INTRODUCTION

Addiction is a chronic brain disorder and not simply a behavior problem involving alcohol, drugs, gambling or sex. The American Society of Addiction Medicine just released a new definition - Addictive behaviors. Any activity, substance, object, or behavior that has become the major focus of a person's life to the exclusion of other activities, or that has begun to harm the individual or others physically, mentally, or socially is considered an addictive behavior ***(Floyd and Garrett, 2011)***.

A person can become addicted, dependent, or compulsively obsessed with anything. There are similarities between physical addiction to various chemicals, such as alcohol and heroin, and psychological dependence to activities such as compulsive gambling, sex, work, running, shopping, or eating disorders. It is thought that these behavior activities may produce beta-endorphins in the brain, which makes the person feel high ***(Dejoie, 2010)***.

Some experts suggest that if a person continues to engage in the activity to achieve this feeling of well-being and euphoria, he may get into an addictive cycle and becomes physically addicted to his own brain chemicals, thus leading to continuation of the behavior even though it may have negative health or social consequences ***(Floyd and Garrett, 2011)***.

There are many common characteristics among the various addictive behaviors: The person becomes obsessed (constantly thinks of) the object, activity, or substance. The person will seek it out, or engage in the behavior even though it is causing harm (physical problems, poor work or study performance, problems with friends, family, fellow workers). Upon cessation of the activity, withdrawal symptoms often occur; these can include irritability, craving, restlessness or depression. He often denies problems resulting from his engagement in the behavior, even though others can see the negative effects. The Person hides the behavior after family or close friends have mentioned their concern (hides food under beds, alcohol bottles in closets, doesn't show spouse credit card bills, etc). Depression is common in individuals with addictive behaviors; they often have low self esteem, feel anxious if they do not have control over their environment, and come from psychologically or physically abusive families ***(Hart, 2011).***

Addiction affects the brain's reward circuitry, such that memories of previous experiences with food, sex, alcohol and other drugs trigger cravings and more addictive behaviors. Brain circuitry that governs impulse control and judgment is also altered in the brains of addicts, resulting in the nonsensical pursuit of "rewards," such as alcohol and other drugs.A long-standing debate has roiled over whether addicts have a choice over their behaviors. Addiction creates distortions in thinking, feelings and perceptions, which drive people to behave in ways

that are not understandable to others around them. Addictive behaviors are a manifestation of the disease, not a cause ***(Leahey, 2010).***

Relevant neuroimaging, neuropsychological and clinical studies proposed that in addition to the brain's reward system, two frontal cortical regions (anterior cingulate and orbitofrontal cortices), critical in inhibitory control over reward-related behavior, are dysfunctional in addicted individuals. This help to explain why some addicts lose control over their drug use and engage in repetitive self-destructive patterns of drug-seeking and drug-taking that takes place at the expense of other important activities ***(Engs, 2010)***.

Dopamine plays a key role in conditioned responses to drugs of abuse; therefore addiction is now recognized as a disease of pathological learning and memory. The neurochemistry shifts from a dopamine-based behavioral system to a predominantly glutamate-based one marked by dysregulated glutamate transmission from the prefrontal cortex to the nucleus accumbens. This is a core part of the executive dysfunction now understood as one of the hallmark features of addiction that also includes impaired decision making and impulse dysregulation ***(Penzel, 2010).***

Pathological gambling is previously the only addictive behavior included in the Diagnostic and Statistical Manual of

Mental Disorders (DSM-IV), and is classified as an "Impulse Control Disorder," where the “essential feature is the failure to resist an impulse to perform an act that is harmful to the person or to others”. Pathological gambling is renamed Gambling Disorder, and moved to a new category, Addiction and Related Disorders, for the most recent version, DSM-5 ***(Ibanez et al., 2013).***

Kessler et al. (2010) proposed that compulsive disorders as kleptomania, compulsive buying and trichotillomania as well as pathological behaviors (e.g. suicidal behaviors, compulsive spending) should also be included in the addictive spectrum. These disorders are now collectively referred to as "Addictive Behaviors".

Excessive work can be viewed as an addictive behavior that have a negative impact on the setting in which it occurs, as well as on the individual. Sexual addictive patterns are considered pathological problems when issues concerning sexual behaviors become the focus of life. These behaviors often cause feelings of shame and guilt with related symptoms of depression and anxiety that cause significant maladaptive social and occupational impairment in functioning. Patients with eating disorders were found to report greater impulsivity, social involvement, sexual activity, family dysfunction, depression and emotional disturbance ***(Bushnell et al., 2010).***

However, the growth of the Internet has been accompanied by a growing concern that excessive use is related to the development of what has been called "Internet addiction", People struggling with Internet addiction report a compelling need to devote significant amounts of time to checking e-mail, participating in online chat rooms or surfing the Web ***(Dejoie, 2010)***.

