

# **Shacklefree** **Training the** **Trainers** **Handbook**

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# Shacklefree Training the Trainers Handbook

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It has been a pleasant journey through the field of mental health and addiction prevention. I have always seen myself as a strong proponent of community based prevention initiatives in the field of mental health; relatively, my role in the field of substance and non substance addiction and its prevention has been small, limited to IPH initiatives like Prakashdoot, and partnerships with organizations such as Responsible Netism. My Ph.D. scholars have taken this interest deeper and completed, or are in the process of completing, interesting work in this area, which will continue to add to the scientific literature.

I think that is the mark of a vibrant new area of work, when it continues to spawn more expertise and becomes a living system, growing and flourishing even after a specific project draws to a close.

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- ▼ National Core Committee Member and IEC Chair, AACCI.

# Preface

Shacklefree is a freely available Training Resource that has grown out of a novel project funded by the RAGAP Rotary Global Grant for Addiction Prevention. RAGAP is an acronym for Rotary Action Group for Addiction Prevention. A quick visit to the website **<https://www.rag-ap.org>** will give a clear idea of how quickly the core idea has grown from strength to strength, and garnered support across national borders. The core idea for substance prevention grew out of the Unplugged model prevalent in Europe (EUDAP), where substance prevention initiatives were in fact woven into the school curriculum, and the program was largely teacher driven. An attempt to replicate the same in India quickly showed up the difficulties of such an exercise, since Indian school structures are very different and evaluation oriented, and teachers are already very burdened with academic as well as extra academic duties. At the same time, the dire need for prevention to addiction of non substance or behavioural addictions was also becoming very apparent in India by the second half of the second decade of the 21st Century.

Rotary Club Ghatkopar along with a number of contributing clubs in Belgium initiated the Shacklefree project with the Department of Psychology at SNDT Women's University, New Marine Lines. Not only was the goal to create training manuals and resources which could be used for young people across the country; a major USP of this project was to involve students completely into the process.

A great deal of the material in the set of Shacklefree manuals is created with the help of Masters students and alumni of the Department of Psychology at Churchgate.

They were inducted into the project as research assistants because they would speak the same language, use the same idiom and examples and illustrations as young people would. They would be able to reach the young audience best, more so than older, more experienced psychologists would, since they effectively belong the same generation.

The focus of this project is therefore prevention of both, addictions to substances, such as alcohol, nicotine, caffeine and a number of other drugs of abuse; and also non substance or behavioural addictions such as overuse of smartphones, excessive gaming, excessive and unhealthy use of the internet, taking selfies, and of course excessive and risky use of social media. The Diagnostic and Statistical Manual of Mental Disorders has recognized Gaming addiction as a behavioral addiction, replicating the basic addiction graph of tolerance, withdrawal and craving. The user continues the behaviour in spite of continuous and recurrent social and psychological problems caused by the addiction. They are well aware that the behaviour needs to stop, but they seem unable to cease.

Interestingly, the underlying brain bases of the addictive behaviour also appears similar, whether the addiction is to certain chemicals, or to behavioural regimens which have become established in the addict's repertoire. And of course, an equal amount of damage results from both forms of addictions.

These young contributors would be able to strike the right chord, use the right tone with young recipients of the Training Module, and therefore prove more effective than any other trainers or material writers.



# Introduction

The set of three volumes created for Shacklefree constitutes this Training of Trainers Handbook, which actually helps the potential trainers walk through the various sessions of the program. The Shacklefree program is designed to be delivered in a single day. This Handbook allows for a “cafeteria” approach, permitting potential trainers to pick the topic for training for the day, perhaps after consulting the stakeholders and doing a needs analysis, and then assemble an appropriate program choosing from the components offered herein. It is assumed of course, that the Trainers will be trained Counseling Psychologists and will be able to choose wisely and well.

The same program could then be repeated after a time span of about six months, using other material from the resource books, without repeating things said earlier. The idea is to drive home the message, in young people's lingo, that "addiction is not cool" and is not necessary at all in order to lead a happy and satisfied life. Research in Universal prevention has shown, as cited elsewhere, that the most effective programs target attitude-change, are life skills driven (ie. with prevention as well as health promotion content) and are not one shot programs but repeated after short durations with the same audience. This Handbook ensures that each Training session is fresh and interesting.

Time taken for all activities is specified in each case, and the Trainer may pick and choose exactly what they would like to do with a particular group on a particular day, depending on the age group of the audience, the awareness level about the issue at hand, and the general interest evinced by them.

The key to Shacklefree is that it is not content heavy, but focuses on attitudes towards addiction, and values that drive health and mental health. The program drives home the message that prevention is not only better than cure, it is in fact the only answer.

This ToT handbook is prepared in such a way, that if a Counsellor should wish to use the exercises outlined within for an activity that is not entirely focused on addiction prevention, that too should be easily possible. Eg. if they feel that a certain group lacks assertiveness, which is an important Life Skill in itself, they will train the students in it.

This may lead to a healthy outcome in areas pertaining to addiction, but also to battle bullying, formation of cliques, and even perhaps mass copying in examinations. Hence, the material is prepared in such a manner that it can be used also for other types of trainings not only in this specific area, but activities pertaining to school, college and community life in general.

This Handbook can also prove useful to other stakeholders in the area of mental health, provided they have a basic core training up to a Masters level. The purpose of this Handbook is not to train in basic Counselling skills, since it is assumed that a Masters level Psychologist would already possess these. They will move to a higher level of training implementation using the routines outlined herein.

Additionally, this ToT Handbook goes hand in hand with TWO other volumes; one is the Facilitator's Manual of Shacklefree and the other is a Resource Package for Addiction Prevention.

To sum up, this Handbook focuses on the general design of ToT sessions, the methodology to be used therein and also some simple tips for trainers to deliver the material in the best possible way.

**The key message that the Shacklefree package attempts to deliver is that of SELF REGULATION. The slippery slope from need to want to craving, and finally the fall into the quicksand of addiction is one of no return. And so it is important to arrest the slide well in time.** As one reaches the stage of craving, internal markers of self awareness about the downslide start giving way to biological underpinnings, and then it may be too late to draw back.

# Life Skills and Addiction Prevention

Young people in India and the world over are exposed to a multitude of environmental influences that make them vulnerable to many health and mental health challenges. School students, adolescents and youth live in a world which challenges their resilience, and renders them vulnerable to high risk behaviours.

It is a well known fact that controlling supply of sources of addiction, whether they are chemical, such as alcohol or drugs, or virtual, such as smartphones or the internet, can succeed only to a limited extent. Disturbing emotions, lifestyle choices and peer pressure are just some of the factors that places them at risk. By far the more practical strategy is one of demand reduction.

The latter is possible only if the young person is exposed to messages from a very young age, and makes them resilient, self reliant, and strong, coping individuals. This is possible by building life skills at an early age. It is a well known fact that peer pressure helps to stigmatise refusal to join the activities popular among the age group, which may include experimenting with alcohol and drugs, as well as unhealthy online behaviours and excessive social media use. Developing Life Skills is one of the few evidence based ways in which a young person will be able to withstand such pressures and in fact create a sort of reverse stigma for those indulging in such behaviours that could ultimately lead to poor health and mental health.

The World Health Organization (WHO) defines Life Skills as "the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the

demands and challenges of everyday life”. Life Skills thus facilitate physical and mental and emotional well being in an individual. UNICEF defines Life Skills based education as “a behaviour change approach focusing on knowledge, attitudes and skills and contributing to education for development.”

Listed below are Eight core Life Skills emphasized in Shacklefree workshops for young people. The emphasis on knowledge is present in this material, but it is relatively lower than the emphasis on Attitudes and Skills. We know that the World Wide Web has brought Knowledge to the fingertips of most people all over the globe, sometimes to their benefit and often to their detriment. Hence, material such as research reviews and powerpoint slides have been included in this material to some extent, but the major emphasis is on Attitude and Skill Building.

▼ **Self awareness** - This life skill helps us recognize who we are, our own strengths and weaknesses. It helps us understand and accept ourselves better.

▼ **Decision making** - Helps a person to weigh the various options available to them, and gauge the advantages and disadvantages of each. The person becomes aware of the effects different decisions are likely to have on their lives.

▼ **Critical Thinking** - Helps us analyze information objectively. Experiences are examined through this same objective lens to understand implications.

▼ **Problem Solving** - Helps us deal effectively and constructively with the various difficulties that can crop up in life. Leaving a problem unsolved for too long is a recipe for stress and anxiety.

▼ **Coping with emotions and stress** - We all need to recognize the sources of stress in our lives. Identifying the effects of these stressors and acting in ways that would help control stress levels will serve to preserve physical and mental health.

▼ **Empathy** - Helps us understand what life is like for them, although the situation they are in may be unfamiliar to us. It helps us accept people very diverse from ourselves.

▼ **Effective Communication** - Helps us convey our thoughts and feeling both verbally and non verbally. Communication needs to be appropriate to situations and to diverse cultures and this life skill ensures this.

▼ **Interpersonal Skills** - These skills help us relate to other people in a positive way. They ensure that we not only build healthy relationships, but we also maintain them over time, an ability which augments our psychological and social well being.

Shacklefree material is built around these eight life skills, although they may not always be explicitly spelt out in the module. Flexibility for use is built into the material, since it is advised that experts conducting the workshop should tailor the activities for any particular day that they conduct the same. Then, when there is a new iteration a few months later for the same audience, material need not be repeated, and a fresh combination can be selected.

# How to use this Training of Trainers Handbook

This one-day training of trainers (TOT) curriculum is designed for approximately 30 to 40 participants. A trainer can pick exercises from this curriculum and design a uniquely tailored one day workshop. The trainer must also keep in mind that another similar workshop will be held perhaps 5 to 6 months later, and then another in the following year, so they can pick and choose different material each time, to keep it fresh for the group.

It naturally follows that Trainers, most of them Counsellors in educational institutions or community settings, must maintain a very careful documentation about who participated, which exercises and activities were done for them and so on, to avoid repetition. Templates for such documentation are also included in the ToT Handbook.

Many topics and techniques described in this curriculum are accompanied by training notes. These notes are designed to provide information to help trainers understand the importance of the topic at hand, and how it fits into the larger philosophy of addiction prevention.

Each Training program is thus designed to be unique; it is also, equally importantly, designed to be flexible enough to meet the needs of each group of participants.

The Trainer must, therefore, pay careful heed before choosing an array of exercises and activities, to the following elements :

1. The rationale for conducting this Training
2. The age group towards whom it is targeted.



3. The environment in which these young people live and interact
4. Language of comfort for the participants
5. Benefits of such workshops
6. Potential barriers to the success of the workshops

The Trainer would do well to ask themselves the following questions before starting out with the workshops :

▼ **Do I understand the Life Skills base which is required to say no to addictions?**

If not, it would be best if they read up material on Life skills listed in the References at the end of this section, and also work with a senior Counsellor at the outset.

▼ **Have I thoroughly gone through the Training of Trainers Handbook and also through the Shacklefree resource Package for Addiction prevention?**

If not, they would benefit by a thorough a detailed reading of both, and some pilot efforts at conducting the session, perhaps with peers.

▼ **Do I have the skills necessary to execute behavior change interventions?**

If not, it would be best if they assisted a senior trainer at first.

▼ **Do I possess the necessary communication skills and the ability to conduct group work successfully?**

▼ **Am I familiar with other material in the same domain** that I can share with my young participants if they come up with questions that can be answered with such sharing?

▼ **Am I also familiar with the popular jargon of the group I am addressing**, the songs they enjoy, the films they watch and other social media platforms that they are familiar with? It is important that a potential Trainer connects with the audience in these respects in order to gain acceptance and make an impact.

## **A brief history and background : Unplugged to Shacklefree**

Dr. Anuradha Sovani's involvement with Unplugged began in 2011, when a VTT team comprising of two faculty members from TISS and Dr. Sovani, accompanied by Rtn. Yogesh Zaveri, went to Ghent to work on understanding the Unplugged program that was widely accepted across the European Union. EU-DAP was adopted by the school system, and its creator, Dr Peer van der Kreeft, a social educator affiliated to De Sleutel and University College Ghent, trained the trainers for carrying the program to India. He subsequently also visited India and carried out a training program at TISS.

Further work with Unplugged continued to attempt to adapt it to India, with additions including that of an important substance of addiction, Tobacco. It was soon realized that the Indian school system is far too demanding of the time of its teachers to allow satisfactory execution of Unplugged India by school teachers, although excellent attempts were made and continued by teachers and Counselors from RBK, Dhirubhai Ambani and Singhania school, among others. Dr. Johan Maertens, our Shacklefree partner in RAGAP, also visited India and visited these schools, and was satisfied with the work being done.

As ToT sessions continued, several excellent school counsellors were trained in the program and were very thorough with it. At the outset of Shacklefree, Dr. Anuradha Sovani conducted Round Tables and ongoing discussions with these counsellors, and abbreviated the program into Mini Unplugged, retaining the original rigor but reducing the time demand. This was later shared with another Rotary initiative triggered by

CMHARTS under the guidance of Dr. Ashish Deshpande, and Rotary clubs of Thane under the guidance of PDG Dr. Ulhas Kolhatkar; this team has also built an excellent drug prevention training manual with components for Rotarians, Parents and Counsellors. The study design to evaluate the impact of this initiative is cleared by National Scientific Committee on Addiction Prevention (NSCAP) under the Chairpersonship of Dr. Pratima Murthy, Professor, and now Director, NIMHANS, and cleared by IEC of Council of Health and Family Welfare, Government of India.

# How Shacklefree was visualized

Dr. Anuradha Sovani, Professor and Head of Department of Psychology at SNDT Women's University and Dean, Faculty of Humanities, realized that an omission area in Unplugged was the emerging addiction to smartphones, social media and the internet. This was a dangerous addiction since it did not require a distribution network, was closely tied to young people's lives, and was pretty much free, in the presence of a wifi network.

She had already been working with strong non substance addiction/behavioral addiction prevention initiatives like Responsible Netism run by the Ahaan Foundation, and Association for Adolescent and Child Care in India (AACCI). She had already spoken at a number of conferences under both these banners, collaborating with the organization in her capacity as Professor and Head, Department of Psychology at SNDT Women's University.

The need was thus seen to work out a project with the USP of student involvement, and student capacity building. Inclusion of counsellor training at the Masters' program stage of any University would ensure that there would be a sufficient supply of well trained Counsellors in the country, and other Universities, as well as colleges affiliated to SNDT are now on board of this initiative and had adopted the training manuals into their curricula. As they say, the proof of the pudding is in the eating, and the NSCAP initiative has been able to involve many SNDT Department of Psychology alumna as their mentors in the project with CMHARTS.

The MoU between Rotary and SNDT Women's University was thus signed in

2017. The inaugural program for the project took place on 30th June 2018 at the Rotary Centre at Ghatkopar, and funds were transferred in September 2018.

Inclusion of Behavioral Addictions in the Prevention agenda was prophetic, in the times of the COVID 19 pandemic which shut the world down through 2020-21, crucial years in the Shacklefree project. However, Shacklefree work continued, and part of the funding was in fact conserved and not drawn from Rotary. It had become extremely clear by this time that the pathway to substance as well as non substance or behavioral addiction prevention was through Psychological interventions and awareness building. Sensitization of doctors, teachers, school counselors and students will make a mark in the long run.

## **The set of three manuals and other collaborations**

The three manuals that have emerged, this Training the Trainers Handbook, and also a Facilitators Manual and a Resource Package, are the products of this Rotary Global Grant project, as are the NSCAP, the multiple programs and studies carried out by Responsible Netism and AACCI with full Psychology student involvement, as well as the International Scientific Committee for Rotary initiatives in Addiction prevention, of which Dr. Sovani is a member.

Since she is also a Trustee and Consultant at Institute for Psychological Health, an interesting initiative has been started there as well, investigating smartphone addiction in school students, and there are plans to involve the Avaahan network of IPH (audio visual media arm) to adapt training films to Indian languages and settings. Dr. Sovani has also worked through other media such as Community Radio and Newspaper publication, creation of Children's Literature, etc. to spread the addiction prevention message far and wide.

