"TRANSCRANIAL DIRECT CURRENT STIMULATION AS AN ADJUNCT ON CRAVING IN PATIENTS OF UNCOMPLICATED ALCOHOL DEPENDENCE SYNDROME: A SINGLE BLIND, RANDOMIZED CONTROLLED STUDY"

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ACRONYMS

ACQ-NOW	Alcohol craving questionnaire
CIWA-Ar	Clinical Institute for Withdrawal Assessment- Alcohol revised
DBS	Deep brain stimulation
DLPFC	Dorsolateral Prefrontal Cortex
ECT	Electro-convulsive therapy
EEG	Electro-encephalogram
FAB	Frontal Assessment Battery
MST	Magnetic stimulation therapy
SADQ	Severity of Alcohol Dependence Questionnaire
tDCS	Transcranial Direct Current Stimulation
rTMS	Repetitive Transcranial Magnetic Stimulation
tES	Transcranial Electrical Stimulation
VNS	Vagus nerve stimulation

ABSTRACT

Background:

Craving is attributed as one of the main reasons for relapse in alcohol dependence syndrome. Neurostimulation techniques targeting craving in substance use disorder is being researched. Dorsolateral prefrontal cortex (DLPFC) is the area responsible for craving.

Objectives:

To study the effect of tDCS (Transcranial Direct Current Stimulation) on craving in patients of Alcohol Dependence Syndrome.

Materials and methods:

We performed a single-blind, sham-controlled study involving 76 patients with alcohol dependence syndrome (according to ICD-10 DCR). Participants with Clinical Institute of Withdrawal Assessment in Alcohol Withdrawal (CIWA-Ar) scores less than 10, not on any anti-craving medications were included in the study. Patients were randamiosed into active and sham tDCS groups in a ratio of 1:1. such that 38 patients received active and 38 patients sham tDCS stimulations ; with anode as right DLPFC and cathode as left DLPFC receiving 2mA current (twice daily session, total 10 sessions).

The Alcohol Craving Questionnaire (ACQ-NOW) was administered to measure the severity of alcohol craving at baseline and after the last tDCS session.

Results

Our study showed significant reduction in craving in the post-tDCS ACQ-NOW scores as compared to sham tDCS. There was also significant reduction in compulsivity and emotionality domain of craving after tDCS. The effect size for treatment with time interaction was (0.58).

Conclusions

Right dorsolateral pre-frontal tDCS was found to have significant anticraving effects in alcohol dependence.

Keywords: tDCS, neuromodulation, DLPFC

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INTRODUCTION

Addiction, a major public health concern that affects not only the addicted individual, even greatly impacts his or her family members and surroundings. Recent studies have shown that substance dependence gradually results in loss in work productivity, crime and foster care making it a serious social concern along with medical problem.[1] Even when several treatment options are available, many patients have shown chronic course of addiction. The abstinence rates range between 40% to 60% one year following post treatment.[2]

"Substance use disorder" a diagnostic term that specifies the maladaptive pattern of use for a prolonged period. Alcohol, being a highly addictive substance and its dependence has been termed as "a chronically relapsing disorder". It one of the leading causes of death and disability globally. About two billion people worldwide consume alcoholic beverages and one-third (nearly 76.3 million) is likely to have one or more diagnosable alcohol use disorders. In India 62.5 million are alcohol consumers with 17.4% of them (10.6 million) being dependent users and 20–30% of hospital admissions are due to alcohol-related problem. [3]

Research studies conducted by *Mishra et al* states that around 65–70% of abstinent alcohol-dependence subjects tend to relapse within 1 year, more within the first three months of abstinence.[4] Relapse in substance use disorder is a multifactorial phenomenon .The cause range from individual patient characteristics, the substance to the reinforcers present externally.

Multiple reasons have been implicated in relapses of a substance disorder. According to the ***"socio-cognitive-behavioral-model"*** proposed by Malaret[5] "negative mood states, external pressures, and lessened cognitive vigilance" are some of the high risk situations for relapse.

Craving is attributed as one of the main reasons for relapse in alcohol dependence. It is a multidimensional concept further defined in terms of behavioral, reinforcement, and cognitive processing.

Targeting "self-efficacy" for coping in certain high risk situations helps in maintaining abstinence.[6] It is the perceived ability of an individual to be able to resist the substance influenced by various cognitive processes and experience of substance use in coping to high-risk situation.

There are many treatment strategies implicated in relapses. Not a single strategy is useful by itself in each individual. All the intervention strategies have their own limitations. In the treatment of alcoholism, pharmacological and psychosocial interventions have shown limited success.[7] There is a need for developing more effective treatment and exploring alternative methods targeting craving for relapse prevention along with pharmacological treatment.

Direct intervention in the brain via neuromodulation has been a topic of research in various psychiatric disorders [8]. Various techniques like rTMS, VNS, MST and tDCS are available.

The modality used in this study is Transcranial direct current stimulation (tDCS). A noninvasive brain stimulation modality in which a weak current is applied to the brain for several minutes through electrodes resulting in "polarity dependent modulation of the brain".[9]

Functional neuroimaging studies have shown that specific brain-areas are associated with alcohol craving like the amygdala, the nucleus accumbens, the anterior cingulate, the orbitofrontal and the dorsolateral pre-frontal cortex (DLPFC).[10]

However most of the studies suggest that it is the prefrontal region specially the DLPFC that plays a major role in craving associated with substance such as alcohol and smoking [11]

The effect of neurostimulation techniques on controlling craving has been explored earlier in other substance like smoking[12] , cocaine [13] opium addiction [14]and even food addiction.

Application of tDCS in moderating craving and intake of addictive substances such as food, nicotine, alcohol, cocaine, and other psychoactive drugs. However, very limited literature on alcohol craving is available.

The few studies conducted earlier pertaining to craving in alcohol dependence[7,9] lack the adequate sample size as well as the effective number of tDCS sessions. Also, the effect of tDCS as an adjunct to pharmacotherapy to assess craving has not been explored earlier.[10]

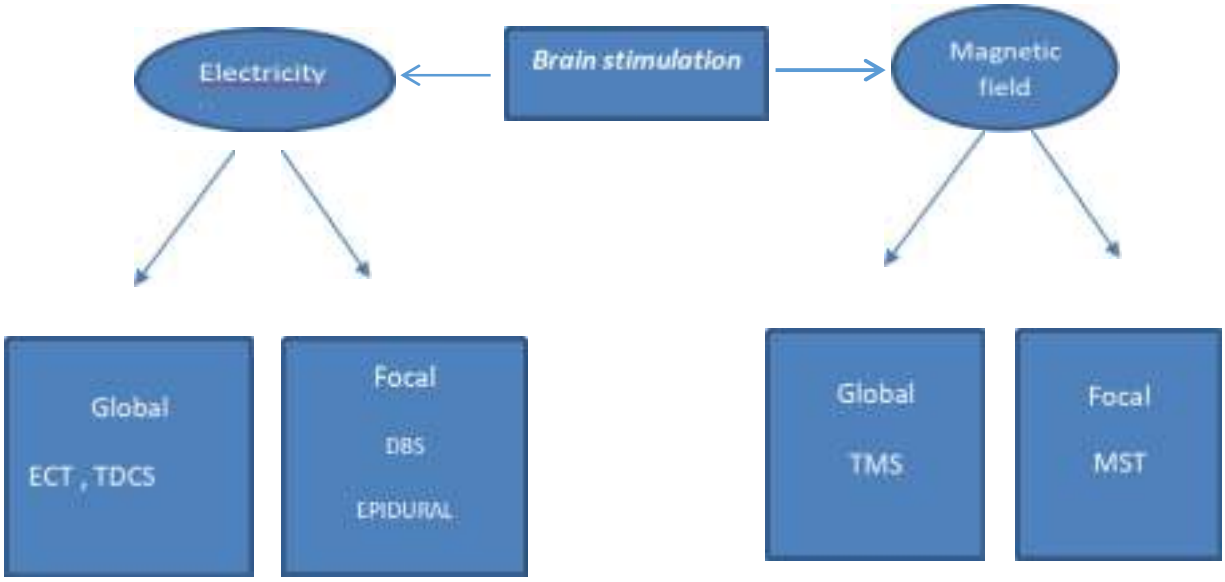
This study is intended to have an adequate number of sample size as well as the effect of tDCS as an adjunct in the process of relapse prevention targeting craving would be assessed.

OBJECTIVES

To study the effect of Trans-cranial direct current stimulation (tDCS) on craving in patients of alcohol dependence syndrome.

REVIEW OF LITERATURE

The use of electrical or magnetic field to alter neuronal firing or neuromodulation as it has been termed precisely is a novel concept in the field of psychiatric practice and research. There are various techniques which involves application of electrical or magnetic field trans cranially or the implantation of electrodes surgically.



DBS- deep brain stimulation

TMS- Trans-cranial magnetic stimulation t

DCS- Trans-cranial direct current stimulation

MST- Magnetic seizure therapy

Fig 1: Types of neuromodulation techniques available

Historical background:

"A constant direct current i.e. flow of electric charge that does not change direction, polarizes tissues."[15]

Since the 16th century, neurophysiologists have been fascinated by the fact that direct current given through the scalp can cause long-lasting changes in brain excitability that last long after they have been offset..

In initial experiments with torpedo fish demonstrated that it delivers a strong direct electric current when placed over the human scalp. Complaints like headache was treated by eliciting a sudden and transient stupor followed by pain relief[16].

Following which a whole set of experiments involving the use of electricity in medicine started.

Alessandro Volta, an Italian physicist, chemist and pioneer of electrical science[17] brought the fact that electrical stimulations of variable duration can elicit a variety of physiological responses. Many researchers have used galvanic current to treat mental disease extensively during the last two centuries, with mixed results. Early observations employed a variety of methods and simply included a qualitative clinical description. However, a rather consistent finding was the opposite effects induced by reversing stimulating polarities.

The introduction of Electroconvulsive therapy (ECT) by Bini and Cerletti in 1930 revolutionized the clinical practice of Psychiatry. Brain stimulation however differs from ECT in its fundamental mechanism. ECT induces convulsive activity. Brain stimulation deals with polarizing i.e inducing neuronal firing through physiological changes without inducing seizure. [18]

In 1985 Anthony Barker and his colleagues published on the first use of trans-cranial magnetic stimulation. Initially used by neurologist for studies of nerve conduction studies TMS was also being incorporated for the treatment of depression [19] anxiety and schizophrenia[20] . In an attempt to find less invasive procedures Magnetic stimulation therapy (MST) was developed as focal means of inducing seizure with fewer cognitive effects. After a decade of the first use of trans-cranial magnetic stimulation (TMS), Deep brain stimulation (DBS) and Vagus nerve stimulation (VNS) came in the picture.

FDA approved initially for the treatment of Parkinson's disease (tremors) in 2002 DBS was expanded to include treatment of all sorts of neurologically sequelae along with depression and OCD.Later VNS also received the approval for the treatment of chronic depression as an adjunct. [21]

MECHANISM OF NEUROSTIMULATION

Neurostimulation works on the principle of electrical stimulation of neurons either by generation of electric pulse or under the effect of magnetic field. In sub convulsive modalities simulation is dependent on the repetitive stimulation of the neurocircuitry.

The effect of neurostimulation can be seen as acute changes in the form of direct activation of neuronal circuit. A direct stimulation of the primary motor cortex can lead to twitch of the hand by activation of the corticospinal tract or as remarkable as the demonstration of speech arrest by stimulation of language domain by TMS. [8]

Prolonged effects of stimulation usually the aftereffects of repetitive stimulation are through neuroplasticity at the neuronal cell level. It occurs through some dynamic alteration in synaptic efficacy. Repetitive stimulation at high frequency induces a lasting change whereas low frequency depresses of the prefrontal pathway

i.e. "Long term potentiation or long term depression" [22]. Other mechanisms like neurotrophic factors, modulation of the cortical excitability and functional connectivity of brain have been proposed for the same.

THE FOCALITY AND INVASIVENESS OF NEUROSTIMULATION MODALITIES:

Noninvasive technology has the benefit of lesser adverse effects like less cognitive impairment so can be initiated earlier during treatment. Focality is useful if a specific target area is known; however, if the therapeutic effect is not known or is broad then focal stimulation would prove a drawback in terms of efficacy. Implantation of electrode inside the target brain region as in deep brain stimulation is the most focal modality. Whereas tDCS is the least invasive and least focal due to its transcranial application of current.

Deep Brain Stimulation	A wire electrode is surgically implanted inside the brain, with several stimulation sites.
Electro-convulsive therapy	Trans-cranial application of electricity via electrodes places on the scalp to induce a seizure under anesthesia.
Magnetic seizure therapy	Under anaesthesia, a high-intensity "transcranial magnetic stimulation" is used to cause a focal seizure.
Transcranial direct current stimulation	Direct electrical currents of low intensity are delivered through stimulation of the scalp via sponge electrodes
Transcranial magnetic stimulation	Application of rapidly alternating magnetic fields to the scalp to induce
Vagus nerve stimulation	The Vagus nerve in the neck receives an electrical pulse from an implanted pacemaker, which activates the afferent nerve.

Table 1: Mechanism of Neurostimulation modalities [8]

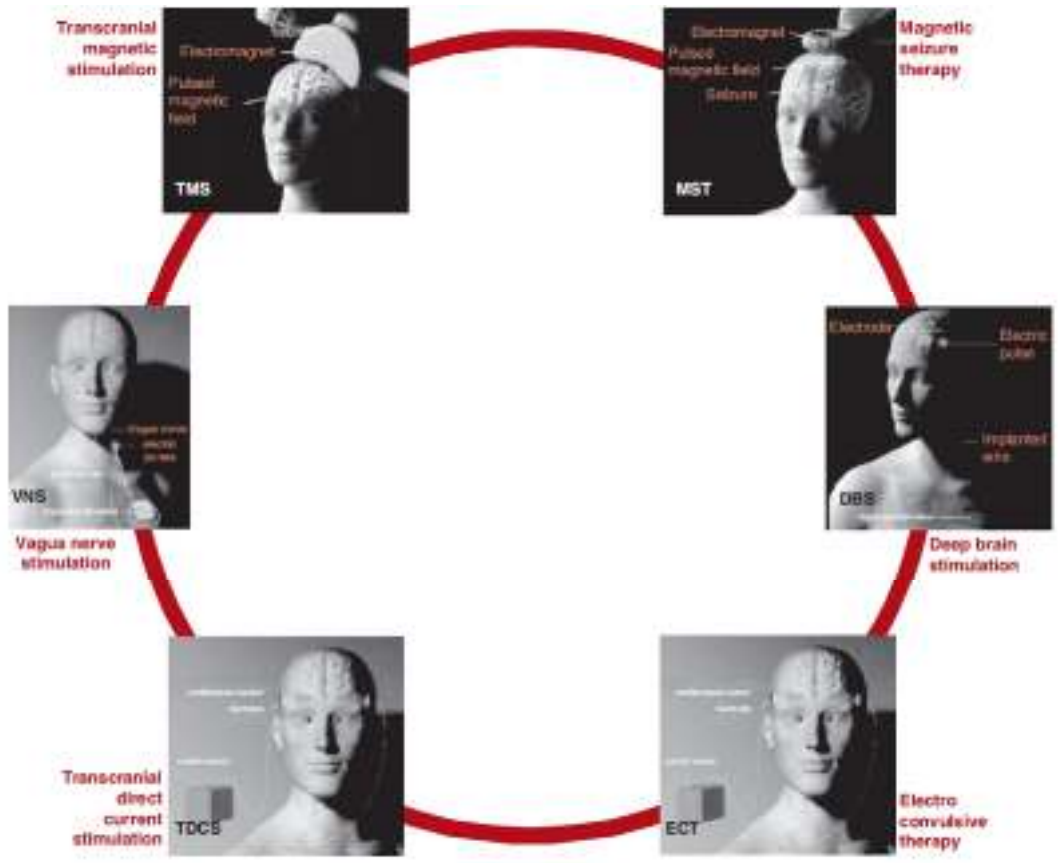


Fig 2: Illustration of different techniques of brain stimulation[8]

APPLICATION OF BRAIN-STIMULATION IN PSYCHIATRY

Apart from its use as a treatment option there are other parallel application for brain stimulation techniques. They're also utilised to look at how the brain works normally or to explain the pathophysiology of various psychiatric diseases. Unlike neuroimaging, which collects passive data on brain function in a variety of situations, brain stimulation is known to modify brain function and cause recorded changes in brain activity. Neuroimaging is a passive modality, and the data it collects indicates behavioural correlates, but it cannot test or explain causal relationships with clinical manifestations. Brain stimulation, on the other hand, can be used to test and demonstrate causal links between the brain and behaviour. It can also be used to examine ideas that have been generated through functional neuroimaging[23]. Apart

from their clinical applicability, noninvasive brain stimulation methods such as transcranial magnetic stimulation have been proven to be effective in investigating brain-behavior interactions.

TRANSCRANIAL DIRECT CURRENT STIMULATION (tDCS): ITS MECHANISM AND APPLICATION

The introduction and development of non-invasive brain stimulation (NIBS) techniques over the past few years has turned out as valuable means to modulate brain activity and contribute to the research of "brain-behavior relations"

Transcranial Electrical Stimulation (tES) and Magnetic Stimulation (TMS) are well-known forms of NIBS that influence neural activity based on different electromagnetic principles.

Michael Nietsche *et all,* in one of his papers has termed tES as a generic term for different stimulation techniques based on its application. It can be direct currents as in tDCS, alternating currents as in tACS, or random noise currents in tRNS[24]

In one of the initial studies done by Michael Nietshe and W. Paulus (2000)[22] mechanism of tDCS was elaborated in detail. The idea behind this study was to use mild DC stimulation to induce changes in neuronal excitability across the intact skull. Intracranial currents of adequate power can be generated in people by stimulating with surface electrodes at levels of up to 1.5 mA, as shown in invasive presurgical epilepsy diagnostics. Excitation could be achieved selectively by anodal stimulation, and inhibition by cathodal stimulation.[8] By varying the current intensity and duration, the strength and duration of the aftereffects could be controlled. The effects were probably induced by modification of membrane polarization.

However,tDCS differs from the other brain stimulation techniques listed in terms of quality. Because static fields in this range do not provide the fast depolarization required to produce action potentials in neural membranes, it does not induce neuronal action potentials. Exposed tissue is polarised, and tDCS alters spontaneous neuronal excitability and activity through "tonic depolarization or hyperpolarization" of the resting membrane potential[25].

Current density is another determinant of efficacy. It calculates the strength of the induced electrical field. It is “the quotient of current strength and electrode size”. Also, it is shown that larger current densities are directly proportional to stronger effects of tDCS. However, large current densities can be painful. It has been noted that with increase in current density cutaneous pain sensations increases. It might affect different groups of neurons due to the greater depth penetration of the effective electrical field. [26] Hence, it is advised to increase the duration of stimulus and not current density, for prolonged effects of tDCS.

Another important determinant of tDCS is stimulation duration. In order to achieve the intended electrical stimulation effects by determining the neuronal population stimulated is orientation of the electric field, which is defined generally by the electrodes’ positions and polarity.

Current flows from the cathode to the anode. For modulation of brain activity or excitability in the motor cortex, different target areas have been stimulated. As per the protocols for tDCS the electrode position has been specified accurately because current flow in different directions may result in different effects.

Furthermore, the degree of shunting and the quantity of current transmitted to brain tissue could be affected by current direction and electrode placement.

Direct current with the use of nonmetallic electrodes (sponge electrodes) usually of the size ranging from $25cm^2$ to $35cm^2$ avoids electrochemical polarization.

In tDCS, the following parameters influence the focality: (1)For the electrode that impacts the underlying cortex, a smaller electrode size while maintaining a consistent current density (2) Larger electrode size, resulting in lower current density, which has no effect on the underlying cortex; (3) or extracephalic reference.

The direction of the shift in excitability can be divergent, dependent on polarity of stimulation and also the specific electrode montage. tDCS produces lasting effects in the human motor cortex when applied for several minutes. These are stable effects lasting for an hour if tDCS is applied for nine-twelve minutes.[26]

As evaluated by motor-evoked potential, anodal stimulation increases excitability while cathodal stimulation decreases it (MEP). As per the changes noted in EEG cathodal "tDCS increases power in the delta and theta bands of the EEG."[27] Electrophysiologic studies have even mentioned about the analogous effects of anodal tDCS on the somatosensory evoked potentials.

tDCS AND SUBSTANCE USE DISORDER

The use of transcranial direct current stimulation (tDCS) to reduce addictive substance intake and cravings has been studied. . It is fueled in part by its link to decision-making and impulsive behaviour regulation. Initial studies have elaborated on the specific effects of brain stimulation on addiction to food[28] and nicotine. Whereas in recent studies focus was on substance abuse like heroin[29], cocaine-crack[30] and also alcohol

STUDIES : (reference)	PARTICIPANTS	MONTAGE	INTENSITY AND DURATION	RESULTS
BOGGIO ET AL9 (2008)	N= 13 Alcohol-dependent patients	Bilateral stimulation: Active ANODAL : F3 CATHODAL : F4 Sham CATHODAL : F3 ANODAL : F4	2 mA or 20 mins	Both active form reduced craving
Den Uyl et al[31] (2015)	N= 41 HEAVY DRINKERS	UNILATERAL STIMULATION: Sham, active F3 anodal	1 ma for 10 mins	No significant reduction for IAT tasks
Klauss et al[32] (2014)	N = 33 alcoholic as per LEISH IV *	BILATERAL : SHAM AND ACTIVE : CATHODAL : F3 ANODAL :F4	2 ma for 13 mins twice a day with an interval of 20 mins	No significant reduction in craving Improvement in quality of life after 6 months.
Den Uyl et al[33] (2016)	N= 78 hazardous drinkers	Unilateral : Sham or active : ANODAL :F3 REF : Contralateral SO area	1 ma for 15 mins 3 daily session	DLPFC stimulation reduced craving in heavy drinkers
Den Uyl et al [34] (2017)	N= 82 alcohol dependent patients	Unilateral : Sham or active ANODAL : F3 Ref: F4	2 ma for 15-20 mins Four daily session	No effect on craving And no reduction in relapse level after 3 months

Table 2: Showing previous studies done on use of tDCS in alcohol dependence patients [35]

Alcohol Dependence

Alcohol alters the neurochemical system of the body. It has both physiological and psychological effects manifesting as acute or chronic changes. Depression[36], anxiety[37] and psychosis[38] are commonly seen in alcohol abuse whereas increasing level of consumption can cause tolerance.

Withdrawal symptoms precipitated by abrupt cessation of alcohol can manifest as autonomic hyperactivity or insomnia to complicated withdrawal like delirium and seizure.

Dependence as defined according to ICD-10 DCR:

"A cluster of physiological, behavioral, and cognitive phenomena in which the use of a substance or a class of substances takes on a much higher priority for a given individual than other behaviors that once had greater value."

The diagnostic criteria for dependence according to ICD-10 has to fulfill any three criteria in the previous year for a minimum duration of 1 month. The criteria outlined below:[39]

"(a) a strong desire or sense of compulsion to take the substance

(b) Difficulties in controlling substance-taking behaviour in terms of its onset, termination, or levels of use

(c) a physiological withdrawal state when substance use has ceased or been reduced, as evidenced by the characteristic withdrawal syndrome for the substance or use of the same (or a closely related) substance with the intention of relieving or avoiding withdrawal symptoms

(d) Evidence of tolerance, such that increased doses of the psychoactive substance are required in order to achieve effects originally produced by lower doses

(e) 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;

(f) 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"

As described above the criteria (a) i.e. craving is a prevalent symptom of all types of drug addictions. . It is also defined as the "pressing , urgent and irrepressible desire to give in to the substance"[40] resulting in an uncontrollable urge to consume a drug. It is associated with strong obsessions and irresistible compulsions to use even when the individual is well aware of the consequences. Koob and Valkow[41] have classified craving as the final stage in their study on addiction cycle.

According to this study compulsivity and impulsivity of human behavior leads to

1. Binge (intoxication)
2. Withdrawal /negative effect
3. Preoccupation/anticipation also known as the craving stage .

Apart from mere drug seeking behavior craving also works on the principle of the reward pathway and the motivational circuits of the brain.

NEUROBIOLOGY OF ADDICTION

The gradual transition from occasional drug use to habitual use, impulsive act to compulsive behavior and obtaining positive reinforcement (reward) to the loss of negative reinforcement coming from withdrawal of substance as studied is based on the neuroadaptive changes in the brain

The structures involved are the basolateral amygdala, hippocampus, insula, the orbitofrontal cortex, dorsal striatum, prefrontal cortex involved in craving and the dorsolateral prefrontal, inferior frontal cortices and cingulate gyrus involved in disrupted inhibitory control.

Mechanism of addiction involves neuroplasticity in all these structures. It may begin with changes in the mesolimbic dopamine system and a cascade of neuroadaptations from the ventral to dorsal striatum and orbitofrontal cortex. It also involves dysregulation of the prefrontal cortex, cingulate gyrus and the extended amygdala.

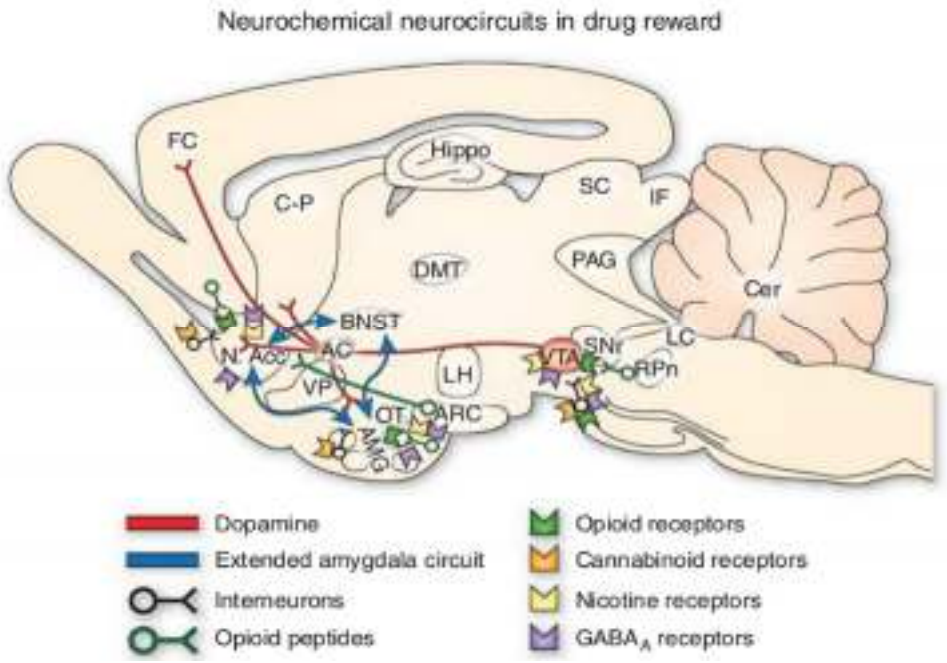


Fig 3 : Diagrammatic representation of the neuro-circuits involved in reward pathway (Source : Koob and Valkow, Neurocircuitory of addiction)[41]

Impulsivity[42] defined as "acting without forethought" or "inability to stop the initiation of action". It involves the ventral striatum linked to thalamus also the ventromedial to the prefrontal and the anterior cingulate cortex.