RATIONALE OF THE STUDY:

There is a long standing debate whether maladaptive behaviors like; pathological gambling, workaholism, addictive sexual behavior, addictive eating disorders, excessive use of video game playing and internet are addictive or not. Those who advocate the inclusion of the addictive disorders diagnosis within the DSM-5 have their justification: addictive behaviors have underlying neurobiological evidence; Executive dysfunction and impulse dysregulation of addictive behaviors are coming from dysregulated glutamate transmission from the prefrontal cortex to the nucleus accumbens.

A continued increase in the incidence of addictive disorders among youth due to new technologies in addition to change in life styles so there is demanding need to widen the scope of the concept of addiction in psychiatry. Those who have arguments against this diagnosis consider addictive behaviors, bad habits, they refuse medicalizing all sources of

maladaptive behaviors for the sake of pharmaceutical companies.

AIM OF THE STUDY:

Elucidation the conception of addictive behaviors and non-conventional Addiction. Submitting the clinical picture of "addictive behaviors" and the parity amongst them and traditional drug addiction. Elicitation the underlying neurobiological evidence of addictive behaviors. Determining the different types of addictive behaviors and their likely impact on the community. Clarification the prospective methods for prohibition and handling of such addictive behaviors.

This study is a review article searching in the following websites:

Pubmed, MD consult, American Journal of Psychiatry, Google. I will use the following key words: addictive behaviors, compulsive behaviors, technological addiction. I will use free English and Arabic articles within the last five years.

ADDICTIVE BEHAVIORS

Definition of Addiction

The word **addicted** comes from Latin. It is made up of the prefix ad, which means to or toward, and the past participle of dicere, which means to say, to pronounce. In Roman Law, addiction was a technical term. There, it meant a formal giving over or delivery by sentence of court. In that technical Roman legal sense, the addict would be a person who, by some official act of court, has been formally spoken over (that is, surrendered or obligated) to a master. Though the sense of a formal legal pronouncement drops in common contemporary usage of the term addiction, the addict is still someone who has been delivered over to master ***(Seeburger, 2010).***

Addicts are individuals who are no longer free for entering into new relationships, responsibilities, and encumbrances, since they have already been spoken for: they have already been claimed by the objects of their addiction ***(Garrett, 2010).***

Addiction in the modern sense is the state or condition of being bound to such a master. Thus, even in that modern sense addiction is still a form of enslavement. The slave is not the person deprived of property. Slaves have lost proprietary rights not over things, but over themselves. In most if not in all cases,

they enslave themselves without ever consciously aiming to do so, and largely as the result of factors-genetic and environmental-beyond their control. It is an existential state or condition in which one's very life has ceased to be one's "own" ***(Seeburger, 2010)***.

The word addict has acquired a distinctive, unseemly, and pejorative connotation that ignores the concept of substance abuse as a medical disorder. Addiction has also been trivialized in popular usage, as in the phrases TV addiction and money addiction. Although these connotations have helped the officially sanctioned nomenclature to avoid use of the word **addiction**, there may be common neurochemical and neuroanatomical substrates among all the addictions, whether to substances or to gambling, sex, stealing, or eating ***(American Psychiatric Association, 2013).***

The concept of substance dependence has had many officially recognized and commonly used meanings over the decades. Two concepts have been used to define aspects of **dependence:** behavioral and physical. In behavioral dependence, substance-seeking activities and related evidence of pathological use patterns are emphasized, whereas physical dependence refers to the physical (physiological) effects of multiple episodes of substance use ***(Shaffer, 2013).***

The various addictions may have similar effects on the activities of specific reward areas of the brain, such as the ventral tegmental area, the locus ceruleus, and the nucleus accumbens ***(American Psychiatric Association, 2013)***.

The word **dependence** is thus being used in two distinct ways: 1. In the sense of physical dependence 2. In the sense of addiction. It is easy to see how confusion results from such dual but distinct meanings of the same word, dependence. The matter is even more complex because most of the drugs that are involved in the behavioral syndrome of addiction (substance dependence) are in fact capable of causing the condition known as physical dependence (capable of causing withdrawal syndrome) ***(Leahey, 2010).***

Diagnostic Criteria for Substance Dependence

- The DSM-5 definition of substance dependence

A maladaptive pattern of substance use leading to clinically significant impairment or distress as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

- Substance is often taken in larger amounts or over longer period than intended.

- Persistent desire or unsuccessful efforts to cut down or control substance use.
- A great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use the substance (e.g., chain smoking), or recover from its effects
- Important social, occupational, or recreational activities given up or reduced because of substance abuse.
- Continued substance use despite knowledge of having a persistent or recurrent psychological, or physical problem that is caused or exacerbated by use of the substance.
- Tolerance, as defined by either: need for increased amounts of the substance in order to achieve intoxication or desired effect; or markedly diminished effect with continued use of the same amount
- Withdrawal, as manifested by either: characteristic withdrawal syndrome for the substance; or the same (or closely related) substance is taken to relieve or avoid withdrawal symptoms ***(American Psychiatric Association, 2013)***.