## **Section I : Substance Disorders**



# Introductory Note

Essentially, both Unplugged and Shacklefree are grounded in the concepts of Life Skills, which empower young people to be able to withstand the temptations life thrown in their path, and stay away from addictive behaviour patterns.

Unplugged has certain components such as decision making, critical thinking, problem solving, understanding emotions and coping with them, and also communication skills.

These are retained in Mini Unplugged, which is now being popularized Nationwide in India through a National Scientific Committee for Addiction Prevention (NSCAP).

The Shacklefree program is attempting to address this challenge with a new perspective. It is built on the premise that a school or college or community group will adopt this program for the participants, and it will be driven in that group over time by a set of concerned professionals. Hence the focus in the initial stages of the program has been to :

1. Induct young trainee counselors into the area of interest at an early stage.
2. Prepare them to conduct such trainings on their own,  
after conducting them initially under senior tutelage.
3. Get them to develop program content on their own so that they develop the confidence to handle addiction prevention through a life skills lens  
and feel sure that they can address any addiction issue using this pathway.

The reason for this last step is simple. Today we are aware of certain specific substances which are addictive, and specific behavioural patterns involving screens, devices and social media, which have huge addictive potential. There is no saying what other domains will emerge over time and what new addictions will entrap youth. Who would have known a decade or more ago, that online activities would have such tremendous addictive risk?

Hence it is important to arm the professional counsellor to address any form of addiction using a life skills perspective. It follows, thus, that the emphasis of such a training will be not on content, ie. Knowledge and facts about addictive substances and behaviors; but on attitudes that involve a firm stand against them, and skills to develop such attitudes in the young people in society/

The following section thus walks the trainee through two major addictive substances, coffee and tobacco, which are very much a part of day to day life in India. The reading material, once again purely created and compiled by SNDT Women's University students of Psychology, gives an adequate overview of all currently recognized substances as per the Diagnostic and Statistical Manual of Mental Disorders, 5th edition.

But this content becomes less decisive and less essential, and fades away into the background against the relative importance of building attitudes against addictive behavior patterns. And that is the thrust of this manual.

Hence, rather than creating a knowledge base of each separate substance of addiction, Shacklefree creates a program that can be used flexibly against any form of addiction. This section deals with the Substance based addictions and their prevention, and the next deals with Non substance based addictions and their prevention.

Experts are aware that in different parts of the world, there will be different statistics for substance usage, and different regulations, laws and age prohibitions. The fact that these prohibitions and laws have existed for years, and have not made a dent in demand or supply for these substances, or their extensive usage, shows the strong need for preventive efforts, and demand reduction.

Professionals will always have a choice between Universal, Selective and Indicated strategies.

The Shacklefree program chooses Universal prevention approach, thereby addressing every young person in the community. As against this, the Selective strategies would address only those at high risk; the Indicated strategies would address those who are clearly in need of help and require professional handholding. The Universal prevention approach would build on life skills, and create social competencies in the youngster to fight off the temptation to succumb to peer pressures and beckoning temptations around him or her.

There has been a slew of community based, community placed and school based programs in countries around the world, each attempting in their own way to address this issue. In some countries, the school based programs have been curricularized and run by teachers. In others, mental health professionals have driven the programs. Programs have encouraged students to take charge of their lives, to create realistic normative beliefs about addictive behaviors. Others have stressed on the harmful consequences of substances and stressed on disapproval associated with using them. Developmental theory based programs have addressed young people as they move from lower to higher classes. Workbooks and kits have been created for students, teachers, principals and parents. Early identification and intervention, treatment and relapse prevention, none of these approaches have been left untried. All have had limited success, varying across various cultures and settings. Most have been difficult to replicate.

It is acknowledged by preventive programs across the globe that to some extent, all these factors are no doubt effective, and thus must be considered. But overall, it is widely acknowledged that preventive efforts in mental health are difficult to design, and their success is hard to establish.

With Shacklefree, we are attempting once again to bring to the table the expertise of Counselors, coupled with the creativity and age based empathy of the young minds who helped design these interventions, thus making it "by and for youth". We are also attempting to bring a flexibility to the effort, giving the Counselors a template and not ready made content. The template can be repeatedly offered, again and again, over time, as the Counselors deems fit, the same group with whom they already have a rapport. The content can be tweaked each time, adding new activities and exercises from the ToT Handbook, and throwing in new material each time from the Resource Package, to build a fresh new experience for participants each time. And yet be able to drive home the same hard hitting message, that substance dependence and addiction is NOT COOL.

Communities are essentially permeable, and so if we build a system where, wherever the young person moves, they are likely to get pretty much the same message, but each time in a new garb, in a new, attractive wrapper, they will soon begin buying into it accepting it as the most believable attitude and point of view.

Shacklefree leaves no avenue unexplored. The effort is to use visual impact with posters and slides, verbal impact through messages in the training modules, social and emotional impact through examples and discussions used in the training. The training is kept at a single day duration to cater to the relatively short attention span of the young, shortened even further by media consumption.

But the same message goes out again and again over time. The package also includes some children's literature that can be floated out to the very young, allowing them to cut their teeth of recognizing the futility and utter stupidity of indulging in addiction. Making "saying no to addiction" the norm, the value base, the "right thing to do" and the "smartest option endorsed by other young people" seems to be the best way to change attitudes. Interestingly, this material was also "piloted" by Dr. Anuradha Sovani on the age group of children for whom it was meant. They had great clarity and the hard hitting honesty typical of their age as they gave the writer of Vik(s)tories "feedback" about the stories, their length, their content and images, and the over interest value they held for this very young audience. The parents of these little children were also clear about their decisions to share these stories with their child and at what age they would prefer to do so. These are important insights to have and hold as we proceed.

The next two sections offer training modules, some for ubiquitous substances like caffeine and tobacco. The reason for this choice is clear. Each have unique methods of being imbibed, eg. caffeine through tea, coffee, chocolates and soft drinks. And tobacco through smoking, chewing and even brushing teeth. It is also clear that the same module can easily be adapted to any other addictive substance by changing some of the knowledge based content, drawing on the "Reading material" given in the manual. Alcohol is another very widely abused substance, and two modules have been created for the same. Modules for other substances are also included, but can be adapted even for

substances other than those covered here. Further, a "bank" of powerpoint slides, posters, cartoons and exercises and games are made available in the Resource Package and can be drawn upon while designing your workshop.

# **Section I (a) : Substance Disorders**

## **Reading material**

### **Neurobiology of Substance Addiction**

The word 'addiction' stems from the Latin word 'addicere' which means 'to give or bind a person to one thing or another' (Koob & Le Moal, 2014). There have been varying definitions of Substance Addiction by various researchers. Goodman (2008) defines substance addiction as "a condition in which a behavior that can function both to produce pleasure and to reduce painful affects is employed in a pattern that is characterized by two key features: (1) recurrent failure to control the behavior, and (2) continuation of the behavior despite significant harmful consequences" where he takes into account the dual motivational function of addictive process – impulsive and compulsive behaviour.

Koob et al. (2014) have given a more recent and comprehensive definition that accommodates the motivational behaviour of addiction and adds an emotional aspect. They defined substance addiction as, "a chronically relapsing disorder that is characterized by: 1) A compulsion to seek and take a drug, 2) Loss of control in limiting intake, and 3) Emergence of a negative emotional state (e.g., dysphoria, anxiety, irritability) when access to the drug is prevented." The crucial process of some voluntary drug-using behaviour transforming into this compulsive seeking of drugs are the changes that take place in the brain structure and neurochemistry of the brain of the drug user. Hence, Addiction is asserted to be a 'brain disease' (Sadock et al. 2015).



The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) replaces 'addiction' with a more neutral terminology, 'substance use disorders', to describe a number of disorders differing on their range of severity, from mild to moderate to severe state of chronically relapsing and compulsive drug-taking. The DSM-5 criteria for substance-use disorders are mentioned in Table 1.

## Table 1: DSM-5 criteria of substance use disorders

A mild substance use disorder is diagnosed if 3 of the following criteria are met.

People meeting 4 or 5 criteria are classified as having moderate substance use disorder and severe substance use disorder is diagnosed in cases where 6 or more of the criteria are met.

1. Taking the substance in larger amounts or for longer than you meant to
2. Wanting to cut down or stop using the substance but not managing to
3. Spending a lot of time getting, using, or recovering from use of the substance
4. Cravings and urges to use the substance
5. Not managing to do what you should at work, home or school because of substance use
6. Continuing to use, even when it causes problems in relationships
7. Giving up important social, occupational or recreational activities because of substance use
8. Using the substance again and again, even when it puts you in danger
9. Continuing to use, even when you know you have a physical or psychological problem that could have been caused or made worse by the substance
10. Needing more of the substance to get the effect that you want (tolerance)
11. Development of withdrawal symptoms, which can be relieved by taking more of the

Substance Source: American Psychiatric Association, 2013.

With advancements in neuroscience, our understanding of substance addiction has evolved to include the acute and long-term neuroadaptive changes taking place in the brain of a drug user and the genetic markers and epigenetic changes associated with addiction (Koob et al., 2014; Uhl, Koob & Cable, 2019).

This paper will focus on the molecular level changes i.e. changes in synaptic transmission, in the neurotransmitters, and/or receptor systems of the brains affected by addictive drugs, the three-stage cycle involved in addiction – binge/intoxication, withdrawal/negative affect, and preoccupation/anticipation with the different brain regions involved in each of these stages, and lastly the different classes of addictive substances and their impact on the brain.

It has been identified that there are three brain regions and their associated networks that are intimately involved in development and sustenance of substance addiction: the sub-regions of basal ganglia which control feelings of pleasure or reward while using a substance and also formation of substance-taking habit, the extended amygdala responsible for stress and negative feelings that accompany withdrawal, and the prefrontal cortex which is involved in executive functioning (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016). Changes at synaptic level, in the neurotransmitters and receptor systems of brain, largely determine the feelings, thoughts or actions of the drug user, promote and sustain addiction and contribute to relapse (Stoehr, 2006; U.S. Department of Health and Human Services & Office of the Surgeon General, 2016).

# **The role of Neurotransmitters in Substance Addiction:**

There are a number of neurotransmitters that play a vital role in substance addiction such as Dopamine, Serotonin, Norepinephrine, GABA, Opioid Peptides, Endorphins, Neuropeptide Y, Substance P, Cortisol, and many more. The more salient ones have been focused on in this paper.

Dopamine (DA)— Dopamine is produced in four different systems in the brain, two of these from midbrain region are critical to the addictive properties of drugs, namely, the mesocorticolimbic dopamine system of ventral tegmentum area (VTA) and the nigrostriatal dopamine system (Koob et al., 2014; Stoehr, 2006). These dopamine neurons are involved in initiation of behaviour, motivational processes and reward behaviour called incentive salience. Incentive salience is a powerful mechanism which facilitates association formation between previously neutral stimuli and drugs of abuse (Koob et al., 2014). An animal study with rats was conducted to investigate global impact of activation of VTA dopamine neurons using optogenetics with fMRI. The results of the study gave an unexpected insight in to the dopamine activation when it was found that regions of basal ganglia like dorsal striatum and globus pallidus that receive a very low VTA dopaminergic projection were also activated. Furthermore, the activation was much higher in the dorsal striatum which was not related to VTA neurotransmission, than in the ventral striatum where there is a high concentration of dopamine neurons. This study implicates a potentially novel VTA-basal ganglia circuit related to activation of VTA dopamine neurons (Lohani et al., 2016).

Dopamine has 5 different receptors through which it produces its functional effects. D1 and D2 receptors, both from prefrontal cortex, are activated by drug of abuse, especially psychostimulants, leading to dopamine's full rewarding effects (Uhl et al. 2019). Along with these two receptors, a new line of research has also been focussing on D3 receptors and its involvement in addiction. To investigate the same, a study was conducted by Payer et al. (2014) where they used PET radiotracer to study involvement and association of D3 receptors in Cocaine-dependence (CD). There were 15 participants in CD group (minimally comorbid) whereas 15 were healthy controls. It was found that D3 dopamine receptors are high in CD group which strengthened the position of D3 receptor as a novel biomarker and target for treatment by using D3 antagonism.

▼ **Serotonin** – Serotonin (5-hydroxytryptamine or 5-HT) is synthesized in dorsal raphe system located in brain stem (Stoehr, 2006). It is not directly involved in motivation-reward but it influences the dopamine system (Goodman, 2008). A review focussed at investigating this interplay of Serotonin and Dopamine by Wang et al. (2019) found that the release of serotonin and glutamate from dorsal raphe (DR) serotonin terminals to VTA activates the glutamate and serotonin receptors which in turn induce the release of dopamine in nucleus accumbens (nAcc) involved in reward process of substance-addiction.

On similar lines, another review of animal studies by Fischer & Ullsperger (2017) focussed on the role of serotonin and dopamine on reward guided behaviour and drug dependence. It was found that activation of purely serotonergic cells was mostly non-rewarding and inhibitory; however, direct stimulation to dorsal raphe nuclei's (DRN) by specific stimulation of glutamate-releasing DRN cells and parallel release of serotonin induces rewarding effects that are comparable to VTA stimulation. This indicates that specific neuronal population of DRN control dopamine related reward behaviour, and that singular release of dopamine or serotonin is not as pleasurable, but conjoint is highly so. Hence, it concluded that joint activity of both serotonin and dopamine systems are involved in carrying reward information.

▼ **Norepinephrine (NE)** – This neurotransmitter is produced in locus ceruleus (LC) located in brain stem and then it is widely distributed in central nervous system. It is primarily responsible for alertness and arousal, and the fight or flight response (Koob et al., 2014; Stoehr, 2006). The NE systems control the heightened alertness and arousal in drugs of abuse like stimulants and hence cause agitation, restlessness, etc (Stoehr, 2006). Also, NE plays a role in anxiety/stressful reactions to drug dependence (Koob et al., 2014). A region in the limbic area which is also involved in stress response is the bed nucleus of stria terminalis (BNST), is innervated by dopamine and norepinephrine and this is the focus of the study on rodents carried out by Jadzic et al. (2019).

It aims to examine the effects of drug abuse with drugs like nicotine, cocaine, amphetamine, morphine, and ethanol on NE transmission in BNST using microdialysis technique. It was found that, even though these drug of abuse have different mechanism of action, they do increase NE transmission in BNST. Hence, it was suggested by the researchers that due to frequent drug-taking, there will be recurring activation of NE in BNST leading to alteration of BNST function of behavioural response to stress, which in turn could cause stress-induced drug-taking behaviour.

▼ **Gamma aminobutyric acid (GABA) – GABA** is an inhibitory neurotransmitter synthesized from glutamate and is found in high concentration throughout our brain (Stoehr, 2006). Depressant drugs like alcohol, sleeping pills, muscle relaxants, etc. act like agonists to GABA, which leads to decrease in general brain activity and cause rapid sedation, coma, black-outs and death (Goodman, 2008; Stoehr, 2006). Focussing specifically on prescription opioid addiction (POA), a study was designed to quantify levels of GABA and Glutamate in Prefrontal cortex (PFC) using a proton magnetic resonance spectroscopy. The study included 35 POA patients and 35 healthy controls where both underwent some neuropsychological assessments and later point-resolved spectroscopy was performed. It was found that there is a significantly higher glutamate level and lower GABA level in POA patients as compared to the controls which is associated to higher impulsivity and cognitive impairment based on the scores of neuropsychological assessments (Li, Liu & Li, 2019). Higher impulsivity can be

because the GABA levels are low leading to increased functioning of brain. Hence, opioid addiction has reverse effect on GABA as compared to the depressants

▼ **Opioid peptides** – These are not neurotransmitters, but short chains of amino acids that are often co-released with other neurotransmitters in the synapse (Stoehr, 2006). There are three kinds of opioid peptides -  $\beta$ -endorphin, enkephalin, and dynorphin – all of them activate opioid receptors (Koob et al., 2014). These opioids have rewarding properties since their receptors are also located on dopamine cells (Koob et al., 2014; Stoehr, 2006). Because of this, when dynorphin acts on opioid ( $\kappa$ ) receptors on dopamine cells, they inhibit the dopamine release and reduce the reward-salience effect of substance-use, thus generating dysphoria (Nestler, 2001 as cited in Goodman, 2008).). Opioid peptides have both high medical use potential and also a high abuse potential.