Compulsivity[42] defined as "repetitive actions inappropriate to situation that persists, having no obvious relationship to the overall goal resulting in undesirable consequences". It is a behavior that results in "perseveration in responding in the face of adverse consequence and in the face of incorrect responses in choice situations or persistent re-initiation of habitual acts". It involves a different brain circuit i.e. the dorsal striatum, the thalamus and the orbitofrontal cortex.

The impulsive behavior which begins in the ventral loop of reward gradually migrates to the dorsal loop due to the cascade of neuroadaptations. It involves the dysregulation of the reward circuit and its insufficient inhibition. Amygdala and hippocampus provide regulatory input to the system.

Repeated drug use leads to firing of the mesolimbic dopamine circuit which is the final common pathway of reinforcement and reward in the brain. It can be better understood with the following graph.

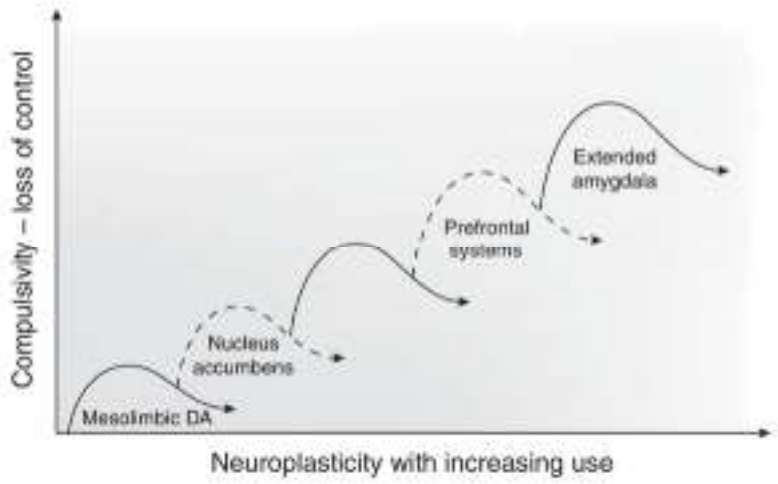


Fig 4: Graphical representation of compulsivity and long term neuroplastic changes (Source: Koob GF, Valkow ND, Neurocircuitory of addiction)[41]

A single injection of cocaine results in increased excitability of the mesolimbic dopamine system. It is reflected in terms of changes in the level of glutamate through long term potentiation. Activation of dopamine pathways leads to increased excitability of the ventral striatum and decreased glutamatergic activity during drug withdrawal, while increased glutamatergic activity occurs during drug-primed and cue-induced drug seeking.The involvement of ventral striatal-pallidal-thalamic loops is "hypothesized to translate to the dorsal striatum which contribute to engagement of habits and automaticity (compulsive like behaviour)". As compulsivity develops into florid addiction loss of function occurs in the frontal cortex systems. It contributes to poor decision making and burdens the brain stress systems.

THE THEORY OF "REWARD - ANTIREWARD PATHWAY"

The emergence of negative emotional state like dysphoria , anxiety and irritability have been clubbed together as the hedonic or affective withdrawal state by Solomon and Corbit; the proponents of opponent process theory[43] . It states that there are two different types of response. Response a is the initial response like euphoria after drug intake. The initial response related to the stimulus could be either a positive or negative response. However, as the response a fade away and response b which is a contrasting response to the initial emerges. The first few exposures to an emotion-eliciting event, such an opponent process can act to return an organism to a state of emotional homeostasis or neutrality following an intensely emotional episode. After repeated exposures, however, the State A response weakens, and the State B response strengthens. The opponent process model was implicated in understanding the dysregulated motivational system of the brain in which addiction is understood as a

spiraling dysregulation of brain's reward and antireward mechanism resulting into compulsive use of the substance.

Anti-reward[44] is a concept that is based on the hypothesis that "there are brain systems in place to limit reward that are triggered by excessive activity in the reward system." Reward system of the brain is defined as "activation of circuits involved in positive reinforcement with an overlay of positive hedonic valence."

The counter-adaptive process which are the opponent reaction to stimulus is labelled as "within system" and "between system" neuroadaptive changes (Koob and Bloom 1988)[45]

A within-system neuroadaptation[44] is a molecular or cellular change within a given reward circuit to accommodate overactivity of hedonic processing associated with addiction, resulting in a decrease in reward function. The neurotransmitter involved in the acute reinforcing effect associated with alcohol use are dopamine, endocannabinoids, gamma amino-butyric acid with target areas being amygdala, ventral-tegmental area, and the nucleus accumbens. Chronic administration leads to reduction in the dopaminergic and glutaminergic pathways in nucleus accumbens subsequently. This leads to the negative motivational state described earlier associated with abstinence . It can trigger long-term biochemical changes that contribute to the clinical syndrome making them more vulnerable to relapse.

The "between-system neuroadaptation"[44] is a circuitry change that activates brain-stress circuit by excessive engagement of the reward circuit resulting in its opposite action.

The hypothalamic-pituitary-adrenal (HPA) axis and the brain stress system that are mediated by corticotropin-releasing factor (CRF), are dysregulated by chronic administration of drugs of abuse. There is also elevation of adrenocorticotropic hormone (ACTH) and corticosterone and extended amygdala CRF during acute withdrawal of drug.

CRF has critical role to play in mediating the neuroendocrine, autonomic and behavior response to stress and anxiety. Along with CRF the extra-hypothalamic CRF system (extended amygdala) also gets activated and mediates for the withdrawal anxiety and fear experienced.

During the development of dependence there is

- Recruitment of CRF system
- Activation of the Dynorphin-k
- Activation of norepinephrine and Stress response
- Dysregulation of NPY brain antistress system

The extended amygdala primarily involved in mediating the antireward pathway mechanism, receives afferent from the limbic system and sends efferents to hypothalamus and ventral pallidum ; thus integrating the emotional processing of this neurocircuitry .

The neurobiology of addiction also comprises of the vulnerabilities the individual is exposed to. Stress, development and environment influence the addiction pattern its initial stages. Psychopathological com-morbidities, drug history and personality plays a crucial role in the later phase of addiction. Disordered self-care

and disordered emotions along with disordered self-esteem and relationship are hypothesized to play an important role in drug self-medication.

Genetic influences play an important role in alcoholism: the risk in families may be 4 to 6 times higher than in the general population. Majority of adoption studies show that the risk of alcoholism in adopted children is strongly correlated with their biological parents rather than adoptive parents (3- 4 times higher); no protective effect was noted in being raised away from drinking biological parents (Goodwin 1973). The genetic risk is clearly higher in males and weak in females.

Variants in GABRA2[46] on chromosome 4p have been shown to be associated with alcohol dependence. It is particularly related to problems with impulse control . This “risk allele” is also seen in adolescents with conduct disorder and in patients of alcohol dependence.

ADH (alcohol dehydrogenase) is the major metabolic enzyme for alcohol, catalyzing its breakdown into acetaldehyde, which is then further metabolized by aldehyde dehydrogenase (ALDH). Both ADH and ALDH have variants associated with the "flushing" reaction to alcohol. The strongest finding with regard to alcoholism is in ADH4[47] which is associated with the early onset of regular drinking.

A meta-analysis of twenty-one studies shows that there is an increased risk of alcoholism of 50–100% of persons carrying the A1 allele of DRD2[48]. However, recent work has questioned whether this polymorphism may actually be reflecting variation in a gene next to DRD2.

The concept of chromatin remodelling was introduced by Epigenetics[49] It has been investigated how persistent changes in gene expression can be induced in neurons and glia, resulting in long-term physiological and behavior alterations.

THE PREFRONTAL CORTEX AND ITS ROLE IN ADDICTION:

The dorsolateral prefrontal cortex a functional area of the brain with its associated structures i.e. the orbitofrontal cortex, basal ganglia, thalamus and the hippocampus has a role in decision making, inhibitory control, attention bias, and awareness.

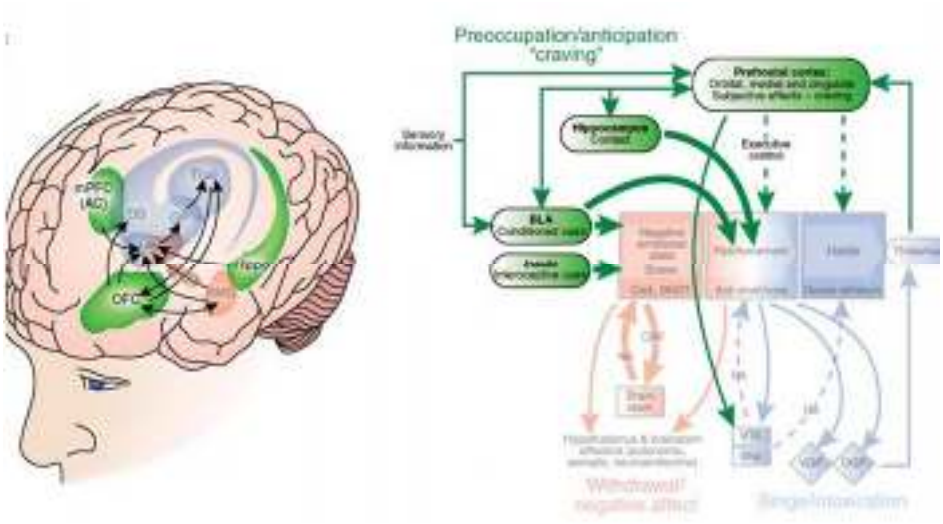


Fig 5. The role of dorsolateral prefrontal cortex in craving (Source: Koob GF, Valkow ND, Neurocircuitory of addiction)

Apart from the dopaminergic pathways which play an important role in the intoxication and withdrawal state, the glutaminergic pathways have major role to play in the preoccupation /anticipation (craving) phase .

The orbitofrontal cortex is attributed with the salience attribution to the substance; disruption of which leads to compulsive behavior. Cingulate gyrus which is related with.. disruption of which leads to impulsive behavior. The processing of conditional

reinforcement takes place in amygdala (basolateral) and contextual information in the hippocampus. .

The prefrontal cortex is associated with executive control and includes representation of contingencies, outcomes, and their value and subjective states (i.e., craving and presumably, feelings) associated with drugs. This subjective effect of craving involves activation in functional imaging studies of the orbital and anterior cingulate cortices and temporal lobe. It also including the amygdala cue related activation which predict reward and trigger craving.

NEUROMODULATION AND DLPFC[50]

Modulation of the dopaminergic systems and other associated reward system might suppress the reward-seeking process. Most drugs of abuse target the reward system by rapidly flooding the circuit with dopamine. It results in overstimulation of the system and the addicted state is characterized by a weak dopamine function. Either the brain produces less dopamine or there is reduction in the number of dopamine receptors in the reward circuit.

The Orbitofrontal Cortex and its role

Modulation of the Dorsolateral prefrontal cortex may "coactivate" other frontal regions such as the orbitofrontal or the ventromedial cortex as they are spatially close and densely interconnected[51] The orbitofrontal region is especially involved in inhibitory control functions . It has connections to other brain areas such as the striatum and amygdala. Hence it may serve to integrate cortical and subcortical processing of motivational behavior and reward. According to the "model of decision making" as proposed by Ernst and Paulus[52] (2005) "the DLPFC is involved in the cognitive process of decision-making, whereas the ventrolateral and ventromedial

prefrontal cortex, the striatum, and the amygdala are involved in the affective process of decision-making".

The reciprocal interaction and connection between DLPFC and orbitofrontal cortex, can simultaneously modulate both cognitive and neural-related processes of decision-making.

MATERIALS AND METHODS

Study design: A single blind randomized control study aimed at assessing craving in patients of alcohol dependence using Trans-cranial direct current stimulation, admitted to the psychiatry in-patient facility

Study population:

Patients who were diagnosed with Alcohol dependence syndrome; in simple withdrawal over a period of 1 year

Place of study:

This study was conducted at the in-patient facility of Department of Psychiatry KLE's Prabhakar Kore Charitable Hospital, Nehru Nagar, Belagavi, Karnataka.

Inclusion Criteria:

I Patients who meet the criteria for alcohol dependence according to ICD-10 DCR.

II Right-handed patients.

III Patients between the age group 18-60 years

IV Patients giving written informed consent.

V Patient with Clinical institute of withdrawal assessment of alcohol revised (CIWA-Ar) Score ≤ 10

Exclusion criteria:

I Co-morbid dependence of substances other than alcohol (except nicotine).

II History of any other psychiatric illness or mental retardation.

III History of any neurological disorder

IV Any contraindications such as electronic or metal implants which might interfere wit stimulation.

Sample size:

Total Sample Size -76

This sample was obtained from a previous similar study [7] with an effect size of 0.58 considering alpha error as 0.10 and power as 0.80.

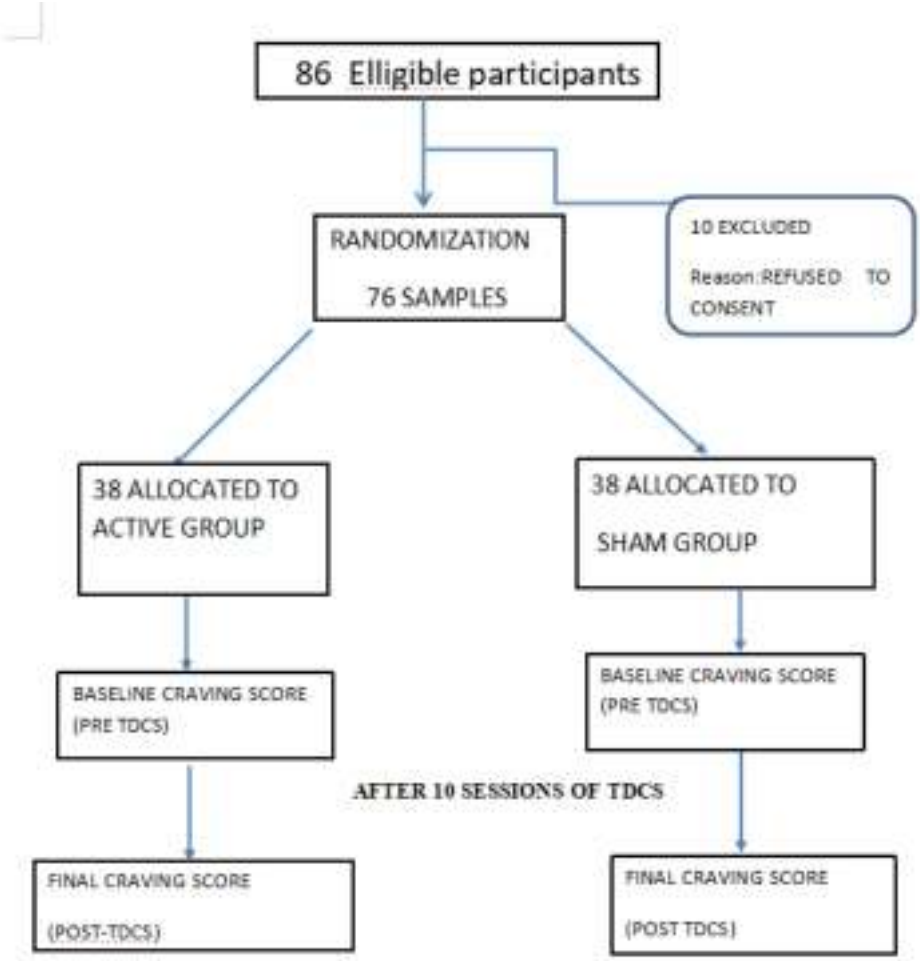
The study sample was divided in two groups. 38 subjects of alcohol dependence were given tDCS. The other 38 subjects of Alcohol dependence received sham tDCS i.e the control group.

Sampling Procedure:

The population of patients who satisfied the inclusion criteria underwent randomized sampling to generate the sample size above mentioned. Each of the patients were randomized into two groups i.e. using a computer generated sequence. . This went on till the sample size, here 76, was obtained.

BLINDING:

Only the investigators knew about the two different groups i.e. the group receiving tDCS and the control group receiving sham tDCS. The patient as well as the care-providers were blinded regarding the same using the sham setting in the device.



FLOW-CHART DEPICTING THE PROCEDURE USING CONSORT GUIDELINES

TOOLS

1. Sociodemographic and clinical data sheet.
2. Handedness Preference Schedule, Hindi Version (Mandal et al, 1992) to assess handedness.
3. "The Clinical Institute of Withdrawal Assessment - REVISED"(CIWA-Ar) (Sullivan et al, 1989)
4. "Severity of Alcohol Dependence Questionnaire - Form-C" (SADQ-C)
5. Alcohol Craving Questionnaire (ACQ-NOW)[53] to assess the multidimensional aspects of craving for alcohol.

6. Transcranial direct current stimulation (tDCS)
7. Checklist for side effect of Tdcs

1. Socio-demographic and clinical data sheet:

A semi-structured proforma for recording demographic details like age, sex, marital status, religion, education, occupation, socio-economic status, habitat, and family type . Also clinical data such as duration of alcohol use, amount of daily alcohol use, age of regular intake of alcohols, last intake, medical and psychiatric illness and premorbid personality. It included details of physical examination of all organ systems andmental status examination. Finally, diagnosis of the patient according to the ICD 10(DCR). Any drug taken during the session will also be recorded, if any.

2. Handedness preference schedule: This is done to assess handedness. It contains 15 items in a questionnaire where subject is asked to indicate their hand preference for an activity on a 5-point rating scale (1-never, 2-rarely, 3-occasionally, 4-frequently, 5-always).

3. The Clinical Institute Withdrawal Assessment (CIWA-Ar): For patients in alcohol withdrawal the CIWA-Ar provides an accurate characterization of the severity of the alcohol withdrawal state. There are 10 items used to measure the alcohol withdrawal state, which includes: nausea and vomiting, tremor, paroxysmal sweats, anxiety, tactile disturbances, visual disturbances, headache, agitation and orientation. Each item has a score ranging from 0-7 . (except for the Orientation) . The minimum score is 0, which indicates the absence of alcohol withdrawal symptoms & signs and the maximum score is 67. The patients scoring less than 10 do not usually need additional medications for withdrawal.

4. Severity of Alcohol Dependence Questionnaire Form-C (SADQ-C): .The SADQ-Section A (Impairment of Control Questionnaire) is a 5-item questionnaire that assesses an individual's level of alcohol intake control impairment. The SADQ-C (Sections B and C combined) is a 20-item questionnaire used to assess the severity of alcoholism. The ICQ's 5.1, 3 and 4 are graded on a 4-point scale ranging from 0 (never or almost never) to 3 (always or very usually) (nearly always). Items 2 and 5 are scored in reverse order, from 0 (almost always) to 3 (almost always) (never or almost never). The SADQ's 20 items are scored as follows: 0=never or very never, 1-sometimes, 2- often, 3=nearly alwayd. It is a widely used valid instrument for measuring the severity of alcohol dependence, with high degree of test-retest reliability.

A score of 31 or more suggests severe alcoholism, a score of 15 to 30 indicates moderate alcoholism, and a score of 15 indicates no or just mild alcoholism. It's probably best used as a diagnostic tool for problem drinkers rather than as a screening tool.

5. Alcohol Craving Questionnaire (ACQ-NOW): It contains 47-items that assess the different aspects of craving for alcohol among current users. The items are grouped into one of five domains/factors that are considered relevant to alcohol craving, which includes: “(1) urges and desires to drink alcohol,” (2) “Intent to use alcohol,” (3) “Anticipation of positive outcome,” (4) “Anticipation of relief from withdrawal and negative outcome” (5) lack of control over use. The consistency check scores are not analyzed. Each item is graded on a visual analogue scale ranging from 0 (strongly disagree) to 8 (strongly agree) (Strongly agree). The raw score is calculated using the formula: (8 - reverse-keyed raw score = raw score) for a few

reverse-keyed items (marked with a *). Other components that make up a planned "consistency check" (marked with an a) have not been validated. The total number of items for each element is divided by the sum of the raw scores for that factor; a general desire index can be calculated by adding all of the items (total ACQ score) and dividing by 31. (the number of items with significant loadings).When the ACQ was first validated, it indicated four dimensions with moderate to high internal consistency. Emotionality, purposefulness, compulsivity, and expectation were the four elements identified.

6. BRAIN STIMULATION: tDCS - Soterix 1*1 low intensity current device , sham controlled device with maximum target current of 2ma , with pre-tickle stimulation along . For electrodes 5*5 EASYpads were used along with Head-gear as rubber straps.

PROCEDURE:

After obtaining ethical clearance the patients diagnosed with alcohol dependence syndrome (ICD F10.20) at KLE'S Dr.Prabhakar Kore Hospital & Research Centre and Charitable Hospital, Belagavi were explained in detail about the study and informed written consent was taken for those who wished to participate. All the individuals willing to participate were explained about the concept of tDCS. They were then asked to repeat what they have understood to ensure that the concept is clear. For those who could not understand in the first attempt, a maximum of three attempts were made to explain. The details of those participants who satisfied the criteria but have refused for participation in the study was also recorded.Patients who wish to get enrolled in the study were allocated randomly in two groups tDCS group (active and the Sham group(control))

Intervention

The intervention in this clinical trial was tDCS. In each session tDCS was applied via two carbonated silicon electrodes ($35cm^2$). The sessions were performed for 20 minutes with a fade-in and fade out period of 30 seconds each. Current intensity was kept at 2mA.

These sessions were conducted twice a day (separated by at least 6 hours) for 5 days.

Active tDCS group - For 20 minutes, this group was exposed to a real 2mA current. As per the 10-20 EEG system the **Anode was placed** over the left DLPFC i.e F3 and the cathode over the right DLPFC, i.e. above F4[2]

Sham tDCS group - The second group received sham tDCS with same position cathode and anode as described in the active group However in this after 30 seconds of stimulation, the stimulator automatically gets switches off. tDCS in this mechanism is primarily used to elicit sensations, direct current is not delivered..[13]

Using CIWA-Ar and ACQ NOW the severity of alcohol dependence of study sample and baseline craving level was measured respectively.

ACQ NOW was re- administered after the last tDCS session to observe the changes in alcohol craving in the individual.

Data analysis:

The data was analyzed using the computer software program, MICROSOFT EXCEL with different parametric and nonparametric tests, as indicated.

The level of significance was taken as $p < 0.05$ (two tailed). The steps of analysis were as follows:

1. Description of sample characteristics done with descriptive statistics: percentage, mean and standard deviation.

2. Group differences for sample characteristics examined with independent t-test and Fisher exact test wherever applicable.

3. Change in mean ACQ-NOW scores pre and post tDCS were compared between active and sham group using **Wilcoxon-Mann-Whitney U Test**

4. Improvement in each domain of ACQ-NOW was analyzed pre and post, using **Wilcoxon-Mann-Whitney U Test.**

RESULTS

86 participants who met the inclusion criteria were approached for inclusion in the study. Out of 86 participants 10 did not consent for the study. Hence a final sample size of 76 was obtained.

Table 3: COMPARISION OF SOCIODEOGRAPHIC PROFILE OF THE STUDY SAMPLE

Parameters	Group		p value
	Active (n = 38)	Sham (n = 38)	
Age (Years)	37.55 ± 8.47	36.58 ± 8.86	0.446
Gender (Male)	38 (100.0%)	38 (100.0%)	1.000
Marital Status			0.613
Married	28 (73.7%)	26 (68.4%)	
Unmarried	10 (26.3%)	12 (31.6%)	
Religion			0.567
Hindu	32 (84.2%)	35 (92.1%)	
Christian	4 (10.5%)	2 (5.3%)	
Muslim	2 (5.3%)	1 (2.6%)	
SES			0.162
Lower	19 (50.0%)	14 (36.8%)	
Middle	10 (26.3%)	18 (47.4%)	
Upper	9 (23.7%)	6 (15.8%)	
Education			0.154
Illiterate	1 (2.6%)	2 (5.3%)	
Primary	14 (36.8%)	18 (47.4%)	
Middle	3 (7.9%)	0 (0.0%)	
Intermediate	3 (7.9%)	0 (0.0%)	
Graduate	17 (44.7%)	18 (47.4%)	
Occupation			**0.036***
Skilled	25 (65.8%)	23 (60.5%)	
Semi-Skilled	6 (15.8%)	14 (36.8%)	
Unskilled	6 (15.8%)	1 (2.6%)	
Student	1 (2.6%)	0 (0.0%)	

TABLE 4: CLINICAL PROFILE OF THE STUDY SAMPLE			
Total years of consumption	11.74+6.53	9.33+6.94	**0.048***
Age Of Onset (Years)	26.05 ± 6.16	27.11 ± 6.00	0.672
Co-Morbidities			0.964
None	27 (71.1%)	25 (65.8%)	
Diabetes Mellitus(DM)	6 (15.8%)	5 (13.2%)	
Hypertension	2 (5.3%)	3 (7.9%)	
Others	1 (2.6%)	2 (5.3%)	
Thyroid Disorder	1 (2.6%)	2 (5.3%)	
Diabetes + Hypertension	1 (2.6%)	1 (2.6%)	
Primary Form of Alcohol			0.226
IMFL	22 (57.9%)	28 (73.7%)	
Beer	15 (39.5%)	10 (26.3%)	
CML	1 (2.6%)	0 (0.0%)	
Maximum Abstinence Period (Years)	0.52 ± 0.52	0.79 ± 0.79	0.234
Past H/O Admission (Yes)	20 (52.6%)	18 (47.4%)	0.646
H/O Delirium (Yes)	10 (26.3%)	16 (43.2%)	0.124
CIWA Score	1.26 ± 1.27	1.29 ± 1.14	0.766
Level Of Confidence			0.172
No Confidence	3 (7.9%)	6 (15.8%)	
Little Confidant	9 (23.7%)	7 (18.4%)	
Moderately Confident	7 (18.4%)	12 (31.6%)	
Very Confident	9 (23.7%)	10 (26.3%)	
Extremely Confident	10 (26.3%)	3 (7.9%)	
SADQ			0.110
Mild	17 (44.7%)	26 (68.4%)	
Moderate	15 (39.5%)	8 (21.1%)	
Severe	6 (15.8%)	4 (10.5%)	

As shown in the Table 3 the mean age (Years) of participants was 37.07 ± 8.63. 54 (71.1%) of the participants were married. 22 (28.9%) of the participants were unmarried. 67 (88.2%) of the participants were Hindu. 6 (7.9%) of the participants Christian. 3 (3.9%) of the participants Muslim. 33 (43.4%) of the participants

belonged to lower, 28 (36.8%) of the participants from middle and 15 (19.7%) of the participants were from upper socioeconomic status.

