“ROLE OF COGNITIVE BEHAVIORAL THERAPY IN COPING WITH CRAVING; AS AN IMPORTANT THERAPEUTIC TOOL IN RELAPSE PREVENTION OF ADDICTION”

Thesis

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Abstract:

(Key Words**):Addiction- Craving- CBT- Relapse prevention**

Addiction is a chronic relapsing disease. Many modern theories assign central prominence to the role of craving in drug use and relapse. Cognitive behavioral therapy is a form of talk therapy that is used to help many patients stop using drugs and remain drug free . The aim of this study was to assess the effect of CBT on coping with craving and also to compare the progress through stages of change in patients receiving CBT vs those who are not . Results: craving scores were significantly declining for patients receiving CBT, and those patients were moving effectively through the stages of change.

List of abbreviations

ACC	Anterior Cingulate Cortex
ACQ-Now	Alcohol Craving Questionnaire -Now.
ARC	Addiction Research Center .
ASI	Addiction Severity Index.
AA	Alcoholics Anonymous .
Amb	Ambivalence .
AMPA	Alpha-amino-3-hydroxy-5-methyl -isoxazole-4-propionate.
APA	American Psychiatric Association.
AUQ	Alcohol Urge Questionnaire .
BSCS	Brief Substance Craving Scale .
C AMP	Cyclic adenosine monophosphate .
CARMHA	Centre for Applied Research in Mental Health and Addiction.
CM	Contingency Management .
CBT	Cognitive Behavioral Therapy.
CT	Cognitive Therapy.
CRA	Community Reinforcement Approach.
CREB	Cyclic adenosine monophosphate Responsive Element Binding protein.
CRF	Corticotrophin-Releasing Factor.
CSF	Cerebrospinal fluid.
CSLT	Cognitive Social learning Theory.
DA	Dopamine.
Delta)9-(THC	*Delta)9(Tetra Hydro-Cannabenoids*
DLPFC	Dorsolateral prefrontal cortex.
DSM-IV	Diagnostic and Statistical Manual the 4th edition.2
FDA	Food and Drug Administration
GABA	Gamma Amino Buteric Acid..
HPH	Heliopolis Psychiatric Hospital.
HRS	High-Risk Situation.
I-RISA	Impaired Response Inhibition and Salience Attribution

IPT	Interpersonal Psychotherapy.
LAAM	Levo alpha-acetyl-methadol.
MDRU	Medications Development Research Units.
MET	Motivational Enhancement Therapy.
MI	Motivational interviewing.
MSNs	Medium-spiny projection neurons.
NAcc	The nucleus accumbens
NA	Narcotics Anonymous.
NIDA	National Institute for Drug Abuse.
NMDA	N-methyle-D-aspartate.
OCDS	Obsessive Compulsive Drinking Scale.
OFC	Orbit Frontal Cortex.
PET	positron emission tomography.
PFC	Prefrontal cortex .
REBT	Rational Emotive Behavior Therapy.
Rec	Recognition.
RGS	Regulator of G-protein Signaling .
RP	Relapse prevention.
SAMHSA	Substance Abuse & Mental Health Services Administration.
SCM	Stages of Change Model.
SOCRATES	Stages of Change Readiness and Treatment Eagerness Scale.
SPSS	Statistical packages for social sciences.
TS	Taking Steps.
TSF	Twelve-Step Facilitation.
UNDCP	United Nation Drug Control Program.
UNODC	United Nations Office on Drugs and Crimes.
VTA	Ventral Tegmental Area.

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Introduction & Aim of the work

Although drug addiction is a complex, and treatable brain disease, yet for many people relapse is possible, even after long periods of abstinence]NIDA, 2006.[

Addiction may begin with an individual conscious choice to use drugs .But as drugs interfere with the normal brain functioning including rewarding and emotional mechanisms thus a powerful feeling of pleasure is created, turning drug users into addicts]NIDA, 2003.[

Those addicted to drugs suffer from compulsive drug craving and usage, which they cannot quit by themselves, and treatment is necessary to help them stop this kind of behavior] Geraldine, 2003.[

According to Huttner) 2006(, classical conditioning plays an important role in development of this addictive behavior, where environmental cues are paired in times with an individual's initial drug use experience .Through this conditioning, these environmental cues started to become)triggers(, which elicit anticipation of drug experience, and thus generate drug craving .This trigger induced craving is one of the most frequent causes of drug use relapses .

