methamphetamine is the most dangerous drug in the world. And yet, in all the clinical studies of methamphetamine at reasonable doses, there is cognitive improvement in most people.[11,12] US Navy research data has helped to justify methamphetamine in extended flight missions.[13] And we have also seen that prescribing amphetamines and similar stimulants will help children with ADHD reduce the risk of substance use in adulthood.[14] So same drug, very different effects, depending on the context.

Bruce Alexander, famous for his rat park experiments,[15] is the author of *The Globalisation of Addiction: A Study in Poverty of Spirit*.[16] He shows conclusively and argues very well that the spread of the free market economy and focus on individualism correlate with an increase in addiction. In South Africa, what interests me is that in the Western Cape population, which was the most psychosocially dislocated in South Africa, I would have predicted the most substance use issues. And indeed, it was, and as we have seen, the breakdown in historical narratives, ties being broken between urban and rural populations, results in an increase in drug use, and the more people lose hope in the future, the more they find meaning in drugs.[16] We often find that drug use is supremely logical. When faced with somebody who has an addiction, we should consider if the decision they are making is the best decision for them in that particular set of circumstances. And if we change the circumstances, they may not have the drug problem. I am interested in knowing your thoughts on that line of thinking and whether you have seen that in your setting?

What leads to addiction?

Bill Ebiti

I think that oversimplifying substance use has led to the view that medical science is the single best framework for understanding addiction. But that seems to not be the case. And so, narrowing the perspective of a complex problem that requires a lot more community support, healing, and all that has led us into this box has now made it difficult for us to maybe explain everything that we are seeing. And a typical example is what you were just talking about in terms of how different individuals respond to different drugs. I think that maybe we may need to go somewhat outside our field of medicine to embrace other fields and concepts to really understand why people react in specific ways when it comes to the idea of addiction. When we talk about recovery, we are talking about functionality, about community issues, about being able to live a healthy life, and so on. And these are issues that are beyond medicine, of health. We have also conflated some of the issues, like cannabis use. A recent study discussed the notion that cannabis use is associated with and has a causal relationship with psychosis. It is like saying that sugar causes diabetes. It is not to say that psychosis is not related to cannabis. Yes, it is related in many instances, but such conflation leads to a very narrow view of psychosis.

How do you think the theory that addiction is a brain disease affects our approach to care? Our approach to interventions for people with substance use problems?

Loving and learning drugs

Shaun Shelly

I have often avoided the argument on whether or not addiction is a brain disease because I tend to find that if people approach the patient with genuine care and compassion and really focus on the individual, the theoretical approach soon goes out the window. I am opposed to the brain disease model of addiction because it is an oversimplification; there is no area of specificity; you cannot look at any scan of somebody's brain and say "This person is addicted". In all the brain imaging studies for people with drug dependence, we see a clustering of what is being measured compared to controls, but they all fall under the bell curve of normal.[17] In our New England Journal of Medicine article on addiction as learning, we make a very persuasive argument that addiction is very much part of the human condition.[18]

In the 1980s, Stanton Peale's book, *Love and Addiction*, highlighted the parallels between falling in love and addiction.[19] When people fall in love, they start doing silly things. They spend more money than they should on the new person in their life, they make different decisions, maybe exclude their family, they see no wrong in the person. People in the early stages of addiction follow a similar neurological set of behaviours that become embedded. But obviously, human relationships are often more productive and more helpful than drug relationships. Although one thing we have never studied is the advantages that some people get from using drugs. Only now are we starting to see the benefits of some, e.g. MDMA in post-traumatic stress disorder (PTSD),[20-22] and ketamine as an effective short-term antidepressant for people who do not respond to conventional treatment. A brief infusion of ketamine alleviates depression within minutes in the majority of severely depressed people.[23-25] We are also seeing many benefits from psilocybin research.[26-28]