3 (3.9%) of the participants were illiterate. 32 (42.1%) of the participants had received primary education. 3 (3.9%) of intermediate. 35 (46.1%) participants were graduate. 48 (63.2%) of the participants were skilled. 20 (26.3%) of the participants had semi-skilled. 7 (9.2%) of the participants were unskilled.

As shown in Table 4 the mean total years of alcohol consumption was 10.53 ± 6.80 years The mean age of onset (Years) was 26.58 ± 6.06.

52 (68.4%) of the participants had no comorbidities. 11 (14.5%) of the participants had Diabetes Mellitus (DM). 5 (6.6%) of the participants had hypertension. 3 (3.9%) of the participants had Thyroid Disorder. 2 (2.6%) of the participants had both DM and hypertension. 50 (65.8%) of the participants had consumed IMFL. 25 (32.9%) of the participants consumed Beer. 1 (1.3%) of the participants consumed CML. The mean maximum abstinence period (Years) was 0.66 ± 0.68. 38 (50.0%) of the participants had past history of admission. 38 (50.0%) of the participants had no previous past history of admission.

26 (34.7%) of the participants had precious history of delirium. 49 (65.3%) of the participants had no history of delirium. The mean CIWA Score was 1.28 ± 1.20.

9 (11.8%) of the participants reported “No” as their level of confidence. 16 (21.1%) of the participants reported “Little Confidant”. 19 (25.0%) of the participants were “Moderately Confident”. 19 (25.0%) of the partici' pants were “Very Confident” 13 (17.1%) of the participants were Extremely Confident.

On the basis of SADQ 43 (56.6%) of the participants had “mild” 23 (30.3%) of the participants had “moderate” 10 (13.2%) had “severe” dependency.

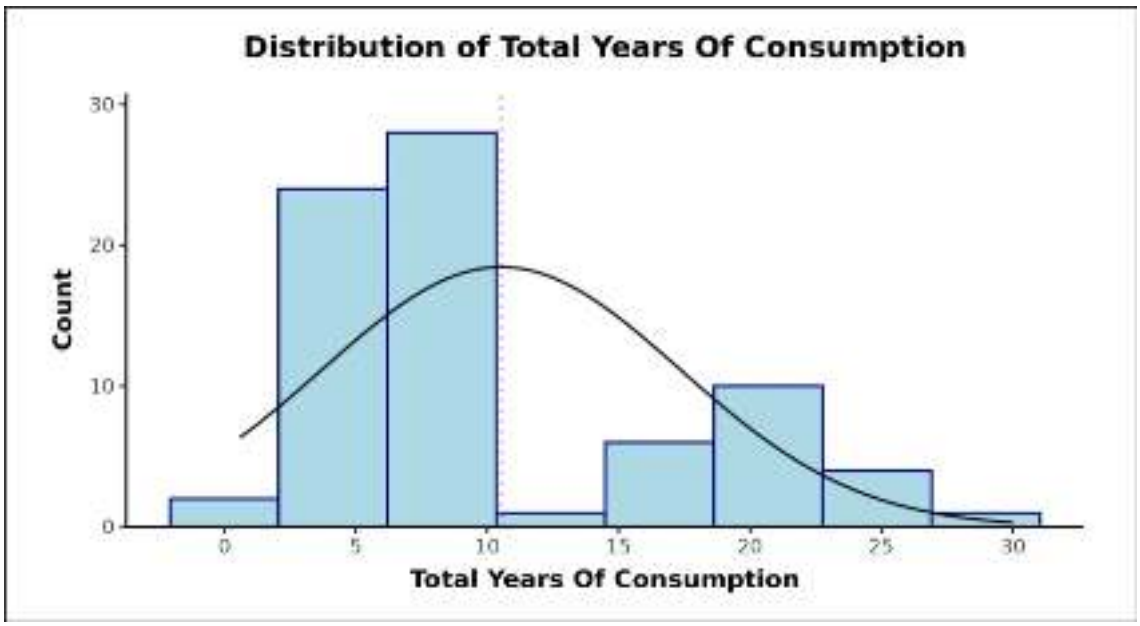


Fig 6: Distribution of total years of consumption. The mean (SD) of “***Total Years of Consumption”*** was 10.53 (6.80). The median (IQR) of Total Years of Consumption was 10.00 (5-15). The total years of Consumption ranged from 0.6 - 30.

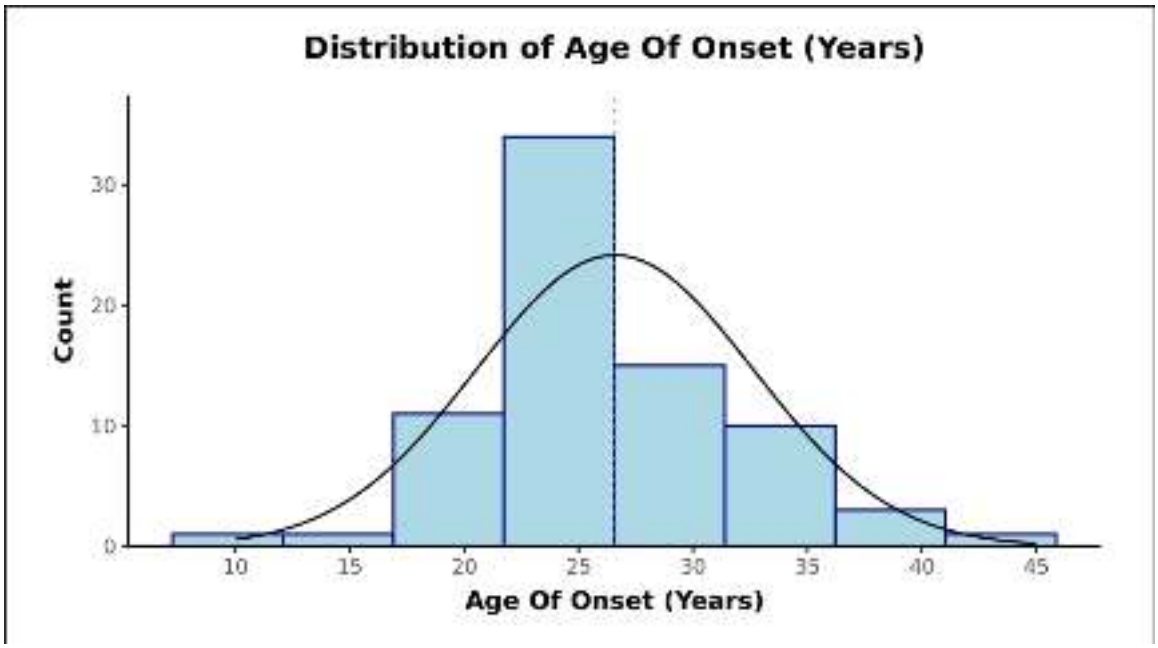


Fig 7: Showing distribution of participants on the basis of age of onset in active and sham group. The mean (SD) of Age of Onset (Years) was 26.58 (6.06). The median

(IQR) of Age of Onset (Years) was 25.00 (23-30). The Age of Onset (Years) ranged from 10 - 45.

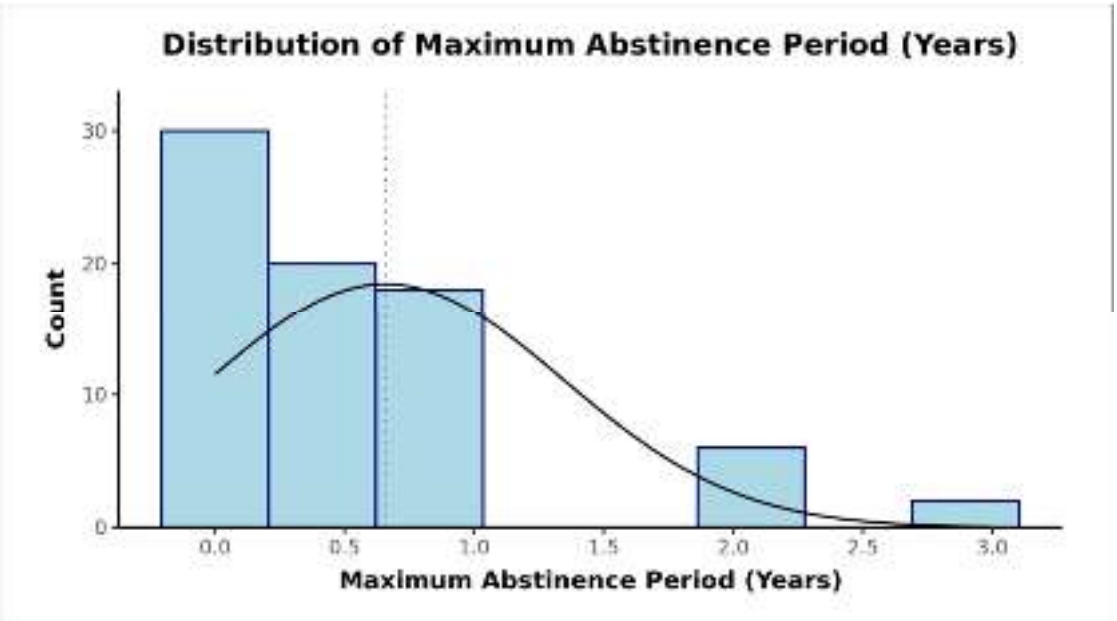


Fig 8: Showing distribution of participants on the basis of maximum abstinence period in active and sham group **.**The mean (SD) of "Maximum Abstinence Period (Years)" was 0.66 (0.68). The median (IQR) of Maximum Abstinence Period (Years) was 0.60 (0.1-1). The Maximum Abstinence Period (Years) ranged from 0 - 3.

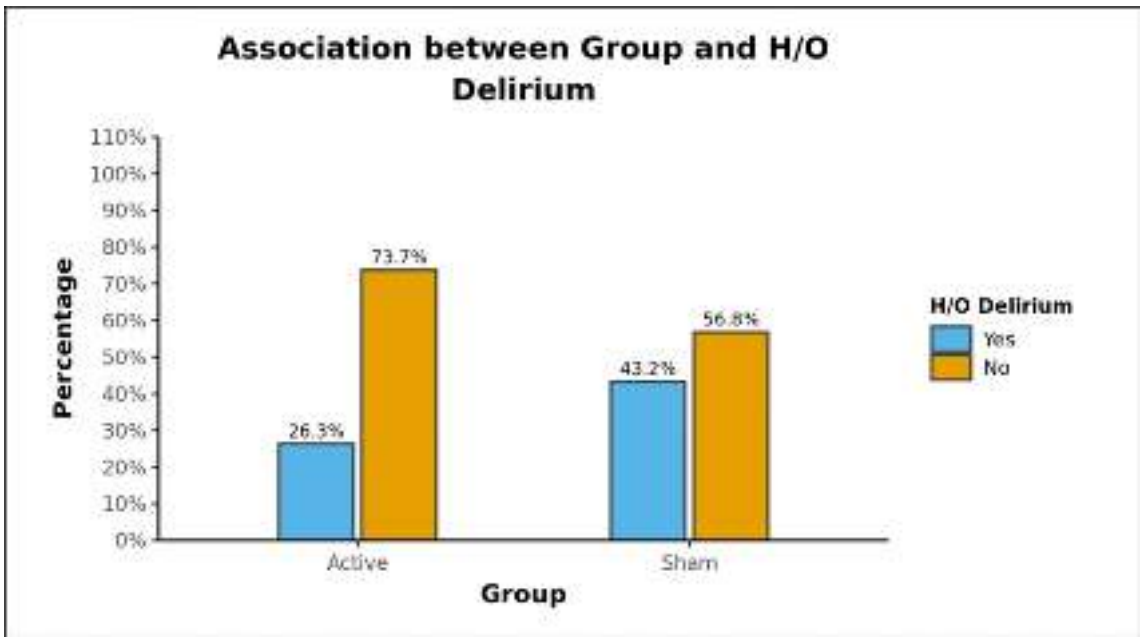


Fig 9: Showing distribution of patients with past history of delirium between active and sham group

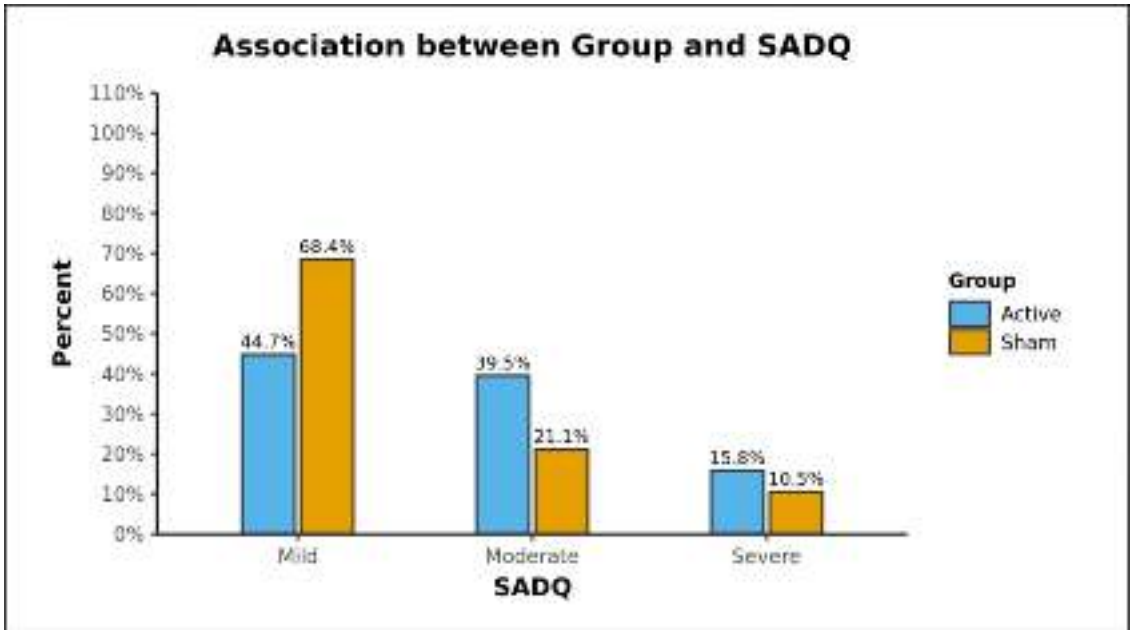


Fig 10: Showing severity of alcohol dependence in active and sham group in terms of SADQ

Table 5: Baseline craving score in terms of ACQ-NOW scale : Total Score (Pre-tDCS) (N= 76)

ACQ-NOW: Total Score (Pre-Treatment)	Group		t-test	
	Active (N=38)	Sham(N=38)	t	p value
Mean (SD)	175.89 (32.75)	163.13 (37.17)	1.588	0.117

The ACQ NOW: Total Score (Pre-tDCS) in the Active ranged from 91 - 234. The ACQ-NOW: Total Score (Pre-tDCS) in the Sham ranged from 98 - 259.

The scores were compared using paired t-test. **However there was no significant difference noted between the groups in terms of ACQ-NOW: Total Score (Pre-tDCS) (t** = 1.588, p = 0.117)

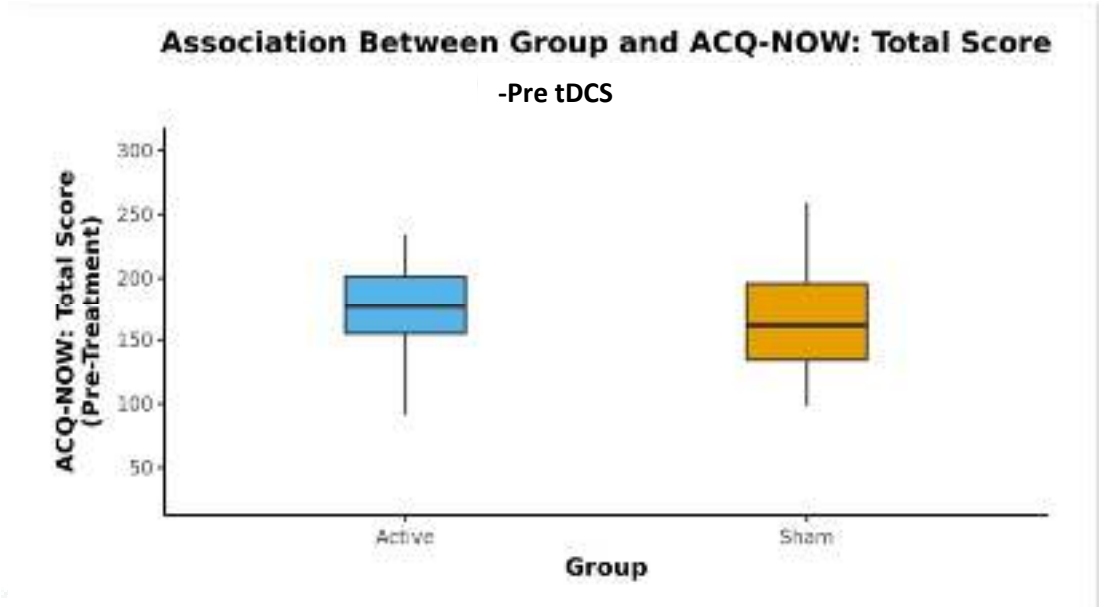


Fig 11: Showing baseline craving score of ACQ-NOW pre-tDCS in the active and sham groups.

Table 6: Comparison between active and sham group in terms of Change in ACQ-NOW: Total Score (post tDCS)(N = 76)

Change in ACQ-NOW: Total Score	Group		Wilcoxon-Mann-Whitney U Test	
	Active(N=38)	Sham (N=38)	W	p value
Mean (SD)	-54.82 (37.98)	-36.50 (33.77)	504.500	**0.024***

Change in total score of ACQ NOW was compared using Wilcoxon-Mann-Whitney U Test**.** The mean of the change score was higher in the active group than control group i.e. -54.82 (37.98) and was -36.50 (33.77) respectively. The difference between the two groups in terms of change in ACQ NOW total score

(W = 504.500, p = 0.024) ***was statistically significant.***

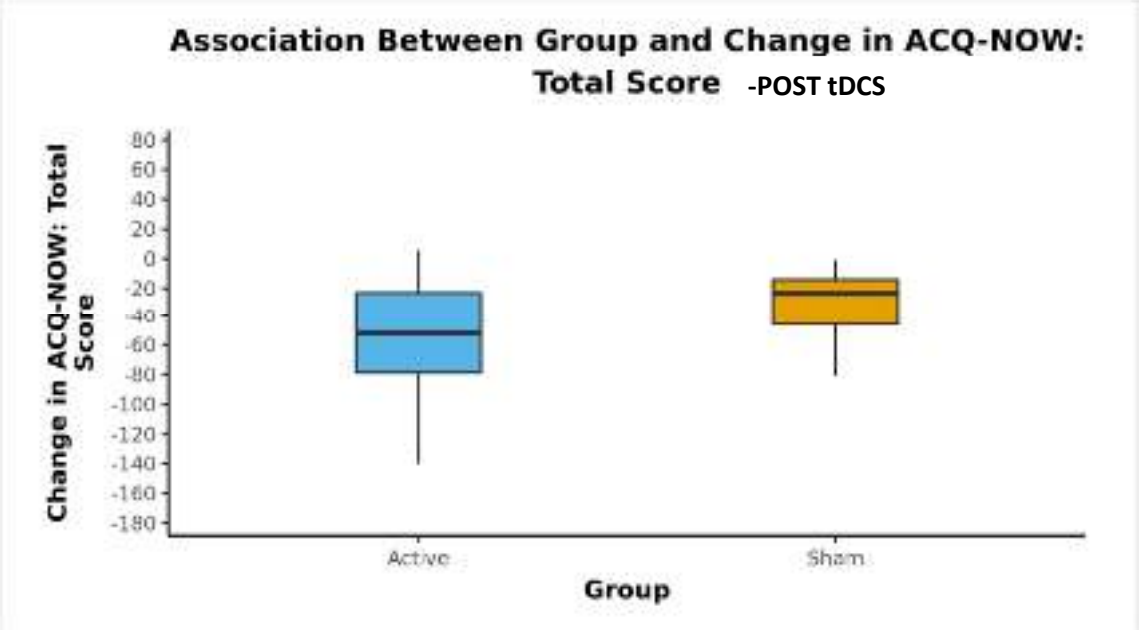


Fig 12: Showing change in total scores ACQ NOW in both active and sham groups post tDCS

Table 7: Comparison between active and sham group for baseline craving scores of ACQ NOW: COMPULSIVITY (Pre-tDCS) (n = 76)

ACQ-NOW: Compulsivity (Pre-Treatment)	Group		Wilcoxon-Mann-Whitney U Test	
	Active (N=38)	Sham (N=38)	W	p value
Mean (SD)	47.11 (10.80)	45.37 (11.56)	813.000	0.347

Wilcoxon-Mann-Whitney U Test were used to make group comparisons. The mean scores were compared, however no significant difference was noted between the groups in terms of ACQ NOW: Compulsivity (Pre-tDCS) (W = 813.000, p = 0.347).

Table 8: Comparison of the change score in active and sham group in ACQ-NOW: Compulsivity (post tDCS)(N= 76)

Change in ACQ-NOW: Compulsivity	Group		Wilcoxon-Mann-Whitney U Test	
	Active (N=38)	Sham (N=38)	W	p value
Mean (SD)	-14.87 (10.83)	-10.55 (11.04)	511.500	**0.029***

Compulsivity scores were compared using Wilcoxon-Mann-Whitney U Test. The change score was noted to be higher in active group than sham group. ***A significant difference was noted in terms of the change in ACQ NOW: Compulsivity domain*** (W = 511.500, **p = 0.029**),

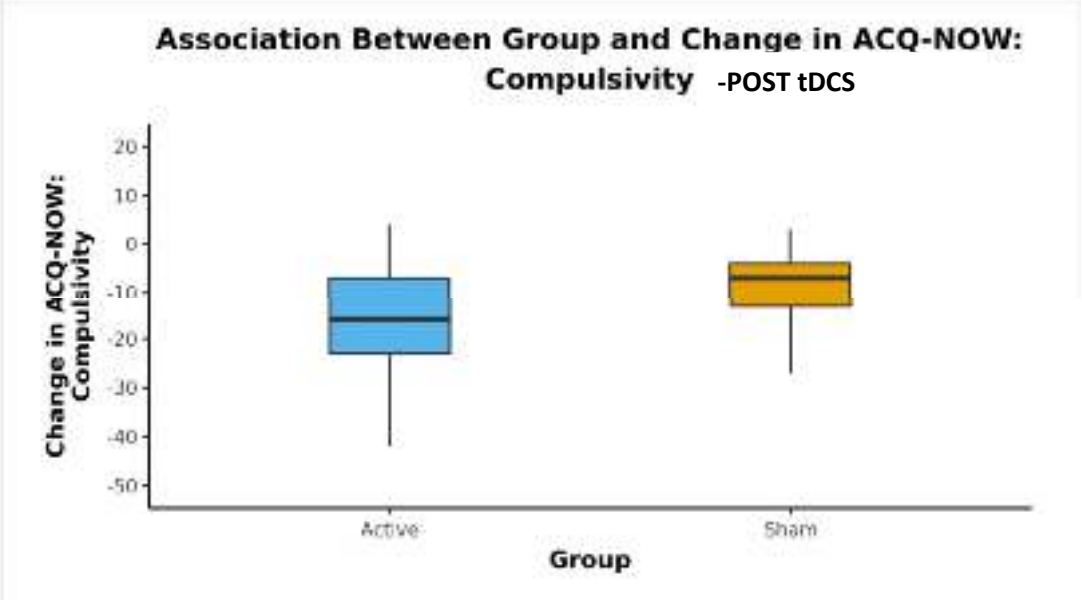


Fig 13: Showing Change in ACQ-NOW: COMPULSIVITY scores post tDCS in the active and sham group

Table 9: Comparison between active and sham group for baseline ACQ-NOW: EXPECTANCY(pre tDCS)(N = 76)

ACQ-NOW: Expectancy (Pre-Treatment)	Group		t-test	
	Active(N=38)	Sham(N=38)	t	p value
Mean (SD)	25.58 (5.95)	24.58 (6.77)	0.684	0.496

The mean scores of expectency in the two groups were compared before tDCS and the difference was not significant. Expectancy (Pre-tDCS) (t = 0.684, p = 0.496).

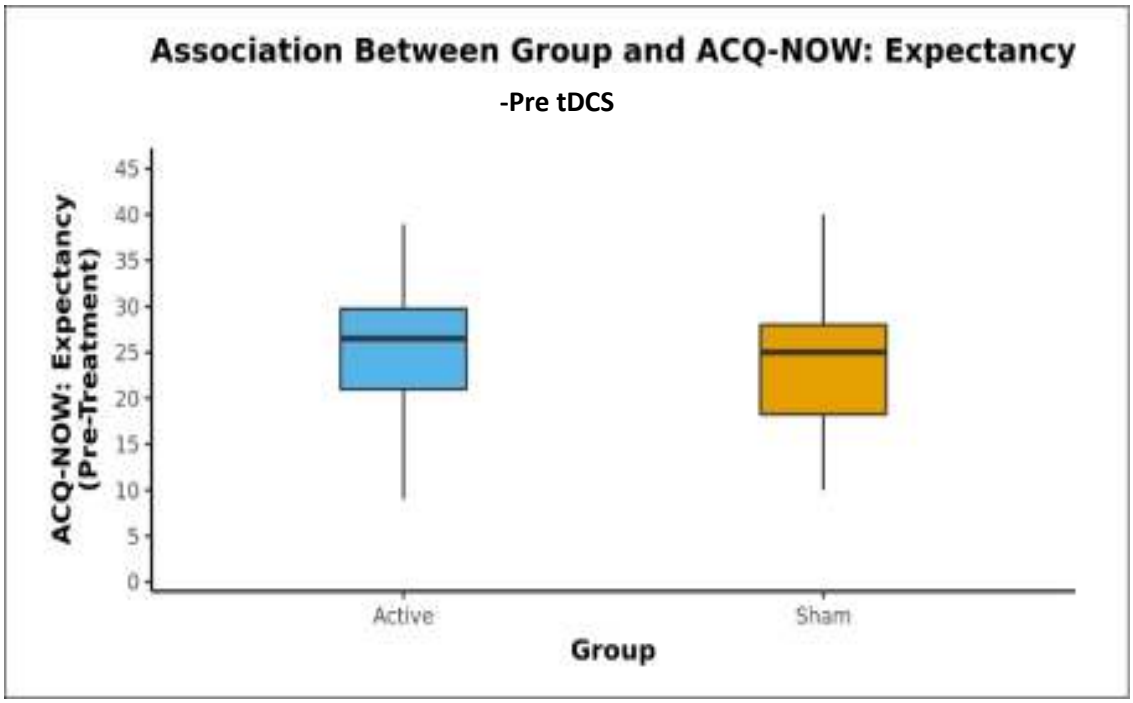


Fig 14: Showing baseline ACQ-NOW: Expectancy pre tDCS in the active and sham groups.