Martinez et al. (2019) conducted a PET study on cocaine addicts to investigate changes in Kappa-opioid receptors (KOR) and dynorphin system before and after a cocaine binge. The participants of this study were a group of patients with cocaine-use disorder (CUD) and matched healthy controls that underwent positron emission tomography (PET) scan and the kappa agonist radiotracer. Participants were first induced with stress through the cold pressor test and then in controlled settings (laboratory), the CUD participants had a cocaine-binge session for 3 days and were scanned again with PET and kappa radiotracer. The study found that there is a significant association between kappa opioid receptors ( $\kappa$ OR) and stress



through the cold pressor test and then in controlled settings (laboratory), the CUD participants had a cocaine-binge session for 3 days and were scanned again with PET and kappa radiotracer. The study found that there is a significant association between kappa opioid receptors ( $\kappa$ OR) and stress-induced binge cocaine use. Also, the cocaine binge of 3 days reduced binding by 18% in the striatum and 14% across brain regions. This study, hence, implicates that KOR /opioid peptides can be targeted for pharmacotherapies to impact treatment development for cocaine-use disorder.

#### ▼ **Addiction Risk Period: Adolescence**

Adolescence is often characterized by a rise in risk-taking behaviour among youth. A research by Giedd (2004) as cited in Winters and Arria (2011) found that adolescence is the period where the brain has not yet developed fully. Though the connections between the brain and brain cells grow rapidly before adolescence, brain begins with the pruning process at around the age of 11 or 12 in order to strengthen the frequently used nerve cells and to clear out the ones which are infrequent or not used at all. The process of pruning helps for faster and smooth processing of information and creates longer chains of nerve cells in adulthood. In addition, it was believed that the limbic region of the brain during the pruning process matures much earlier than the pre-frontal cortex. Therefore, it is more likely for the young teenagers to inculcate themselves in high risk-taking behaviors such as consumption of substances (drugs, alcohol, etc) than children or adults. Also, adolescents vary in the ability to control their

impulses which may further contribute to the risk-taking behavior (Winters & Arria, 2011).

In animal models, when adolescent rats consumed alcohol, they experienced fewer disturbances in motor functioning and less sedation as compared to adult rats. In addition, they experienced less sensitivity to the effects of alcohol drinking and thus they consumed it in larger amounts of drinking during teenage period (Winter & Arria, 2011). It was found that the heavy use of alcohol and cocaine leads to faster human aging process (Luciana & Feldstein Ewing, 2015). An epidemiological research suggested that earlier the beginning of substance use, higher the risk of developing substance abuse problem in adulthood. In a study, it was found that young people who started consuming alcohol at 11-12 years of age were more likely to have an alcohol use disorder (7.2%) within 2 years, whereas people who started drinking at 21 years of age had 3.7% likelihood of substance use disorder (Winters & Arria, 2011). Also, people who started drinking alcohol at an early age showed decline in cognitive abilities, especially in the area of learning and memory, attention and executive functioning. A longitudinal study supported that adolescents who had chronic use of marijuana, overall experienced reduce intellectual functioning (Luciana & Feldstein Ewing, 2015).

Recent scientific evidence suggests that substance addiction is a biogenetic, psychosocial brain disease that is, biological and social factors play an important role in determining the degree to which a person will engage from casual use to abuse and will get addicted to it. Studies such as genetically identical twins of the same family, different families, and in animal models have suggested that nature (genes and hereditary) contributes 50 to 60% in the addiction of substance use. The likelihood of a person getting addicted to alcohol increases dramatically when one or both parents are addicted to it. However, individuals whose parents do not consume substance can still get addicted to it. Hence, nurture (environment) plays an important role in shaping individual's personality. Individuals raised in safe family environment where adequate nutrition, emotional support, etc has had been provided are less vulnerable to the addiction of substance use. On the other hand, people whose environment involves a lot of hardships in day-to-day life, most likely take support of the substances in order to escape from the negative feelings (Stoehr, 2006). In addition to the biology, culture plays a key role in determining whether or not adolescent girls and boys involve themselves in risky behaviors such as substance use (Becker & Koob, 2016). In a longitudinal study of 300 middle schoolers, girls who started drinking in the follow-up period of 4 years indicated huge decline in performance on memory test and boys showed impairment on visual attention test (Uhl, Koob, & Cable, 2019).

**An individual experiences four behaviors before s/he gets addicted to the substance use which are as follows :**

1. Impulsivity: This behavior occurs in the initial use of substance. When a person acts without thinking of a long-term consequence and strives for immediate gratification.

2. Positive Reinforcement: When a person perceives an initial use of the substance to be pleasurable, then it is more likely that he/she will consume it in the future. In positive reinforcement, the effects of substance use diminish over time (tolerance) and a person might consume substance in large amounts or may frequently crave for it in order to experience the initial level of reinforcement.

3. Negative Reinforcement: An individual might also engage in the consumption of substance use in order to escape from the negative feelings such as stress, anxiety, depression, etc. This is known as withdrawal wherein the chances get high of consuming substances again and thus get rid of withdrawal symptoms.

4. Compulsivity: Eventually, the consumption of the substance becomes an entrenched behavior and impulsivity moves to compulsivity. Compulsivity is an important characteristic of addiction because a person experiences loss of self-control and consumes substance to get negatively reinforced (relieve stress) than positive reinforcement (experience pleasure). Compulsivity also contributes to the relapse that addicted people may experience after ceasing use of the substance (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016).

## ▼ The Addiction Cycle

**A person gets addicted to the substance use when there is a repeated cycle of three stages. The three stages of addiction are as follows :**

1. Binge/Intoxication stage: At the initial stage, an individual consumes substance due to peer pressure, curiosity, drug availability, etc (Stoehr, 2006). The initial use of the substance activates the excessive amount of dopamine in the brain and thus they may feel highly euphoric. This experience increases the likelihood that s/he will crave for the substance use again in the future. It is this repeated use of the substance which triggers the addiction cycle to begin. Over a period of time, the substance use may no longer feel the same pleasure. This change in the response of the brain is known as tolerance, and as a result, the person might increase the amount of consumption to experience the same effect (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016). An evidence suggests no difference among men and women in the consumption of alcohol over a past few decades. However, the differences in patterns of drinking alcohol among men and women gets visible around 17 years of age (adolescence period) and remain over adulthood. With regard to the animal models, studies have found that female rats consumed substances longer and in greater amounts as compared to male rats. But once female rats got addicted to substances, their behavior was comparable to male rats (Becker & Koob, 2016).

2. Withdrawal/ Negative Affect stage: When a person is not consuming the substance for a period of time, s/he would experience negative emotional state wherein withdrawal symptoms (stress, anxiety, suicidal thoughts, etc) negatively reinforce one to consume the substance again. (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016). Clinical evidence suggest that adolescent girls may experience negative mood for a longer period of time when consumed high doses of substances as compared to adolescent boys. Male rats, in the animal models, exhibited more withdrawal responses but slowed in recovery from acute alcohol withdrawal as compared to female rats (Becker & Koob, 2016).

3. Preoccupation/Anticipation stage: The last stage of the addiction cycle is compulsivity wherein a person becomes engrossed with, and feels compelled to use the substance again. This is known as craving. At this stage, the person is no longer in control of themselves, and gets addicted to the substance. (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016). In people with severe substance use disorders, the period of abstinence may be quite short; as short as an hour. A clinical literature provided evidence that women are more likely to show relapse symptoms for most of the substances and with shorter duration of reduce in the consumption of substances and relapse as compared to men. With limited evidence of sex differences for the stage of addiction cycle, a reliable finding suggested that female species are more inclined to stress- and cue-induced relapse as compared to male species (Becker & Koob, 2016).

The three stages cycle of addiction are connected to each other. Also, different brain areas are involved in each stage of the cycle. A person may differ on duration (hours, weeks, months, etc), intensity of involvement of each stage and variations in the progression of each stage of addiction. Nonetheless, the addiction of the substances strengthens over a period of time, causing physical and mental injury (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016).

### **Stage-wise Neurobiological Impact :**

1. Binge/ Intoxication Stage : Basal Ganglia This stage mostly involves the basal ganglia and its two salient brain sub-regions, the nucleus accumbens and the dorsal striatum (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016).

All addictive substances yield feelings of pleasure. These "rewarding effects" positively reinforce their use and increase the probability of frequent use. The activity in nucleus accumbens, as mentioned earlier, is involved in the rewarding effects of substances, which also includes activation of dopamine and opioid signalling system of the brain. All addictive substances activate the neurons that release dopamine, either directly or indirectly. In addition, the brain's opioid system, which includes naturally occurring opioid and three types of opioid receptors, plays a key role in mediating the rewarding effects of other addictive substances. The opioid system is activated by these substances which stimulates the nucleus accumbens through the dopamine system.

Brain imaging studies in humans show activation of dopamine and opioid neurotransmitters during alcohol and other substance use (Koob & Volcow, 2010).

Activation of the brain's reward system by addictive substances not only produces the pleasurable effects associated with those substances, it also eventually sparks changes in the way a person counters to stimuli linked to the use of those substances. A person learns to link the stimuli available while using a substance, including people, places, drug paraphernalia, and even internal states, such as mood, with the substance's rewarding effects. Over time, these stimuli can trigger the dopamine system on their own and stimulate powerful urges to take the substance (incentive salience); they can linger even after the rewarding effects of the substance have reduced (Volcow et al, 2006).

Studies conducted previously on animals demonstrated how incentive salience works; Therein, "the researchers repeatedly gave an animal a stimulant drug (e.g., cocaine) along with a neutral stimulus, such as a light or a sound, they found that the neutral stimulus by itself caused the animal to engage in drug-seeking behavior, and it also resulted in dopamine release that had previously occurred only in response to the drug" (Uslaner et al, 2006).



More interesting results were found when scientists recorded the electrical activity of dopamine-transmitting neurons in animals that had been exposed multiple times to a neutral stimulus followed by a drug. They found that at first, neuronal response was related to exposure of drug only but over time, the neurons did not fire to the drug, per say but instead fired on exposure to neutral stimulus linked to that drug. This implicated that the animals linked the stimulus to the substance and hence, their brains started releasing dopamine even in anticipation of getting the substance. This resulted in a strong motivation for substance-taking (Schultz et al, 1997 as cited in U.S. Department of Health and Human Services & Office of the Surgeon General, 2016). Imaging studies in humans have shown similar results (Volcow et al, 2007).

Together, these studies indicate that drug-like effects can be caused due to stimuli associated with addictive drugs, triggering substance-use. These findings have great implications and help us understand that how continued contact with people that the addictive individual previously used substance with or places where they used drugs, can increase the risk of relapse in the person trying to maintain abstinence.

Another sub-region of the basal ganglia is the dorsal striatum, which is involved in habit formation in the binge/intoxication stage. The release of dopamine (along with activation of brain opioid systems) and release of glutamate can eventually trigger changes in the dorsal striatum. These variations strengthen substance-seeking and substance-taking habits as addiction advances, eventually giving rise to compulsive use (Wong et al, 2006).

## 2. Withdrawal/Negative Affect Stage : Extended Amygdala

The negative feelings linked with this stage are presumed to come from two sources: diminished activation in the reward circuitry of the basal ganglia and activation of the brain's stress systems in the extended amygdala (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016).

When used over the long-term, all substances of abuse cause an overall depletion in the sensitivity of the brain's reward system, both to addictive substances and also to natural reinforcers, such as food and sex, as natural reinforcers also based upon the same reward system and circuits. This dysfunction justifies why those who develop a substance use disorder often do not attain the same level of satisfaction or pleasure from once-pleasurable activities. This loss of sensitivity to reward may lead to compulsive escalation of drug-use because of the individual's attempt to regain the feelings of pleasure that was provided by the reward system (Volcow & Morales, 2015).

Another process occurs during the withdrawal stage – the activation of stress neurotransmitters in the extended amygdala. These stress neurotransmitters incorporate corticotropin-releasing factor (CRF), norepinephrine, and dynorphin. Studies have shown that these neurotransmitters play a vital role in the negative feelings affiliated with withdrawal and in stress-triggered substance use. In human and animal studies, when researchers used antagonists to block activation of the stress neurotransmitter systems, it has the effect of alleviating substance intake in response to withdrawal and stress.

For example, alcohol consumption in alcohol-dependent rats as well as humans with alcohol use disorder reduced when activation of stress receptors were blocked. This means that suppressing overactive stress systems of brain that generate negative emotions, might be an additional motivation for drug and alcohol use (Parson & Hurd, 2015, as cited in U.S. Department of Health and Human Services & Office of the Surgeon General, 2016). Motivation for continued consumption is strengthened through negative reinforcement, because taking the substance relieves the negative feelings associated with withdrawal, at least temporarily.

### 3. Preoccupation/Anticipation Stage : Prefrontal Cortex

This stage of addiction involves the brain's prefrontal cortex, the region that controls executive functions, which is essential for a person to make appropriate choices about whether or not to use a substance and to override often strong urges to use, especially when the person experiences triggers, such as stimuli associated with that substance or stressful experiences (U.S. Department of Health and Human Services & Office of the Surgeon General, 2016).

Koob et al. (2014) divided the functions of this brain region into a 'Go system' and an opposing 'Stop system' to help understand how the prefrontal cortex is involved in addiction. They highlighted that the Go system helps in decision making and planning. It was observed that when substance-seeking behavior is triggered by substance-associated environmental cues (incentive salience), activity in the Go circuits of the prefrontal cortex increases dramatically.

This increased activity stimulates the nucleus accumbens to release glutamate. Incentive salience is promoted due to this release of glutamate which in turn, produces a strong urge to use substance when there are drug-associated cues present.

The Go system is also associated with habit-response systems of dorsal striatum and plays a role in impulsivity involved in substance seeking. These habitual responses are automatic and without conscious awareness, so the individual may not even be aware that they are involved in these behaviours. The prefrontal cortex that carries the neurons of the Go circuits activates the habit systems located in dorsal striatum with the help of connections using glutamate (Koob et al., 2014).

On the other hand, the Stop system inhibits the activities of the Go system and plays a crucial role in addiction. It controls the areas of basal ganglia engaged in the binge/intoxication stage of addiction, specially, the habit response driven by the dorsal striatum. Researchers also believe that it contributes to reducing the ability of substance-associated stimuli to trigger relapse i.e. it inhibits incentive salience (Koob et al., 2014). The Stop system also controls the stress and emotional systems of the brain and hence instrumental in relapse triggered by stressful life events or circumstances. These relapse are caused by activation of neurotransmitters like CRF, Norepinephrine and Dynorphin. As described above, the prolonged abstinence during the withdrawal stage activates these neurotransmitters. More recent animal studies have shown disruptions in the brain's cannabinoid system which regulates the stress systems involved in relapse.

It has also been shown that there is an increased activity of stress circuits involving extended amygdale associated with lower activity in Stop system of prefrontal cortex. This increased activity drives substance-use behaviour and relapse. Brain imaging studies in people with addiction show disruptions in the function of both the Go and Stop circuits (Goldstein et al., 2002).

### **Substances of Abuse**

Although the underlying mechanisms of the cycle of addiction to different substances of abuse are the same, there are differences in the way these substances impact one's biology. There are multiple systems of classifying these substances of abuse, including classification systems based on chemical makeup, effect of drug, and legal classification for prescriptive usage (Juergens, 2019). Here, we will look at different classes of substances based on their neurological impact.

