

Understanding Addiction: An Overview

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Abstract

Introduction: This paper presents a critical review of published literature detailing the cardinal signs, types, physiology, underlying causes and strategic management for addiction. **Background:** Addiction refers to irrepressible urge which is often accompanied by loss of control. Certain behaviour unconsciously makes people addict to certain things. It's a kind of psychological dependency that ruins many lives by affecting all the aspects of human life. **Methods:** Following a literature search of electronic databases, 15 articles were retrieved that met the selection criteria with papers discussed in relation to cardinal signs, types, physiology, underlying causes and strategic management for addiction. **Results:** There is significant impact of addiction on physical, social, psychological and economic status for the addicts and their families as well as the society. **Conclusions:** It is very essential to create awareness on addiction so that people abstain from such activities. **Nursing Implications:** These findings will help the nursing professionals to identify the underlying causes of addiction, pathophysiology of addiction and impact of addiction on life, thus they can help the people by educating them.

Keywords: Addiction; Cardinal Signs; Physiology; Strategic Management.

What is Addiction?

A regular tendency or practice, especially one that is hard to give up is called habit and some habits gradually transformed into addiction.

The six core components of addiction are: salience, mood modification, tolerance, withdrawal, conflict and relapse. Any behaviour that features all the six core components is addiction [1].

1. **Salience** – A particular activity that becomes the most important activity in an individual's life in such a way that it dominates his/her thoughts, feelings and behaviour. The person is preoccupied with the thought even when not actually engaging in that activity.
2. **Mood modification** – It is the subjective experience of an individual after getting engaged in the particular activity.
3. **Tolerance** – It is the consistently increased need for the particular activity to make the individual feel the same level of pleasure.
4. **Withdrawal** – The consequences that occur when the particular activity is suddenly reduced or discontinued are called withdrawal symptoms. They may be physical or psychosocial.
5. **Conflict** – The addicted person may suffer from interpersonal or intrapersonal conflicts. Intrapersonal conflicts usually compromise of personal relationships, work, education, society and recreational activities. The intrapersonal conflicts usually involve feelings of guilt or helplessness.
6. **Relapse** – It is the repeated returns of the earlier patterns of the particular activity.

Cardinal signs of Addiction

The four cardinal signs of addiction are: obsession, negative consequences, a lack of control and denial. If someone exhibits each of these four signs, then they may be struggling with an addiction [2].

1. **Obsession** – Preoccupation or, thinking about something all the time.
2. **Negative Consequences** – A regular habit

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Received on 07.02.2018, **Accepted on** 15.6.2018

becomes an addiction when there are negative consequences associated with the behaviour. Common negative consequences include: grief, financial distress, career loss, relationship problems, deterioration of physical and mental health.

3. Lack of Control - Trying to control the addictive behaviour but unable to do so.
4. Denial - When someone denies, it means he/she is making an effort to hide the truth from someone. This is a form of self-protection on the part of the addict, which need to be broken down carefully. It is not possible to overcome a state of denial until someone is ready to accept that they have an addiction.

Types of Addiction

All types of addictions can be categorised under two major headings: Substance and Non-substance addiction. (DSM - V)

Substance Addiction - Drugs, Alcohol etc.

Non-substance Addiction - Gambling, Shopping etc.

Physiology of Addiction

The brain is composed of many different regions and structures, which form the brain's communication system. Each of these different regions and structures serves for different purposes and coordinates various activities. Any kind of addictions can alter the structure and functions of these regions [3]. In addiction, the limbic system of the brain plays a vital role. The limbic system is a set of brain structures located at the border of the cortex. The primary structures within the limbic system include the amygdala, hippocampus, thalamus, hypothalamus, basal ganglia, cingulate