Table 10: Comparison of active and sham group in terms of change in ACQ NOW-Expectancy, (post tDCS) (N = 76)

Change in ACQ-NOW: Expectancy	Group		Wilcoxon-Mann-Whitney U Test	
	Active(N=38)	Sham(N=38)	W	p value
Mean (SD)	-8.53 (6.51)	-5.97 (5.39)	565.000	0.103

Mean of the change score in expectancy was compared using Wilcoxon Mann Whitney U Test .There was reduction in expectancy scores post tDCS , more in active group than compared to sham . However no significant difference was noted between the groups in terms of change in ACQ NOW Expectancy (W = 565.000, p = 0.103).

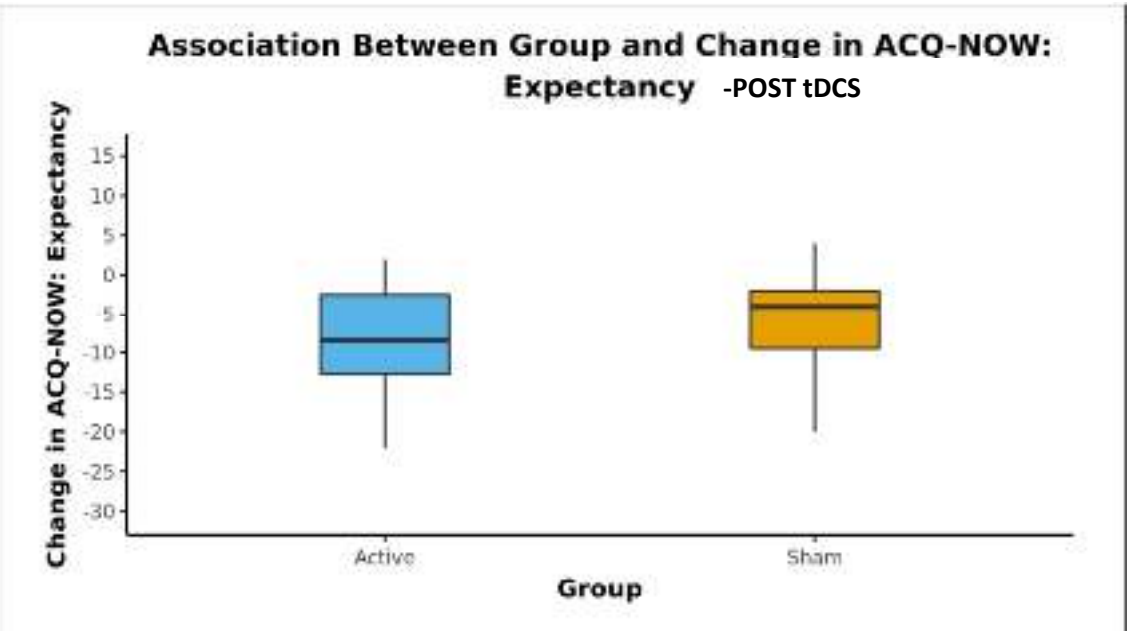


Fig 15: Showing change in ACQ NOW: EXPECTANCY scores post tDCS in the active and sham group

Table 11: Comparison of the active and sham group for baseline craving scores of ACQ-NOW: PURPOSEFULNESS (Pre-tDCS) (N = 76)

ACQ-NOW: Purposefulness (Pre-Treatment)	Group		t-test	
	Active(N=38)	Sham(N=38)	t	p value
Mean (SD)	33.26 (8.82)	28.32 (6.20)	2.829	**0.006***

Parametric tests (t-test) were used to make group comparisons for mean scores of ACQ-NOW: Purposefulness (Pre-tDCS).**The difference was statistically significant between the two groups** (t = 2.829, p = 0.006), with the mean ACQ-NOW: Purposefulness (Pre-Treatment) being higher in the active group as compared to sham group.

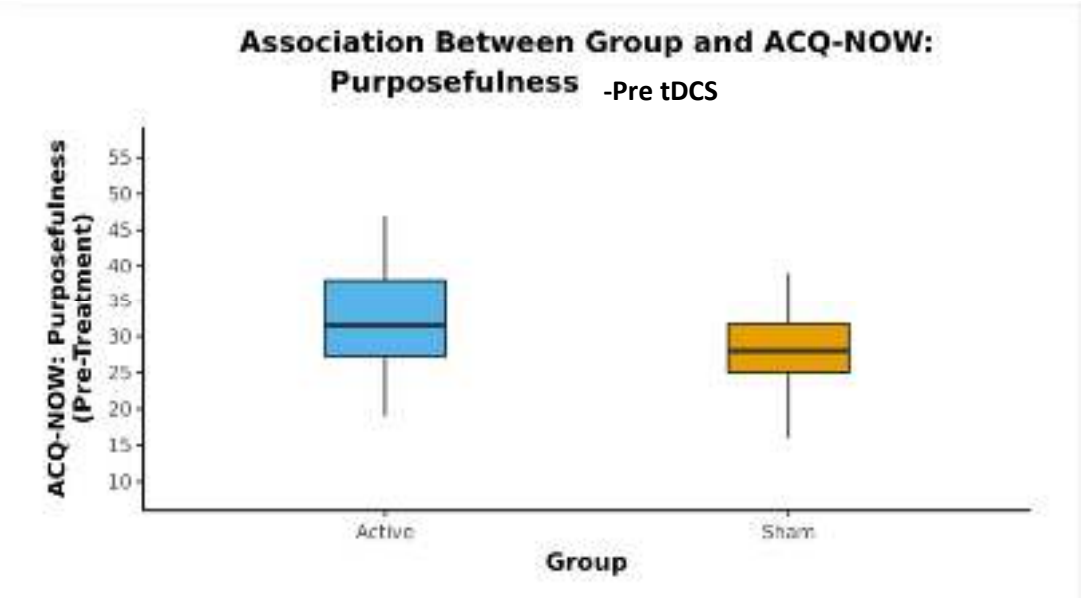


Fig 16: Showing baseline craving score of ACQ-NOW: PURPOSEFULNESS pre-tDCS in the active and sham group.

Table 12: Comparison of the active and sham group in terms of change in ACQ-NOW: Purposefulness (N = 76)

Change in ACQ-NOW: Purposefulness	Group		Wilcoxon-Mann-Whitney U Test	
	Active (N=38)	Sham(N=38)	W	p value
Mean (SD)	-9.71 (8.19)	-6.16 (5.81)	560.000	0.093

Change in Purposefulness after giving tDCS was compared using *Wilcoxon Mann-Whitney U* Test and the **difference was not found to be significant between the groups** (W = 560.000, p = 0.093).

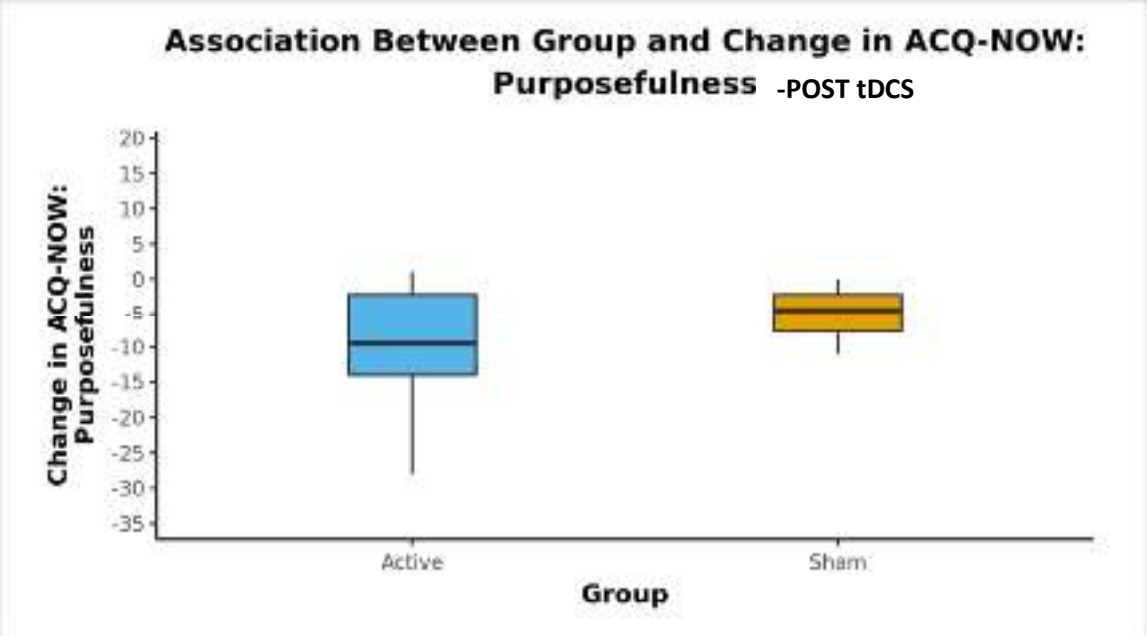


Fig 17: Showing change in ACQ-NOW: PURPOSEFULNESS scores post tDCS in the active and sham group

Table 13: Comparison of the active and sham group for baseline craving scores of ACQ-NOW: EMOTIONALITY (Pre-tDCS) (N = 76)

ACQ-NOW: Emotionality (Pre-Treatment)	Group		t-test	
	Active(N=38)	Sham(N=38)	t	p value
Mean (SD)	10.34 (4.06)	10.34 (3.30)	0.000	1.000

The baseline emotionality scores were compared which was similar in both the groups. No significant difference was found between the groups in terms of ACQ NOW: Emotionality (Pre-tDCS) (t = 0.000, p = 1.000).

Table 14: Comparison of the active and sham group in terms of change in ACQ-NOW: Emotionality (N = 76)

Change in ACQ-NOW: Emotionality	Group		Wilcoxon-Mann-Whitney U Test	
	Active (N=38)	Sham (N=38)	W	p value
Mean (SD)	-3.26 (2.97)	-2.00 (2.92)	534.000	*0.050*

Change in emotionalty was compared using Wilcoxon-Mann-Whitney U Test. Post tDCS reduction in emotionality scores were noted in both active and sham group, the change was greater in active group than sham group

The difference was comparable, though not statistically significant. The difference between the groups in terms of Change in ACQ-NOW: Emotionality (W = 534.000, p = *0.050*).

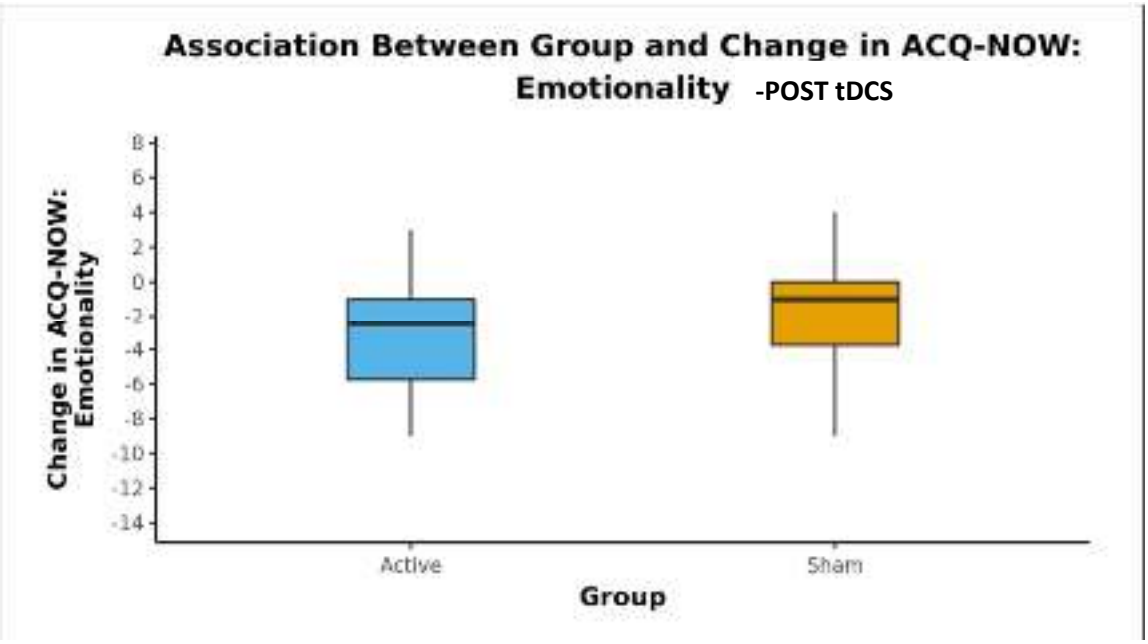


Fig 18: Showing change in ACQ-NOW: EMOTIONALITY scores post tDCS in both the active and sham group

Table 15: Comparison of the active and sham group as per the *percentage* change in ACQ NOW: Total Score (N = 76)

Percent Change in ACQ-NOW: Emotionality	Group		Wilcoxon-Mann-Whitney U Test	
	Active (N=38)	Sham (N=38)	W	p value
Mean (SD)	-25.83 (25.79)	-14.81 (28.97)	522.000	0.038

Wilcoxon-Mann-Whitney U Test were used to make group comparison**. There was a significant difference between (W = 521.000, p = 0.037**) the two groups in terms of percent change in ACQ-NOW scores, greater in active group than sham group

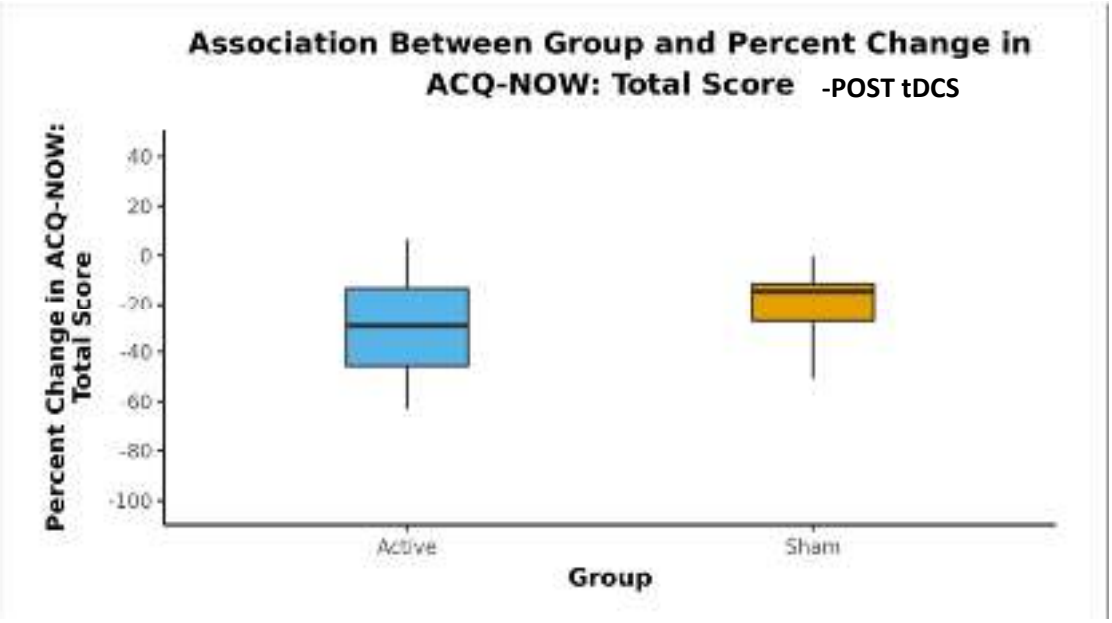


Fig 19: Showing percentage change in total ACQ-NOW scores post tDCS in the active and sham group

Table 16: Comparison of active group and sham group in terms of Percent Change in ACQ-NOW: Emotionality (N = 76)

Percent Change in ACQ-NOW: Emotionality	Group		Wilcoxon-Mann-Whitney U Test	
	Active (N=38)	Sham (N=38)	W	p value
Mean (SD)	-25.83 (25.79)	-14.81 (28.97)	522.000	0.038

Wilcoxon-Mann-Whitney U Test) were used to make group comparisons. The mean (SD) of Percent Change in ACQ-NOW: Emotionality in the Group: Active group was -25.83 (25.79). The mean (SD) of Percent Change in ACQ-NOW: Emotionality in the Group: Sham group was -14.81 (28.97).

There was a significant difference between the two groups in terms of Percent Change in ACQ-NOW: Emotionality (W = 522.000, p = 0.038),

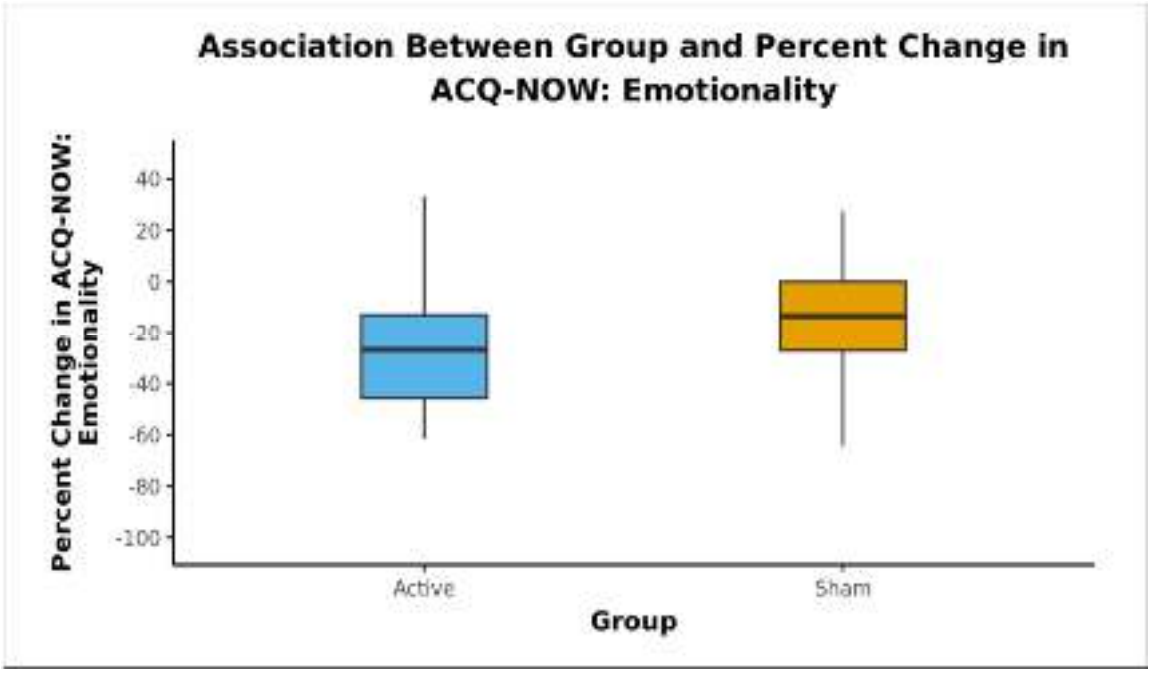


Fig 20: Showing the percentage change in ACQ-NOW: Emotionality scores post tDCS in the active and sham group

DISCUSSION

tDCS a neurostimulation technique which is found to be useful in reducing craving in substance use disorders especially Alcohol Dependence syndrome. Our study aims to find out if the intervention is useful or not in patients with Alcohol Dependence who have craving. However, the measures to assess craving differs from one study to the other also the number of participants and process of stimulation. The tool used in our study to assess craving was **ACQ NOW**. It is a 47-item self-administered, multidimensional scale that measures alcohol craving. It has been adapted from the "Cocaine Craving Questionnaire" (CCQ NOW). It has also been shown to correlate with other multidimensional measures and visual analogs used to monitor changes in levels of craving from pre-intervention through post-intervention.

The sociodemographic profile of the study sample

As shown in Table 3 the mean age of participants in our study was *37.06.* Whereas in a study conducted by da silvia, Mc et al, (2013)[55], the mean age was found to be 49. The difference could be because the enrolled participants in their study were of higher age group.

In this study both active and sham groups had a homogenous background of marital status, education, socio-economic status and occupation. 71% of the participants were married. 43.4% of the participants belonged to lower, 36.8% of the participants belonged to and only 15% of the participants belonged to upper socioeconomic status. Most of the participants had received formal education only 3% of the participants were illiterate which was similar to educational background of study conducted by da silvia, , Mc, et al (2013).[55]

CLINICAL PROFILE OF THE STUDY SAMPLE

As shown in the Table 4 both active group and sham group had a similar clinical profile with respect to age of onset of alcohol consumption, total duration of consumption, type of alcohol consumed, the CIWA Scores and SADQ scores. The mean age of onset of starting drinking was 26.58(Years). In comparison with a study conducted in Paris by da silvia, Mc et al (2013), the mean age was found to be 14 years.[55]. This difference could be because the drinking pattern is common in adolescent age group in Western countries.

In our study total mean duration of consumption (years) of Alcohol was 10.53 (11.9 in active group and 9 years in sham group). The maximum abstinence period was 0.66(years). 26 participants had past history of delirium. As per ACQ NOW Levels of confidence (i.e. to quit alcohol for 1 year) was assessed. It was found that it ranged from "Little confident" (21%) to "Very confident" (25%). 10 particpants in the active group were extremely confident whereas only 3 participants in the sham group reported being so.

The dependence pattern was assessed by SADQ scale. It ranged from mild (52%) to moderate (30.3%). 13% were found to have severe dependence.

EFFECT OF tDCS IN CRAVING SCORES AS MEASURED BY ACQ-NOW: THE PRE AND THE POST (tDCS) SCORES.

As shown in Table 5 baseline craving scores were compared in both the groups and no statistically significant difference was found between the groups in terms of ACQ-NOW: Total Score (Pre-tDCS).

It was found that the craving was significantly reduced in active group when compared to sham group after 10 tDCS sessions as depicted in Table no 6. **It was found that the change in total scores of ACQ-NOW between the two groups**

(W = 504.500, p = 0.02) which was statistically significant. Also the ***change in percentage score*** was found to be higher in the active group than the sham group , values being 29.54% and 20.57% respectively (as shown in Table 15)

Our study has further tried to assess the multidimensional aspects of craving in its various domains as given in ACQ-NOW. Effect of tDCS in reducing craving on all these domains has been studied in detail pre and post intervention. No previous data is available for the same findings.

Effect of tDCS on craving on domains of ACQ NOW:

1. Compulsivity

Compulsivity which is the "*urge and desire in anticipation of loss of control over drinking"* is regulated by the orbitofrontal cortex. As stated earlier in this study neuromodulation targeting DLPFC also co-activates orbitofrontal and ventromedial cortex which also explains the finding of this study.

As given in Table 6 baseline compulsivity scores in both the groups were measured and was found to be 47.11 in the active group and 45.37 in the sham group. The baselines values were compared and was found to be statistically insignificant (p = 0.347). Post tDCS compulsivity scores were compared as shown in Table 8. Greater reduction in compulsivity was found in active group than the sham group i.e 14.87 and 10.55 respectively. This result was statistically significant (p= 0.029).

This seems quite a point to highlight as it has been noticed that patients of Alcohol dependence or any substance dependence involuntarily are trapped in the cycle of compulsive behavior which is initially driven by urge and later as a medium to avoid the unpleasant side effects of withdrawal.

2. Expectancy

Expectancy which is the "urge and desire to drink in anticipation of the positive benefits of drinking"

In our study on assessing Expectancy domain as per ACQ NOW it was found that there is reduction in expectancy in both active group and sham group after giving 10tDCS sessions. The baseline scores in expectancy as shown in Table 9 were similar in both the group (p = 0.496). Post tDCS the change in scores were compared and was found to be higher in active group than in sham group. The score of active group was 8.57 and sham group 5.97(as given in Table 10) However this comaprision had no statistical significance (p=0.103).

The above findings suggest that the tDCS intervention has possible impact in reducing expectancy domain.

3. Purposefulness

Purposefulnes which is "urge and desire coupled with intent and planning to drink". *It* is regulated by the reward and emotional circuits of the brain.They take part in executive functions. Down-regulation of dopamine signalling, which dulls the reward circuits' sensitivity to pleasure, also occurs in prefrontal brain regions and associated circuits, impairing executive functions such as self-regulation, decision making, action selection and initiation, attribution of salience (the assignment of relative value), and error monitoring. After 10 sessions of tDCS there was a reduction in purposefulness in both the groups

As shown in Table 11 there was a statistically significant difference between the two groups in the domain of Purposefulness (Pre-tDCS) (t = 2.829, p = 0.006), with the mean ACQ-NOW: Purposefulness (Pre-tDCS) being higher in the active group as compared to sham group.

As shown in Table 12, mean change score was 9.71 in active group and 6.16 in sham group. However the statistical comparison is not significant (p=0.093).

Through this result it can be inferred that possible actions of tDCS on reducing purposefulnes which includes planning and execution. This result can restate the fact that tDCS helps in enhancing frontal lobe functions like executive functions as shown in the study by da silvia, Mc, et al, (2013)[55]

4. EMOTIONALITY

Neuromodulation through its action on prefrontal cortex has shown to reduce the emotionality domain of craving in both the groups. *Emotionality* which is "urge and desire to drink in anticipation of relief from withdrawal/negative affect". The theory of ***reward and antireward*** pathways states that to avoid the hedonic effects of substance withdrawal, the level of anticipation increases.

As shown in Table 14 the change in craving scores post tDCS was found to be higher in active than in sham group i.e. 3.26 and 2.97 respectively. The change score between the groups though not statistically significant; was almost comparable with p value being 0.05.

However the percentage change in total craving scores as shown in Table 16 was statistically significant. The change being 25.83 in active group and 14.81 in sham group (p=0.038).

In context of above results we can say that tDCS reduces craving by controlling the level of anticipation i.e.emotionality through its action on reward pathway.

So with the background of above results we can say that tDCS reduces craving in alcohol use disorder and specifically in those individuals who score high in *Compulsivity* and *Emotionality* domains of craving.

It was observed that there was significant reduction in craving in active group after 10 tDCS sessions. Our study findings corelated with the study findings conducted by Boggio et al, (2008)[9]. This further strengthens to our knowledge that tDCS helps in reducing craving in Alcohol dependence Syndrome by its mechanism of neuromodulation in DLPF and Orbitofrontal areas of the brain. In amother study conducted by Den Uyl et al, (2015)[31] it was found that there was significant reduction in craving in patients with alcohol dependence syndrome. However, the number of session administered in their study were 3 whereas in our study we administered 10 sessions. Another study conducted by Den uyl et al, (2016) [33] Also showed reduction in patients with alcohol dependence syndrome, however their study sample included hazardous drinkers.

A study conducted by da silvia, Mc, et al, (2013)[55] [s]Showed reduction in craving in patients with alcohol dependence syndrome. However, tDCS stimulations were given unilateral, whereas in our study the stimulations were bilateral.