**Nicotine** : Found in tobacco leaves, nicotine is a powerfully addicting psychoactive stimulant. It is commonly consumed through cigarette smoke and chewing tobacco. When nicotine is inhaled from a cigarette, it reaches the brain's pleasure areas in less than ten seconds. Nicotine reportedly increases the release of dopamine and inhibits the activity of monoamine oxidase (MAO) whose function is to metabolize dopamine. Therefore, by decreasing the MAO activity, nicotine can elevate dopamine levels (Stoehr, 2009). There are certain positive reinforcing effects produced by nicotine like increased energy, diminished stress, heightened arousal, mild euphoria,

reduced anxiety and diminished appetite. Smokers report that smoking is pleasurable, calms them down, helps them concentrate and helps them deal with difficult situations.

More nicotine is absorbed by inhalation than through the mouth or chewing. The nervous system is affected by nicotine through the action of nicotinic acetylcholine receptors (nAChRs) which are present in the mesocorticolimbic dopaminergic (DA) system that project from the ventral tegmental area (VTA) to the nucleus accumbens and the prefrontal cortex (Laviolette & Van der Kooy, 2004). Other neurochemical systems including cholinergic, glutamatergic, gamma aminobutyric acid (GABA), and opioid peptide systems which are involved in nicotine reinforcement interact with the mid-brain dopamine system. Nicotine binds with nAChR complex which may lead to increase in dopamine release (Koob & Le Moal, 2006).

**Depressants :** These cause a general slowing in the nervous system. Depressants increase the activity of inhibitory neurotransmitters like gamma aminobutyric acid (GABA) which is found in the central nervous system. This leads to a general slowing of the brain functions (Stoehr, 2009). Alcohol falls under the category of depressants. It increases the activity of GABA, causing euphoria and a general sense of well-being. Alcohol consumption also interferes with muscle coordination, speech, vision and planning by increasing GABA signals throughout the brain. Alcohol consumption can lead to severe health problems, such as liver disease, heart and vascular changes, esophageal, stomach and intestinal disease.

Chronic alcohol use can lead to permanent brain damage (Stoehr, 2009).

Alcohol can affect the cerebral cortex, hypothalamus, amygdale, basal ganglia and the cerebellum. Alcoholic patients have an atrophy of the cerebral cortex with widening of the cortical sulci and narrowing of the gyri. A slight reduction in the volume of the cerebral cortex has also been reported. Neurons in the hippocampus get damaged due to alcohol consumption (Harper, 1998).

Opiates : These are a separate class of drugs; they bind specific opioid receptors in certain areas of the central nervous system as well as other organ systems (Stoehr, 2009). Opioids have analgesic, sedative, euphorogenic, and respiratory depressant effects. There are three opioid receptors – mu, delta and kappa receptors; they mediate the activities of both exogenous opioids (drugs) and endogenous opioid peptides. They belong to the G protein-coupled receptors. Agonist binding to these receptors ultimately causes inhibition of neuronal activity (World Health Organization, 2004).

Opiates are legally distributed as prescription painkillers to soothe the sensation of pain. These medications block pain by engaging the opioid receptors in the brain. They are effective painkillers, they block pain signals from damaged tissue in the body. The issue arises when these opiates come in contact with opioid receptors which are located on cells that control chemical motivational system that use dopamine. As a result, when drugs such as heroine, morphine, opium and prescription painkillers such as OxyContin and Vicodin turn on these opioid receptors one may feel euphoria as well as relief from

pain. This can lead to severe addiction to these prescription painkillers (Stoehr, 2009).

Heroin is an intravenously injected, extremely addicting opiate. It is soluble in fat and therefore absorbed by the brain and the bloodstream easily. It reaches the pleasure pathways in the brain rapidly and causes a significant increase in the production and release of dopamine. These opiates bind to the opioid receptors in bodily tissue and the brain and have physical effects, their pupils constrict, they may experience itchy skin, may feel nauseous and their blood pressure, pulse and breathing decreases. An overdose may cause respiratory depression (Stoehr, 2009).

Cannabinoids : The cannabinoids are derived from cannabis plants such as marijuana. Marijuana is consumed by smoke or sometimes is ingested. It may remain in the body for long periods and may accumulate after repeated use. One of marijuana's ingredients, delta-9-tetrahydrocannabinol (THC), is fat soluble and therefore enters the bloodstream and brain easily and quickly (Stoehr, 2009). THC is the major chemical with psychoactive effects and is metabolized to another active compound, 11-OH-delta-9-THC (World Health Organization, 2004). THC also increases dopamine release which in turn makes marijuana an addicting substance. THC shares certain properties with opiates, the withdrawal symptoms are very similar to opiate withdrawal symptoms which include irritability, depression, diarrhoea, rapid heart rate and elevated blood pressure (Stoehr, 2009).



Cannabinoid receptor agonists may be plant derived or synthetic. Cannabinoid compounds activate two different receptors – CB-1 cannabinoid receptor and the CB-2 cannabinoid receptor. THC and its analogues show good correlation between their affinity for these receptors and their effects, denoting that these receptors are the targets for these compounds (World Health Organization, 2004).

Marijuana consumption may cause bloodshot eyes, drooping eyelids, elevated heart rates and high blood pressure (Stoehr, 2009). The perception of time is slowed, there are feelings of relaxation, short term memory and motor coordination is impaired (World Health Organization, 2004). Long-term effects of marijuana smoking can cause lung damage and damage to the hippocampus (Stoehr, 2009). Long term exposure to cannabis can produce long lasting cognitive impairment (World Health Organization, 2004).

#### Nervous stimulants:

Amphetamines and cocaine are powerful nervous stimulants, more specifically; they are indirect sympathomimetic amines, meaning they enhance the levels of monoamines available in the synaptic clefts of monoamine synapses within the central nervous system (Koob & Moal, 2006). Certain prescription drugs such as Adderall used in the treatment of ADHD, and dexamphetamine used in the treatment of obesity contain amphetamine, but are recommended for short-term use due to their addictive properties (Newman, 2017).

Amphetamines : Amphetamines reverse the action of biogenic amine transporters at the plasma membrane. Thus they increase activity of the dopamine and norepinephrine system, causing overstimulation of the brain, leading to physiological effects such as prolonged wakefulness, decreased appetite, agitation and rise in body temperature. Specifically, amphetamines block the dopamine transporter (DAT) leading to an increase of dopamine levels in the nucleus accumbens, the pleasure center of the brain (Luscher & Ungless, 2006). This leads to eventual tolerance and the need to consume increasingly large quantities of the drug to maintain the artificial high level of dopamine (Stoehr, 2006). An excess of norepinephrine and dopamine in the prefrontal cortex also causes "amphetamine psychosis", a condition with symptoms redolent of paranoid schizophrenia (Stoehr, 2006).

Cocaine : Cocaine, another stimulant, has similar effects. While amphetamines increase the release of dopamine from the presynaptic terminals of dopamine-containing cells in the nucleus accumbens, cocaine causes an increase in the amount of dopamine in the synapse by blocking its reuptake from these presynaptic terminals (Stoehr, 2006). Cocaine, whether injected, snorted or smoked, is a very effective blocker of the re-uptake of dopamine in the nucleus accumbens. Ergo, dopamine remains in the synapses of cells in the nucleus accumbens, causing euphoria, leading to a rapidly increasing drive to take more of the drug. Crack cocaine is especially addicting, because it is absorbed very rapidly from the lungs into the bloodstream, and then into the brain.

Methamphetamine : Often going by the street name "crystal meth", methamphetamine also belongs to this class of nervous stimulants. Highly addictive, this drug stimulates a state of alertness and high energy, pleasure and excitement, with a significant following "crash" once the drug begins to wear off. Like other stimulants, meth is often consumed in a binge pattern, dubbed a "run", where small amounts of the drug are taken every few hours for a few days at a time. Such a pattern of consumption leads to drug abuse and addiction much faster (American Addiction Centers, 2019).

Looking at the neurobiological mechanisms at the cellular level, the high lipophilicity of methamphetamine allows it to easily cross the blood brain barrier via passive diffusion. Inside the terminals, methamphetamine depletes the monoamine storage vesicles of neurotransmitters, and also inhibits monoamine metabolism through the inhibition of monoamine oxidase. As a result, there is an increase in the intracellular levels of cytoplasmic dopamine and other monoamines. Dopamine also autoxidizes in the cytoplasm and generates reactive oxygen species (chemically reactive chemical species containing oxygen), leading to the degeneration of dopaminergic terminals in most species. Methamphetamine also stimulates a reversal of the monoamine transporters, which results in a voluminous release of monoamines into the synaptic cleft, like the other stimulants discussed above (Koob & Le Moal, 2006).

As for long-term deficits created by prolonged use, meth users with impaired attention and impaired cognitive control exhibit abnormalities in the cingulate gyrus and insula. MRI and surface-based computational image studies have shown gray matter deficits in the cingulate, limbic, and paralimbic cortices of MA abusers, smaller hippocampal volumes than control subjects, and white matter hypertrophy (Thompson & Hayashi, 2004). Another study showed that Methamphetamine users have microstructural abnormalities in white matter underlying the prefrontal cortices and hippocampal formation (Tobias et al., 2010). Furthermore, meth users have been found to have abnormalities in brain regions involved in mood disorders (Morais et al, 2017).

Hallucinogens : Hallucinogens or dissociatives are drugs that alter one's perception of reality, often resulting in visual and auditory hallucinations. Although hallucinogens are said to be less addictive than other drug classifications, their immediate impact is generally more perilous. LSD, Psilocybin Mushrooms and PCP are examples of hallucinogens. Relatively little is known about the exact mechanisms underlying the psychedelic and dissociative effects of hallucinogens on a user.

Importantly, these drugs are different from other classes of drugs as they do not evoke dopamine release, indicating that only drugs that activate the mesolimbic DA system are addictive. In contrast, "the critical action of hallucinogens may be increased glutamate release in the cortex, presumably through a pre-synaptic effect on 5-HT<sub>2A</sub> receptors expressed on excitatory afferents from the thalamus" (Lüscher & Ungless, 2006).

Interestingly, recent research on psychedelics such as lysergic acid diethylamide (LSD), psilocybin and ketamine have revealed a clinical potential of their usage in the treatment of certain psychiatric disorders. Behavioural and neuroimaging data indicates that psychedelics influence neural circuits that form the basis of mood and affective disorders. Their effect can reduce the clinical symptoms of these disorders. These findings imply that further research on psychedelics might reveal novel therapeutic techniques and interventions which are based on glutamate-driven neuroplasticity (Vollenweider & Kometer, 2010).

Conclusion : Recent advancements in neuroscience, and specifically neuroimaging techniques, have facilitated a deeper inquiry into the biological mechanisms underlying addiction. Though still a ravaging cost to society at large, addiction is now recognized as a disease, a biological phenomenon rather than a personal evil, which implies a step towards equally empirical and tangible solutions and treatment interventions. Further research would be of great value, especially as far as the discovery of more effective treatment interventions is concerned.

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## **Section I (b) : Substance Disorders**

### **Attitude building**

# **Example of Tobacco addiction prevention workshop**

**Age group :** Today, we have gathered here for a fun- learning workshop pertaining to "Tobacco Addiction Prevention". This workshop is being conducted for students of class 8th to 10th (14 to 16 years of age). This workshop can also benefit students beyond the aforementioned age range to raise awareness.

In the course of the workshop, we will talk and discuss about different types Tobacco Products and highlight their ill-effects on us. We will also have some fun activities during the workshop. So without any further ado, let's get started with the workshop.

## **What is Addiction?**

To put it in simple words, Addiction is compulsive need for and use of a habit-forming substance. It is a psychological and physical inability to stop consuming a chemical, drug, activity, or substance, even though it is causing psychological and physical harm.

## **What are the Symptoms of Addiction?**

Some of the prominent symptoms of Addiction are :

Uncontrollably seeking of substance, Indulging in harmful levels of habit-forming behavior, Neglecting or losing interest in activities that do not involve the harmful substance or behavior, inability to stop using the substance, even though it may be causing health problems or personal problems, such as issues with employment or relationships, Hiding substances for further consumption, Profound changes in appearance, including a noticeable abandonment of hygiene, Increased risk-taking to access the substance and indulging in it.

## **Addiction of Tobacco Products**

According to statistics, there is 'one' tobacco related death occurring every 8 seconds in India. Around 2500 people are dying each day because of the tobacco intake and use. 56.4% of cancers in men and 44.9% of cancers in women are caused by tobacco in India. Tobacco industry glamorizes tobacco use through direct and indirect advertisements using movie stars. Tobacco industry cleverly targets children, adolescents and youth.

### **Activity 1: Straw Activity**

▼ **Key Objectives** – To understand the physical limitations that people experience from the use of tobacco products.

▼ **Materials Needed** – Straws and Stopwatch.

▼ **No. of Participants** – Entire Class or Some Student Volunteers.

▼ **Time Required** – 2-3 minutes.

▼ **Outcomes** – Students will have a better understanding of the physical limitations that smokers and tobacco users encounter every day, doing simple things like running in place.

### **Instructions for Straw Activity**

This activity will help you realize how hard it is for tobacco users to breathe even when they're doing minimalistic activities.

If you have asthma, please don't participate in this activity; also, if you feel lightheaded or dizzy, please stop the activity. (Some students can volunteer to do this activity, or have the entire class do the activity)



### **Instructions for Straw Activity**

This activity will help you realize how hard it is for tobacco users to breathe even when they're doing minimalistic activities.

If you have asthma, please don't participate in this activity; also, if you feel lightheaded or dizzy, please stop the activity. (Some students can volunteer to do this activity, or have the entire class do the activity)

First, let's all run in place for thirty seconds, breathing normally.  
(Group runs in place for thirty seconds)

How is everyone feeling?  
(Let different people respond and comment on responses)

Okay, now, everyone put a straw in your mouth, pinch your nose, and breathe "normally" through your mouth with the help of straw.

This gives you an idea of what it feels like to be a person who smokes.

Now, keep the straw in your mouth, pinch your nose, and run in place for thirty more seconds. (Group runs in place for thirty seconds)

How is everyone feeling?  
(Let one or two people respond and comment on answers.)

Smoking and chewing tobacco causes, or worsens, many respiratory diseases, including lung cancer, emphysema, bronchitis, and asthma. When you smoke, your lungs fill up with smoke, tar, and harmful chemicals. Your lungs can get infections and inflammation.

This activity gives us a glimpse of how people with severe airway and lung disease, like emphysema, feel when they try to breathe through their mouth and nose. It is difficult to exhale and to catch your breath even while doing simple activities.

### **Brief History of Tobacco**

Tobacco is said to have been introduced in India in the beginning of 17th century by the Portuguese. The British East India Company started the commercial production of tobacco, which then flourished over the time.

### **Types of Tobacco Products**

▼ There are different types of tobacco products available in the market. It is consumed in various ways. They are as follows:

▼ Smoking tobacco - wherein, the tobacco is lit and smoked up. E.g. cigarette, bidi, hukkah.

▼ Chewing tobacco- wherein, the tobacco is chewed and consumed. E.g. gutka, paan masala, paan, mava.

▼ Tobacco application- wherein, the tobacco powder is snorted or applied on teeth. E.g. snuff, tobacco containing tooth powder, mishri.

### **How Harmful is Tobacco?**

Tobacco smoke emitted from cigarettes, bidi, hukkah contains more than 4,000 chemicals whereas chewing of tobacco contains more than 3000 chemicals. All of these chemicals are extremely harmful and injurious to health and may cause cancer and other irreversible damage to the body.

### **Activity 2 : Dessert Activity**

▼ **Key Objectives** – To reinforce the amount of harmful chemicals in tobacco products.

▼ **Materials Needed** – Big bowl for ingredients, candles, batteries, toy car, ammonia, nail polish remover, rat poison, pencils, toilet cleaner, and moth balls

▼ **Time Required** – 5 minutes.