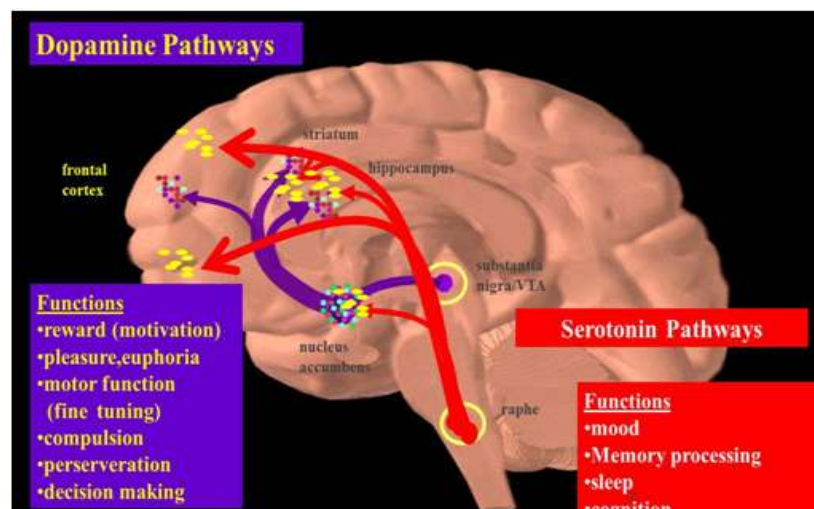
gyrus, ventral tegmental area (VTA), nucleus accumbens and prefrontal cortex.

There is a neurotransmitter in the brain, called the dopamine which is responsible for functions like reward, motivation, pleasure, compulsion, perseverations and decision making. It releases in 8 different ways [4]. The various pathways or channels of dopamine release lead to different functions in the body. In case of addiction it follows the 'Mesolimbic Pathway' also known as the 'Reward System' or 'Reward Pathway'. This pathway is from the VTA to the nucleus accumbens. The release of dopamine through the mesolimbic pathway into the nucleus accumbens regulates incentive i.e., motivation and desire etc. for rewarding stimuli and facilitates positive reinforcement and reward-related learning; and also play a role in the subjective perception of pleasure [5,6].

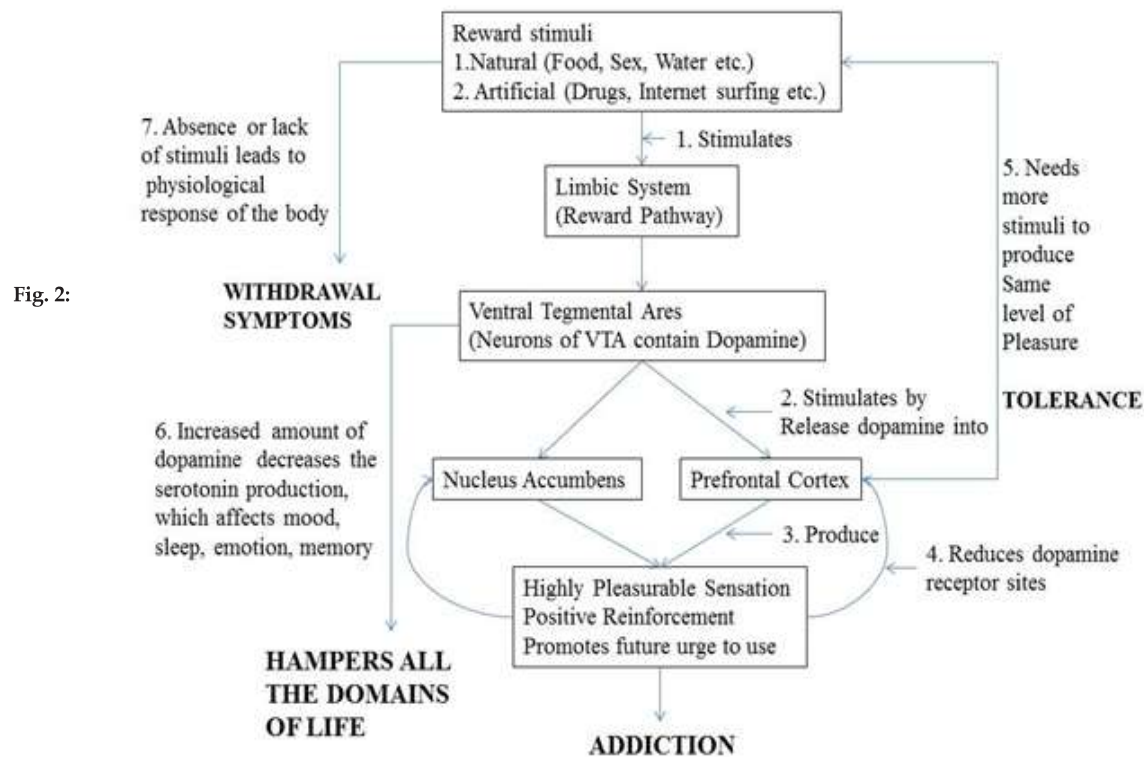
There is another neurotransmitter in the brain called the serotonin, responsible for functions like mood, memory processing, cognition, emotions, aggression, sleep, appetite, anxiety, memory, and perceptions. The impaired regulation of the mesolimbic pathway and serotonin pathway play a significant role in the development of an addiction [7-10].