Adverse effects

In our study majority ost of the patients tolerated the tDCS well. Two patients in active group reported tingling and itching sensations with stimulation. Three (2 in active and 1 in sham group) patients reported headache which subsided after giving analgesic. Our study findings were comparable to the side effects reported in a study conducted by Bogio et al, (2008)[9] where discomfort at the site of stimulation was the most common adverse effect (1 report in the sham and 2 reports in anodal

left/cathodal right and anodal right/cathodal left stimulation conditions) followed by headache (1, 0 and 2 reports, respectively)

Through these findings stated above we can say that tDCS is safe and well tolerated in patients.

STRENGTH:

1. Our study had the advantage of having larger sample size as compared to most of the previous studies. The number of sessions were also more (10 sessions) as compared to previous studies which gave fewer number of sessions ranging between 3-5 sessions.
2. The target areas of stimulations was bilateral stimulation with a current intensity of 2 mA as compare to previous studies where target stimulation areas were unilateral with a current intensity of 1mA.
3. The study is also different in the assessment of craving. Few of the studies have used cue based (images) and some studies have also tried to incorporate frontal assessment battery (FAB). Our study used a self rating questionnaire in which the participants themselves answered for 47 questions pertaining to craving before and after tDCS.
4. The ACQ-NOW scale has further categorized craving into four domains such as compulsivity, expectancy, purposefulness and emotionality. The assessment of these domains was done for the first time in our study. The assessment of craving in these domains is a novel finding of our study.
5. There was a homogenous distribution of sample in both the groups in terms of age of onset of drinking, past history of delirium and maximum period of abstinence. Also both the groups were not receiving any anti-craving medications.

LIMITATIONS:

1. This study could have included more number of days or number of simulations which could elicit a stronger effect on craving.
2. A follow-up assessment of patients after few days for craving in order to comment on the long-term effects of tDCS on craving.
3. Along with that the patients could also be followed up for a longer period to study the frequency of relapse.
4. Our study was also limited by lack of double blinding. It may result in rater bias during assessment of psychobiology.

CONCLUSION

The current study showed that neurostimulation modality like tDCS reduces craving in patients of Alcohol dependence syndrome as per the findings of our study.

Out of the four domains that were studied Compulsivity and Emotionality had significant reduction in craving as compared to Expectancy and Purposefulness.

SUMMARY

Alcohol use is addictive and alcohol dependence is a “chronically relapsing disorder”. Craving is attributed as one of the main reasons for relapse. Available treatment options i.e pharmacotherapy and psychotherapy have their own limitations. Recent advances in the treatment strategy have highlighted the application of neurostimulation techniques like rTMS and tDCS in various psychiatric disorders including substance use disorder.

The present study was taken up with aim to study the effect of tDCS on craving in patients of alcohol dependence. It was a single blind randomized controlled study with two groups of 38 participants in each. tDCS was given to both the groups with anode as right DLPFC and cathode as left DLPFC receiving 2mA current (twice daily session, total 10 sessions)

The active group received actual tDCS stimulation while the sham group received only sensations where no actual current was passed. The device used tDCS Soterix 1*1 had sham setting for the participants which was used for blinding.

The tool used in the study, ACQ-NOW is a 47-item self-administered, multidimensional scale for measuring craving for alcohol. It correlates with other multidimensional measures and visual analogs used to monitor changes in levels of craving from pre through post-intervention. The scale categorizes craving in further its domains of compulsivity, emotionality, purposefulness, and expectancy with specific questions. In this study a baseline craving score before and after the stimulation was measured.

The results showed that there was a statistical significant difference between the two groups in terms of change in ACQ-NOW scores**.** Also, the change in percentage score was found to be higher in the active group as compared to the sham group. There was also significant reduction in craving score in the domains of compulsivity and emotionality.

Thus, it can be concluded that tDCS has its effect on reducing craving in patients of alcohol dependence syndrome. It can be further explored as an adjunct with pharmacotherapy with more number of simulations.

A non-invasive technique with minimal side effects tDCS machine is portable and can be given in out patient setting.

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ANNEXURE I. ETHICAL CLEARANCE.

K.L.E. ACADEMY OF HIGHER EDUCATION AND RESEARCH
(Deemed - to - be - University)
Accredited 'A' Grade by NAAC (3rd Cycle) Placed in Category 'A' by MHRD (India)
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
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Ref: MDC/DOME/ 298 Date: 24/12/2019

To,

REG NO. BQ0119001

PG student in Psychiatry,
J. N. Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled "**TRANSCRANIAL DIRECT CURRENT STIMULATION AS AN ADJUNCT ON CRAVING IN PATIENTS OF UNCOMPLICATED ALCOHOL DEPENDENCE SYNDROME: A SINGLE BLIND RANDOMIZED CONTROLLED STUDY** ", is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Ankita Dalal)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Roopa M Belliad)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

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ANNEXURE II

INFORMED CONSENT

Participant Information Sheet (PIS)

Chief guide: Dr. _____.

Principal investigator: REG NO. BQ0119001

Contact address: Junior Resident, Department of Psychiatry, J.N.M.C KLE BELAGAVI.

Introduction:

You are invited to voluntarily take part in a research study to assess the effect of Tdcs (transcranial direct current simulation) on craving in alcohol dependence syndrome.

Before agreeing to participate in this study, it is important that you read and understand this form. It describes the purpose and procedure of the study. If you participate, you will receive a copy of the consent form to keep for your records.

Purpose

It has been hypothesized that stimulation of DLPFC with right as anode and left as cathode helps in reducing craving in patients of alcohol dependence syndrome.

The primary purpose of your participation in this study is to help answer this research question and also to provide you add on treatment for your condition.

Participation in the study

Your participation in the study is entirely voluntary. You may refuse to take part in the study or withdraw from the study and this will not affect your treatment at JNMC KLEH. You will not have to pay any money for participating in the study.

To become part of the study and to authorize use and disclosure of your personal health information, you or your legal representative must sign and date the consent form.

Study procedure

In this study, after initial interviews, subject will undergo 20 sessions of tDCS. The procedure will take around twenty minutes each session, 2 sessions per day separated by 6 hours for 10 days (5 days in one week) and is not reported to have any significant side effects. Nausea, mild headache and skin irritation has been occasionally reported for a brief duration which responds to symptomatic management. We will also be conducting certain interviews with you using some questionnaires. Your participation in the study would be for about 10 days. No invasive procedure will be carried out during the entire course of study.

Any risk to the subject associated with the study:

The tDCS machine which will be applied on your head in this study is entirely non-invasive and very safe. But sometimes you may experience mild headache, Nausea and skin irritation. These are mild and generally diminish over the course of the treatment. However, there is no known risk of tDCS causing seizure at this time, but it is not advised to administer this stimulation to people susceptible to seizures.

Benefits: There may be improvement in your craving for alcohol in this study. If improvement in craving using tDCS is observed, further research and therapeutic use of tDCS may be undertaken in the community for benefit to individuals in alcohol dependence to prevent relapse.

New Information: If any new information relevant to your decision to participate becomes available during the course of this study, you will be informed.

Costs and Payments: It will not cost you anything to take part in this study. You will not be paid any amount for your contribution in this study. However, you will be provided free treatment if any injury is sustained due to tDCS.

Confidentiality

The identity of the participant will be kept strictly confidential both during the study and while publishing results of the study. All information about you and your community will be encoded and kept in locked files. Your opinion on questionnaire will only be available to the investigators and co-investigators. Your opinion on research questionnaire records, just like hospital records, may be summoned by court order or may be inspected by government regulatory authorities.

Results of the Analysis: The results of the analysis will not be made available to you directly.

Right to Withdraw: You are free to refuse to participate in this research study and to withdraw at any time. If you withdraw from the research study, it will have no bearing on your ongoing treatment.

Date: **Investigator's Signature**

ಭಾಗವಹಿಸುವವರ ಮಾಹಿತಿ ಹಾಳೆ (ಪಿಐಎಸ್)

ಮುಖ್ಯ ಮಾರ್ಗದರ್ಶಿ: ಡಾ._____

ಪ್ರಧಾನ ತನಿಖಾಧಿಕಾರಿ : **REG NO. BQ0119001**

ಸಂಪರ್ಕ ವಿಳಾಸ: ಜೂನಿಯರ್ ರೆಸಿಡೆಂಟ್, ಸೈಕಿಯಾಟ್ರಿ ವಿಭಾಗ, ಜೆಎನ್ಎಂಸಿ ಕೆಎಲ್ಇ ಬೆಳಗಾವಿ

ಪರಿಚಯ:

ಆಲ್ಕೋಹಾಲ್ ಅವಲಂಬನೆ ಸಿಂಡ್ರೋಮ್ನಲ್ಲಿ ಹಂಬಲಿಸುವಿಕೆಯ ಮೇಲೆ ಟಿಡಿಸಿಎಸ್ (ಟ್ರಾನ್ಸ್ ಕ್ರೇನಿಯಲ್ ಡೈರೆಕ್ಟ್ ಕರೆಂಟ್ ಸಿಮ್ಯುಲೇಶನ್) ಪರಿಣಾಮವನ್ನು ನಿರ್ಣಯಿಸಲು ಸಂಶೋಧನಾ ಅಧ್ಯಯನದಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳಲು ನಿಮ್ಮನ್ನು ಆಹ್ವಾನಿಸಲಾಗಿದೆ

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪುವ ಮೊದಲು, ನೀವು ಈ ಫಾರ್ಮ್ ಅನ್ನು ಓದುವುದು ಮತ್ತು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವುದು ಬಹಳ ಮುಖ್ಯ. ಇದು ಅಧ್ಯಯನದ ಉದ್ದೇಶ ಮತ್ತು ಕಾರ್ಯವಿಧಾನವನ್ನು ವಿವರಿಸುತ್ತದೆ. ನೀವು ಭಾಗವಹಿಸಿದರೆ, ನಿಮ್ಮ ದಾಖಲೆಗಳಿಗಾಗಿ ಇರಿಸಿಕೊಳ್ಳಲು ನೀವು ಒಪ್ಪಿಗೆ ಪತ್ರದ

ಉದ್ದೇಶ

ಆಲ್ಕೋಹಾಲ್ ಡಿಪೆಂಡೆನ್ಸ್ ಸಿಂಡ್ರೋಮ್ನ ರೋಗಿಗಳಲ್ಲಿ ಕಡುಬಯಕೆ ಕಡಿಮೆ ಮಾಡಲು ಡಿಎಲ್ಪಿಎಫ್ಸಿಯನ್ನು ಆನೋಡ್ನಂತೆ ಮತ್ತು ಎಡಕ್ಕೆ ಕ್ಯಾಥೋಡ್ನಂತೆ ಉತ್ತೇಜಿಸುವುದು ಸಹಾಯ ಮಾಡುತ್ತದೆ ಎಂದು ಹೇಳೋ ಥೀಸಿಸ್ ಮಾಡಲಾಗಿದೆ

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯ ಪ್ರಾಥಮಿಕ ಉದ್ದೇಶವೆಂದರೆ ಈ ಸಂಶೋಧನಾ ಪ್ರಶ್ನೆಗೆ ಉತ್ತರಿಸಲು ಸಹಾಯ ಮಾಡುವುದು ಮತ್ತು ನಿಮ್ಮ ಸ್ಥಿತಿಗೆ ಚಿಕಿತ್ಸೆಯನ್ನು ಸೇರಿಸುವುದು.

ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವಿಕೆ

ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆ ಸಂಪೂರ್ಣವಾಗಿ ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿದೆ. ನೀವು ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಿರಾಕರಿಸಬಹುದು ಅಥವಾ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಬಹುದು ಮತ್ತು ಇದು ಜೆಎನ್ಎಂಸಿ ಕೆ ಎಲ್ ಇ ಎಚ್ನಲ್ಲಿ ನಿಮ್ಮ ಚಿಕಿತ್ಸೆಯ ಮೇಲೆ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ. ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನೀವು ಯಾವುದೇ ಹಣವನ್ನು ಅಧ್ಯಯನದ ಭಾಗವಾಗಲು ಮತ್ತು ನಿಮ್ಮ ವೈಯಕ್ತಿಕ ಆರೋಗ್ಯ ಮಾಹಿತಿಯ ಬಳಕೆ ಮತ್ತು ಬಹಿರಂಗಪಡಿಸುವಿಕೆಯನ್ನು ಅಧಿಕೃತಗೊಳಿಸಲು, ನೀವು ಅಥವಾ ನಿಮ್ಮ ಕಾನೂನು ಪ್ರತಿನಿಧಿ ಒಪ್ಪಿಗೆ ಪತ್ರಕ್ಕೆ ಸಹಿ ಹಾಕಬೇಕು ಮತ್ತು ದಿನಾಂಕ ಮಾಡಬೇಕು.

ಅಧ್ಯಯನ ವಿಧಾನ

ಈ ಅಧ್ಯಯನದಲ್ಲಿ, ಆರಂಭಿಕ ಸಂದರ್ಶನಗಳ ನಂತರ, ವಿಷಯವು ಟಿಡಿಸಿಎಸ್ನ 20 ಅವಧಿಗಳಿಗೆ ಒಳಗಾಗುತ್ತದೆ. ಕಾರ್ಯವಿಧಾನವು ಪ್ರತಿ ಅಧಿವೇಶನಕ್ಕೆ ಸುಮಾರು ಇಪ್ಪತ್ತು ನಿಮಿಷಗಳನ್ನು ತೆಗೆದುಕೊಳ್ಳುತ್ತದೆ, ದಿನಕ್ಕೆ 2 ಸೆಷನ್ಗಳನ್ನು 10 ಗಂಟೆಗಳ ಕಾಲ 6 ಗಂಟೆಗಳಿಂದ ಬೇರ್ಪಡಿಸಲಾಗುತ್ತದೆ (ಒಂದು ವಾರದಲ್ಲಿ 5 ದಿನಗಳು) ಮತ್ತು ಯಾವುದೇ ಗಮನಾರ್ಹ ಅಡ್ಡಪರಿಣಾಮಗಳು ಕಂಡುಬರುವುದಿಲ್ಲ. ವಾಕರಿಕೆ, ಸೌಮ್ಯ ತಲೆನೋವು ಮತ್ತು ಚರ್ಮದ

ನಿರ್ವಹಣೆಗೆ ಸ್ಪಂದಿಸುತ್ತದೆ. ಕೆಲವು ಪ್ರಶ್ನಾವಳಿಗಳನ್ನು ಬಳಸಿಕೊಂಡು ನಾವು ನಿಮ್ಮೊಂದಿಗೆ ಕೆಲವು ಸಂದರ್ಶನಗಳನ್ನು ಸಹ ನಡೆಸುತ್ತೇವೆ. ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯು ಸುಮಾರು 10 ದಿನಗಳವರೆಗೆ ಇರುತ್ತದೆ. ಇಡೀ ಅಧ್ಯಯನದ ಅವಧಿಯಲ್ಲಿ ಯಾವುದೇ ಆಕ್ರಮಣಕಾರಿ ವಿಧಾನವನ್ನು ಕೈಗೊಳ್ಳಲಾಗುವುದಿಲ್ಲ.

ಅಧ್ಯಯನಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ವಿಷಯಕ್ಕೆ ಯಾವುದೇ ಅಪಾಯ:

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮ ತಲೆಯ ಮೇಲೆ ಅನ್ವಯಿಸಲಾಗುವ ಟಿಡಿಸಿಎಸ್ ಯಂತ್ರವು ಸಂಪೂರ್ಣವಾಗಿ ಆಕ್ರಮಣಶೀಲವಲ್ಲದ ಮತ್ತು ಅತ್ಯಂತ ಸುರಕ್ಷಿತವಾಗಿದೆ. ಆದರೆ ಕೆಲವೊಮ್ಮೆ ನೀವು ಸೌಮ್ಯ ತಲೆನೋವು, ವಾಕರಿಕೆ ಮತ್ತು ಚರ್ಮದ ಕಿರಿಕಿರಿಯನ್ನು ಅನುಭವಿಸಬಹುದು. ಇವುಗಳು ಸೌಮ್ಯ ಮತ್ತು ಸಾಮಾನ್ಯವಾಗಿ ಚಿಕಿತ್ಸೆಯ ಅವಧಿಯಲ್ಲಿ ಕಡಿಮೆಯಾಗುತ್ತವೆ. ಆದಾಗ್ಯೂ, ಈ ಸಮಯದಲ್ಲಿ ಟಿಡಿಸಿಎಸ್ ರೋಗಗ್ರಸ್ತವಾಗುವಿಕೆಗೆ ಯಾವುದೇ ಅಪಾಯವಿಲ್ಲ, ಆದರೆ ರೋಗಗ್ರಸ್ತವಾಗುವಿಕೆಗೆ ಒಳಗಾಗುವ ಜನರಿಗೆ ಈ ಪ್ರಚೋದನೆಯನ್ನು ನೀಡಲು ಸಲಹೆ

ಪ್ರಯೋಜನಗಳು :

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಆಲ್ಕೋಹಾಲ್ ಬಗ್ಗೆ ನಿಮ್ಮ ಹಂಬಲದಲ್ಲಿ ಸುಧಾರಣೆ ಇರಬಹುದು. ಟಿಡಿಸಿಎಸ್ ಬಳಸಿ ಕಡುಬಯಕೆ ಸುಧಾರಣೆಯನ್ನು ಗಮನಿಸಿದರೆ, ಮರುಕಳಿಕೆಯನ್ನು ತಡೆಗಟ್ಟಲು ಆಲ್ಕೊಹಾಲ್ ಅವಲಂಬನೆಯಲ್ಲಿರುವ ವ್ಯಕ್ತಿಗಳಿಗೆ ಪ್ರಯೋಜನಕ್ಕಾಗಿ ಸಮುದಾಯದಲ್ಲಿ ಟಿಡಿಸಿಎಸ್ನ ಹೆಚ್ಚಿನ

ಹೊಸ ಮಾಹಿತಿ :

ಈ ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ಭಾಗವಹಿಸುವ ನಿಮ್ಮ ನಿರ್ಧಾರಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಯಾವುದೇ ಹೊಸ ಮಾಹಿತಿಯು ಲಭ್ಯವಾದರೆ, ನಿಮಗೆ ತಿಳಿಸಲಾಗುತ್ತದೆ.

ವೆಚ್ಚಗಳು ಮತ್ತು ಪಾವತಿಗಳು :

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳಲು ನಿಮಗೆ ಏನೂ ವೆಚ್ಚವಾಗುವುದಿಲ್ಲ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮ ಕೊಡುಗೆಗಾಗಿ ನಿಮಗೆ ಯಾವುದೇ ಮೊತ್ತವನ್ನು ಪಾವತಿಸಲಾಗುವುದಿಲ್ಲ. ಆದಾಗ್ಯೂ, ಟಿಡಿಸಿಎಸ್ ಕಾರಣದಿಂದಾಗಿ ಯಾವುದೇ ಗಾಯವಾದರೆ ನಿಮಗೆ ಉಚಿತ ಚಿಕಿತ್ಸೆ ನೀಡಲಾಗುವುದು.

ಗೌಪ್ಯತೆ

ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ಮತ್ತು ಅಧ್ಯಯನದ ಫಲಿತಾಂಶಗಳನ್ನು ಪ್ರಕಟಿಸುವಾಗ ಭಾಗವಹಿಸುವವರ ಗುರುತನ್ನು ಕಟ್ಟುನಿಟ್ಟಾಗಿ ಗೌಪ್ಯವಾಗಿಡಲಾಗುತ್ತದೆ. ನಿಮ್ಮ ಮತ್ತು ನಿಮ್ಮ ಸಮುದಾಯದ ಬಗ್ಗೆ ಎಲ್ಲಾ ಮಾಹಿತಿಯನ್ನು ಎನ್ಕೋಡ್ ಮಾಡಲಾಗುತ್ತದೆ ಮತ್ತು ಲಾಕ್ ಮಾಡಿದ ಫೈಲ್ಗಳಲ್ಲಿ ಇರಿಸಲಾಗುತ್ತದೆ. ಪ್ರಶ್ನಾವಳಿಯ ಕುರಿತು ನಿಮ್ಮ ಅಭಿಪ್ರಾಯವು ತನಿಖಾಧಿಕಾರಿಗಳಿಗೆ ಮತ್ತು ಸಹ-ತನಿಖಾಧಿಕಾರಿಗಳಿಗೆ ಮಾತ್ರ ಲಭ್ಯವಿರುತ್ತದೆ. ಆಸ್ಪತ್ರೆಯ ದಾಖಲೆಗಳಂತೆಯೇ

ಸಂಶೋಧನಾ ಪ್ರಶ್ನಾವಳಿ ದಾಖಲೆಗಳ ಕುರಿತು ನಿಮ್ಮ ಅಭಿಪ್ರಾಯವನ್ನು ನ್ಯಾಯಾಲಯದ ಆದೇಶದ ಮೂಲಕ ಕರೆಯಬಹುದು ಅಥವಾ ಸರ್ಕಾರಿ ನಿಯಂತ್ರಕ ಅಧಿಕಾರಿಗಳು ಪರಿಶೀಲಿಸಬಹುದು.

ವಿಶ್ಲೇಷಣೆಯ ಫಲಿತಾಂಶಗಳು:

ವಿಶ್ಲೇಷಣೆಯ ಫಲಿತಾಂಶಗಳು ನಿಮಗೆ ನೇರವಾಗಿ ಲಭ್ಯವಾಗುವುದಿಲ್ಲ.

ಹಿಂತೆಗೆದುಕೊಳ್ಳುವ ಹಕ್ಕು :

ಈ ಸಂಶೋಧನಾ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಮತ್ತು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಹಿಂತೆಗೆದುಕೊಳ್ಳಲು ನೀವು ಮುಕ್ತರಾಗಿದ್ದೀರಿ. ನೀವು ಸಂಶೋಧನಾ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿದರೆ, ಅದು ನಿಮ. ನಡೆಯುತಿರುವ ಚಿಕಿತೆ ಗೆ ಯಾವುದೇ ಪರಿಣಾಮ ಬೀರುವುದಿಲ.

ದಿನಾಂಕ: ತನಿಖಾಧಿಕಾರಿಗಳ ಸಹಿ

PATIENT INFORMATION SHEET IN MARATHI

सहभागी माहिती पत्रक (पीआयएस)

मुख्य मार्गदर्शक: डॉ. _____

प्रधान अन्वेषक: **REG NO. BQ0119001.**

संपर्क पत्ता: कनिष्ठ रहिवासी, मानसोपचार विभाग, जेएनएमसी केएलई बेलागावी

परिचय:

अल्कोहोल अवलंबन सिंड्रोममध्ये तल्लफ झाल्यावर टीडीसीएस (ट्रान्स क्रेनियल डायरेक्ट करंट सिम्युलेशन) च्या प्रभावाचे मूल्यांकन करण्यासाठी आपल्याला स्वेच्छेने एका अभ्यास अभ्यासामध्ये भाग घेण्यासाठी आमंत्रित केले आहे.

या अभ्यासामध्ये भाग घेण्यास सहमती देण्यापूर्वी आपण हा फॉर्म वाचणे आणि समजणे महत्वाचे आहे. यात अभ्यासाचे उद्दीष्ट व कार्यपद्धती यांचे वर्णन केले आहे. आपण सहभाग घेतल्यास आपल्या नोंदी ठेवण्यासाठी संमती फॉर्मची एक प्रत आपल्याला प्राप्त होईल.

उद्देश

असे अनुमान लावले गेले आहे की कॅथोड म्हणून उजवीकडे एनोड आणि डावीकडे डीएलपीएफसीचे उत्तेजन अल्कोहोल अवलंबन सिंड्रोमच्या रूग्णांची तल्लफ कमी करण्यास मदत करते.

या अभ्यासामधील आपल्या सहभागाचा प्राथमिक हेतू या संशोधन प्रश्नाचे उत्तर देण्यात मदत करणे आणि आपल्याला आपल्या स्थितीवर उपचार जोडणे देखील आहे.

अभ्यासात सहभाग

अभ्यासामधील आपला सहभाग पूर्णपणे ऐच्छिक आहे. आपण अभ्यासामध्ये भाग घेण्यास किंवा अभ्यासापासून दूर जाण्यास नकार देऊ शकता आणि जेएनएमसी के एल ई एच येथे आपल्या उपचारांवर याचा परिणाम होणार नाही. अभ्यासामध्ये भाग घेण्यासाठी आपल्याला पैसे द्यावे लागणार नाहीत.

अभ्यासाचा भाग होण्यासाठी आणि आपल्या वैयक्तिक आरोग्यविषयक माहितीचा वापर आणि प्रकटीकरण अधिकृत करण्यासाठी, आपण किंवा आपल्या कायदेशीर प्रतिनिधीने सहमती फॉर्मवर स्वाक्षरी आणि तारीख असणे आवश्यक आहे.

अभ्यास प्रक्रिया

या अभ्यासात, प्रारंभिक मुलाखती नंतर, विषय टीडीसीएसच्या 20 सत्रे घेईल. या प्रक्रियेमध्ये प्रत्येक सत्रात सुमारे वीस मिनिटे लागतील, दररोज 2 सत्रे 6 दिवसांनी 10 दिवस (एका आठवड्यात 5 दिवस) विभक्त केली जातात आणि कोणतेही दुष्परिणाम असल्याचे नोंदवले जात नाही. मळमळ, सौम्य डोकेदुखी आणि त्वचेची जळजळ अधूनमधून संक्षिप्त कालावधीसाठी नोंदविली गेली जी लक्षणात्मक व्यवस्थापनास प्रतिसाद देते. आम्ही काही प्रश्नावली वापरुन आपल्याबरोबर काही विशिष्ट मुलाखती घेत आहोत. अभ्यासामध्ये आपला सहभाग सुमारे 10 दिवसांचा असेल. संपूर्ण अभ्यासादरम्यान कोणतीही आक्रमक प्रक्रिया केली जाणार नाही.

अभ्यासाशी संबंधित विषयावर कोणताही धोका:

या अभ्यासामध्ये आपल्या डोक्यावर लावण्यात येणारी टीडीसीएस मशीन संपूर्णपणे आक्रमक नसलेली आणि खूप सुरक्षित आहे. परंतु कधीकधी आपल्याला सौम्य डोकेदुखी, मळमळ आणि त्वचेचा त्रास होऊ शकतो. उपचारांच्या बाबतीत हे सौम्य आणि सामान्यतः कमी होत जातात. तथापि, या वेळी टीडीसीएसमुळे जप्ती होण्याची कोणतीही जोखीम नाही, परंतु जप्तीची शक्यता असलेल्या लोकांना हे उत्तेजन देण्याचा सल्ला दिला जात नाही.

फायदे:

या अभ्यासामध्ये आपल्या अल्कोहोलच्या तीव्रतेमध्ये सुधारणा होऊ शकते. टीडीसीएस वापरण्याच्या तल्लफमध्ये सुधारणा दिसून येत असल्यास, पुन्हा होण्यापासून बचाव करण्यासाठी अल्कोहोल अवलंबून असलेल्या व्यक्तींच्या फायद्यासाठी समाजात टीडीसीएसचा पुढील संशोधन आणि उपचारात्मक उपयोग केला जाऊ शकतो.