▼ **Outcomes** – Students will have a better understanding of the toxic ingredients that are inside tobacco products.

### Instructions for Dessert Activity

This activity will help you realize how much of toxic and injurious chemicals and ingredients are there in tobacco products.

The demonstrator asks the class, "What kind of dessert do you all like to eat?" We will make a fun dessert with the available ingredients here.

### Ingredients

▼ <b>Stearic Acid</b> - Candle	▼ <b>Arsenic</b> – Rat Poison
▼ <b>Mercury</b> - Batteries	▼ <b>Carbon Monoxide</b> – Tail pipe of car
▼ <b>Ammonia</b> – Toilet cleaner	▼ <b>Lead</b> – Pencils
▼ <b>Acetone</b> – Nail polish remover	▼ <b>Napthelene</b> – Moth Balls

Go through each ingredient slowly and show it to the class. As you call each ingredient, pick up the prop meant to represent that ingredient and pretend to put it in the big bowl. After all of the ingredients have been "added", pretend to stir it on a high flame. Our dessert is ready. Even those who did not order this dessert will get to enjoy it. The end result of this dessert, made correctly will be serious damage to body and brain and may also lead to death.

You all must be wondering what kind of rubbish dessert is this? One cannot eat all of these ingredients or chemicals as a dessert. But do you know that all the tobacco products consist of these very products which are not only injurious to health but also life threatening. Why would anyone want to consume such chemicals and damage their body and of others around them?

This activity gives us a glimpse of how tobacco products incorporate hazardous and life threatening chemicals and toxins in their making.

### **Excessive Use of Tobacco can Lead to?**

India has the largest number of tobacco consumers in the world. Smoking and chewing of tobacco can lead to different types of cancer pertaining to lung, larynx, mouth, esophagus, throat, bladder, kidney, liver, stomach, pancreas, colon and rectum, and cervix, as well as acute myeloid leukemia.

Tobacco use not only causes cancer but increases risk of other life threatening and chronic diseases like Heart diseases, Blood pressure issues, Paralysis, Diabetes, Impotence in Men, Reduced fertility in Women, Poor memory and concentration, Low productivity at work.

Excessive use of tobacco also causes Staining of teeth, Pigmentation of palms and fingers, Dark/blackened lips, White/red patches on tongue and in mouth, Ulcers inside the mouth, Hair-loss, Wrinkling of the skin, Smelly mouth, bad breath, bad odour, Rash and strained voice.

### **Passive Smoking**

More than 40% of population is exposed to smoke from cigarettes/bidi of other people. A non-smoker living with the smoker passively smokes equivalent to 3 cigarettes a day. Passive smoking increases a risk of getting heart diseases and many respiratory diseases. Passive smoking during pregnancy results in babies with very low birth weight.

### **Prevention Measures- Say "NO" to Tobacco Use**

It is of utmost importance to take the necessary preventive measures in order to stay away from the consumption of Tobacco and avoid falling a prey to it. We should indulge in a healthy lifestyle and have a healthy balanced diet and exercise daily in order to remain fit. Playing games, swimming, exercising, jogging, taking walk, deep breathing, indulging in Yoga etc. will help not just in relaxing and relieving stress but also have many other health benefits. Avoid falling into peer pressure of consuming tobacco products and other injurious substances.

We all must thrive for betterment of human life by condemning use of tobacco and other such illicit substances.

### **Seek Help!**

If you are addicted to tobacco products or slowly falling prey to the substance, do not delay further! Seek help right away. Talk to someone close, a family member, friend or support group member for help in your effort to resist a tobacco craving. If required, undergo counselling and therapy. It is wise to avail the support available. Visit the Tobacco De-addiction Clinics or Rehabilitation Centers.

### **Two Examples of Alcohol addiction prevention workshops**

- ▼ **Substance** -Alcohol (including beer, wine, and hard alcohol)
- ▼ **Age group** - Grades VIII and IX

Students get prone to increasing stress levels and peer pressure, starting somewhere around 13 years of age. This is also the beginning of puberty and they might feel the need to experiment with things and substances. Thus, this becomes the most appropriate age group for education on addiction prevention.

### **Number of facilitators - 8**

The workshop shall be held for students of grade VIII first, in 4 different classrooms with 2 facilitators per class. This will be followed by the same workshop being held for students of grade IX, in 4 different classrooms with 2 facilitators per class.

- ▼ **Venue** - Empty classrooms (or tables and moved to the sides)
- ▼ **Time** - 2 hours

### **Outline**

- ▼ Activity 1 : Icebreaker - Walk, Stop, Run (15 minutes)
- ▼ Activity 2 : Quiz (30 minutes)
- ▼ Activity 3 : Balance and Vision (10 minutes)
- ▼ Activity 4 : Infographic (25 minutes)
- ▼ Activity 5 : Doctor Doctor Please Help Us (20 minutes)
- ▼ Activity 6 : Alcohol Prevention BINGO! (15 minutes)

**Q&A** (5 minutes)

- ▼ **Materials** - Chalk, blackboard, tennis balls, Infographic and BINGO printouts, chart paper, sketchpens, pens, bluetooth speakers.

### **Activity 1 (Icebreaker) - Walk, Stop, Run! (15 minutes)**

### **Instructions -**

(8 minutes) I invite you to gather in a circle leaving enough space for each of our bodies. Now I am going to play some music and invite you to move while listening to cues I give, simultaneously. Let your body move the way it likes, and if you bump into each other, remember to say "Thank you" instead of saying "Sorry".

Walk in any direction... change direction... Change direction again... Find edges of the space as well as the center... Change direction... walk backward... if you run into someone, say "thank you"... walk forward again... Take fast small steps... explore walking in slow small steps now try walking in long and fast steps... Walk in an unusual way you have never walked before... change direction... Now imagine you are a fish in the ocean and swim your way through the room. Pay attention to the sort of fish you are - your shape, size, and colour of your scales. Notice the other fish in the room and see if you want to play with them... or maybe swim right by some of them... change direction... Stop... Breathe... Move again... Swim faster.... Stop... Now swim very slowly... Stop...

(2 minutes) I invite you to stay where you are and close your eyes. Have the experience, and notice any sensations, thoughts, feelings that might come up for you. Do not analyse. Just notice. When you are ready, gently open your eyes and sit in circles of 8 people each.



(5 minutes) We shall now do a quick feeling check wherein each person quickly describes in one word or sentence how they are feeling at this very moment. They will then tag another person who will do the feeling check. We shall keep repeating this until every member in the group is done.

▼ **Materials required** - bluetooth speakers.  
<https://youtu.be/Rn2kVmRLc0M>

**Rationale** - This form usually serves as an excellent icebreaker, allowing participants to loosen up and explore their individual and collective spaces. It not only invites unpredictability and experimentation ("walk in an unusual path") but also encourages interaction ("notice who else is in the room"). It introduces them to the idea that they might bump into each other, and that that might be a good thing (Say "thank you!"). The movement of bodies also helps a group "claim" a particular space, almost always leading to increased interaction among those in the group.

**Activity 2 : Quiz**  
**(30 minutes - 3 minutes per question)**

**Instructions** : We will play this game in teams of 8. The team members unanimously select a captain. I am going to throw open the question while ONLY and ONLY the captain can raise their hand if they think they know the correct answer, after consulting their team members. The team gets 10 points for each correct answer. The team with the highest number of points wins. Do you have any questions? Shall we begin?

(Facilitator A asks questions. Every answer given by the students will be followed by an explanation given by the facilitator. Make sure to write keywords on the board. Facilitator B records the point on the board.)

▼ **Materials required** - chalk, board  
**Questions**

**1. We have gathered here today to learn about addiction and primary addiction prevention.**

**Can you guess what type of addiction we are going to talk about?**

A. That's right. Alcohol addiction prevention.

**2. What is the only type of alcohol that can be used for consumption?**

A. There are four types of alcohol: methyl alcohol, ethyl alcohol, propyl alcohol and butyl alcohol. Only ethyl alcohol or ethanol is used in the production of alcoholic beverages. The other three types, if consumed, can result in blindness and death, even in relatively small doses.

**3. What are the 2 types of alcoholic beverages?  
Can you name a few alcoholic beverages?**

A. Distilled and Undistilled (fermented) alcohol. Fermentation is the process by which bacteria or yeast chemically converts sugar into ethanol. Wine and beer are both fermented, undistilled alcoholic beverages. Distillation is a process which follows fermentation. It involves converting a fermented substance into one with an even higher concentration of alcohol by separating it from the water and various other components. Gin, Brandy, Whiskey, Rum, Tequila, Vodka, etc. are distilled or hard alcoholic beverages.

**4. As students of science, can you tell me what is metabolism?**

A. Metabolism refers to the process by which substances are converted into energy and waste products by the body. Did you know that 90% or more of the alcohol a person drinks is metabolised by the body? Alcohol is mainly metabolized in the liver (and stomach) with ethanol as the intoxicating agent. The rest is excreted unchanged by the kidneys into urine, by sweat glands, and by the lungs as a person breathes out. This is the basis for the function of the Breathalyzer test. This test approximates BAC, or blood alcohol concentration, as a person exhales into a device.

**5. What is the legal drinking age for the consumption of wine and beer in Maharashtra?**

A. 21 years. Different states in India have different legal drinking ages.

**6. What is the legal drinking age for the consumption of hard liquor in Maharashtra?**

A. 25 years.

**7. Which states/UTs in India have banned the sale of alcohol?**

A. 3 states and 1 UT. Gujarat, Mizoram, Manipur, Lakshadweep. In spite of legal restrictions, alcohol consumption in India has risen over 55% over a period of 20 years (according to OECD figures).

**8. State whether True or False.**

**There is no point postponing drinking until I am over 21 years of age.**

A. False. Research shows that the later the age-onset of drinking, the less likely you are to experience alcohol-related problems. The brain does not finish developing until a person is at least in their early 20s. One of the last regions to mature is involved with the ability to plan and make complex judgments. They made the legal age limit 21 for a reason!

**9. State whether True or False.**

**Women can hold their alcohol as well as a man.**

A. False. Men have a greater capacity to metabolize alcohol in the stomach. This means that higher levels of alcohol reach the bloodstream in women.

**10. State whether True or False.**

**Beer does not have as much alcohol as hard liquor.**

A. This is a tricky one. Depends on the amount consumed. (Draw this image on the board) All these drinks and the stated quantities contain nearly the same amount of alcohol. Always check the alcohol content of a drink before consuming it And know your limits.

**11. State whether True or False. I can drink and still be in control.**

A. False. ACTIVITY TIME! (Check Activity 3 and 4)

**Activity 3 : Balance and Vision  
(10 minutes)**

**Instructions :** (5 minutes) We are going to play catch in the same groups of 8 people. Let's start.

**Activity 3 : Balance and Vision  
(10 minutes)**

**Instructions :** (5 minutes) We are going to play catch in the same groups of 8 people. Let's start.

Okay this looks easy. Now, I need you to spin around in circles and throw the ball to the other person immediately as you stop spinning.

(Student describes their experience) Now this seems difficult. This is how alcohol affects balance.

(5 minutes) Now, I need one member of each team to come and write a sentence on the board. Seems easy! Now, spin 10 rounds very quickly. Again, write the sentence on the board.

(Student describes their experience) Now this seems difficult. This is how alcohol affects vision.

**Materials required - 4-5 tennis balls, chalk, board  
Activity 4: Effects of Alcohol on the Body  
(25 minutes)**

**Instructions -** (8 minutes) On the chart paper provided to each team, I need you to write down or draw the various parts of the body and how they are affected by alcohol.

(17 minutes) Now, I shall hand out an INFOGRAPHIC to each of you, and we will discuss the short-term and long-term effects of alcohol consumption on the human body.

Note how many did you get right!

(Facilitator discusses the various effects while categorizing them as short-term and long-term.

Examples of short-term effects - impaired coordination, blackouts, double vision, dehydration, aggressive behaviour, impulsive decisions, impaired judgment. Most others could be categorised as long-term effects)

**Materials required - chart papers, sketch pens, colour print outs of pamphlets.**

**Activity 5 - Doctor Doctor Please Help Us!  
(20 minutes)**

(10 minutes) I need a few volunteers.

Group 1 - 4 members and 1 doctor

Group 2- 6 members and 1 doctor

Group 3 - 8 members and 1 doctor

Now, I need all the members in each group to stand in circles while holding hands, while the doctors of each group will wait outside class. You are now required to entangle yourselves in any way you want, but remember to not leave your partners' hands.

The doctors can now come back. Your task is to help your respective group detangle itself.

(2 minutes) Doctors and group members share their experiences.

**(8 minutes) Discuss -**

a. It is easier to detangle the group of 4 members, but very difficult with the group of 6 members, and even more difficult with the group of 8 members. Draw a parallel between how it is easy to go down the spiral (entangling) while consuming alcohol but extremely difficult to come out of it (detangling) despite help from self and others (doctor).

b. All substances taken in excess have in common, direct activation of the brain reward system, which is involved in the reinforcement of behaviours and production of memories. Instead of achieving reward system activation via adaptive behaviours (Give an example of grades after studying), substances directly activate pathways. They produce such an intense activation of the reward system that normal activities may be neglected (academics, peer relationships, family relationships, etc).

**c. Binge drinking** - defined as consuming 4 or more alcoholic beverages per occasion for women or 5 or more drinks per occasion for men

**d. Heavy drinking** - defined as consuming 8 or more alcoholic beverages per week for women or 15 or more alcoholic beverages per week for men.

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**Activity 6 - Alcohol Prevention BINGO!**  
**(15 minutes)**

(10 minutes) Instructions: Page 2 of the handout consists of an empty BINGO that we are now going to fill using 5 different categories.

As we discuss, you may write down the answers in any of the 25 squares you like.

(Students are required to come up with answers for each category).

▼ **Category 1** : Circumstances under which teens start drinking?

(Stress, peer pressure, parties, parental influence, popularity, being uninformed, etc.)

▼ **Category 2** : Physiological effects of alcohol?  
Discussed in activity 4. Thus, serves as a summary.

▼ **Category 3** : Behavioral effects of alcohol?

(impulsive decision making, drinking and driving, impaired judgment, aggressive tendencies, inappropriate sexual advances, unprotected sex, etc)

**Category 4 :** Social, economic, and other effects of drinking?

(affects academics and work performance, family and social relationships, etc)

**Category 5 :** How to Say "NO"?

Discussed in activity 4. Thus, serves as a summary.

(Be straightforward, be polite, change the subject, be persistent in refusing, etc.)

(5 minutes) Now that we have 25 answers and you have written them down as you like, in your BINGO box, I am going to read out random answers and you may cross them out. When you have successfully crossed out all boxes in 3 lines (vertically, horizontally, diagonally), it's a BINGO!

**The End - Q&A (5 minutes)**

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### **Another Alcohol prevention module :**

**Introduction Activity :** Name & An activity that relaxes you.

Together : Something that stresses you out (5 minutes)

Activity 1 : Movement and Meditation (5 minutes)

Activity 2 : Find the object (10 minutes)

Activity 3 : Chinese whispers (with earphones on) (10 minutes)

Activity 4 : Identify the emotion (10 minutes)

Infographic (10 minutes)

Closure Activity: De-roling and Gratitude(5 minutes)

Feedback (5 minutes)

### **INTRODUCTION ACTIVITY :**

Once the facilitator (A trained mental health professional) has made an introduction of herself/himself, and has introduced the purpose of the workshop, the introductory activity can begin.

**Instructions :** "Let's all go arounds, say your name, followed by an activity that helps you de-stress/relax in day to day life." For example; My name is Shrishti, and dancing helps me relax.

(Once all the participants have gone around introducing themselves, the participants will be asked to shout out an answer to the following question together).

**Instructions :** "Now all together on the count of three, let's all shout out what stresses us out the most. It could be more than one thing. Let's focus all our energy on freeing up some frustration while we shout."