Any stimuli natural (i.e. sex, food, water) or, artificial (i.e. drugs, alcohol, gambling) stimulates the limbic system or the brain's reward pathway, leading to dopamine production from the VTA. Dopamine then stimulates the nucleus accumbens and prefrontal cortex to produce highly pleasurable sensation. This positive reinforcement further increases the desire for the stimuli for further getting the same level of pleasure referred to as 'tolerance'. On the other hand, increased level of dopamine in the CNS decreases the serotonin production which hampers the mood, memory processing, cognition,

Fig. 1:



Source - Montclair High School Bio Blog: 2018



emotions, aggression, sleep, appetite, anxiety, memory, and perceptions [7-10].

Underlying Causes of Addiction

Underlying causes of addiction may be classified in two categories, e.g.

Internal factors [11-13] – Personality, genetic factor, family history

External factors [11-13] – Environment, peer pressure, easy availability of the addiction causing substances, stress etc.

Hindrances in Strategic Management of any kind of Addiction

Over 80% of people don't seek treatment for addiction because of impaired insight, lack of recognition of severity due to underlying neural dysfunction.

Strategic Management for Any Kind of Addiction

Drug Treatment [14]

In acute phase sometimes drug rehabilitation or psychotherapeutic treatment may be required which mainly contain anti-craving medications e.g. Naltrexone, Naloxone, Subutex, Campral, Baclofen, Neurontin etc.

Recovery Skill [15]

1. *First rule of recovery:* Recovery from any kind of addiction is not possible by abstinence,

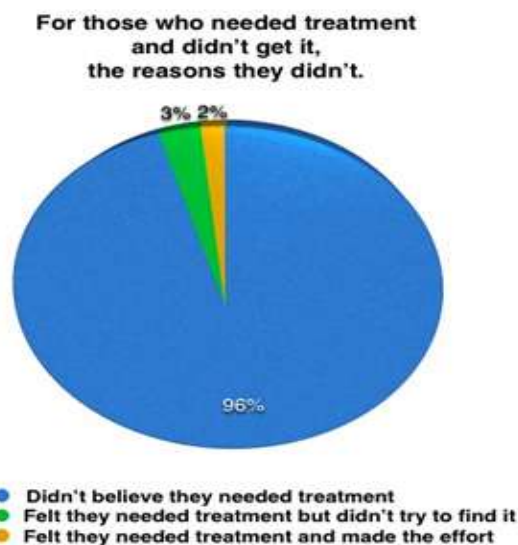


Fig. 3: The reason why many people do not get treatment for addiction

(Source: <http://www.narconon.org/blog/drug-addiction/why-many-people-dont-see-treatment-for-addiction/>)