I think the brain disease model has made us subtract humanity from neurobiology. We have assumed that people need a formal treatment setting. One intervention that shows that this idea is wrong, is motivational interviewing, which is simply a positive change conversation based on four principles and a series of strategies. More than 1 500 randomised controlled trials on motivational interviewing have shown how a simple conversation can result in positive changes, even more so than certain medications (see https://motivationalinterviewing.org/sites/default/files/mi_controlled_trials.pdf). Of course, some people may need an agonist to help them through that period, or maybe the drug serves a very different purpose in their life, which needs to be supported in some other way. And, we don't want to ignore the fact that many people who use drugs have other co-occurring psychiatric disorders that often need to be treated. In South Africa, at times, we have seen clinicians refuse

to treat people until they have stopped using the drugs, which is a crazy idea because they are using the drugs for a reason.

So, I cannot look at someone and say this person has a brain disease. I need to look at them and say, what benefit are they deriving from their use of drugs? What makes this the best choice for them at this stage in their life and this particular set of circumstances? It might not be a conscious choice at this stage, but at some stage, it had a benefit. Because people evolve to survive, decisions are based on the best outcome, and usually the short-term outcome because short-term outcomes carry greater value.[29,30]

Another big problem is that ownership of resolving a drug use issue has been taken away from the community. Effectively, we have taken people out of the community, admitted them to a psychiatric facility, which is very expensive, isolated them, expected to cure them and then we have returned them to the same setting, hoping that they will not use drugs again, which I think *is* crazy.

We have criminalised and incarcerated people who use drugs for many years, which often has been politically motivated. Certain groups using certain drugs have been imprisoned.[31-33] The harms of the criminal justice response to drugs are now obvious to many, and no longer easily justified. There is a move toward a more medicalised response – to see people who use drugs as patients, not prisoners.[34] And now we are seeing certain people being over-medicalised and forced into treatment. And if I was cynical, I think that somebody worked out that you can charge patients more than you can charge prisoners. We have this industrial treatment complex coming up, which has very few evidence-based treatments at all. We've inherited a lot of it in Africa, which we need to look at it critically.

A politically expedient scapegoat

Bill Ebiti

Interestingly, you have outlined some of the difficulties associated with being narrow-minded in describing addiction in its entirety as a brain disease. We are beginning to see a lot of counterproductive outcomes in criminal responses to drug use. In Nigeria, for example, a lot of violence in the recent past has been blamed by the government on substance use and people who use drugs. Yet, I would say, in 100% of the cases that we have reviewed, those individuals had mental health problems, especially schizophrenia. Because these individuals are also using drugs, in one way or the other, it is described as a drug issue rather than a mental illness. Unresolved mental health problems are ignored. This becomes a big problem. The terrorists and insecurity in Nigeria has also been blamed on substance use.

Criminalisation makes it a lot more difficult for people with substance use problems. Even using substances recreationally as an adult has become a big problem as criminalisation creates a problem for people who ordinarily do not have a problem. That is one. Secondly, you talked about the possibility of people using drugs to be able to deal with several issues. That is poverty, that is loneliness, people may have depression or mental health problems or difficulties, such as unemployment and so on. People may be using drugs as a way of coping with all these situations. The drug is not the problem. I tend to believe that if we deal with the primary concern they have, they may not be using substances in a way that will be damaging to them or problematic to them. I don't know what your view is.

Shaun Shelly

I would agree with that. And in South Africa, we see similarities. We see drug users becoming politically expedient targets to blame for the breakdown of communities. But really, drug use is often a symptom of the situation. I understand the frustration of people in poor communities having their taps stolen, but in our recent research into heroin (Nyaope) users in Tshwane, we found that many users are earning their money through legal hustles. Our preliminary findings are supported by research in other countries as well.[35,36] Most heroin-dependent people need to use every four hours, so they need a regular income, between two and four US$ every four hours. They cannot rely on crime. The name "junkie", the derogatory term for heroin users, comes from the fact that way back in the 1920s, people who used heroin were very vocational in the US.[37] They would collect scrap metal, and we see the same. There are groups of current and former Nyaope users who have a recycling project and a feeding scheme they have put together. There is a solid sense of a mutually supportive community.

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