### **ACTIVITY 1 : MOVEMENT & MEDITATION**

**Materials** : Phone/laptop, and speaker, song (Weightless by Marconi Union).

**Instructions** : "Let's keep this momentum going! You can stand, jump, or stay seated, and just move your body to the music. Pay special attention to the areas of your body in which you feel the frustration and stress."

(The movement can carry on for 3 minutes, after which the participants will be instructed to slowly come to a standstill and focus on their breath.)

**Instructions** : "Begin to slow down your movements as you come to a standstill, you may return to your seated position or remain standing. Focus your attention on your breath and the movement of your face, chest and stomach. And bring to mind something that makes you grateful. You may close your eyes or leave them open based on which is more relaxing for you." "Now that we have grounded ourselves, let's move on to the next activity."

### **ACTIVITY 2: FIND THE OBJECT**

**Materials** : A handkerchief/piece of cloth to use as a blindfold; a schoolroom or household item placed at 10 feet distance.

**Instructions** : "For this game, one at a time, you will come up here, the chosen item will be placed at 10 feet distance in a location that you can see. You will then wear the blindfold, and turn around 10 times, and then locate that item." (After the activity is concluded)

"That was fun right? But did you notice how it was difficult to find the object, and even the general direction of the object for some, even though you're in such a familiar space that you could otherwise navigate blindfolded. The spinning affected all of our senses that would otherwise have helped us locate the object that we had just seen placed right before our eyes. Intoxication can have such an inhibiting effect on our senses, and body functions as well, which makes it difficult to carry out simple tasks like this one, let alone more complex and delicate tasks."

\*This activity can be conducted remotely as well, with each participant setting up the item in their own home.

### **ACTIVITY 3 : CHINESE WHISPERS**

**Materials :** Earphones, music on phone, a phrase (at least 5 words long).

**Instructions :** "You will all be organized in order, from first in the roll call to the last. You will all wear earphones, with your music on the loudest level. The first person in the roll call will see a phrase we have chosen, and will relay it to the next person in the roll call and so on until the last person tells us what the phrase is, once you have relayed the message, you may take off the earphones and observe the others."

(After the activity is concluded)

"The purpose of this game was to bring to life the interference that substances can have on the brain. Our brains rely on the neurons passing down information to each other in order for us to be able to assess and react to any given situation. But like the music was a hindrance, and made it difficult for you to relay the phrase to each other,

so are the substances to the neurons of the brain. This can make it difficult for us to control our behaviour, our actions, and our attention in the given situation."

#### **ACTIVITY 4: IDENTIFY THE EMOTION**

**Materials :** 8 emoticon cards/PPT slides depicted different emotions: anger, frustration, suspicion, fear, anxiety, surprise, happiness, calm.  
Placed at 4 feet distance.

**Instructions :** " For this activity, you will be divided into groups of 8. In each group, you'll be divided into a team of 4 of you will spin in place fast, and 3 will spin slow. One member from each team will not spin. From each team 'fast and slow', one person will spin 4 times, one will spin 8 times, and one will spin 12 times. After you're done spinning, an emoticon will be shown to you, and you will name the emotion it depicts. For those of you who won't spin, you will be shown the emoticon when you say ready. Your response time will be measured."

(After the activity is concluded)

"As you all must have noticed, the teammates who didn't spin were able to react immediately, and identify the emotion they were shown. The responses of those who spun faster were also more delayed, and especially as the number of times they spun increased. This goes to show that the amount and speed at which we consume substances can have a huge effect on our ability to assess and react to a situation, and more importantly to react appropriately. Especially as we rely on nonverbal cues for most of our interaction with people, any difficulty in recognizing how they are responding to the situation can lead to discomfort and misunderstandings, or even arguments."

\*This activity can be conducted remotely as well, the emoticon can be presented on a laptop screen using screen sharing.

**INFOGRAPHIC :**

(The facilitator can read out the information to the group if time permits, or can open the floor to questions that the students may have about the topic).

**Instructions :** ""These activities, although fun in the moment, were an attempt to show us the toll that alcohol and substance consumption can take on daily tasks that are necessary for our survival in a group (society). We need the functions of our body to care for ourselves, and also do the work that is required to make a living. We also need to be able to communicate with our fellow colleagues, and our families, and the people that we will live with. But, as all of these are addictive substances, it is possible that your everyday life can be disrupted. We will now hand out a flier that shows the many negative long term consequences of substance use. Take a few moments to go through the flier, and feel free to ask me any questions you may have regarding substance use and addiction."

### **CLOSURE ACTIVITY :**

**Materials :** Phone/Laptop, speaker, song (Shake it off by Taylor Swift).

**Instructions :** "As we conclude this session, let's take some time to shake off the frustration that we feel. It would be ideal if we could all engage in the activity that relaxes us that we mentioned in our introductions, but since we are in such a large group it's a little tough to accomplish. However, when you are alone, or with a friend, take the time to engage in these activities, especially when things get stressful. And expand and learn new activities as well. You could learn what your friends' activities are, and do them together. All of this will help us to self-care and self-soothe ourselves when things get difficult. But for now let's shake off the negative feelings, through our hands.

our legs.....

our heads.....

our shoulders...

the entire body.

Now, as the song comes to an end, let's take deep breaths...

and shout out the thing we are grateful for on the count of 3."

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## **Two Examples of caffeine addiction prevention**

### **Why Caffeine Addiction Prevention?**

Across the globe, across different cultures and ages, caffeine is one of the most widely used psychoactive drugs. (Meredith et. al., 2013). Excessive caffeine intake "can have a negative effect on health in terms of optimal sleep, overall growth, and development, and the risk for engaging in risky behaviors." (Gera et. al., 2016), exacerbate symptoms of anxiety, depression, psychosis, hyperactivity (Broderick & Benjamin, 2004), and in severe cases, although uncommonly so, may even prove fatal. (Willson, 2018)

In India, tea, coffee and non-alcoholic drinks form the 3 major sources of caffeine. Among adolescents, the consumption of tea and coffee, particularly, is being highly encouraged, and romanticized by the heavy marketing of manufacturers. The danger lies in the fact that many may be unaware of caffeine being a psychoactive drug, in the first place. Many remain uninformed of the adequate amount of intake, the effects of a caffeine high, and the toll it may take after. Caffeine is still considered a controversial substance, but it does have addictive qualities. And the packaging of some highly caffeinated beverages and foods do not come with this warning. Caffeine addiction is now recognized as a real, diagnosable condition by the International Classification of Diseases (10th edition), and the Diagnostic and Statistical Manual (5th edition).

Since adolescence is a critical period where experimentation with, and thus addiction of, various drugs, including caffeine, begin, it is important to provide the youth with evidence-based information about appropriate doses of caffeine intake, and all related necessities to prevent a caffeine dependence.

**The primary motive** of this workshop is to raise awareness about caffeine addiction among adolescents, emphasizing on what the compound is, its mechanism of action in our brain, how much of it is safe to consume, common place products that are caffeinated, busting myths around caffeine, and having the participants think critically about how it all starts – social and marketing components that could get them hooked to caffeine.

### **Let's Talk Caffeine**

(The following workshop is designed with an idea of it being a physical, offline workshop. However, the material can be modified and presented in a virtual, online setting as well.)

The workshop will be targeted at adolescents between 15 - 19 years of age. This is usually a period of major transitions - shifting from schools to colleges, adjusting to new environments, and dealing with academic and life stressors. This is also the age range where children go through their last major growth spurt, speaking developmentally and cognitively.

Thus, building awareness of the use of caffeine, which may begin and develop into a habit during this period, is crucial to prevention of later addiction. The materials are

designed in a mix of English and Hindi languages. This will be communicated beforehand to the enrolling participants. The purpose, and other details of the workshop will likewise be made known in the invite which will be circulated online. A banner or a print out of the invitation will also be pinned at the door, for walk-in participants to have a look at before entering the workshop room.

The total strength of the workshop will be a maximum of 30 participants. If more participants wish to join, they will be taken separately in another batch. The days would preferably be weekdays, during the regular school or college classes of adolescents, since it is easier for many to be present, and it seems less laborious to attend. However, if such a system does not work due to permissions, weekends, preferably Saturdays, could be selected. Reluctance about having the workshop on Sundays stems from the notion that adolescents may not be greatly interested in attending a lecture/workshop voluntarily on weekends, particularly Sundays.

Mid-afternoon time - sometime between 1:00 pm to 5:00 pm - would be preferable. The total time required for the workshop is estimated to be 2 ½ - 3 hours, including a short break in between.

A well ventilated, well lit, closed room would be preferable. A projector screen, with attached speakers for audio - video presentations will be required. A U-shaped seating arrangement, with chairs arranged in an open-ended configuration and the participants facing inwards would be preferred, if we have the luxury of space

Otherwise, a usual classroom seating, with adequate distance in between for participants to move around would be acceptable. 3 - 4 volunteers will be required for the workshop.

A (non-expensive) coffee scented perfume will be used to make the room smell like it when the participants are about to enter, just to build the mood, and because olfactory memories in humans are considered stronger. (Sullivan et. al., 2015)

The participants will be greeted, and the session will begin with a quick exercise of checking in how participants feel at the moment, and as a boost activity to start with. All dialogues are quoted from trending and well-known movies / stars, which are relevant to adolescents. The participants will be shown the slide, and asked to repeat the dialogue in the same fashion. For example - "At the count of 3, everyone who identifies with Rancho say the dialogue like he does, together"

Post this, there will be a quick introduction of the facilitator and the volunteers. The following rules will be explained.

1. Request to keep phone on silent mode.
2. "This is a general awareness exercise and not a personal attack on anyone. If you feel uncomfortable at any point, please feel free to indicate so."
3. "Let's strive to make this a safe, non-judgmental space. Please do not disclose outside any sharing or personal disclosures that may thus happen."
4. All questions will be taken at the end of the session.

### **Want – Need/ Craving – Addiction**

The purpose of this activity is to get participants to understand the difference between Needs, Wants, and Addiction. Participants will learn to label and classify their behaviours/ feelings in one of the aforementioned 3 categories, and it will allow us to discuss the meanings and definitions of these terms. A parallel learning would be to recognize the differences in opinions and choice between participants.

Materials needed : 3 paper banners - 'WANT', 'NEED', 'ADDICTION'

Procedure: Three volunteers will hold the 3 banners and stand in 3 distanced corners of the room. Desks will be moved to create space for the participants to move around. The facilitator will read the sentences (mentioned in the slide) one at a time, and participants have to decide, for themselves, where they classify the object / behavior and move to that corner of the room. A few participants will be asked to voluntarily share why they chose a spot. At the end, the meanings and dictionary definitions of the terms will be discussed, by having the volunteers act out and describe themselves as being the banners they were holding. For instance - volunteer holding the 'Need' banner saying 'I am Need. I am your craving.....You must have me!' (This will be said with a straight face and without any implied meaning, however a few chuckles are expected). Definitions and differences will also be displayed on the slide and briefly discussed with all seriousness as well. Also discussed will be how the same object or behaviours could be classified differently by different people.

Instructions: "I will read a list of objects and behaviours, one at a time. After I read it, you will move to the poster that you think best describes the example for you. Understand that there could be differences of opinions that may be reflected, and that is absolutely okay. There is no right and wrong."

Post task talk: Discussion around the meanings and differences between the 3 terms at the end of the activity. Connecting talk: On the lines of "We know that we are going to be discussing caffeine today. But before we get deeper, let's quickly understand the compound by itself."

### **Which among these contain caffeine?**

Materials needed: A coffee mug (empty), A cup of tea (empty), a hot chocolate bowl mug (empty), a can of Coke, a can of Red Bull, a bar of dark chocolate, placards. Procedure: All the material will be kept side by side on a table, with respective placards holding their names. Participants will be asked "Which among these contain caffeine?" The correct answer is all of the displayed products, in differing quantities. The material will be left on the table throughout the session, and referred to when speaking of caffeinated products. Having the material available throughout may also allow for a better visual memory.

Post task talk : This will be followed by a short questioning round - 'How many of us consume one of these products on a daily basis?', 'How many of us like one of these products so much we'd have it anytime anywhere?'. The idea is to understand that a lot of our commonplace products contain caffeine, since many equate caffeine with coffee consumption.

Connecting talk : On the lines of "All of us have tried at least one of these so far. These products are very much a part of our regularly consumed beverages. (Chai / Coffee / Energy drink lovers here - make some noise) The question though is, how much is too much? What is the safest and what harm can come from an extra cup of coffee?"

#### Talk- Introducing Caffeine addiction

The facilitator will deliver a 15- 25-minute talk, elaborating on the following pointers:

- ▼ Here's a fact - Caffeine is a psychoactive drug. In fact, one of the most widely used.
- ▼ To clarify at this point - Caffeine is not inherently, by itself harmful. This is why there are very few legal bounds on caffeinated products. This is also why many sports people consume caffeine before their performance, to give them the required rush. However, it has a certain effect on the brain when consumed in certain quantities, and effects very similar to other drugs, which is important to understand. Despite no clear legal limits on caffeine intake, caffeine related disorders have been recognized as a diagnosable, and treatable condition in the medico-psychological domains.

The Diagnostic and Statistical Manual of mental disorders - 5th Edition (DSM - 5) places caffeine and related disorders in the broader section on substance related and addictive disorders. Under the DSM - 5, Caffeine Intoxication, Caffeine Withdrawal, Other Caffeine related disorders like caffeine induced anxiety or caffeine induced sleep-wake disorders, and unspecified caffeine use disorder are diagnosable conditions, if caffeine use or withdrawal causes significant impairments in daily functioning, and meets the given criteria. (Slide 8)

▼ Speaking of Quantity first. (There will be different sizes of cups which will be referred to when speaking of quantity of consumption, because it is hard to visualize, for instance, how much 400 milligram is.). There are no universally accepted healthy consumption of caffeine amounts. There are many factors like body weight, gender, age and susceptibility, also the type of product, brewing time etc. that all influence the final caffeine amount that could potentially cause harm. While in the west, between 100 – 300 mg/day, roughly, is recommended for adolescents (pointing to the appropriate cup size, in approximation) (Gera et. al., 2016) However, many researchers suggest between 85 – 175 mg/day with body weight 40–70 kilograms as acceptable and safe. (Cho, 2018 & Gera et.al., 2016). This relates to about one cup of coffee, one - two cups of tea and two cans of soft drinks or energy drinks a day. (Keep reiterating that all these quantities are a rough estimate.)



▼ These are safe consumption limits. However, it does not mean that if one day you consume more caffeine than is assumed to be safe, you have an addiction. An addiction develops gradually, and there are some specific warning signs that you can monitor yourself for. Elaborate on the warning signs of caffeine intoxication, in line with the DSM - 5 (American Psychiatric Association, 2013)

▼ Nonetheless, anything that goes beyond the safe consumption bar can trigger potentially harmful effects. Let us understand what happens when caffeine enters our system.

▼ So, does this mean that you should never eat your favorite chocolate bar, or enjoy your tapri wali kadak chai, or go on a coffee date anymore? NO. We are not saying that. But you must strive to control your intake, and understand what could possibly go wrong with 'just another cup of coffee'.

▼ We keep taking coffee/ tea, chocolate and energy drinks as examples, because these are by far the most frequently consumed caffeinated products in our country (Sharma & Poornima, 2015, & Gera et. al., 2016). Elaborate on which product has the highest estimated caffeine amount. "A cup of 250 ml coffee contains 80-150 mg of caffeine compared to 60 mg from tea. 250 ml which is considered a large serving in the Indian setting where serving sizes are much smaller varying from 100 – 150 ml per serve. The correct way of estimating the caffeine intake should be on the basis of the weight of coffee powder used per cup rather than the volume as consumed. According to the USDA

one rounded teaspoon of instant coffee (1.8g) contains 57 mg of caffeine, which makes it more reasonable to expect approximately 60 mg caffeine per cup of coffee. Servings dispensed in cafe bars and up market retail outlets may be larger at around 250ml" (Food Safety and Standards Authority of India (FSSAI), 2010).