नवीन माहितीः

या अभ्यासाच्या वेळी आपल्या सहभागाच्या निर्णयाशी संबंधित कोणतीही नवीन माहिती उपलब्ध झाल्यास आपणास कळविले जाईल.

Participant Informed Consent Form (LAR)

Protocol /Study No. : _____

Patient Id No. for this trial: _____

Project Title:

Name of Principal Investigator: **REG NO. BQ0119001.**

Contact address: Junior Resident, Department of Psychiatry, JNMC, and KLE BELAGAVI

The content of information sheet dated _____ (version) _____ that was provided have been read carefully by me/explained to me in detail to me, in a language that I comprehend and have fully understood its content. I confirm that I have had opportunity to ask questions. The nature and purpose of study and its potential risks/benefits and expected duration of study, and relevant details of study have been explained to me in detail. I understand that my

participation is voluntary and that I am free to withdraw at any time without giving reasons, without my medical care or legal rights being affected.
I understand that information collected about me from my participation in this research and section of any of my medical notes, may be looked at by responsible individuals from regulatory authorities where relevant to taking part in research. I give permission for these individuals to have access to my record
Signature/left thumb impression

Signature of the subject/left thumb impression & Date: _____

Place: _____

Name of the participant: _____
Name of the parent/LAR: _____
Son/daughter/spouse of: _____

This is to certify that above consent have been obtained in my presence.

Name of Principal Investigator Signature of Principal Investigator

Name of Witness 1

Signature of Witness 1 Thumb impression of Witness 1

Address:

Name of Witness 2
Signature of Witness 2 Thumb impression of Witness 2

Address:

ANNEXURE III

SOCIO-DEMOGRAPHIC SHEET

Name-

2. Gender- Male...../ Female.....

3. Age-

4. Marital status- Never married / Married / separated / divorced
Widowed / Living together without marriage /Prefer not to say

5. Occupation – Professional / Skilled-worker / unskilled worker

Unemployed / Housewife / Retired / Student / Business
Farmer / Prefer not to say

6. Education – Illiterate / Primary / Middle / Matric / Intermediate
Graduate / Post-graduate / Professional / Unknown

7. Monthly income - < 5000 / 5000-10000 / 10000-15000 / 15000-20000 / > 20000

8. Religion – Hindu / Islam / Christianity / Sikhism / Others / Not known

9. Residential address-

10. Phone number –

11. Clinical details:
A. TOTAL DURATION OF ALCOHOL CONSUMPTION:
i. Age at starting –
ii. Quantity of alcohol consumed per day –
iii. Last drink -
iv. Withdrawal symptoms-

B. MEDICAL/ANY OTHER PSYCHIATRIC ILLNESS- ……

C.TREATMENT RECEIVED IN THE PAST- …….

D. SYSTEMIC EXAMINATION- …….

E. MENTAL STATE EXAMINATION - ……

EDINBURGH HANDEDNESS INVENTORY

Task / Object	Left Hand	Right Hand
1. Writing		
2. Drawing		
3. Throwing		
4. Scissors		
5. Toothbrush		
6. Knife (without fork)		
7. Spoon		
8. Broom (upper hand)		
9. Striking a Match (match)		
10. Opening a Box (lid)		
Total checks:	LH =	RH =
Cumulative Total	CT = LH + RH =	
Difference	D = RH – LH =	
Result	R = (D / CT) × 100 =	
Interpretation: (Left Handed: R < -40) (Ambidextrous: -40 ≤ R ≤ +40) (Right Handed: R > +40)		

Alcohol Withdrawal Assessment Scoring Guidelines (CIWA - Ar

Nausea/Vomiting - Rate on scale 0 – 7

0 – None
1 - Mild nausea with no vomiting
2
3
4 - Intermittent nausea
5
6
7 - Constant nausea and frequent dry heaves and vomiting

Tremors - have patient extend arms & spread fingers. Rate on scale 0 - 7.
0 - No tremor
1 - Not visible, but can be felt fingertip to fingertip
2
3
4 - Moderate, with patient's arms extended
5
6
7 - severe, even w/ arms not extended

Anxiety - Rate on scale 0 – 7
0 - no anxiety, patient at ease
1 - mildly anxious
2
3
4 - moderately anxious or guarded, so anxiety is inferred
5
6
7 - equivalent to acute panic states seen in severe delirium or acute schizophrenic reactions.

Agitation - Rate on scale 0 – 7
0 - normal activity
1 - somewhat normal activity
2
3
4 - moderately fidgety and restless
5
6
7 - paces back and forth, or constantly thrashes about

Paroxysmal Sweats - Rate on Scale 0 - 7.
0 - no sweats
1- barely perceptible sweating, palms moist
2
3
4 - beads of sweat obvious on forehead
5
6
7 - drenching sweats

Orientation and clouding of sensorium - Ask, "What day is this? Where are you? Who am I?" Rate scale 0 - 4
0 – Oriented
1 – cannot do serial additions or is uncertain about date

2 - disoriented to date by no more than 2 calendar days

3 - disoriented to date by more than 2 calendar days
4 - Disoriented to place and / or person

Tactile disturbances - Ask, "Have you experienced any itching, pins & needles sensation, burning or numbness, or a feeling of bugs crawling on or under your skin?"
0 – none
1 - very mild itching, pins & needles, burning, or numbness
2 - mild itching, pins & needles, burning, or numbness
3 - moderate itching, pins & needles, burning, or numbness
4 - moderate hallucinations
5 - severe hallucinations
6 - extremely severe hallucinations
7 - continuous hallucinations

Auditory Disturbances - Ask, "Are you more aware of sounds around you? Are they harsh? Do they startle you? Do you hear anything that disturbs you or that you know isn't there?"
0 - not present
1 - Very mild harshness or ability to startle
2 - mild harshness or ability to startle
3 - moderate harshness or ability to startle
4 - moderate hallucinations
5 - severe hallucinations
6 - extremely severe hallucinations
7 - continuous hallucinations

Visual disturbances - Ask, "Does the light appear to be too bright? Is its color different than normal? Does it hurt your eyes? Are you seeing anything that disturbs you or that you know isn't there?"
0 - not present
1 - very mild sensitivity
2 - mild sensitivity
3 - moderate sensitivity
4 - moderate hallucinations
5 - severe hallucinations
6 - extremely severe hallucinations
7 - continuous hallucinations

Headache - Ask, "Does your head feel different than usual? Does it feel like there is a band around your head?" Do not rate dizziness or lightheadedness.

0 - not present
1 - very mild
2 – mild
3 – moderate
4 - moderately severe
5 – severe
6 - very severe
7 - extremely severe

Assess and rate each of the 10 criteria of the CIWA scale. Each criterion is rated on a scale from 0 to 7, except for "Orientation and clouding of sensorium" which is rated on scale 0 to 4. Add up the scores for all ten criteria. This is the total CIWA-Ar score for the patient at that time. **Prophylactic medication should be started for any patient with a total CIWA-Ar score of 8 or greater (ie. start on withdrawal medication), see protocol below for dosages.** Document vitals and CIWA-Ar assessment on the Withdrawal Assessment Sheet. Document administration of PRN medications on the assessment sheet as well. The CIWA-Ar scale is the most sensitive tool for assessment of the patient experiencing alcohol withdrawal. Nursing assessment is vitally important. Early intervention for CIWA-Ar score of 8 or greater provides the best means to prevent the progression of withdrawal

ACQHISTORY

FIRST, WE NEED TO GET SOME GENERAL INFORMATION ABOUT YOU. PLEASE ANSWER THE FOLLOWING QUESTIONS.

1. Your sex: (Circle the number of your answer)

    1. MALE
    2. FEMALE

2. Your present age: _____ ____ Years

3. Are you presently: (circle all numbers that apply)

    1. EMPLOYED FULL- TIME
    2. EMPLOYED PART - TIME
    3. UNEMPLOYED
    4. RETIRED
    5. FULL - TIME HOMEMAKER
    6. STUDENT

4. What is the highest level of education you have completed?

    1. NO FORMAL EDUCATION
    2. SOME GRADE SCHOOL
    3. COMPLETED GRADE SCHOOL
    4. SOME HIGH SCHOOL
    5. COMPLETED HIGH SCHOOL
    6. SOME COLLEGE
    7. COMPLETED COLLEGE
    8. SOME GRADUATE WORK
    9. A GRADUATE DEGREE

5. What is your race/ethnicity? (circle one number)

    1. WHITE, NOT OF HISPANIC ORIGIN
    2. BLACK, NOT OF HISPANIC ORIGIN
    3. HISPANIC/LATINO/LATINA
    4. ASIAN
    5. AMERICAN INDIAN
    6. OTHER (please specify)_____

6. Are you: (circle one number)

1. SINGLE
2. MARRIED
3. DIVORCED OR SEPARATED

NEXT, WE NEED TO GET SOME INFORMATION ABOUT YOUR EXPERIENCES WITH ALCOHOL. PLEASE ANSWER THE FOLLOWING QUESTIONS.

7. When did you last drink an alcoholic beverage? (circle one number)

1. TODAY
2. YESTERDAY
3. WITHIN THE LAST TWO DAYS
4. WITHIN THE LAST FOUR DAYS
5. WITHIN THE LAST WEEK
6. WITHIN THE LAST TWO WEEKS
7. WITHIN THE LAST MONTH
8. WITHIN THE LAST TWO MONTH
9. WITHIN THE LAST THREE MONTHS
10. WITHIN THE LAST FOUR MONTHS

IF TODAY:

A. WHAT TIME?___ ___ : ___ ___ B. WHEN (circle one number)

1. AM (morning)
2. PM (afternoon or evening)

8. About how old were you when you first drank an alcoholic beverage?

AGE:____ _____

9. About how many times in your life have you consumed alcohol? (circle one)

1. 1 OR 2 TIMES
2. 3 TO 5 TIMES
3. 6 TO 10 TIMES
4. 11 TO 49 TIMES
5. 50 TO 99 TIMES
6. MORE THAN 99 TIMES

10. During the past 30 days, on about how many days did you drink alcohol?

    NUMBER OF DAYS: ____ ____

11. On the average. how often in the last six months did you drink alcohol? (circle one number)

    1. MORE THAN ONCE EACH DAY
    2. ONCE A DAY
    3. FOUR TO SIX DAYS A WEEK
    4. TWO OR THREE DAYS A WEEK
    5. ONCE A WEEK
    6. TWO OR THREE DAYS A MONTH
    7. ONCE A MONTH
    8. SEVERAL TIMES, BUT LESS THAN ONCE A MONTH
    9. ONCE OR TWICE

12. Now tell us the different types of alcoholic beverages you have ever consumed. (circle all the numbers that apply).

    1. BEER
    2. WINE OR WINE COOLERS
    3. HARD LIQUOR
    4. OTHER (please specify)_____

13. What type of alcoholic beverages did you generally drink over the last six months? (circle one number)

    1. BEER
    2. WINE OR WINE COOLERS
    3. HARD LIQUOR
    4. OTHER (please specify)_____

14. How many drinks do you typically have at one time ?

    A. Beer (12 oz. can, bottle)
    1. None
    2. __ __ Drinks

    B. Wine (glass or bottle)
    1. None
    2. __ __ Drinks

    C. Liquor (1oz., shot, drink)
    1. None
    2. __ __ Drinks

    D. Other (specify) _____
    1. None
    2. __ __ Drinks

15. How many drinks do you typically have in one day (a 24-hour period) ?

A. Beer (12 oz. can, bottle)
1. None
2. __ __ Drinks

B. Wine (glass or bottle)
1. None
2. __ __ Drinks

C. Liquor (1oz., shot, drink)
1. None
2. __ __ Drinks

D. Other (specify) _____
1. None
2. __ __ Drinks

16. Which sentence best describes what you mean by "craving for alcohol?" (circle ONLY one number)

1. A CRAVING FOR ALCOHOL IS ONLY A STRONG URGE OR DESIRE TO DRINK ALCOHOL

2. A CRAVING FOR ALCOHOL IS ANY URGE OR DESIRE TO DRINK ALCOHOL, EVEN A WEAK ONE

17. On a scale of 0 to 10 where 0 is not at all, and 10 is the most imaginable, how much do you crave an alcoholic beverage when you've gone without a drink for 1-2 days?

____ ____ craving

18. On a scale of 0 to 10 where 0 is not at all, and 10 is the most imaginable, how much do you crave an alcoholic beverage right now?

____ ____ craving

19 On the line below, please make a mark between "NOT AT ALL" and " A GREAT DEAL" to indicate HOW STRONG, on the average, your craving for alcohol has been DURING THE PAST WEEK.

INTENSITY - HOW STRONG HAS AN AVERAGE URGE BEEN?:

NONE/ A GREAT
NOT AT
ALL____!_____!____!_____!_____!_____!_____DEAL

20. On the average, HOW FREQUENTLY (how many times a day) have you experienced craving for alcohol DURING THE PAST WEEK.

FREQUENCY - HOW MANY TIMES PER DAY: (Circle one number)

1. NONE
2. 1
3. 2
4. 3-5
5. 6-10
6. 11-20
7. More than 20

21. On the average, How LONG has the craving for alcohol lasted DURING THE PAST WEEK?

DURATION - HOW LONG DOES AN AVERAGE URGE LAST: (Circle one number)

1. Less than one Minute
2. 1-5 Minutes
3. 6-10 Minutes
4. 11-15 Minutes
5. 15-30 Minutes
6. 31-45 Minutes
7. 46-60 Minutes
8. 1-2 Hours
9. More than 2 Hours.

22. Have you ever tried to quit drinking? (circle one number)

1. NO
2. YES IF YES: A. How many times have you tried to quit?

_____ _____ _____TIMES

B. What is the longest period of time that you've been able to quit? _____ days

23. Number of previous Inpatient treatments for alcohol (Circle one Number)

1. No previous inpatient treatment
2. 1
3. 2
4. 3-5
5. 6 or more

24. Number of previous outpatient treatments for alcohol (Circle one number)

1. No previous outpatient treatment
2. 1
3. 2
4. 3-5
5. 6 or more

25. Age at which drinking first became a problem

1. Never been a problem
2. (Age): _____ _____

26. If you would try to quit drinking now, how confident are you that you could go for one year without drinking? (circle one number)

1. NOT CONFIDENT
2. A LITTLE CONFIDENT
3. MODERATELY CONFIDENT
4. VERY CONFIDENT
5. EXTREMELY CONFIDENT

ACQ-NOW

INSTRUCTIONS: Indicate how much you agree or disagree with each of the following statements by placing a single checkmark (like this: X) along each line between STRONGLY DISAGREE and STRONGLY AGREE. The closer you place your checkmark to one end or the other indicates the strength of your disagreement or agreement. Please complete every item. We are interested in how you are thinking or feeling right now as you are filling out the questionnaire.

RIGHT NOW

1. If there was alcohol right here in front of me, it would be hard not to use it.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

2. Drinking alcohol would not be pleasant right now.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

3. I would feel better if I could drink.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

4. If I had the chance to use alcohol, I think I would drink.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

5. Drinking would be wonderful.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

6. Even if it were possible, I probably wouldn't drink right now.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

7. Right now, I miss drinking.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

8. I am going to drink as soon as I possibly can.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

9. I would feel less jittery if I used alcohol right now.

   STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

RIGHT NOW

10. Drinking would make things seem just perfect.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

11. I have an urge to drink now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

12. Right now, I am not making any plans to drink.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

13. I would feel more in control of things right now if I could drink.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

14. Drinking would make me feel less jittery.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

15. I could not stop myself from drinking if I had some alcohol here.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

16. If I drank a little alcohol right now, I would not be able to stop using it.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

17. I want to drink so bad I can almost taste it.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

18. Nothing would be better than drinking right now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

19. I would do almost anything for a drink.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

RIGHT NOW

20. Having a drink would be ideal.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

21. I want to use alcohol right now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

22. I would feel less irritable if I used alcohol now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

23. I am thinking of ways to get alcohol.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

24. All I want to do right now is drink.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

25. It would be difficult to turn down a drink right this minute.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

26. Starting now, I could go without drinking for a long time.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

27. Drinking would not be very satisfying right now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

28. If I used alcohol right now, I would feel less tense.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

29. I would not enjoy drinking right now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

RIGHT NOW

30. If I had the chance to use alcohol, I think I would drink.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

31. I would not be able to control how much alcohol I drank if I had some here.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

32. It would be great to use alcohol now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

33. If I had some alcohol right now, I would probably drink it.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

34. I would feel less restless if I drank alcohol now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

35. I could easily limit how much alcohol I drank right now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

36. I do not need to use alcohol now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

37. I will drink as soon as I get the chance.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

38. I have no desire to drink right now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

39. If I were using alcohol now, I would feel less nervous.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

RIGHT NOW

40. I have no urge to drink now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

41. Drinking would not make me content.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

42. I think I could resist using alcohol right now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

43. It would be easy to pass up the chance to use alcohol.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

44. I crave alcohol right now.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

45. If I were offered some alcohol, I would drink it right away.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

46. Drinking would put me in a better mood.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

47. My desire to drink seems overpowering.

STRONGLY DISAGREE___:___:___:___:___:___:___STRONGLY AGREE

END

ACQ NOW (SCALE FOR CRAVING) IN KANNADA

ಎ ಸಿ ಕ್ಯೂ - ಈಗ

ಸೂಚನೆಗಳು :

ಪ್ರತಿ ಸಾಲಿನ ಉದ್ದಕ್ಕೂ ಒಂದೇ ಚೆಕ್‌ಮಾರ್ಕ್ ಅನ್ನು (ಈ ರೀತಿಯಾಗಿ: ಎಕ್ಸ್) ಇರಿಸುವ ಮೂಲಕ ಈ ಕೆಳಗಿನ ಪ್ರತಿಯೊಂದು ಹೇಳಿಕೆಗಳನ್ನು ನೀವು ಎಷ್ಟು ಒಪ್ಪುತ್ತೀರಿ ಅಥವಾ ಒಪ್ಪುವುದಿಲ್ಲ ಎಂಬುದನ್ನು ಸೂಚಿಸಿ.
ನಿಮ್ಮ ಚೆಕ್‌ಮಾರ್ಕ್ ಅನ್ನು ನೀವು ಒಂದು ತುದಿಗೆ ಹತ್ತಿರಕ್ಕೆ ಇರಿಸಿ ಅಥವಾ ಇನ್ನೊಂದು ನಿಮ್ಮ ಭಿನ್ನಾಭಿಪ್ರಾಯ ಅಥವಾ ಒಪ್ಪಂದದ ಬಲವನ್ನು ಸೂಚಿಸುತ್ತದೆ.
ದಯವಿಟ್ಟು ಪ್ರತಿ ಐಟಂ ಅನ್ನು ಪೂರ್ಣಗೊಳಿಸಿ. ನೀವು ಪ್ರಶ್ನಾವಳಿಯನ್ನು ಭರ್ತಿ ಮಾಡುತ್ತಿರುವಾಗ ನೀವು ಇದೀಗ ಹೇಗೆ ಯೋಚಿಸುತ್ತಿದ್ದೀರಿ ಅಥವಾ ಭಾವಿಸುತ್ತಿದ್ದೀರಿ

ಇದೀಗ

1. ನನ್ನ ಮುಂದೆ ಇಲ್ಲಿಯೇ ಆಲ್ಕೋಹಾಲ್ ಇದ್ದರೆ, ಅದನ್ನು ಬಳಸದಿರುವುದು ಕಷ್ಟ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

2. ಆಲ್ಕೋಹಾಲ್ ಕುಡಿಯುವುದು ಇದೀಗ ಆಹ್ಲಾದಕರವಾಗುವುದಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

3. ನಾನು ಕುಡಿಯಲು ಸಾಧ್ಯವಾದರೆ ನಾನು ಚೆನ್ನಾಗಿರುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

4. ನನಗೆ ಆಲ್ಕೋಹಾಲ್ ಬಳಸುವ ಅವಕಾಶವಿದ್ದರೆ, ನಾನು ಕುಡಿಯುತ್ತೇನೆ ಎಂದು ಭಾವಿಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

5. ಕುಡಿಯುವುದು ಅದ್ಭುತವಾಗಿದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

6. ಅದು ಸಾಧ್ಯವಾದರೂ, ನಾನು ಈಗ ಕುಡಿಯುವುದಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

7. ಇದೀಗ, ನಾನು ಕುಡಿಯುವುದನ್ನು ತಪ್ಪಿಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

8. ನಾನು ಸಾಧ್ಯವಾದಷ್ಟು ಬೇಗ ಕುಡಿಯಲು ಹೋಗುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

9. ನಾನು ಇದೀಗ ಆಲ್ಕೋಹಾಲ್ ಬಳಸಿದರೆ ನನಗೆ ಕಡಿಮೆ ನರಳುತ್ತದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

10. ಕುಡಿಯುವುದರಿಂದ ವಸ್ತುಗಳು ಕೇವಲ ಪರಿಪೂರ್ಣವೆಂದು ತೋರುತ್ತದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

11. ನನಗೆ ಈಗ ಕುಡಿಯುವ ಹಂಬಲವಿದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

12. ಇದೀಗ, ನಾನು ಕುಡಿಯಲು ಯಾವುದೇ ಯೋಜನೆಗಳನ್ನು ಮಾಡುತ್ತಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

13. ನಾನು ಕುಡಿಯಲು ಸಾಧ್ಯವಾದರೆ ಇದೀಗ ವಸ್ತುಗಳ ನಿಯಂತ್ರಣದಲ್ಲಿ ನಾನು ಹೆಚ್ಚು ಭಾವಿಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

14. ಕುಡಿಯುವುದರಿಂದ ನನಗೆ ಕಡಿಮೆ ಗಲಿಬಿಲಿ ಉಂಟಾಗುತ್ತದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

15. ನಾನು ಇಲ್ಲಿ ಸ್ವಲ್ಪ ಮದ್ಯ ಸೇವಿಸಿದರೆ ನನ್ನನ್ನು ಕುಡಿಯುವುದನ್ನು ತಡೆಯಲು ಸಾಧ್ಯವಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

16. ನಾನು ಇದೀಗ ಸ್ವಲ್ಪ ಮದ್ಯ ಸೇವಿಸಿದರೆ, ಅದನ್ನು ಬಳಸುವುದನ್ನು ನಿಲ್ಲಿಸಲು ನನಗೆ ಸಾಧ್ಯವಾಗುವುದಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

17. ನಾನು ತುಂಬಾ ಕೆಟ್ಟದಾಗಿ ಕುಡಿಯಲು ಬಯಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

18. ಇದೀಗ ಕುಡಿಯುವುದಕ್ಕಿಂತ ಏನೂ ಉತ್ತಮವಾಗಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

19. ನಾನು ಪಾನೀಯಕ್ಕಾಗಿ ಬಹುತೇಕ ಏನನ್ನೂ ಮಾಡುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

20. ಪಾನೀಯವನ್ನು ಹೊಂದಿರುವುದು ಸೂಕ್ತವಾಗಿದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

21. ನಾನು ಇದೀಗ ಆಲ್ಕೋಹಾಲ್ ಬಳಸಲು ಬಯಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

22. ನಾನು ಈಗ ಆಲ್ಕೋಹಾಲ್ ಬಳಸಿದರೆ ನನಗೆ ಕಡಿಮೆ ಕಿರಿಕಿರಿ ಉಂಟಾಗುತ್ತದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

23. ನಾನು ಆಲ್ಕೊಹಾಲ್ ಪಡೆಯುವ ಮಾರ್ಗಗಳ ಬಗ್ಗೆ ಯೋಚಿಸುತ್ತಿದ್ದೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

24. ನಾನು ಇದೀಗ ಮಾಡಲು ಬಯಸುವುದು ಪಾನೀಯ ಮಾತ್ರ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

25. ಈ ನಿಮಿಷದಲ್ಲಿಯೇ ಪಾನೀಯವನ್ನು ತಿರಸ್ಕರಿಸುವುದು ಕಷ್ಟ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

26. ಈಗ ಪ್ರಾರಂಭಿಸಿ, ನಾನು ದೀರ್ಘಕಾಲ ಕುಡಿಯದೆ ಹೋಗಬಹುದು.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

27. ಕುಡಿಯುವುದು ಇದೀಗ ತೃಪ್ತಿಕರವಾಗಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

28. ನಾನು ಇದೀಗ ಆಲ್ಕೋಹಾಲ್ ಬಳಸಿದರೆ, ನಾನು ಕಡಿಮೆ ಉದ್ವಿಗ್ನತೆಯನ್ನು ಅನುಭವಿಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

29. ನಾನು ಈಗ ಕುಡಿಯುವುದನ್ನು ಆನಂದಿಸುವುದಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

30. ನನಗೆ ಆಲ್ಕೋಹಾಲ್ ಬಳಸುವ ಅವಕಾಶವಿದ್ದರೆ, ನಾನು ಕುಡಿಯುತ್ತೇನೆ ಎಂದು ಭಾವಿಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

31. ನಾನು ಇಲ್ಲಿ ಸ್ವಲ್ಪ ಹೊಂದಿದ್ದರೆ ನಾನು ಎಷ್ಟು ಆಲ್ಕೊಹಾಲ್ ಸೇವಿಸಿದ್ದೇನೆ ಎಂದು ನಿಯಂತ್ರಿಸಲು ನನಗೆ ಸಾಧ್ಯವಾಗುವುದಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

32. ಈಗ ಆಲ್ಕೋಹಾಲ್ ಬಳಸುವುದು ಉತ್ತಮ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

33. ನಾನು ಇದೀಗ ಸ್ವಲ್ಪ ಮದ್ಯ ಸೇವಿಸಿದರೆ, ನಾನು ಅದನ್ನು ಕುಡಿಯುತ್ತಿದ್ದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

34. ನಾನು ಈಗ ಮದ್ಯ ಸೇವಿಸಿದರೆ ನನಗೆ ಕಡಿಮೆ ಚಡಪಡಿಕೆ ಅನಿಸುತ್ತದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

35. ನಾನು ಈಗ ಎಷ್ಟು ಆಲ್ಕೊಹಾಲ್ ಸೇವಿಸಿದ್ದೇನೆ ಎಂದು ನಾನು ಸುಲಭವಾಗಿ ಮಿತಿಗೊಳಿಸಬಹುದು.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

36. ನಾನು ಈಗ ಆಲ್ಕೋಹಾಲ್ ಬಳಸುವ ಅಗತ್ಯವಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

37. ಅವಕಾಶ ಸಿಕ್ಕ ಕೂಡಲೇ ಕುಡಿಯುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

38. ನನಗೆ ಈಗ ಕುಡಿಯುವ ಆಸೆ ಇಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

39. ನಾನು ಈಗ ಆಲ್ಕೋಹಾಲ್ ಬಳಸುತ್ತಿದ್ದರೆ, ನಾನು ಕಡಿಮೆ ನರವನ್ನು ಅನುಭವಿಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

40. ನನಗೆ ಈಗ ಕುಡಿಯುವ ಹಂಬಲವಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

41. ಕುಡಿಯುವುದರಿಂದ ನನಗೆ ವಿಷಯವಾಗುವುದಿಲ್ಲ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

42. ನಾನು ಇದೀಗ ಆಲ್ಕೊಹಾಲ್ ಬಳಸುವುದನ್ನು ವಿರೋಧಿಸಬಹುದೆಂದು ನಾನು ಭಾವಿಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

43. ಆಲ್ಕೋಹಾಲ್ ಬಳಸುವ ಅವಕಾಶವನ್ನು ಹಾದುಹೋಗುವುದು ಸುಲಭ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

44. ನಾನು ಇದೀಗ ಆಲ್ಕೋಹಾಲ್ ಅನ್ನು ಹಂಬಲಿಸುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

45. ನನಗೆ ಸ್ವಲ್ಪ ಮದ್ಯ ನೀಡಿದರೆ, ನಾನು ಈಗಿನಿಂದಲೇ ಅದನ್ನು ಕುಡಿಯುತ್ತೇನೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

46. ಕುಡಿಯುವುದರಿಂದ ನನ್ನನ್ನು ಉತ್ತಮ ಮನಸ್ಥಿತಿಗೆ ತರುತ್ತದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

47. ಕುಡಿಯುವ ನನ್ನ ಆಸೆ ಮಿತಿಮೀರಿದೆ.

ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ ___: ___: ___: ___: ___: ___: ___ ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ

ACQ-NOW IN MARATHI

एसीक्यू-आत्ता

सूचना :

दृढ असहमत आणि जोरदार सहमत यांच्या दरम्यान प्रत्येक ओळीवर एकच चेकमार्क (याप्रमाणे: एक्स) ठेवून आपण खालीलपैकी प्रत्येक विधानाशी किती सहमत आहात किंवा सहमत आहात हे दर्शवा. आपण आपले चेकमार्क एका टोकाला किंवा दुसऱ्या टोकाला जितके जवळ ठेवता ते आपल्या मतभेद किंवा कराराची शक्ती दर्शवते. कृपया प्रत्येक आयटम पूर्ण करा. आपण प्रश्नावली भरत असताना आपण आत्ता कसे विचार करीत आहात किंवा कसे वाटत आहे याबद्दल आम्हाला स्वारस्य आहे.

ताबडतोब

1. इथे माझ्यासमोर दारू असते तर ते वापरणे कठीण होते.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

2. सध्या अल्कोहोल पिणे आनंददायी होणार नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

3. मी प्यायलो तर बरे होईल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

4. जर मला मद्यपान करण्याची संधी मिळाली तर मी मद्यपान करतो असे मला वाटते.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

5. मद्यपान आश्चर्यकारक होईल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

6. जरी हे शक्य असेल तर, मी कदाचित आत्ताच पिणार नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

7. आत्ता, मला मद्यपान करण्याची आठवण येते.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

8. मी शक्यतो शक्य तितक्या लवकर मी पिणार आहे.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

9. मी आत्ता दारू वापरली तर मला त्रासदायक भावना कमी वाटेल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

10. मद्यपान केल्याने गोष्टी परिपूर्ण वाटतील.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

11. मला आता पिण्याची इच्छा आहे.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

12. आत्ता, मी पिण्याची कोणतीही योजना करत नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

13. जर मी मद्यपान केले तर मला आत्ता गोष्टींवर अधिक नियंत्रण ठेवता येईल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

14. मद्यपान केल्याने मला त्रास कमी होतो.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

15. मला येथे काही मद्यपान केल्यास मी मद्यपान करण्यापासून रोखू शकत नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

16. मी आत्ताच थोडे मद्यपान केले तर मी ते वापरणे थांबवू शकणार नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

17. मला इतके वाईट प्यायचे आहे की मी जवळजवळ याचा स्वाद घेऊ शकतो.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

18. आत्ता पिण्यापेक्षा काहीही चांगले नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

19. मी पिण्यासाठी जवळजवळ काहीही करेन.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

20. एक पेय घेणे आदर्श होईल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

21. मला आत्ता दारू वापरायची आहे. 22. जर मी आता मद्यपान केले तर मला कमी त्रास होईल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

23. मी मद्यपान करण्याच्या पद्धतींचा विचार करीत आहे.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

24. मला आत्ता करायचे आहे ते म्हणजे मद्यपान.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

25. या क्षणी पेय देणे बंद करणे कठीण होईल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

26. आतापासून, मी बराच वेळ न प्यायला जाऊ शकतो.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

27. आत्ता पिणे खूप समाधानकारक ठरणार नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

28. जर मी आत्ता दारू वापरली तर मला कमी त्रास होईल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

29. मला आत्ता पिण्यास आनंद होणार नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

30. जर मला मद्यपान करण्याची संधी मिळाली तर, मी असे म्हणतो की मी मद्यपान करतो.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

31. मी येथे काही असल्यास मी किती मद्यपान केले हे नियंत्रित करण्यास मी सक्षम नाही.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

32. आता अल्कोहोल वापरणे चांगले होईल.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

33. जर आत्ता मला थोडे मद्यपान केले असेल तर मी कदाचित ते प्यावे.

मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

34. जर मी आता मद्यपान केले तर मला थोडे अस्वस्थ वाटेल.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

35. मी आत्ता किती मद्यपान केले हे मी सहजपणे मर्यादित करू शकत होतो.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

36. मला आता अल्कोहोल वापरण्याची आवश्यकता नाही.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

37. जशी संधी मिळेल तशी मी पिईन.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

38. मला आत्ता पिण्याची इच्छा नाही.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

39. जर मी आता अल्कोहोल वापरत असेल तर मला चिंताग्रस्त वाटेल.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

40. मला आता प्यायला उद्युक्त नाही.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

41. मद्यपान केल्याने मला समाधान मिळणार नाही.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

42. मला वाटते की मी आत्ता दारू पिण्यास प्रतिकार करू शकतो.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

43. मद्यपान करण्याची संधी मिळवणे सोपे होईल.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

44. मी आत्ता अल्कोहोलची लालसा करतो.
मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

45. जर मला थोडे मद्यपान केले गेले तर मी ते लगेच पितो.
    मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

46. मद्यपान केल्याने मला चांगल्या मूडमध्ये आणता येईल.
    मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

47. माझ्या मद्यपान करण्याची तीव्र इच्छा खूपच शक्तीवान आहे.
    मजबूत असहमत ___: ___: ___: ___: ___: ___: ___ मजबूत सहमत

NAME	Group	Age (Years)	Gender	Marital Status	Religion	SES	EDUCATION
ALEXANDER	Active	19	Male	Unmarried	Christian	2	Intermediate
SANJAY PATIL	Active	43	Male	Married	Hindu	2	Graduate
RAJU	Active	34	Male	Married	Hindu	1	Middle
MARUTI	Active	45	Male	Married	Hindu	1	Middle
SANJEEV SANI	Active	40	Male	Married	Hindu	3	Graduate
BASAVRAJ	Active	42	Male	Married	Hindu	1	Primary
DHARESH BHAN	Active	30	Male	Married	Hindu	1	Intermediate
HANUMANTH K	Active	34	Male	Married	Hindu	1	Primary
RAJEEV K VALLPUKAR	Active	31	Male	Married	Hindu	2	Graduate
SOMSHEKHAR V	Active	40	Male	Unmarried	Hindu	1	Graduate
ROBIN P	Active	44	Male	Married	Christian	2	Graduate
SHIVANAND PATIL	Active	50	Male	Unmarried	Hindu	3	Grauate
MANJUNATH P	Active	33	Male	Unmarried	Hindu	1	Primary
FAZAL A	Active	40	Male	Married	Muslim	2	Intermediate
VIKTOR	Active	28	Male	Unmarried	Christian	3	Graduate
ADINATH	Active	35	Male	Married	Hindu	1	Primary
JAYESH V	Active	25	Male	Unmarried	Hindu	1	Primary
GURUBASAVVA	Active	50	Male	Married	Hindu	2	Primary
BASAPPA KODAGI	Active	45	Male	Married	Hindu	1	Primary
SURESH M	Active	40	Male	Unmarried	Hindu	2	Primary
RAJESH P	Active	30	Male	Married	Hindu	3	Graduate
RAJEEV K VALLPUKAR	Active	45	Male	Married	Hindu	1	Graduate
GOPAL	Active	30	Male	Married	Hindu	1	Graduate
DAVID J	Active	40	Male	Unmarried	Christian	3	Graduate
GOPINATH K	Active	20	Male	Unmarried	Hindu	1	Graduate
EMANUEL	Active	30	Male	Married	Hindu	2	Skilled

TANMAY	Active	30	Male	Married	Hindu	1	Graduate
VINAYAK M	Active	35	Male	Married	Hindu	1	Graduate
MANISH	Active	35	Male	Married	Hindu	2	Graduate
SAMEER AHMED	Active	38	Male	Married	Muslim	2	Primary
VINOD K MALKACHI	Active	33	Male	Unmarried	Hindu	1	Graduate
HARISH SAOJI	Active	45	Male	Married	Hindu	3	Primary
GOVINDAPPA J	Active	40	Male	Married	Hindu	3	Graduate
SAMAPPA	Active	30	Male	Married	Hindu	3	Primary
SATEYAPP K	Active	50	Male	Married	Hindu	3	Primary
YAMANAPPA	Active	48	Male	Married	Hindu	1	Illiterate
SIDDAROUD G	Active	55	Male	Married	Hindu	1	Primary
MAHANTESH K	Active	45	Male	Married	Hindu	1	Primary
Nandeappa	Sham	45	Male	Married	Hindu	1	Primary
Shivraj P 30M Unmarried	Sham	30	Male	Married	Hindu	1	Primary
Vijay K	Sham	45	Male	Married	Hindu	2	Graduate
Ravi Nayak	Sham	30	Male	Married	Hindu	2	Gradute
Hanumath	Sham	43	Male	Married	Hindu	1	Primary
Vitthal	Sham	25	Male	Unmarried	Hindu	1	Illiterate
Mrituanjy	Sham	35	Male	Married	Hindu	2	Primary
Ningappa	Sham	30	Male	Married	Hindu	2	Graduate
Raju	Sham	40	Male	Married	Hindu	1	Primary
Kiran Patil	Sham	24	Male	Unmarried	Hindu	1	Prmary
Lokesh	Sham	34	Male	Married	Hindu	1	Primary
Gurubasapa	Sham	46	Male	Married	Hindu	3	Graduate
Rajeev	Sham	35	Male	Married	Hindu	2	Graduate
Sunil	Sham	29	Male	Unmarried	Hindu	1	Primary
Sadashiv P	Sham	45	Male	Married	Hindu	3	Primary
Gangaram	Sham	28	Male	Married	Hindu	1	Primary
Dayanand	Sham	35	Male	Married	Hindu	2	Primary
Adinath	Sham	47	Male	Unmarried	Hindu	2	Graduate
Nagaraj	Sham	33	Male	Unmarried	Hindu	2	Graduate
Stephen	Sham	30	Male	Unmarried	Christian	2	Graduate
Anand R	Sham	33	Male	Married	Hindu	2	Graduate
Aditya	Sham	25	Male	Unmarried	Hindu	3	Graduate
Rajappa	Sham	28	Male	Unmarried	Hindu	3	Graduate
Hanumath	Sham	30	Male	Married	Hindu	3	Graduate
Rohit M	Sham	50	Male	Married	Hindu	2	Graduate
Sanjeev M	Sham	55	Male	Married	Hindu	2	Graduate
Ajay Patil	Sham	54	Male	Married	Hindu	1	Graduate
Sanjay M	Sham	28	Male	Married	Hindu	1	Graduate

Rajesh K	Sham	40	Male	Unmarried	Christian	2	Graduate
Jafar	Sham	40	Male	Married	Muslim	2	Primary
Dundappa M	Sham	25	Male	Unmarried	Hindu	1	Illiterate
Shivaji P	Sham	35	Male	Married	Hindu	2	Primary
Manjunath M	Sham	40	Male	Married	Hindu	2	Primary
Gauri Shankar	Sham	50	Male	Married	Hindu	2	Primary
Kailash M	Sham	28	Male	Married	Hindu	1	Primary
Sadashiv K	Sham	30	Male	Unmarried	Hindu	2	Primary
Yallesh	Sham	40	Male	Married	Hindu	1	Primary
Bharat K	Sham	50	Male	Unmarried	Hindu	3	Graduate

OCCUPATION	TOATAL YEARS OF CONSUMPTION	AGE OF ONSET	CO-MORBIDITIES	ALCOHOL	MAX ABSTIENCE PERIOD	PAST H/O IPD	H/O DELIRIUM	CIWA SCORE	LEVEL OF CONFIDENCE	SADQ
Skilled	2	17	None	Beer	0.1	2	0	2	3	Mild
Skiled	20	23	None	Beer	4 Days	2	0	0	3	Severe
Semi-Skilled	7	25	None	Whiskey	7 Days	0	0	4	2	Mod
Unskilled	15	25	Dm	Whiskey	0.2	1	1	2	4	Mod
Skilled	22	20	None	Whiskey	2Years	6	2	4	4	Severe
Unskilled	10	28	None	Whiskey	0.1	2	0	2	4	Moderate
Unskilled	8	22	None	Beer	0.2	2	0	4	3	Severe
Unskilled	10	24	None	Whiskey	10 Days	0	0	1	5	Severe
Skilled	10	21	None	Whiskey	10 Days	2	0	2	3	Moderate
Skilled	15	35	Dm/Htn	Beer	0.6	2	0	0	3	Mild
Skilled	10	34	None	Whiskey	0.4	0	0	2	1	Mild
Skilled	20	30	Dm	Whiskey	2	1	1	2	5	Moderate
Skilled	7	24	Thyroid	Beer	0.2	1	0	2	3	Mod
Skilled	5	35	Dm	Whiskey	0	0	0	1	4	Mod
Skilled	4	24	None	Whiskey	0.2	0	0	0	2	Severe
Unskilled	10	25	None	Beer	0.2	0	0	0	5	Severe
Skilled	3	22	None	Beer	0	0	0	1	2	Mild
Skilled	15	35	Dm	Whiskey	0.6	0	0	0	3	Mod
Skilled	20	25	Dm	Whiskey	0.2	1	1	1	5	Mod
Semi-Skiiled	10	30	None	Whiskey	0	0	0	1	2	Mild
Skilled	4	26	Htn	Beer	0	0	0	4	5	Moderate
Skilled	20	25	None	Whiskey	1	0	0	2	2	Mild
Skilled	10	20	None	Whiskey	0.6	0	0	2	5	Mild
Skilled	25	25	None	Whiskey	1	1	1	2	5	Mild
Student	4	16	None	Beer	0.2	1	0	2	5	Mild
Skilled	10	20	None	Beer	0.6	2	2	2	2	Moderate

Skilled	10	20	None	Beer	0.6	1	1	0	5	Mild
Skilled	10	25	None	Beer	0	1	1	0	4	Mild
Skilled	10	25	None	Beer	0.6	1	1	0	2	Mild
Semi-Skiiled	5	33	Dm	Beer	1	0	0	0	5	Mild
Skilled	23	10	Asthma	Whiskey/Beer	0.6	0	0	0	2	Moderate
Semi-Skiled	7	38	None	Beer	1	0	0	1	4	Mild
Semi-Skilled	10	30	None	Whiskey	1	0	0	0	2	Mild
Skilled	5	25	None	Whiskey	1	0	0	0	1	Moderate
Skilled	15	35	None	Local	1	0	0	0	1	Moderate
Unskilled	20	28	None	Whiskey	1	1	1	1	4	Moderate
Semi-Skilled	25	30	Htn	Whiskey	1	2	0	1	4	Mild
Skilled	10	35	None	Whiskey	0.6	1	0	0	4	Mild
Semi-Skilled	20	25	None	Whiskey	0.6	5	2	3	4	Moderate
Semi-Skilled	4	26	Psoriasis	Whiskey	0.1	2	0	2	5	Mild
Skilled	5	40	Dm	Whiskey	1	1	1	2	4	Moderate
Skilled	5	25	None	Whiskey	0	1		0	3	Mild
Semi-Skilled	7	35	None	Whiskey	0	1	1	1	3	Moderate
Semi-Skilled	3	22	None	Beer	0	1	0	0	3	Mild
Skilled	4	31	Hyper-Thy	Beer	0.2	0	1	2	4	Moderate
Skilled	4	26	Dm	Whiskey	0.3	0	0	1	3	Mild
Semi-Skilled	10	30	Htn	Whiskey	0.6	1	2	2	4	Severe
Semi-Skilled	5	19	None	Whiskey	0.5	0	1	4	4	Severe
Skilled	15	20	None	Whiskey	1	4	2	3	4	Severe
Skilled	0.6	45	Rvd	Whiskey	0	0	0	3	1	Moderate
Skilled	12	23	None	Beer	0.1	0	1	0	2	Severe
Semi-Skilled	4	28	None	Whiskey	0.6	1	0	1	2	Mild
Skilled	10	35	Htn	Whiskey	0.1	2	0	3	1	Mild
Semi-Skilled	4	24	None	Whiskey	0.2	0	1	3	4	Mild
Skilled	10	25	None	Beer	1	0	1	0	2	Mild
Semi-Skilled	20	27	None	Beer	0.6	0	0	2	5	Mild
Skilled	10	23	None	Whiskey	1	0	0	1	3	Mild
Skilled	5	25	None	Whiskey	0	0	0	0	3	Mild
Semi-Skilled	4	29	None	Whiskey	0	0	0	0	5	Mild
Skillled	4	21	None	Whiskey	0.6	0	0	0	3	Mild
Skilled	4	25	None	Whiskey	1	1	1	1	2	Mild
Skilled	7	23	Dm	Beer	0.6	1	2	2	1	Moderate
Skilled	30	21	Dm	Whiskey	2	2	2	2	4	Mild
Semi-Skiled	25	30	Htn	Whiskey	1	0	2	2	4	Moderate
Skilled	20	24	Dm,Htn	Whiskey	2	2	1	1	1	Mild
Skilled	8	20	None	Whiskey	0.6	0	1	1	3	Mild

Skilled	5	35	None	Whiskey	0.4	0	0	2	2	Moderate
Semi-Skiled	10	30	Thyroid	Beer	2	1	0	0	3	Mild
Semi-Skiled	3	22	None	Beer	0.2	0	0	0	1	Mild
Skilled	10	25	None	Beer	0.6	1	0	0	1	Mild
Skilled	10	30	None	Whiskey	1	1	0	2	3	Mild
Skilled	20	30	None	Whiskey	3	1	0	0	3	Mild
Semi-Skiled	4	24	None	Whiskey	3	0	0	1	2	Mild
Skilled	5	25	None	Beer	1	0	0	0	3	Mild
Unskilled	18	22	Dm	Whiskey	2	0	0	1	2	Mild
Skilled	10	40	None	Whiskey	1	0	0	1	4	Mild

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19
7	7	5	5	1	7	5	1	7	4	7	7	1	4	7	7	1	1	1
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Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38
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Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	ACQ-NOW: Total Score (Pre-Treatment)	ACQ-NOW: Compulsivity (Pre-Treatment)	ACQ-NOW: Expectancy (Pre-Treatment)	ACQ-NOW: Purposefulness (Pre-Treatment)	ACQ-NOW: Emotionality (Pre-Treatment)	Q1
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3	3	3	3	3	3	3	3	5	133	37	26	24	9	1
7	1	5	5	3	4	5	4	1	172	43	20	31	16	5
7	4	7	5	6	6	5	5	2	201	48	27	38	14	1
5	4	5	5	5	6	4	5	2	180	48	20	31	12	3
5	4	6	6	6	6	2	5	2	162	42	20	24	8	6
4	5	6	5	6	6	2	7	4	189	51	29	33	7	7
1	1	2	2	4	5	3	6	5	169	49	31	27	3	4
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4	4	4	4	3	3	3	4	4	206	61	30	33	14	3
1	4	7	3	7	5	2	1	5	222	60	31	47	11	3
1	1	4	3	5	4	3	3	5	200	46	34	47	13	3
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5	1	3	7	7	2	2	6	6	184	60	28	31	7	3
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4	1	1	1	1	2	2	1	1	155	44	21	28	12	4
5	5	1	5	6	5	4	6	2	218	59	30	43	16	2
3	2	2	3	2	4	3	2	2	127	32	20	24	10	2
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2	2	2	2	2	4	4	2	2	178	55	29	29	9	3
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3	3	3	3	3	4	3	4	3	146	32	27	25	11	3
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5	5	3	3	4	4	4	1	4	4	3	5	5	4	4	1	1	4	2
1	2	1	2	2	3	2	4	4	3	3	3	4	3	3	3	3	3	4
4	3	4	4	4	4	3	3	4	4	4	4	2	3	3	3	3	3	3
3	4	3	3	3	3	3	3	3	3	2	1	1	1	1	1	1	1	3
1	2	1	1	1	1	2	1	1	1	2	3	3	2	1	2	1	2	1
1	2	1	1	1	1	1	1	1	1	2	3	3	2	1	1	3	3	1
3	1	2	1	1	2	3	6	7	4	2	4	4	4	4	4	3	1	1
2	1	3	1	1	3	2	4	4	4	2	2	2	3	3	3	4	2	3
2	2	2	3	1	3	3	4	4	3	3	4	3	3	3	3	3	3	3
4	4	4	3	3	4	4	4	4	2	3	3	3	3	3	1	1	3	3
4	4	3	4	3	3	2	2	2	2	2	2	3	3	3	2	3	3	2
3	4	3	3	3	3	2	2	2	2	2	2	3	3	2	2	4	4	2
3	3	4	3	3	2	2	2	2	2	2	2	3	3	2	2	2	3	3
1	2	1	1	1	1	~~1~~	2	2	1	2	2	2	2	1	1	2	1	1
3	3	2	1	4	2	2	4	2	2	2	4	1	2	1	1	2	2	1
1	3	7	4	5	6	2	5	2	2	3	3	1	2	1	3	2	1	3
7	1	1	1	1	1	3	6	7	4	1	4	4	4	4	7	3	1	1
6	1	1	2	2	3	4	5	6	7	1	2	3	4	3	4	4	1	2
1	1	1	2	3	1	1	3	4	3	3	1	1	2	3	1	1	1	2
1	1	2	5	2	1	1	1	2	3	1	1	1	1	3	3	4	4	2
3	2	2	2	2	2	2	2	2	2	2	1	2	2	1	1	1	2	2
4	3	3	2	2	2	3	3	4	2	3	2	2	4	3	3	2	2	2
1	1	2	1	1	1	2	3	2	2	3	2	2	1	1	2	1	1	2
1	1	2	1	2	2	2	1	1	1	1	1	2	1	1	2	1	1	1
3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	3	1
2	3	2	4	4	4	3	4	4	4	3	4	4	3	3	4	4	3	2
2	3	1	4	4	4	4	3	3	3	3	2	2	3	3	4	4	4	1
4	3	3	3	4	4	4	4	4	3	3	3	2	3	3	4	3	2	2
5	6	5	4	4	4	4	4	4	4	4	4	3	4	2	6	6	3	4
5	5	3	5	5	4	4	5	5	5	5	4	4	4	3	3	3	4	4
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4	4
3	4	4	4	4	3	3	3	4	3	4	4	4	4	4	3	4	4	3
5	6	4	4	4	4	5	4	4	4	4	3	3	4	1	3	3	2	3
1	1	2	1	3	1	3	3	3	1	1	1	1	1	2	2	3	3	3

1	4	6	4	4	4	4	4	5	4	5	3	4	4	1	1	1	3	2
3	3	3	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2
2	1	1	2	2	3	1	3	3	1	1	1	1	2	3	4	2	3	5
2	2	2	2	1	3	1	1	3	1	1	1	2	1	3	4	2	2	2
2	1	3	3	2	3	1	1	1	1	3	3	3	3	4	4	4	4	3
1	1	1	2	1	3	2	1	2	1	3	3	2	2	4	4	4	4	4
1	2	1	2	1	3	2	1	3	1	2	3	2	2	4	3	2	4	5
1	2	1	2	2	2	2	1	1	1	1	4	1	2	1	3	1	2	2
3	3	1	2	1	4	4	5	5	2	2	2	2	3	3	4	4	4	3
4	5	5	6	7	7	7	7	6	2	3	2	2	3	3	3	4	3	4

Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	ACQ-NOW: Total Score (Post-Treatment)	ACQ-NOW: Compulsivity (Post-Treatment)	ACQ-NOW: Expectancy (Post-Treatment)	ACQ-NOW: Purposefulness (Post-Treatment)	ACQ-NOW: Emotionality (Post-Treatment)
1	1	1	1	1	1	1	1	88	18	7	38	3
1	5	7	1	1	1	1	1	98	17	7	32	3
6	6	6	6	1	1	1	1	163	41	19	33	11
3	3	3	3	3	3	3	5	110	29	20	20	8
3	4	4	2	3	5	3	1	148	36	16	30	11
4	7	3	4	4	5	5	1	149	37	19	28	8
4	5	3	5	6	4	3	1	156	41	16	26	10
4	5	4	5	6	2	4	1	148	37	19	23	7
4	7	4	7	6	2	7	3	177	45	28	34	6
1	1	2	4	5	3	3	2	112	27	24	21	4
2	1	3	2	3	1	3	2	125	36	27	23	6
3	4	4	4	4	2	2	4	136	41	16	27	7
1	3	1	1	1	1	1	1	82	18	10	25	7
1	2	1	1	1	3	3	1	81	17	16	19	5
2	2	1	1	1	1	1	1	89	22	10	18	6
2	2	1	1	1	2	1	1	97	17	16	18	10
3	2	3	3	4	4	4	3	125	35	17	24	8
3	3	3	3	3	3	3	4	146	43	23	23	8
1	1	7	7	1	3	4	4	127	32	14	34	5
1	1	7	7	1	1	3	4	125	41	10	29	4
1	6	5	6	7	2	2	2	129	39	15	19	9
1	1	1	1	1	1	2	2	127	34	18	22	10
1	5	4	3	3	1	1	6	174	51	20	25	7
1	1	1	1	1	1	1	1	101	31	12	19	8
1	1	1	1	1	1	1	1	88	25	15	17	3
1	1	1	1	1	1	1	1	57	16	8	9	4