However Tiffany) 1999 (has introduced cognitive concepts such as memory, expectancies, interpretations and automatic behavior into the conceptualization of craving .The past three decades have been marked by a tremendous progress in behavioral therapies for drug abuse and dependence, as well as many advances in conceptualization of approaches to development of behavioral therapies.

Cognitive behavioral therapy and a variety of other types of behavioral treatments have been shown to be potent interventions for several forms of drug addiction]Campbell & Carroll, 2005.[

Cognitive behavioral therapy is a form of talk therapy that is used to teach, encourage and support individuals about how to reduce /stop their harmful drug use .It also provides skills that are valuable in helping people in gaining initial abstinence as well as maintaining abstinence from drugs]UNODC, 2007c.[

Hypothesis:

As addiction is a learned behavior that can be changed according to principles of conditioning and learning, so according to the same principles; C.B.T .helps patients to recognize, avoid and cope along the following parameters :

- Recognize their craving as a situation in which they are most likely to use drugs
- Avoid such situations when appropriate.
- Cope more effectively with their craving
- Change their problematic behavior associated with substance abuse .

Aim of the work:

1. To elicit the effectiveness of CBT on coping with craving as a major risk factor in relapse prevention.
2. To compare ability of coping with craving in patients receiving CBT vs .others who do not.
3. To compare progress through stages of change in patients receiving CBT vs . those who are not.

Addiction :A disease of Learning and Memory

Introduction:

Drug and alcohol abuse is an enormous societal problem due to individual suffering as well as associated disruption of families and communities through criminality and violence and health care costs .During the 1990s, at least 134 countries and territories were faced with a drug misuse problem, with three quarters of all countries reporting the use of heroin and two thirds misuse of cocaine] WHO, 1998.[

The concept of addiction could be traced back to the 5th century BC when Hippocrates set down explanations of diseases he had observed]Miller, 1995 .[Problems of drug abuse were recognized even in ancient times, drunkenness was mentioned in the Bible and in the writings of ancient Greeks and Romans] Loza, 1990.[

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)physiological (effects of multiple episodes of substance use .In definitions stressing physical dependence, ideas of tolerance or withdrawal appear in the classification criteria .Somewhat related to dependence are the related words addiction and addicts . The word addict has acquired a distinctive, unseemly, and pejorative connotation that ignores the concept of substance abuse as a medical disorder] Kaplan & Sadock, 2004.[

The confusion of physical dependence) i.e .causing a withdrawal syndrome in everyone who takes enough of the substance for a long enough time (with addiction)a behavioral syndrome characterized by prolonged excessive and harmful use of the substance (is one of the commonest and harmful errors of understanding in this area .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 withdrawal syndrome] (Garrett, 2002.[

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 means 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 spoken over)that is, surrendered or obligated (to a master .Addicts are individuals who are no longer free for entering into new relationship, responsibilities, and encumbrances, since they have already been claimed by the objects of their addiction] Seeburger, 1993.[

Definitions:

Addiction is the desire or compulsive need to continue taking the drug and to obtain it by any means with tendency to increase the dose]Hoffman, 1982 .[

Drug dependency is a state arising from repeated periodic or continuous administration of a drug that results in harm to the individual or sometimes to the society] Goldstien & Kalant, 1990[

Addiction is also defined as follows:

- A preoccupation with acquiring a substance that dominates the user`s lifestyle.
- Compulsive use of drugs and alcohol despite adverse consequences.
- A pattern of relapse to use of drugs and alcohol after a period of abstinence or an inability to cut down use despite recurrent adverse consequences] Jaffe, 1990[

DSM-IV Diagnostic Criteria for Substance dependence:

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

1. Tolerance, as defined by either of the following) :a (A need for markedly increased amounts of the substance to achieve intoxication or the desired effect or)b (Markedly diminished effect with continued use of the same amount of the substance .
2. Withdrawal, as manifested by either of the following) :a (The characteristic withdrawal syndrome for the substance or)b (The same)or closely related (substance is taken to relieve or avoid withdrawal symptoms .
3. The substance is often taken in larger amounts or over a longer period than intended .
4. There is a persistent desire or unsuccessful efforts to cut down or control substance use .
5. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects .
6. Important social, occupational, or recreational activities are given up or reduced because of substance use .
7. The substance use is continued despite knowledge of having a persistent physical or psychological problem that is likely to have been caused or exacerbated by the substance)for example, current cocaine use despite recognition of cocaine-induced depression or continued drinking despite recognition that an ulcer was made worse by alcohol consumption](APA, 1994.[

The ICD-10 criteria for substance dependence:

A definite diagnosis of dependence should usually be made only if three or more of the following have been present together at some time during the previous year:

- A strong desire or sense of compulsion to take the substance;
- Difficulties in controlling substance-taking behavior in terms of its onset, termination, or levels of use.

- A physiological withdrawal state when substance use has ceased or have been reduced, as evidenced by :the characteristic withdrawal syndrome for the substance; or use of the same)or closely related (substance with the intention of relieving or avoiding withdrawal symptoms;
- Evidence of tolerance, such that increased doses of the psychoactive substance are required in order to achieve effects originally produced by lower doses)clear examples of this are found in alcohol -and opiate-dependent individuals who may take daily doses sufficient to incapacitate or kill non tolerant users(;
- Progressive neglect of alternative pleasures or interests because of psychoactive substance use, increased amount of time necessary to obtain or take the substance or to recover from its effects;
- Persisting with substance use despite clear evidence of overtly harmful consequences, such as harm to the liver through excessive drinking, depressive mood states consequent to periods of heavy substance use, or drug-related impairment of cognitive functioning; efforts should be made to determine that the user was actually, or could be expected to be, aware of the nature and extent of the harm] Kaplan & sadock, 2004.[

Although some individuals can stop compulsive use of tobacco, alcohol, or illegal drugs on their own, for a large number of individuals, addiction proves to be a recalcitrant, chronic, and relapsing condition.

The development of addiction involves a transition from casual to compulsive patterns of drug use .This transition to addiction is accompanied by many drug-induced changes in the brain and associated changes in psychological functions] Koob, 2000.[

The Biological Basis of Drug Addiction

When examining the biological basis of drug addiction, we must first understand the pathways in which drugs act and how drugs can alter those pathways] Webster, 2000.[

With new imaging techniques, we can watch the brain function in real time, and now we know that addictive drugs cause the activation of a specific set of neural circuits, called the brain reward system] Wilson &Kuhn, 2005.[

The Reward Circuit :

Also referred to as the meso-limbic system, is characterized by the interaction of several areas of the brain.

- **The ventral tegmental area) VTA(** consists of dopaminergic neurons which respond to glutamate .These cells respond when stimuli indicative of a reward are present .The VTA supports learning and sensitization development and releases dopamine) DA (into the forebrain] Jones& Bonci, 2005.[
  These neurons also project and release DA into the nucleus accumbens, through the mesolimbic pathway .Virtually all drugs causing drug addiction increase the dopamine release in the mesolimbic pathway, in addition to their specific effects]Eisch & Harburg, 2006[
- **The nucleus accumbens) NAcc(** consists mainly of medium-spiny projection neurons)MSNs(, which are GABA neurons .The NAcc is associated with acquiring and eliciting conditioned behaviors and involved in the increased sensitivity to drugs as addiction progresses] Kourrich et al., 2007.[
- **The prefrontal cortex) PFC(,** more specifically the anterior cingulate and orbitofrontal cortices, is important for the integration of information which contributes to whether a behavior will be elicited .It appears to be the area in which motivation originates and the salience of stimuli is determined]Kalivas& Volkow, 2005.[
- **The basolateral amygdala** projects into the NAcc and is thought to be important for motivation as well] Floresco &Ghods-Sharifi , 2007.[
- More evidence is pointing towards the role of the **hippocampus** in drug addiction because of its importance in learning and memory .Much of this evidence stems from investigations manipulating cells in the hippocampus alters dopamine levels in NAcc and firing rates of VTA dopaminergic cells] Eisch& Harburg, 2006.[

The reward system in the brain is activated when a person performs an action necessary to survival, such as eating .Activation of the reward circuit provides pleasurable feelings, giving positive feedback for necessary actions] Webster, 2000.[