▼ For commercially available canned / packed products, it is always a good idea to quickly check the ingredients to see the caffeine amount. Connecting talk: Now that we have understood the basics, let's dive into a fun activity and debunk a few myths surrounding caffeine usage.

### **2 truths and 1 myth**

Procedure: Participants will be divided into 2 groups, and shown 3 statements on each of the 7 slides. Every slide will address one myth about caffeine usage. Each group has to guess which one of the 3 statements is a myth, which will be followed by a brief discussion on the same.

Instructions: "Work in groups and identify the one statement which is a myth. Note that here, we define myths as a widely held but false belief or idea. Your task is to correctly point out which statement is false. For every correct answer, the team gets 10 points. Please discuss amongst yourself before answering. The team that correctly picks out the maximum number of myths wins."

### **Discussion points for Myths :**

1. Caffeine causes cancer - While popularly believed to be true, recent research on the link between caffeine and cancer is not conclusive. Many studies in fact show a decreased risk of developing cancer as a result of low to moderate caffeine consumption. (Ganmaa et. al., 2008, Zhou et. al., 2015). Remember, low to moderate consumption. A higher dosage may have many other unwanted effects, not necessarily cancer though.

2. It is safe to consume caffeine in pregnancy - Research, most of which are mainly based on animal studies, show that caffeine over-consumption during pregnancy can affect the birth weight, and heart health of the fetus. (Sengpiel et. al., 2013). While some caffeine consumption within the safe limits are considered harmless, it is best to abstain from caffeine from conception to birth.

3. You Can Safely Mix Alcohol and Caffeine - Caffeine + Alcohol is considered a dangerous mix. Some of you must have heard "Alcohol ka nasha utarna ho toh coffee pee leni chahiye."

Well here's the fact - Caffeine intake has no impact on metabolism of alcohol. Caffeine can mask the depressant effects of alcohol, making drinkers feel as if they are less intoxicated and more alert than they would otherwise. As a result, they may drink more alcohol and become more impaired than they realize, increasing the risk of alcohol-attributable harms. (Ferre & O'Brien, 2011)

4. There are absolutely no benefits of caffeine - Caffeine consumption, in balanced quantities, has shown to have some health benefits like reduction in risks of certain kinds of cancer, reduced risk for heart failure, and even lowered risk for Alzheimer's disease and dementia later in life. (Eskelinen & Kivipelto, 2010). It is often added to analgesics (pain relievers) to provide faster and more effective relief from pain and headaches.

5. Caffeine can make up for lost sleep - Caffeine doesn't correct the cognitive impairments associated with sleep loss. There is no replacement for sleep. It only is a short-term solution to keep you from falling asleep in a lecture or while doing your assignments.

Connecting talk : We now have good knowledge of the nature, mechanism of action, quality and quantity of caffeine. However, what is it like to be dependent on it? What are some signs that tell us "Oh Boy, you are living off caffeine!" What happens when you are addicted to it? Let us hear it from someone who has lived through it all. We would like to invite <Name and a short introduction of the speaker>. S(he) is here to share their story with us, intending that we will all learn from their experience. After the sharing, you are free to ask her any questions you may have. We would like to request everyone here - Please do use any stigmatizing language when asking your questions. If you are unsure of how to ask a certain thing, you may ask the volunteers for help. We must also strive to respect the choice of the speaker to not answer certain questions.

## **20 questions to a person who overcame a caffeine addiction - A guest talk**

This will be a guest talk. A guest speaker, someone who has been addicted to caffeine, and has overcome it, will be invited to first share his/her experience of being in the addiction phase, and the process of recovering from it. Due permissions and consent will be taken from the speaker. They will be fully informed about the nature of the workshop, contents covered, and all necessary details. We will respect the speaker's right to privacy if s(he) does not wish to share all of their experience. The speaker will be particularly asked to highlight how the usage began, when did they realize it is an addiction, what were the withdrawal symptoms and how do they currently feel about caffeine usage. (This will cover the remaining aspects of caffeine addiction that were not previously discussed in the workshop). The idea is to give participants a glimpse into the life of a person who was previously addicted, and a hope that it can be overcome.

Participants can ask questions that they may have with regards to caffeine. A set of questions will be prepared as a backup. The title says 20 questions because sharing personal experiences takes time, and one would not want to hurry the speaker. However, if time permits, participants will be encouraged to ask more questions, if they may have any.

(If the speaker is unavailable, s(he) could be asked to join remotely, or a non-interactive recording of their lived experience could also be shown. The guest speaker will be thanked for their time and sharing.)

Connecting talk: On the lines of 'Now we need to put this learning to work in real life situations.

### **Towards the End**

#### **The Real - fusal skills**

Most times, many adolescents find themselves doing certain things out of social pressure, and because they do not know how to say no to an offer, without being a subject of gossip. Thus, it may help to get them to think how they would, when faced by some real-life situation, turn down an offer. Material needed: 6 scene cards.

Procedure: Participants will be divided into 3 or 6 groups. Each group will be given a scene card. The scenes include turning down a caffeine offer by one's crush, family and work colleagues. A timer will be set for 5 minutes. Every group will be asked to read the scene presented, discuss how they would respond, and prepare a 1 - 3-minute skit involving all the group members. The participants will be told that they would have to enact the play to the class.

Instructions: Working in your respective groups, read the scene cards given to you carefully, imagine you are in the situation, and prepare a 1 - 3-minute skit depicting how you would respond to the offer / request. You will have 5 minutes to brainstorm and think. Remember, importantly, that in all these situations, you have already had enough caffeine for the day before the offer is being made.

Please note that group members may have contrasting ideas and ways of communication. Please be mindful not to disrespect anybody, and strive to incorporate every input. Also note that you need not be very sarcastic in your response. Just come up with a best idea that would be polite, respectful, and also capable of putting your points across. Have fun. Your time starts NOW!

Post task talk: Reflecting on the responses of all groups. Analyzing which response would be best suited, and what could potentially be hurtful or go wrong in some responses, if that be the case. Participants will also be allowed to share any similar personal experience that they may have had.

Connecting talk: On the lines of 'A lot of fascination to try many products with high caffeine content comes not just from direct exposure by a friend or family member, but also from media and advertisements, to a great extent. Companies spend a lot of money on their marketing campaigns, and specifically target the youth for certain products like energy drinks, coffee, chocolate etc. Now that we understand caffeine a bit better, let us look at some Indian advertisements and how they are made to lure us to never stop consuming their products.

## **Deconstructing and reconstructing ads**

Goal : The aim of this activity is to aid in understanding how portrayal of caffeinated products targeted at the youth could be appealing, but manipulative, and attract them to be lifelong consumers. Many young people are readily influenced; they may still be in the process of developing critical reasoning skills. Heavy marketing can thus easily get one to believe what is being shown about a product on TV, highlighting the benefits exponentially, and hiding the demerits.

Material required : PPT slides, paper, pens, Full size chart papers, sketch pens, some old magazines, glue.

### **Procedure : The activity will be done in 2 parts.**

Part 1: Deconstructing - Participants will be regrouped to form 3- 6 groups (depending on the number of participants). Every group will be asked to think of an advertisement (Ads) for a caffeinated product (coffee, tea, dark chocolate, energy drinks, soft drinks etc.) that is targeted at adolescents. They could use one of the 3 ads in the bank, if they require. Working as a group, participants will then be asked to answer a set of 5 questions about the advertisement.



Part 2: Once the groups have answered the questions, they will then be asked to redesign / rethink an advertisement for the same product, this time being 100% honest about the quality and contents of the product. They could act it out to the class, or design it using a chart paper, as the group would like.

Each group will be, at the end, asked to share both the parts of the activity to all the participants.

Instructions: This is a fun activity, and will be done in two parts. You will be working in groups, and each group will get a total of 20 minutes. For Part 1, you will have to think of an Indian advertisement of a caffeinated product. It could be any advertisement, of any product, for example - coffee, tea, dark chocolate, energy drinks, soft drinks etc. The advertisement should be targeted to adolescents (The meaning of target population will be explained). If you wish to, you can run to the facilitator and pick an advertisement from the bank, which has 3 advertisements for 3 products. Once you have chosen an advertisement, you have to answer 5 questions about it, displayed on the screen. You can write your responses down on a sheet of paper. You are also allowed to have a look at the chosen advertisement on the internet, for which you may use your phones. The idea is to decode the advertisement. Please think carefully, and work harmoniously in the groups.

For Part 2, once you have understood the chosen advertisement, you have to rethink or redesign the ad for that very product, imagining how the ad would be if it were to give a 100% honest view of the nature and ingredients of the product. You can choose to act the redesigned ad out to the class, or make a print version of the ad and design it using chart paper and pens.

For both parts together, you will get 20 minutes. Please think well and be creative. Each group will then get 5 minutes to present their work, and share their experience. Remember, be respectful of opposing opinions and work as a team!

Post task talk: On the lines of 'Companies spend a huge sum on marketing their products and trying to make them appealing. In this quest, many advertisers try to grab your attention, urge you to try and continue to consume their products. It is important to be cognizant of what the advertisement is telling you, and what it is not telling you about a product. For instance, when Nescafe advertisements say "Din bhar bhagna hai, raat bhar jaagna hai, toh ek Nescafe aur laga", they convey a message that at a young age, you must hustle throughout the day, doing everything you wish to, and to get this energy, you need 2 cups of coffee a day. What they do not tell you is about the high amount of caffeine, and how it will act on your system to give you the 'sense of' energy, and what harm can an overdose cause.

How to help someone who could be overusing caffeine?

This will be a short, concluding talk, elaborating on the following points :

▼ If you notice a friend, or a family member being caffeine dependent, or if you see the early signs of caffeine addiction in them, here are some things you can do to help-

▼ Educate: They may be unaware of the nature of caffeine, the mechanism of action and its effects. Get in a gentle conversation with them. Get to know their caffeine consumption habits and put these bits of information across. IMPORTANT: Do not stigmatize, judge, or label them as 'Addicts'. Choose your words wisely so that they feel you are on their side. Do not lecture if they do not wish to listen, or feel the need to change.

▼ If the caffeine dependence has just begun, give them alternatives. For instance, instead of coffee, they could try Chicory root coffee, which is absolutely caffeine free, yet tastes like it. Instead of tea, urge them to try options like green tea etc. There are caffeine free drinks available even in India. Help them explore caffeine-free options. Beware of withdrawal signs though.

▼ In cases of severe addiction, avoid trying to Google ways to help, or attempt to help by yourself. Remember, cutting out caffeine altogether after a massive use can equally trigger withdrawal symptoms, which will need management. Caffeine use may have underlying psychological, biological or behavioral needs, which may be hard for you to handle by yourself.

▼ Connect them: In cases of severe addiction or caffeine dependence, urge the person to get professional help. Help them look for and book an appointment with a medical or mental health professional. Encourage them to seek help. Give them the necessary hope that it is treatable, and that a professional could help a great deal.

**Deaddiction - Where to find help?**

**The moderator will elaborate on the following points :**

▼ Caffeine addiction could be a biological dependence, or it could have associated psychological features. Medical doctors, psychologists and psychiatrists, and qualified social workers are the primary sources to connect with if help is needed.

▼ Usually, medical and mental health professionals work in close concordance in de-addiction help. Medicines and psychotherapy may both be needed and used, depending on the client's needs and severity of addiction.

▼ Support groups and group therapies may help too. However, it is a good idea to first choose an individual mode of treatment for personalized care. The participants will be given a list of professionals and centers that they can approach, after due permissions are taken from the respective treating professionals. The list will be displayed on a slide, which they could take a picture of. Handouts are avoided to save paper.

### **Concluding remarks**

"This age is of trying new things. So, try it. One cup of coffee or tea, or one can of energy drink will not lead to death. But, one cup / can every day could hook you to it. So do try it, if you wish to. Just don't be dependent on it."

A Tea / Coffee table will be made available for the participants outside the workshop room. The facilitator will end by saying - "There is unlimited tea / coffee being served outside. You may make a choice of the amount you wish to consume. It is, at the end, one's choices that make a difference. Thank you!" Participants will be thanked for their patience and cooperation.

Some group formulation strategies: For activities requiring division of participants in groups, fun strategies will be used to group participants. The motive is only a little pre activity fun. However, some of these may take longer. Thus, if there are time constraints, simple methods like dividing by rows etc. will be done.

1. A box of candy : Non - expensive candies (Eclairs, Kisme, Hajmola, Mentos etc.) will be put in a box, and participants will be asked to pick one without looking into it. Groups will be made based on participants receiving similar candies. Only as many types of candies will be put that are required to form the desired number of groups. We will know the total number of participants from the number of registrations, and will plan the number of groups to be made accordingly.

2. Birthday dates: Participants whose birthdays come between certain dates will be grouped together. For example - All participants with birthdays between 1st - 12th , 13th - 22nd, and 23rd -31st of the months will be grouped together.

3. Card pick: Two sets of cards, blue and green colors, will be prepared. On Blue cards, one word of the three combination pairs will be written, and on the green cards, the other word of the pair's combinations will be written. For instance

Blue Cards	Green Cards
Chai	Biscuit
Coffee	Cookie
Soft drink	Ice

The participants will be asked to collect one card from the volunteers standing in the corresponding rows, and find their combination pair from the other row. The combinations will be told to the participants. This way, we will have 3 groups at the end - 1) Chai + Biscuit, 2) Coffee + Cookie, 3) Soft drink + Ice. We will know the total number of participants from the number of registrations, and will plan the number of groups to be made accordingly.

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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

## **SECOND MODULE ON CAFFEINE DEADDICTION**

Opening Conversation:

- ▼ "Who here present drinks coffee/tea/coke/red bull and other beverages daily?"
- ▼ "Who drinks coffee/tea/coke/red bull and other beverages more than 4 times in a day?"
- ▼ "How do you feel after consuming these beverages?"
- ▼ Are you Caffeinated Questionnaire is given to the students
- ▼ Students are self- evaluated according to the scoring read out by presenter.
- ▼ Today we are here to talk about the our constant need to keep chugging drink after drink of caffeinated beverages and how can you can kick your caffeine addiction and actually enjoy your caffeine again without feeling like you are sacrificing a part of yourself.
- ▼ Introducing the meaning of caffeine What is Caffeine Addiction?
- ▼ A Case Study Investigating a Behavioural Intervention to Reduce Caffeine Consumption.
- ▼ The Pros and Cons of Caffeinated Beverages
- ▼ How do you develop an addiction to Caffeine?
- ▼ Intervention Strategies      ▼ Self Help Techniques
- ▼ Group Therapy                ▼ Summary of Module
- ▼ What have I learned from this Module

### **OBJECTIVES :**

- ▼ To be made aware of a building problem with caffeine overconsumption
- ▼ To be educated about the term caffeine addiction and whether you are caffeinated
- ▼ To understand what products are included in the caffeine family?
- ▼ To understand the positive and negative effects of caffeine
- ▼ How to effectively break free from said addiction without causing damage to you mental health.

# HANDOUT FORM 1

## - QUESTIONNAIRE -

Are you a Coffee Addict?	Yes	No
Do you consume more than two cups of coffee, tea or cola or chocolate in a day?		
Do you feel fatigued on and off during the day?		
Do you go through massive emotional mood swings during the day?		
Do you suffer from frequent headaches?		
Do you suffer from constipation or are you dependent on tea or coffee in the morning for clearing your bowels?		
Do you suffer from acidity or heartburn?		
Do you feel a generalized pain in the neck, shoulders and back region and a sensation of discomfort in the legs, hands and stomach?		
Do you suffer from a burning sensation, fatigue and heaviness in the eyes?		
If you are a woman do you suffer from premenstrual syndromes?		
Do you have difficulty in going to sleep?		
Do you wake up in the morning feeling dead tired?		
Are you easily irritable?		
Do you suffer from irregular or rapid heartbeats?		
Do you often feel dizzy?		
Do you have high blood pressure problems apart from anxiety problems?		
Do you have problems concentrating without your regular cup of coffee?		
Do your hands tremor?		
Do you feel dehydrated?		
Do you have ulcers?		