3	4	4	3	1	1	1	2	82	22	10	14	6
1	2	1	1	1	1	2	2	70	21	10	11	4
1	1	1	1	2	2	1	1	143	39	21	28	10
2	1	2	4	5	4	3	4	118	29	21	23	7
2	1	2	2	3	3	2	2	112	25	20	21	10
4	3	3	3	3	3	3	3	156	42	20	26	12
2	2	2	2	1	1	3	2	148	48	17	24	7
2	2	2	3	3	3	3	3	103	19	15	22	11
2	3	3	4	4	4	4	4	176	54	26	29	9
1	1	2	1	1	1	2	1	140	51	26	21	7
1	2	3	3	4	3	1	1	98	24	21	21	4
2	2	3	3	2	3	2	2	97	25	19	19	4
2	1	1	2	5	5	4	7	140	40	17	26	11
3	2	2	1	4	2	3	3	133	31	24	23	10
3	3	3	2	3	4	4	3	142	36	23	26	10
2	2	2	4	3	3	4	4	136	40	18	24	10
4	2	2	4	2	2	3	2	136	43	21	21	7
4	2	3	4	2	2	4	2	137	40	22	24	7
3	3	3	2	3	2	3	2	116	32	21	18	8
1	1	1	1	1	1	1	1	80	20	18	14	5
1	1	2	3	3	3	3	4	116	32	22	18	7
2	1	2	3	4	4	5	5	121	34	19	17	10
2	1	1	1	1	4	3	1	120	32	12	23	11
2	3	3	2	3	4	2	1	132	32	16	22	11
1	4	5	7	3	4	2	1	100	25	14	18	7
2	3	2	1	2	4	1	1	105	37	9	19	4
2	1	2	2	3	1	1	2	78	20	10	15	6
2	3	3	3	3	2	2	2	127	37	17	24	9
2	3	3	3	3	2	1	1	99	24	17	19	6
1	1	1	1	2	2	2	2	79	19	16	17	3
2	3	3	2	2	2	2	3	115	31	19	22	5
3	4	4	2	4	3	4	4	139	36	19	23	9
1	1	1	1	2	1	2	2	121	32	19	24	7
2	2	4	3	3	4	3	3	145	39	21	26	9
4	4	4	4	4	4	4	4	175	47	24	31	12
4	4	4	4	4	4	3	3	182	57	19	29	13
4	4	4	4	4	4	3	4	174	49	22	28	12
3	3	3	3	4	4	4	1	158	42	24	27	10
2	3	4	3	3	3	4	2	157	47	25	25	11
3	5	5	4	5	4	4	4	124	26	20	23	7

4	5	5	4	3	5	6	4	180	55	32	29	10
2	2	2	2	1	1	2	2	82	22	17	13	4
2	2	1	4	4	4	1	2	108	18	21	25	10
1	3	2	4	3	3	2	1	107	29	15	24	4
2	2	3	2	1	2	2	2	107	28	14	17	7
2	2	3	3	3	1	1	1	109	32	13	19	7
3	4	4	3	4	3	1	1	120	32	15	20	8
4	4	1	1	1	3	2	2	98	29	13	13	5
3	3	2	1	1	1	1	3	118	31	14	23	11
2	3	1	1	1	1	2	3	196	67	25	33	14

Group	Age (Years)	Gender	Marital Status	Religion	SES	Education	Occupation	Total Years Of Consumption	Age Of Onset (Years)	Co-Morbidities	Primary Form of Alcohol	Maximum Abstinence Period (Years)	Past H/O Admission	H/O Delirium	CIWA Score	Level Of Confidence	SADQ	ACQ-NOW: Total Score (Pre-Treatment)	ACQ-NOW: Compulsivity (Pre-Treatment)	ACQ-NOW: Expectancy (Pre-Treatment)	ACQ-NOW: Purposefulness (Pre-Treatment)	ACQ-NOW: Emotionality (Pre-Treatment)	ACQ-NOW: Total Score (Post-Treatment)	ACQ-NOW: Compulsivity (Post-Treatment)	ACQ-NOW: Expectancy (Post-Treatment)	ACQ-NOW: Purposefulness (Post-Treatment)	ACQ-NOW: Emotionality (Post-Treatment)	Change in ACQ-NOW: Total Score	Change in ACQ-NOW: Compulsivity	Change in ACQ-NOW: Expectancy	Change in ACQ-NOW: Purposefulness	Change in ACQ-NOW: Emotionality	Percent Change in ACQ-NOW: Total Score	Percent Change in ACQ-NOW: Compulsivity	Percent Change in ACQ-NOW: Expectancy	Percent Change in ACQ-NOW: Purposefulnes	Percent Change in ACQ-NOW: Emotionality
Active	19	Male	Unmarried	Christian	Middle	Intermediate	Skilled	2	17	None	Beer	0.1	Yes	No	2	Moderately Confident	Mild	188	44	24	56	3	88	18	7	38	3	-100	-26	-17	-18	0	-53.2	-59.1	-70.8	-32.1	0.0
Active	43	Male	Married	Hindu	Middle	Graduate	Skilled	20	23	None	Beer	0.01	Yes	No	0	Moderately Confident	Severe	136	27	9	43	4	98	17	7	32	3	-38	-10	-2	-11	-1	-27.9	-37.0	-22.2	-25.6	-25.0
Active	34	Male	Married	Hindu	Lower	Middle	Semi-Skilled	7	25	None	IMFL	0.02	No	No	4	Little Confidant	Moderate	201	58	21	42	17	163	41	19	33	11	-38	-17	-2	-9	-6	-18.9	-29.3	-9.5	-21.4	-35.3
Active	45	Male	Married	Hindu	Lower	Middle	Unskilled	15	25	DM	IMFL	0.2	Yes	Yes	2	Very Confident	Moderate	133	37	26	24	9	110	29	20	20	8	-23	-8	-6	-4	-1	-17.3	-21.6	-23.1	-16.7	-11.1
Active	40	Male	Married	Hindu	Upper	Graduate	Skilled	22	20	None	IMFL	2	Yes	Yes	4	Very Confident	Severe	172	43	20	31	16	148	36	16	30	11	-24	-7	-4	-1	-5	-14.0	-16.3	-20.0	-3.2	-31.3
Active	42	Male	Married	Hindu	Lower	Primary	Unskilled	10	28	None	IMFL	0.1	Yes	No	2	Very Confident	Moderate	201	48	27	38	14	149	37	19	28	8	-52	-11	-8	-10	-6	-25.9	-22.9	-29.6	-26.3	-42.9
Active	30	Male	Married	Hindu	Lower	Intermediate	Unskilled	8	22	None	Beer	0.2	Yes	No	4	Moderately Confident	Severe	180	48	20	31	12	156	41	16	26	10	-24	-7	-4	-5	-2	-13.3	-14.6	-20.0	-16.1	-16.7
Active	34	Male	Married	Hindu	Lower	Primary	Unskilled	10	24	None	IMFL	0.03	No	No	1	Extremely Confident	Severe	162	42	20	24	8	148	37	19	23	7	-14	-5	-1	-1	-1	-8.6	-11.9	-5.0	-4.2	-12.5
Active	31	Male	Married	Hindu	Middle	Graduate	Skilled	10	21	None	IMFL	0.03	Yes	No	2	Moderately Confident	Moderate	189	51	29	33	7	177	45	28	34	6	-12	-6	-1	1	-1	-6.3	-11.8	-3.4	3.0	-14.3
Active	40	Male	Unmarried	Hindu	Lower	Graduate	Skilled	15	35	DM+HTN	Beer	0.6	Yes	No	0	Moderately Confident	Mild	169	49	31	27	3	112	27	24	21	4	-57	-22	-7	-6	1	-33.7	-44.9	-22.6	-22.2	33.3
Active	44	Male	Married	Christian	Middle	Graduate	Skilled	10	34	None	IMFL	0.4	No	No	2	No Confidence	Mild	214	60	34	34	14	125	36	27	23	6	-89	-24	-7	-11	-8	-41.6	-40.0	-20.6	-32.4	-57.1
Active	50	Male	Unmarried	Hindu	Upper	Graduate	Skilled	20	30	DM	IMFL	2	Yes	Yes	2	Extremely Confident	Moderate	206	61	30	33	14	136	41	16	27	7	-70	-20	-14	-6	-7	-34.0	-32.8	-46.7	-18.2	-50.0
Active	33	Male	Unmarried	Hindu	Lower	Primary	Skilled	7	24	yroid Disord	Beer	0.2	Yes	No	2	Moderately Confident	Moderate	222	60	31	47	11	82	18	10	25	7	-140	-42	-21	-22	-4	-63.1	-70.0	-67.7	-46.8	-36.4
Active	40	Male	Married	Muslim	Middle	Intermediate	Skilled	5	35	DM	IMFL	0	No	No	1	Very Confident	Moderate	200	46	34	47	13	81	17	16	19	5	-119	-29	-18	-28	-8	-59.5	-63.0	-52.9	-59.6	-61.5
Active	28	Male	Unmarried	Christian	Upper	Graduate	Skilled	4	24	None	IMFL	0.2	No	No	0	Little Confidant	Severe	205	50	25	46	13	89	22	10	18	6	-116	-28	-15	-28	-7	-56.6	-56.0	-60.0	-60.9	-53.8
Active	35	Male	Married	Hindu	Lower	Primary	Unskilled	10	25	None	Beer	0.2	No	No	0	Extremely Confident	Severe	213	43	34	38	14	97	17	16	18	10	-116	-26	-18	-20	-4	-54.5	-60.5	-52.9	-52.6	-28.6
Active	25	Male	Unmarried	Hindu	Lower	Primary	Skilled	3	22	None	Beer	0	No	No	1	Little Confidant	Mild	234	58	39	44	15	125	35	17	24	8	-109	-23	-22	-20	-7	-46.6	-39.7	-56.4	-45.5	-46.7
Active	50	Male	Married	Hindu	Middle	Primary	Skilled	15	35	DM	IMFL	0.6	No	No	0	Moderately Confident	Moderate	212	59	29	37	13	146	43	23	23	8	-66	-16	-6	-14	-5	-31.1	-27.1	-20.7	-37.8	-38.5
Active	45	Male	Married	Hindu	Lower	Primary	Skilled	20	25	DM	IMFL	0.2	Yes	Yes	1	Extremely Confident	Moderate	191	50	28	47	7	127	32	14	34	5	-64	-18	-14	-13	-2	-33.5	-36.0	-50.0	-27.7	-28.6
Active	40	Male	Unmarried	Hindu	Middle	Primary	Semi-Skilled	10	30	None	IMFL	0	No	No	1	Little Confidant	Mild	184	60	28	31	7	125	41	10	29	4	-59	-19	-18	-2	-3	-32.1	-31.7	-64.3	-6.5	-42.9
Active	30	Male	Married	Hindu	Upper	Graduate	Skilled	4	26	HTN	Beer	0	No	No	4	Extremely Confident	Moderate	141	35	26	22	15	129	39	15	19	9	-12	4	-11	-3	-6	-8.5	11.4	-42.3	-13.6	-40.0
Active	45	Male	Married	Hindu	Lower	Graduate	Skilled	20	25	None	IMFL	1	No	No	2	Little Confidant	Mild	169	50	29	22	10	127	34	18	22	10	-42	-16	-11	0	0	-24.9	-32.0	-37.9	0.0	0.0
Active	30	Male	Married	Hindu	Lower	Graduate	Skilled	10	20	None	IMFL	0.6	No	No	2	Extremely Confident	Mild	201	49	30	37	15	174	51	20	25	7	-27	2	-10	-12	-8	-13.4	4.1	-33.3	-32.4	-53.3
Active	40	Male	Unmarried	Christian	Upper	Graduate	Skilled	25	25	None	IMFL	1	Yes	Yes	2	Extremely Confident	Mild	170	54	23	33	5	101	31	12	19	8	-69	-23	-11	-14	3	-40.6	-42.6	-47.8	-42.4	60.0
Active	20	Male	Unmarried	Hindu	Lower	Graduate	Student	4	16	None	Beer	0.2	Yes	No	2	Extremely Confident	Mild	168	56	21	26	6	88	25	15	17	3	-80	-31	-6	-9	-3	-47.6	-55.4	-28.6	-34.6	-50.0

Active	30	Male	Married	Hindu	Middle	Middle	Skilled	10	20	None	Beer	0.6	Yes	Yes	2	Little Confidant	Moderate	153	44	18	30	9	57	16	8	9	4	-96	-28	-10	-21	-5	-62.7	-63.6	-55.6	-70.0	-55.6
Active	30	Male	Married	Hindu	Lower	Graduate	Skilled	10	20	None	Beer	0.6	Yes	Yes	0	Extremely Confident	Mild	150	31	19	32	8	82	22	10	14	6	-68	-9	-9	-18	-2	-45.3	-29.0	-47.4	-56.3	-25.0
Active	35	Male	Married	Hindu	Lower	Graduate	Skilled	10	25	None	Beer	0	Yes	Yes	0	Very Confident	Mild	145	38	23	23	9	70	21	10	11	4	-75	-17	-13	-12	-5	-51.7	-44.7	-56.5	-52.2	-55.6
Active	35	Male	Married	Hindu	Middle	Graduate	Skilled	10	25	None	Beer	0.6	Yes	Yes	0	Little Confidant	Mild	155	44	21	28	12	143	39	21	28	10	-12	-5	0	0	-2	-7.7	-11.4	0.0	0.0	-16.7
Active	38	Male	Married	Muslim	Middle	Primary	Semi-Skilled	5	33	DM	Beer	1	No	No	0	Extremely Confident	Mild	218	59	30	43	16	118	29	21	23	7	-100	-30	-9	-20	-9	-45.9	-50.8	-30.0	-46.5	-56.3
Active	33	Male	Unmarried	Hindu	Lower	Graduate	Skilled	23	10	Others	IMFL	0.6	No	No	0	Little Confidant	Moderate	127	32	20	24	10	112	25	20	21	10	-15	-7	0	-3	0	-11.8	-21.9	0.0	-12.5	0.0
Active	45	Male	Married	Hindu	Upper	Primary	Semi-Skilled	7	38	None	Beer	1	No	No	1	Very Confident	Mild	175	49	21	28	14	156	42	20	26	12	-19	-7	-1	-2	-2	-10.9	-14.3	-4.8	-7.1	-14.3
Active	40	Male	Married	Hindu	Upper	Graduate	Semi-Skilled	10	30	None	IMFL	1	No	No	0	Little Confidant	Mild	178	55	29	29	9	148	48	17	24	7	-30	-7	-12	-5	-2	-16.9	-12.7	-41.4	-17.2	-22.2
Active	30	Male	Married	Hindu	Upper	Primary	Skilled	5	25	None	IMFL	1	No	No	0	No Confidence	Moderate	155	35	27	32	13	103	19	15	22	11	-52	-16	-12	-10	-2	-33.5	-45.7	-44.4	-31.3	-15.4
Active	50	Male	Married	Hindu	Upper	Primary	Skilled	15	35	None	CML	1	No	No	0	No Confidence	Moderate	197	60	31	31	12	176	54	26	29	9	-21	-6	-5	-2	-3	-10.7	-10.0	-16.1	-6.5	-25.0
Active	48	Male	Married	Hindu	Lower	Illiterate	Unskilled	20	28	None	IMFL	1	Yes	Yes	1	Very Confident	Moderate	176	58	28	31	8	140	51	26	21	7	-36	-7	-2	-10	-1	-20.5	-12.1	-7.1	-32.3	-12.5
Active	55	Male	Married	Hindu	Lower	Primary	Semi-Skilled	25	30	HTN	IMFL	1	Yes	No	1	Very Confident	Mild	103	24	19	21	4	98	24	21	21	4	-5	0	2	0	0	-4.9	0.0	10.5	0.0	0.0
Active	45	Male	Married	Hindu	Lower	Primary	Skilled	10	35	None	IMFL	0.6	Yes	No	0	Very Confident	Mild	91	23	18	19	4	97	25	19	19	4	6	2	1	0	0	6.6	8.7	5.6	0.0	0.0
Sham	45	Male	Married	Hindu	Lower	Primary	Semi-Skilled	20	25	None	IMFL	0.6	Yes	Yes	3	Very Confident	Moderate	159	43	22	27	12	140	40	17	26	11	-19	-3	-5	-1	-1	-11.9	-7.0	-22.7	-3.7	-8.3
Sham	30	Male	Married	Hindu	Lower	Primary	Semi-Skilled	4	26	Others	IMFL	0.1	Yes	No	2	Extremely Confident	Mild	146	32	27	25	11	133	31	24	23	10	-13	-1	-3	-2	-1	-8.9	-3.1	-11.1	-8.0	-9.1
Sham	45	Male	Married	Hindu	Middle	Graduate	Skilled	5	40	DM	IMFL	1	Yes	Yes	2	Very Confident	Moderate	162	43	23	31	11	142	36	23	26	10	-20	-7	0	-5	-1	-12.3	-16.3	0.0	-16.1	-9.1
Sham	30	Male	Married	Hindu	Middle	Graduate	Skilled	5	25	None	IMFL	0	Yes		0	Moderately Confident	Mild	217	67	28	35	13	136	40	18	24	10	-81	-27	-10	-11	-3	-37.3	-40.3	-35.7	-31.4	-23.1
Sham	43	Male	Married	Hindu	Lower	Primary	Semi-Skilled	7	35	None	IMFL	0	Yes	Yes	1	Moderately Confident	Moderate	188	60	32	29	8	136	43	21	21	7	-52	-17	-11	-8	-1	-27.7	-28.3	-34.4	-27.6	-12.5
Sham	25	Male	Unmarried	Hindu	Lower	Illiterate	Semi-Skilled	3	22	None	Beer	0	Yes	No	0	Moderately Confident	Mild	157	45	24	26	8	137	40	22	24	7	-20	-5	-2	-2	-1	-12.7	-11.1	-8.3	-7.7	-12.5
Sham	35	Male	Married	Hindu	Middle	Primary	Skilled	4	31	hyroid Disord	Beer	0.2	No	Yes	2	Very Confident	Moderate	145	40	25	22	11	116	32	21	18	8	-29	-8	-4	-4	-3	-20.0	-20.0	-16.0	-18.2	-27.3
Sham	30	Male	Married	Hindu	Middle	Graduate	Skilled	4	26	DM	IMFL	0.3	No	No	1	Moderately Confident	Mild	201	61	25	34	14	80	20	18	14	5	-121	-41	-7	-20	-9	-60.2	-67.2	-28.0	-58.8	-64.3
Sham	40	Male	Married	Hindu	Lower	Primary	Semi-Skilled	10	30	HTN	IMFL	0.6	Yes	Yes	2	Very Confident	Severe	139	37	23	25	8	116	32	22	18	7	-23	-5	-1	-7	-1	-16.5	-13.5	-4.3	-28.0	-12.5
Sham	24	Male	Unmarried	Hindu	Lower	Primary	Semi-Skilled	5	19	None	IMFL	0.5	No	Yes	4	Very Confident	Severe	200	48	34	39	13	121	34	19	17	10	-79	-14	-15	-22	-3	-39.5	-29.2	-44.1	-56.4	-23.1
Sham	34	Male	Married	Hindu	Lower	Primary	Skilled	15	20	None	IMFL	1	Yes	Yes	3	Very Confident	Severe	132	36	15	25	11	120	32	12	23	11	-12	-4	-3	-2	0	-9.1	-11.1	-20.0	-8.0	0.0
Sham	46	Male	Married	Hindu	Upper	Graduate	Skilled	0.6	45	Others	IMFL	0	No	No	3	No Confidence	Moderate	135	31	18	23	11	132	32	16	22	11	-3	1	-2	-1	0	-2.2	3.2	-11.1	-4.3	0.0
Sham	35	Male	Married	Hindu	Middle	Graduate	Skilled	12	23	None	Beer	0.1	No	Yes	0	Little Confidant	Severe	108	28	14	20	7	100	25	14	18	7	-8	-3	0	-2	0	-7.4	-10.7	0.0	-10.0	0.0
Sham	29	Male	Unmarried	Hindu	Lower	Primary	Semi-Skilled	4	28	None	IMFL	0.6	Yes	No	1	Little Confidant	Mild	123	39	10	25	5	105	37	9	19	4	-18	-2	-1	-6	-1	-14.6	-5.1	-10.0	-24.0	-20.0
Sham	45	Male	Married	Hindu	Upper	Primary	Skilled	10	35	HTN	IMFL	0.1	Yes	No	3	No Confidence	Mild	192	57	30	32	12	78	20	10	15	6	-114	-37	-20	-17	-6	-59.4	-64.9	-66.7	-53.1	-50.0
Sham	28	Male	Married	Hindu	Lower	Primary	Semi-Skilled	4	24	None	IMFL	0.2	No	Yes	3	Very Confident	Mild	173	51	28	30	10	127	37	17	24	9	-46	-14	-11	-6	-1	-26.6	-27.5	-39.3	-20.0	-10.0
Sham	35	Male	Married	Hindu	Middle	Primary	Skilled	10	25	None	Beer	1	No	Yes	0	Little Confidant	Mild	167	47	27	28	10	99	24	17	19	6	-68	-23	-10	-9	-4	-40.7	-48.9	-37.0	-32.1	-40.0
Sham	47	Male	Unmarried	Hindu	Middle	Graduate	Semi-Skilled	20	27	None	Beer	0.6	No	No	2	Extremely Confident	Mild	160	47	29	25	8	79	19	16	17	3	-81	-28	-13	-8	-5	-50.6	-59.6	-44.8	-32.0	-62.5
Sham	33	Male	Unmarried	Hindu	Middle	Graduate	Skilled	10	23	None	IMFL	1	No	No	1	Moderately Confident	Mild	161	42	26	30	9	115	31	19	22	5	-46	-11	-7	-8	-4	-28.6	-26.2	-26.9	-26.7	-44.4

Sham	30	Male	Unmarried	Christian	Middle	Graduate	Skilled	5	25	None	IMFL	0	No	No	0	Moderately Confident	Mild	171	42	25	28	12	139	36	19	23	9	-32	-6	-6	-5	-3	-18.7	-14.3	-24.0	-17.9	-25.0
Sham	33	Male	Married	Hindu	Middle	Graduate	Semi-Skilled	4	29	None	IMFL	0	No	No	0	Extremely Confident	Mild	164	43	27	28	11	121	32	19	24	7	-43	-11	-8	-4	-4	-26.2	-25.6	-29.6	-14.3	-36.4
Sham	25	Male	Unmarried	Hindu	Upper	Graduate	Skilled	4	21	None	IMFL	0.6	No	No	0	Moderately Confident	Mild	181	47	25	31	12	145	39	21	26	9	-36	-8	-4	-5	-3	-19.9	-17.0	-16.0	-16.1	-25.0
Sham	28	Male	Unmarried	Hindu	Upper	Graduate	Skilled	4	25	None	IMFL	1	Yes	Yes	1	Little Confidant	Mild	205	58	27	34	14	175	47	24	31	12	-30	-11	-3	-3	-2	-14.6	-19.0	-11.1	-8.8	-14.3
Sham	30	Male	Married	Hindu	Upper	Graduate	Skilled	7	23	DM	Beer	0.6	Yes	Yes	2	No Confidence	Moderate	205	55	32	35	13	182	57	19	29	13	-23	2	-13	-6	0	-11.2	3.6	-40.6	-17.1	0.0
Sham	50	Male	Married	Hindu	Middle	Graduate	Skilled	30	21	DM	IMFL	2	Yes	Yes	2	Very Confident	Mild	198	57	28	31	14	174	49	22	28	12	-24	-8	-6	-3	-2	-12.1	-14.0	-21.4	-9.7	-14.3
Sham	55	Male	Married	Hindu	Middle	Graduate	Semi-Skilled	25	30	HTN	IMFL	1	No	Yes	2	Very Confident	Moderate	164	45	25	27	10	158	42	24	27	10	-6	-3	-1	0	0	-3.7	-6.7	-4.0	0.0	0.0
Sham	54	Male	Married	Hindu	Lower	Graduate	Skilled	20	24	DM+HTN	IMFL	2	Yes	Yes	1	No Confidence	Mild	218	63	32	36	15	157	47	25	25	11	-61	-16	-7	-11	-4	-28.0	-25.4	-21.9	-30.6	-26.7
Sham	28	Male	Married	Hindu	Lower	Graduate	Skilled	8	20	None	IMFL	0.6	No	Yes	1	Moderately Confident	Mild	259	66	40	47	18	124	26	20	23	7	-135	-40	-20	-24	-11	-52.1	-60.6	-50.0	-51.1	-61.1
Sham	40	Male	Unmarried	Christian	Middle	Graduate	Skilled	5	35	None	IMFL	0.4	No	No	2	Little Confidant	Moderate	208	60	35	32	14	180	55	32	29	10	-28	-5	-3	-3	-4	-13.5	-8.3	-8.6	-9.4	-28.6
Sham	40	Male	Married	Muslim	Middle	Primary	Semi-Skilled	10	30	hyroid Disord	Beer	2	Yes	No	0	Moderately Confident	Mild	98	31	19	16	4	82	22	17	13	4	-16	-9	-2	-3	0	-16.3	-29.0	-10.5	-18.8	0.0
Sham	25	Male	Unmarried	Hindu	Lower	Illiterate	Semi-Skilled	3	22	None	Beer	0.2	No	No	0	No Confidence	Mild	111	25	17	27	9	108	18	21	25	10	-3	-7	4	-2	1	-2.7	-28.0	23.5	-7.4	11.1
Sham	35	Male	Married	Hindu	Middle	Primary	Skilled	10	25	None	Beer	0.6	Yes	No	0	No Confidence	Mild	122	34	17	27	5	107	29	15	24	4	-15	-5	-2	-3	-1	-12.3	-14.7	-11.8	-11.1	-20.0
Sham	40	Male	Married	Hindu	Middle	Primary	Skilled	10	30	None	IMFL	1	Yes	No	2	Moderately Confident	Mild	137	37	18	22	13	107	28	14	17	7	-30	-9	-4	-5	-6	-21.9	-24.3	-22.2	-22.7	-46.2
Sham	50	Male	Married	Hindu	Middle	Primary	Skilled	20	30	None	IMFL	3	Yes	No	0	Moderately Confident	Mild	123	35	17	20	7	109	32	13	19	7	-14	-3	-4	-1	0	-11.4	-8.6	-23.5	-5.0	0.0
Sham	28	Male	Married	Hindu	Lower	Primary	Semi-Skilled	4	24	None	IMFL	3	No	No	1	Little Confidant	Mild	127	36	18	23	4	120	32	15	20	8	-7	-4	-3	-3	4	-5.5	-11.1	-16.7	-13.0	100.0
Sham	30	Male	Unmarried	Hindu	Middle	Primary	Skilled	5	25	None	Beer	1	No	No	0	Moderately Confident	Mild	112	34	20	16	4	98	29	13	13	5	-14	-5	-7	-3	1	-12.5	-14.7	-35.0	-18.8	25.0
Sham	40	Male	Married	Hindu	Lower	Primary	Unskilled	18	22	DM	IMFL	2	No	No	1	Little Confidant	Mild	134	38	16	30	11	118	31	14	23	11	-16	-7	-2	-7	0	-11.9	-18.4	-12.5	-23.3	0.0
Sham	50	Male	Unmarried	Hindu	Upper	Graduate	Skilled	10	40	None	IMFL	1	No	No	1	Very Confident	Mild	197	64	36	35	11	196	67	25	33	14	-1	3	-11	-2	3	-0.5	4.7	-30.6	-5.7	27.3