The reason why many people do not seek treatment for addiction

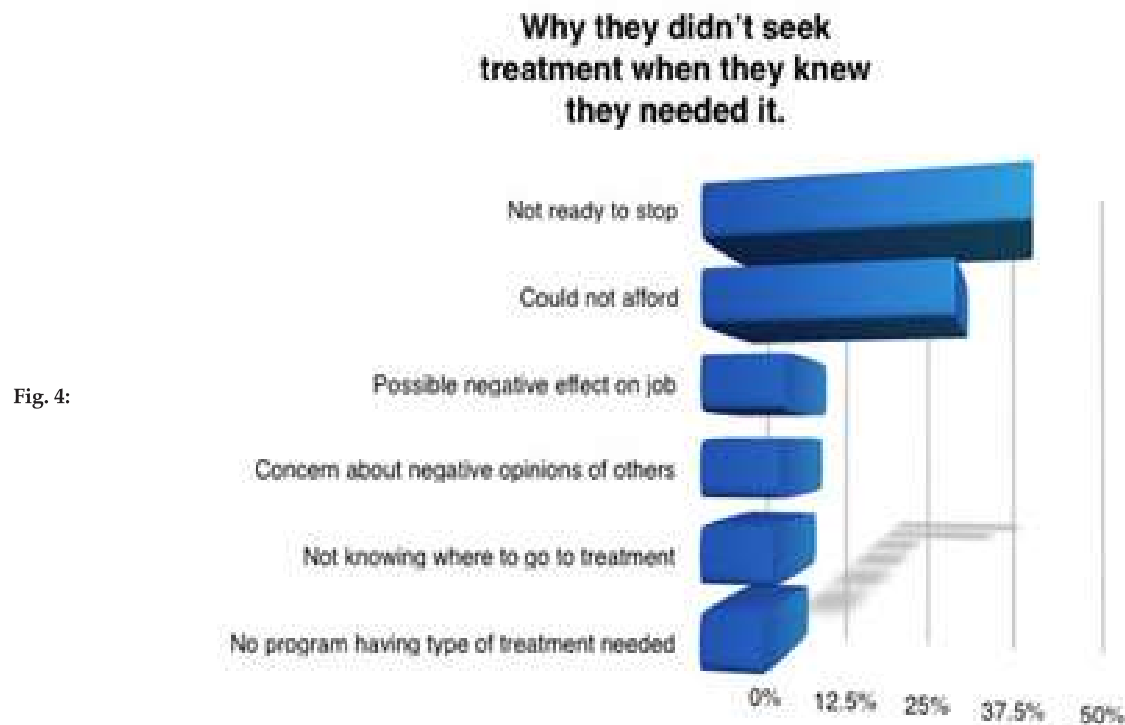


Fig. 4:

(Source:<http://www.narconon.org/blog/drug-addiction/why-many-people-dont-see-treatment-for-addiction/>)

rather it is possible by creating a new life where it is easier to not use. Otherwise all the factors that brought an individual to addiction will eventually catch up with him again. There is no need to change everything in one's life. But there are a few things and behaviours that put an individual into trouble, and they will continue to get into trouble. The more an individual hold onto his old life in recovery, the less well he will do. It is very important to develop the insight or ownership of the problem and recovery. Without this insight, the recovery may not be possible.

2. *Avoid high risk situations:* High risk situations are described by the acronym, HALT: e.g. hungry, angry, lonely, and tired. Of course, one can't always avoid these situations. But if aware of them, can prevent little craving from turning into major urges. Therefore, healthy meals should be taken timely to prevent hunger, one should learn how to relax and should have a good 8 hours night sleep, have good relationships with neighbours and family members. Recovery isn't about one big change but lots of little changes. Avoiding those high-risk situations helps create a new life where it's easier to not use.
3. *Learn to relax:* There are many ways to relax ranging from simple techniques like going for a walk, to more structured techniques like meditation. Meditation should be practised on a daily basis. Other relaxation techniques must also be practised on a daily basis to relax, escape, reward self, and turn off the chatter in the mind.
4. *Coping Skill:* The most important coping skills for recovery are the ability to relax, manage stress, and the readiness to change negative thinking. Stress management is important, because when someone is tense, he/she usually tends to do what's familiar and wrong instead of what's new and right and is not open to change. Cognitive therapy is important because it helps breaking the negative thinking which is a major cause of anxiety and depression and often underlies addiction. If one can change his thinking, it will improve his life.
5. *Be Honest:* Recovery requires complete honesty. One has to be honest to himself, with the therapist, with the family members who are supporting him during the recovery process. Lying opens the door for further relapse.

Conclusion

Controlling impulses is something everyone struggles with, whether it's ignoring a craving for pizza, or something like trying to quit smoking. Some habits become addictive. Addiction is a mental illness. It leads to most of the psychological, physical, health and economic problems for the addicts and their families as well as the society. Sensitising and increasing awareness among people can help to prevent and manage any kind of addiction. Thus, it is important to create awareness on addiction so that people abstain from such activities.

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