

Substance Abuse

SALES REPRESENTATIVE:
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ADDICTION

must be viewed as a disease or ailment

Introducing the neuroscience of addiction the reader is proffered an understanding of addiction to stimulate thinking, in an attempt to create an experiential approach on the topic.

Addiction can be understood as a perceived physical or psychological dependence on a substance or activity, which may or may not be evidenced on a neurological basis.

In this broad definition two things spring to mind, firstly that any substance can be addictive not necessarily substances with psychoactive ingredients such as alcohol, cocaine, cannabis etc.

Secondly addiction can also be formed by activities, such as sex, gambling, overeating and so forth. With this in mind in our understanding of addiction we are not looking on the burden of proof of whether one is an addict or not.

We are investigating neurological patterns that are etched on an addict's parasympathetic nervous system as a result of the substance or activity one is indulging in.

Such an open ended definition may assist family, business associates, colleagues, peers and even medical professionals in identifying and dealing with addictive behavior, without the social stigma and taboo traditionally attached to the topic.

At the outset we claim categorically, that addiction must be viewed as a disease or ailment, comparable to diabetes, high blood pressure and asthma.

The disease of addiction has its acute phase (which requires almost immediate intervention), but is deemed as a chronic ailment for this discussion.

The good news is that once the addict/patient and well meaning support groups, accept the above as a reality check, addiction becomes a manageable albeit chronic condition with the possible prognosis of abstinence and zero relapse. Isn't this music to our ears? However, there are challenges regarding such a positive outcome.

To shed some light on the above complexity the addict's (referred to also as the patient) brain gets hardwired with a neurological imprint or biochemical circuit when the disease sets in, which is often an endless labyrinth that the patient might spend years or even a lifetime to rewire to a state of abstinence and zero relapse.

Viewing addiction in this manner allows an intervention for recovery to be approached systematically.

We are not aware of any comprehensive study conducted in Southern Africa to establish the real cost of addiction.

Here the obvious and immediate physiological, psychological or even fatal cost an addict personally has to pay is only part of the story.

We make reference to concomitant costs such as human tragedies incurred by third parties due to the addict's disorientated behavior that might affect the public eg. drunken driving, acts of violence etc.

We also refer to social costs incurred by family, organisations and colleagues as a spillover of the addict's behavior.

Furthermore, what is of interest is the opportunity cost in rand value, caused due to impaired or improper decision making or problem solving in the workplace.

Finally, reference is also made to the monetary cost of absenteeism,

and the decreased levels of performance and productivity in an organization due to the addict's behavior which is worth investigation.

This butterfly effect is practically immeasurable, however such statistics would prove useful measurement tools in personal, social and organisational contexts.

The unsettling truth is that the addict may not only exist as someone dear to or acquainted to oneself, and may well exist as someone in a highly responsible problem solving and decision-making social or organisational position.

Why is this the case? Because a disease is not selective in whom it afflicts.

A brief layman's understanding of how a human brain functions is necessary in explaining the neuroscience of addiction.

The relevance to the reader of such insight is not so much its diagnostic value but more so for prognosis in managing this chronic condition with the attainable goal of abstinence, sobriety and zero relapse.

Our objective here is not to police or 'bust' an addict, comparable to the ludicrous notion of 'busting' a diabetic or asthmatic.

Our neuroscience point of departure is the brain. The adult brain has over a hundred billion neurons, with

endless possible neurological pathways, on how a certain learned behavior or habit is formed.

The brain has innumerable options in making a particular neurological imprint or firing a neurological signal. Once this signal keeps firing in a particular way, it tends to establish a neurological pathway or biochemical circuitry, which is hardwired over time.

This concept is not new as this is part of child, adult and all learned activities. The brain structure comprises billions of neurons which are the basic cells in the brain and are connected by axons and dendrites, similar to the roots and branches of a living tree.

The axons or roots of a particular neuron send biochemical impulses via neurotransmitters to the dendrites or branches of another neuron, and the impulse or 'spark' occurs at the junction between two neurons known as the synapse.

Dopamine is the excitatory neurotransmitter that activates the reward circuitry in the brain. Activation of the mesolimbic neural pathway increases the firing of dopamine when substances such as alcohol, cocaine and methamphetamines are ingested.