More recently, the psychiatrists have come to realize that people can also develop addictions to behaviors, such as gambling, and even quite ordinary and necessary activities such

as exercise and eating. What these activities have in common is that the person doing them finds them pleasurable in some way ***(Garrett, 2010).***

There is some **controversy** about which of the **"behavioral"** addictions constitute scientifically validated "true" addictions, with both professionals and the public failing to reach an agreement. More research is needed to clarify this issue ***(Down, 2010).***

ADDICTIVE BEHAVIORS

Any activity, substance, object, or behavior that has become the major focus of a person's life to the exclusion of other activities, or that has begun to harm the individual or others physically, mentally, or socially is considered an **addictive behavior** ***(Penzel, 2010).***

There are similarities between physical addiction to various chemicals, such as alcohol and heroin, and psychological dependence to activities such as compulsive gambling, sex, work, running, shopping, or eating disorders. It is thought that these behavior activities may produce beta-endorphins in the brain, which makes the person feel "high" ***(Penzel, 2010).***

If a person continues to engage in the behavior activity to achieve the feeling of well-being and euphoria, he may get into

an addictive cycle. In so doing, he becomes physically addicted to his own brain chemicals, thus leading to continuation of the behavior even though it may have negative health or social consequences. Others feel that these are just bad habits ***(Engs, 2010).***

Most physical addictions to substances such as alcohol, heroin, or barbiturates also have a psychological component. For example, an alcoholic who has not used alcohol for years may still crave a drink. Thus we need to look at both physical and psychological dependencies upon a variety of substances, activities, and behaviors as an addictive process and as addictive behaviors. All of these behaviors have a host of commonalities that make them more similar to than different from each other and that they should not be divided into separate diseases, categories, or problems ***(Hart, 2010).***

Common Characteristics among Addictive Behaviors

There are many common characteristics among the various addictive behaviors:

1. The person becomes obsessed (constantly thinks of) the object, activity, or substance.
2. They will seek it out, or engage in the behavior even though it is causing harm (physical problems, poor work or study

performance, problems with friends, family, fellow workers).

3. The person will compulsively engage in the activity, that is, do the activity over and over even if he does not want to and find it difficult to stop.
4. Upon cessation of the activity, withdrawal symptoms often occur. These can include irritability, craving, restlessness or depression.
5. The person does not appear to have control as to when, how long, or how much he will continue the behavior (loss of control).
6. He often denies problems resulting from his engagement in the behavior, even though others can see the negative effects.
7. Person hides the behavior after family or close friends have mentioned their concern.
8. Many individuals with addictive behaviors report a blackout for the time they were engaging in the behavior.
9. Depression is common in individuals with addictive behaviors. That is why it is important to make an appointment with a physician to find out what is going on.
10. Individuals with addictive behaviors often have low self esteem, feel anxious if the do not have control over their

environment, and come from psychologically or physically abusive families ***(Ibanez et al., 2010).***

Psychopathology of Addiction

Addiction is a compulsive continuous search for happiness outside ourselves, despite the fact that contentment always eludes us. If we are to reverse addictive behavior, we must begin to challenge the fundamental concepts of the ego which are:

1. **Guilt:** the belief that we have done something wrong, bad, and unforgivable. It is based upon the belief that the past is inescapable and determines the future.

2. **Shame:** as guilt increases, we not only believe that we have done something bad, we begin to believe that we are bad.

3. **Fear:** because of guilt and shame and the resulting feelings that we have done something wrong and we then become plagued with a fear of punishment. For some this translates into fear of God; for others this manifests itself in the belief that they don't deserve love.

Guilt, shame, and fear leave us with anxiety and feelings of emptiness, incompleteness, and hopelessness. The ego keeps us from examining itself too closely by making us believe that guilt and shame are so strong and pervasive that we could not

possibly get beyond them. Because of fear, we run from looking within ourselves, and we begin to look to people, places, activities, and possessions for our happiness. It is in this external search for peace of mind that the ego pushes us toward our first steps in addiction ***(Jampolsky, 2010)***.

Ways of Viewing Addiction

There is no such simple "opposite" to disease, however, unless it be the condition of full health, and certainly no one would seriously maintain that addiction is equivalent to that. So when we think about the question **"Is addiction a disease?"** we also need to ask ourselves "As opposed to what?". In terms of history of attitudes toward addiction, the most important answer to that last question is "willful misconduct". The key ethical component of the process of recovery from addiction engenders a paradox. The emergence and spread of the idea of "recovery" from addiction is inseparably tied to the shift from viewing **addiction** as willful misconduct to viewing it as illness or disease (the shift from viewing addicts as "bad people" to viewing them as "sick people"). Yet to recover from their "sickness," addicts must strive to be responsible, caring and ethical individuals. Thus, when we consider whether addiction is a disease or not, we need to think not only in terms of the opposition between disease and willful misconduct but also in terms of the opposition between disease and behavior disorder ***(Seeburger, 2010)***.