Neural signals are sent to the cortex and these are recorded as a 'pleasurable' or rewarding experi-

ence. So this impulse repeated over time creates a neural pathway or circuitry that becomes imprinted or hardwired.

The brain over time reduces the natural neural circuits of producing dopamine and therefore additional quantities of the addictive substance is required to activate the reward circuitry.

The fully adult brain has a higher capacity to rewire or create completely new neural pathways and countless differing hardwiring circuits than ever previously imagined.

This may be so possibly due to the recent discovery and understandings of the concept of neuroplasticity, which creates the unfortunate possibility for the brain to get addicted to various substances, and not only one.

Here lies the danger for adolescents or adults, when they use logic of 'just get drunk or high this once' and 'I can control myself as I have willpower'.

This is not a matter of control or will power, in the same way as that diabetics have very little control over their insulin levels. Once the neural pathway is established and repeated it becomes imprinted or biochemically ignited and metaphorically a mythical key opens the Pandora's Box in the brain of the patient.

The question one might ask then

is why do some people become addicted and others not. The first answer that springs to mind is that some individuals may well be in denial, or have not been 'bust', i.e. diagnosed with the disease.

Secondly, there are those more fortunate individuals that may have been genetically endowed without this particular ailment of addiction, or may in fact not have the same degree of neuroplasticity as the addict.

Up to the early 1990's neuroscientists believed that by age two, neurons in the brain where pruned to 100 billion. They also assumed that by early adulthood there was a loss of neurons with no regeneration and brain structure and neural circuitry was fixed by this time.

On this assumption it could have been argued that once a person has passed adolescence, the potential addict was through the danger zone. Regarding the reward circuitry in the brain, if it had been hardwired to produce dopamine naturally (no substance abuse until adulthood), why can rewiring occur in adulthood?

The stark reality is that many addicts are afflicted long after their teens and some that may never have been dependent on a substance or activity until well into adulthood.

So where does the answer lie? In all likelihood some of the answers lie in the relatively new discovery of

neuroplasticity, which was identified in primates and humans in the 1990's.

Mainstream neuroscience theory was rewritten in so far as that a human brain was no longer understood as permanently hardwired after adolescence but had a fair amount of plasticity and rewiring capabilities.

It was established that the human brain had the potential to rewire or create brand new neural circuitries. Neuroplasticity had positive applications in successfully treating stroke patients, individuals with OCD and ADHD.

Furthermore through willpower and mindfulness techniques adults having achieved major accomplishments in activities not learned from childhood, such as adult learning requiring high executive functions and impressive athletic feats was neuroplasticity in action.

Unfortunately this may be a double edged sword, as a fully developed adult brain can also be rewired or reprogrammed through the process of neuroplasticity to create or activate the disease of addiction. The skeptic or cynic might ask 'so what?'

The relevance in understanding the neuroscience of addiction is providing a road map or a 'Hanzel and Gretel' trail of how the patient got there and why, in the first place.

In conclusion, the process of neuroplasticity got the addict there albeit he/she had the genetic propensity of the disease of addiction to be sparked.

On the flip side, the prognosis is that the very same process of neuroplasticity that got the addict there, may well be the process in getting the addict back to a state of abstinence, sobriety and zero relapse.

This may appear as a minor shift in thinking, however for the patient it is a quantum leap, particularly where pre-existing social issues and other psychopathology's are evident.

The road to recovery is truly the road less travelled and this is no walk in the park – it is an ultra marathon worth completing.

- Tim Zakis (BCOM)(Hon)

AM I ADDICTED...

THERE are numerous signs and indicators that could assist with a prevention programme if addressed early enough. If you answer 'yes' to any one of these symptoms (or know of someone who does) then help is needed. Remember prevention is always better than cure.

- Do you find yourself sitting thinking about drugs and when to use them?
 - Do you think about the last time you tripped?
 - Do you look forward to your next hit?
 - Do you hide your drugs so that you can have them handy when convenient?
 - Do you have to make excuses when people ask you what is the matter with you?
 - Do you feel the hurt that you cause to those who love you?
 - Do you feel guilty when you use money intended for food or accounts to buy drugs with?
 - Do you find an excuse to use drugs
 - Are you never able to keep a promise to stop – even to yourself
 - Do you use another drug to try and kick the first habit?
 - Do you always plan activities and spending around obtaining drugs?
- For help please contact SANCA on: 27 11 447-3528 or 08614SANCA or visit www.sancanational.org.za

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NO MOTHER SHOULD EVER SAY IF ONLY I HAD KNOWN...

WHAT IS FETAL ALCOHOL SYNDROME?

Fetal Alcohol Syndrome (FAS) includes a spectrum of physical, neurological and behavioural problems in children exposed to alcohol before birth (while their mothers were pregnant with them).

When a pregnant women drinks, her unborn baby is affected by the alcohol. The alcohol she consumed is absorbed through the bloodstream and reaches the unborn baby (fetus) within 20 minutes. The alcohol is poisonous (toxic) for the unborn baby and it may affect any of the unborn baby's organs, although the brain is most vulnerable.

Unfortunately there is no safe amount of alcohol. Every person metabolizes alcohol in a unique way. One person may feel intoxicated from a few sips of champagne while another person may be able to tolerate more alcohol. No-one can predict how your body will respond to alcohol.

As soon as a woman falls pregnant, her body's ability to metabolize also changes. In addition the unborn baby (fetus) has an immature liver and has great difficulty to metabolize the alcohol it is exposed to.

South Africa, and specifically the Northern Cape, has the highest reported Foetal Alcohol Specimen Disorder Prevalence Rates in the world.

In De Aar, the FASD Prevalence Rate used to be 120/1000 (12%). Due to a comprehensive FASD Prevention Programme undertaken by the Foundation for Alcohol Related Research since 2002, this rate has dropped by 30%. This is the first ever reported drop in a FASD community prevalence rate in the world.

The FASD Prevention Project in De Aar commenced in 2002 with a FASD Prevalence Study amongst Grade 1 learners involving all the schools in De Aar. This provided the baseline information. It was followed by an intensive community awareness drive, whereby FARR strived to involve all possible stakeholders like The Departments of Social Development, Health, Education, etc., other NGO's, community and church leaders and the community at large.

The community awareness programme comprised of an extensive media campaign; training of professionals and community members and door-to-door dissemination of information. Critical to this programme was a responsible trading campaign with licensed taverners in De Aar.

This De Aar FASD Prevention Project model is now being implemented in the Western Cape Province and the World Health Organisation has shown interest in taking this model to other countries.



The children appearing on these pictures are not suffering from FAS.

Building a Caring Society. Together.



Province of the
Northern Cape
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Foetal Alcohol Syndrome is the ONLY DISABILITY that is 100 % PREVENTABLE

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The Neuroscience of Addiction Workshop

What everyone should know and how to deal with the problem.

This Workshop is relevant to:

1. People with Addictive Behaviour.
2. Substance Abusers.
3. Employers, HR, Wellness Consultants .
4. Family Members/Spouses/Partners/Sponsors.
5. Coaches, Counsellors & Therapists.
6. Health Professionals.
7. Educators.

Topics:

1. Addiction and the Brain.
2. Forms of Addiction/Addictive Personalities.
3. Cross Addiction.
4. Dual Diagnosis.
5. Neuroplasticity and Staying Clean.
6. Abstinence, Sobriety and Relapse.
7. Addiction in the Workplace and Community.
8. Workplace, Performance & Productivity.
9. Recovery, Coaching and Mentor Programs.
10. Recovery Centres/ In Patient/Out Patient.

When: Workshop 1: 17th March 2012 09Hoo - 17Hoo
Workshop 2: 18th March 2012 09Hoo - 17Hoo

Where: Worldview Academy
WorldsView House,
150 Kelvin Drive,
Woodmead, JHB

Fee: R1999.00 per delegate(ex vat)
15% Discount for Corporate groups of 5 or more delegates. Limited to 15 delegates per group.

Book now to avoid disappointment! Seats Limited to 50 delegates per workshop.

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What is NeuroLeadership?
NeuroLeadership is an emerging field of study focused on bringing neuroscientific knowledge into the areas of leadership development, managing training, change management, education, consulting and coaching. Please visit our website www.neuroleadershipgroup.co.za for more info on our programs, coaching & interventions