If you have answered five to six of the questions with 'yes' caffeine is part of your daily system, reduction or removal of products laced with caffeine from your diet will improve your health considerably.

If you have answered seven to eight of the questions in the affirmative, you are a caffeine addict, and need to reduce or eliminate caffeine from your diet. Before caffeine causes any nutritional imbalance or disorder try and be conscious about what you eat and drink.

If 10 to 12 of the questions have a positive answer, it's time to sit up and listen to your body signals. Caffeine can cause serious damage to your health. Wean yourself of the habit slowly and steadily, preferably with the help of the dietician.

Remember this is just a self- help questionnaire and not a professional diagnosis sheet. Increase of alarming results it is advisable to contact the family doctor.

# What Is Caffeine?

Caffeine is a drug that is naturally produced in the leaves and seeds of many plants. It's also produced artificially and added to certain foods. Caffeine is defined as a drug because it stimulates the central nervous system, causing increased alertness. Caffeine gives most people a temporary energy boost and elevates mood. It works by stimulating effect on cognitive functions. Caffeine is naturally present in more than 60 plants and contained in many foodstuffs such as coffee, tea and chocolate.

Caffeine is the most widely used drug in the world. Almost 80% of the world's population consumes a caffeinated product each day, and this number goes up to 90% for adults and children in worldwide people use it regularly and among them average consumption is more than 200mg of caffeine per day. Although consumption of low to moderate doses of caffeine is generally safe, consumption of higher doses by vulnerable individuals can lead to increased risk for negative health consequences, including cardiovascular problems and perinatal complications. A cup of coffee contains between 19 and 177 mg/d of caffeine. The mean daily caffeine consumption per person varies, depending on culture and geographical position, reaching from approximately 170 to 210 mg/d in the United States, UK and Canada and Asia to 410 mg/d. Caffeine is absorbed rapidly from the gastrointestinal tract and is nearly 100% bioavailable. Peak plasma caffeine concentration is reached between 15 to 120 min after oral ingestion and plasma half-life ranges between 3 to 8 hours. However, its absorption is incomplete when ingested in the form of coffee. Due to its hydrophobic properties caffeine readily crosses the blood-brain barrier. Following peak absorption, brain levels remain stable for at least one hour. Caffeine is metabolized by the liver; some metabolites also possess marked pharmacological activity.

Various psychopharmacological studies investigated the different effects that caffeine exerts on behaviour. Caffeine was found to possess beneficial effects on psychomotor function, vigilance, and mood. Furthermore, caffeine could enhance learning and memory. However too much of anything good is bad.

### Products Which Contain Caffeine

Drink/Food/Supplement	Amt. of Drink/Food	Amt. of Caffeine
Red Bull energy drink	8.3 ounces	80 mg
Mountain Dew	12 ounces	55 mg
Coca-Cola	12 ounces	34 mg
Diet Coke	12 ounces	45 mg
Pepsi	12 ounces	38 mg
7-Up	12 ounces	0 mg
Brewed coffee (drip method)	5 ounces	115 mg*
Iced tea	12 ounces	70 mg
Cocoa beverage	5 ounces	4 mg
Chocolate milk beverage	8 ounces	5 mg
Dark chocolate	1 ounce	20
Milk chocolate	1 ounce	6 mg
Cold relief medication	1 tablet	30 mg

### WHAT IS CAFFEINE ADDICTION?

Addictions are commonly referred to as "self-medicating," and despite society's collective obsession with the substance, some consumers do have a higher psychological risk of dependency. Individuals already possessing a genetic predilection toward anxiety tend to abuse caffeine at slightly higher rates than their calmer peers. Caffeine addiction is the body and the mind requires the stimulant to keep them-selves pressing forward throughout the day. Caffeine also increases work hours and leads to insomnia to meet our jittery needs. Caffeine dependents experience a tragic barrage of symptoms destroying body and mind alike. These range in severity from mild and curable without medical intervention to, unfortunately, critical health concerns – including death. Addiction to caffeine can begin as early as in school, or as the syllabus pressure gets the better of you in college or perhaps, when you land a job and have to course up the anxiety ridden path to office. The first sip happens when you battling stress and depression.

## **CASE STUDIES :**

A case study done by Morphet L et al. (2014) A Case Study Investigating a Behavioural Intervention to Reduce Caffeine Consumption. This case study investigated a behavioural intervention to reduce caffeine consumption in a 50-year-old female with a 35-year history of consuming 350 mg caffeine per day. The participant completed a behaviour diary for 10-weeks, recording amount of caffeine consumed, type of caffeinated drink, time, location, who she was with and the activity in which she was engaged. She also completed a 10-point performance scale, and recorded tiredness and headaches. Baseline data was recorded for one week, and then Functional Behavioural Analysis of the diary data was used to design an intervention. A graduated intervention was implemented: Stage 1 (1-week), caffeine =160 mg/day; Stage 2 (1-week), caffeine ≤80 mg/day; Stage 3 (7-weeks), caffeine =35 mg/day. Caffeine was reduced to planned levels during the intervention period. Perceived performance ratings were significantly improved during the three stages of the intervention relative to baseline  $p$  (0.05). Frequency of daily tiredness increased during Stage 2 and decreased overall during Stage 3 relative to baseline. Headaches were at least as frequent during the intervention as they were during baseline. Findings suggest that the intervention was successful over this 2-month period. Further monitoring is recommended in order to ascertain whether headaches and tiredness possibly symptoms of caffeine withdrawal.

The intervention successfully resulted in a decrease in caffeine consumption from an average of nearly five caffeinated beverages per day (350 mg) to a single beverage containing a low dosage of caffeine (35 mg). This supports previous studies highlighting the benefits of graduated reduction in health intervention. Further, results support the use of substitute products, rather than simply removing the substance of concern. This approach acknowledges that behaviours, even those with negative consequences, often serve important positive Functions for an individual, and have cues, or triggers as part of everyday life. In this case, caffeine was used to boost alertness while studying. The participant also associated caffeinated beverages with meals and socialising. She also used cappuccinos as a "little treat" For herself. The intervention design included substitutes for coffee, tea and cola in these situations. The participant was able to use herbal teas, cereal beverages and napping as substitutes.

## **HANDOUT 2**

### **BENEFITS OF CAFFEINE :**

- ▼ Boost your energy
- ▼ Lower risk of colon and cancer by up to 25% (regular intake)
- ▼ Reduced the risk of developing kidney stones
- ▼ Fewer asthma symptoms (theophylline is bronchodilator)
- ▼ May help prevent: cirrhosis of the liver, Parkinson's disease, skin cancer and gallstones.
- ▼ May help to lose weight as it may boost the number of calories you burn per hour by about 4%.
- ▼ It can relieve a headache as effective as an aspirin

Research shows that three or four cups a day (under two cups for pregnant women) aren't going to do any harm.

### **NEGATIVE EFFECTS OF CAFFEINE :**

- ▼ Caffeine Encourages Dependency
- ▼ Causes one to experience irrational emotions and feelings like anxiousness, nervousness, and irritability
- ▼ Muscle twitches and tremors
- ▼ Caffeine suppresses a chemical called adenosine, which is secreted by the brain to relax the body suppression of this compound by caffeine affects the body by making it feel a tense surge of energy.
- ▼ Too much caffeine in your body Promotes Dehydration caffeinated drinks are among the biggest contributors to dehydration despite a high volume of liquid consumption with these beverages. Dehydrated cells have difficulty absorbing nutrients, and they also have problems eliminating waste.
- ▼ Caffeine consumption may raise blood pressure.



▼ Increased risk of heart attacks among young adult

▼ Research suggested that too much consumptions of caffeine can Cause Breast Tissue Cysts in Women. One study showed that "Women who consumed 31–250 mg of caffeine/day had a 1.5-fold increase in the odds of developing fibrocystic breast disease and women who drank over 500 mg/day had a 2.3-fold increase in the odds of developing cysts.

▼ Caffeine can cause insomnia

▼ Caffeine can cause indigestion. People who consume caffeinated beverages often report an upset stomach or indigestion.

▼ Caffeine can leads to risk of Miscarriage. In a recent study, both men and women who consumed at least two caffeinated beverages a day during the weeks prior to conception slightly increased the risks of a miscarriage.

▼ Caffeine consumption can lead to increased anxiety, depression and the need for anxiety medication

▼ Consumption of caffeine for longer term has been associated with an increased risk of high cholesterol, heart disease, and osteoporosis.

▼ Caffeine may cause the body to lose calcium, and that can lead to bone loss over time. Drinking caffeine-containing soft drinks and coffee instead of milk can have an even greater impact on bone density and the risk of developing osteoporosis.

In massive doses, caffeine is lethal calculated to be more than 10 grams (about 170 mg/kg body weight) this is the same as drinking 80 to 100 cups of coffee in rapid succession.

High acute consumption of caffeine increases the risk of toxic effects, particularly in children and adolescents who have not developed tolerance to caffeine. Clinical manifestations of caffeine toxicity include serious adverse cardiovascular effects, seizure, and deaths. Other effects include sleep disturbance, increased anxiety, nausea, palpitations, and headaches. Childhood consumption may lead to habitual intakes in adult life. Concomitant consumption of energy drinks and alcohol by youth has been identified as a public health issue of concern for health promoters, policy makers, and regulators. An additional concern is that many caffeinated products are essentially a soft drink, high in added sugar, nutrient poor, and energy dense, promoted for sale based on their stimulatory effects. The displacement of nutrients from the diets of energy drink consumers and excess energy intake from discretionary foods contribute to obesity and related chronic disease, including cardio metabolic disease. (Christina Mary Pollard)

# How Can An Individual Develop An Addiction To Caffeine?

Many people develop a tolerance for caffeine. This means that their body gets used to having caffeine every day. Over time, they must keep increasing their caffeine intake to achieve the desired effects of alertness and ability to concentrate. For example, while a cup of coffee apparently stimulates your senses, a regular intake of caffeine can leave you a complete wreck. This is because coffee simply stimulates the central nervous system, increases the stress hormones in the blood streams, thus making a person feel unnaturally alert. Consequently induced alert state tends to subdue your body's natural instincts and prevent it from relaxing. This causes undue stress and leads to various kinds of disorders. Daily caffeine intake induces a 24 hour cyclic disturbance in your body. While the morning cup of coffee or tea perks up your mood most people can't stop at that. Almost every office goer develops a craving for the next cup and subsequently, a heavy fatigue sets in by late afternoon. Even if endless cups revives you at this time of the day, a total collapse is inevitable by evening. Irritability, fatigue and gloom along with an uncomfortable sensation are the usual symptom. What is worse is that finally when you try to sleep away your blues at night, you just can't. That's not the end, the next morning you get up tired, thirsting for a steaming cuppa to settle your mood. Thus begins a coffeeholic's journey. At the end of which, apart from developing dark circles under the eyes, you also acquire acidity problems, irregular palpitations and more. And this holds true for other caffeinated products. So next time you take a sip remember you are sipping a host of health problems too.

# **The Interventions which we have planned is based on Behavioral Therapy (BT) and Rational Emotive Behavioral Therapy (REBT)**

## **BEHAVIOUR THERAPY :**

The BEHAVIOURAL THERAPY is focusing on human behavior and looks to eliminate unwanted or maladaptive behavior. The therapy is used for those with behavioral problems or mental health conditions that involve unwanted behavior. Examples of this include addictions, anxiety, phobias etc. Therapist believes that behavior is learned through environment and therefore we can eliminate via therapy. The behavioral therapists will look at thoughts and feelings that lead to the behavior or occur as a result of the behavior to understand it on a deeper level.

## **RATIONAL EMOTIVE BEHAVIOURAL THERAPY (REBT) :**

The REBT is founded by an American psychologist Albert Ellis, is a system of psychotherapy which teaches individuals that is their believes which are largely responsible for their emotional and behavioral reactions to life events. Rational Emotive Behavior Therapy (REBT) is a short-term form of psychotherapy that helps you identify self-defeating thoughts and feelings, challenge the rationality of those feelings, and replace them with healthier, more productive beliefs. REBT focuses mostly on the present time to help you understand how unhealthy thoughts and beliefs create emotional distress which, in turn, leads to unhealthy actions and behaviors that interfere with your current life goals. Once identified and understood, negative thoughts and actions can be changed and replaced with more positive and productive behavior, allowing you to develop more successful personal and professional relationships.

## **HANDOUT 3**

### **HOW TO KICK YOUR CAFFEINE ADDICTION AND ACTUALLY ENJOY YOUR CAFFEINE AGAIN!!!!**

We've examined some of the detrimental effects of caffeine, but many of you probably already know that quitting on anything is no easy task. This module provides you with 2 broad ways to get rid of your problem-Self-help and Group therapy. These methods can be undertaken individually or in combination according to the convenience of the person, however word of caution: TRY NOT TO LEAVE THE PLAN HALFWAY. If you wish to wean yourself off this stimulant, here are a number of tips and ways to help you on your way!

This is a great way to overcome the greediness of coffee addiction. The next time you feel like a hot cup think about all the people in the world who have nothing. Think about how many coffees you have per day and whether or not that is really necessary. I have found that by thinking about compassion (others) I actually reduce the cravings I have about satisfying myself. It is quite powerful.

### ▼ Do a simple breathing meditation

Quite often our desire to drink coffee arises because we are stressed, anxious or tired. We think that coffee will make us feel better. However, you can bypass this need for coffee and any other caffeinated drinks by dealing with the initial problems of stress, anxiety and tiredness. The way to do that is with a simple breathing meditation.

▼ If you calm yourself down when you are stressed you will minimize the need for coffee. A coffee won't seem as necessary if you are having a great day and your mind is light and happy. Breathing meditation can do this.

Next time you feel stressed simply close your eyes and gently bring your attention to your breath. Focus on the breath going in and out of your lungs and the feeling at the tip of your nose. Begin to count each breath mentally. Count up to ten complete inhalations and exhalations. This will reduce your stress significantly. Once you do this you will feel much less likely to use caffeine to numb your anxiety. And the great thing about breathing meditation is that the effects last longer. You will not experience the low that comes after a cup of coffee.

▼ **Quitting Coffee Gradually** - So make sure you reduce your regular caffeine intake gradually. Initially reduce your intake by half. Avoid the other half by replacing it with a cup of mild organic green tea or herbal tea. For example if you are used to four cups of coffee in a day, start drinking two cups of coffee and two cups of mild green tea. Gradually replace the mild tea with soup or plain hot water mixed with honey and lime. Then replace the remaining two cups of coffee with mild tea and follow the same pattern.

• 4 cups of coffee 2 cups of coffee+ 2 cups of tea
• 2 cups of coffee+2 servings of soup/hot water with honey and lime
• 1 cup coffee+1 cup of tea+2 cups of soup/hot water with honey and lime
• 2 cups of tea+2 cups of soup/water with honey and lime

Freedom from caffeine dependence.

To successfully reduce your caffeine intake, gradually reduce the amount of coffee, tea, soda and energy drinks you have each day.

▼ **Drink lots of Water** - It is often feelings of tiredness that drive us to coffee and other stimulants like sugar. Remember that it might simply be dehydration that is causing your fatigue. When you feel tired, reach for a glass of water instead of a coffee. You should quickly feel less tired, and you'll save some money too! Begin to substitute cold caffeinated beverages with water. Water is a healthy choice and satisfies the need for drinking a liquid. Water also naturally flushes caffeine from your body and keeps you hydrated. The benefits of hydration are well documented. Research has busted the myth that caffeinated beverages don't hydrate you, but this is about cutting caffeine. A little water—even flavored waters with citrus, fruit, or other flavorful mixers—can replace the volume you normally take in with soda. Hot water is a popular performer's trick to keep your voice in prime condition, and is sometimes taken with a little lemon or honey to add flavor. If a hot cup is all you want, give it a try.

▼ **Replace one ritual with another** - The reason people generally get their caffeine from drinks rather than tablets, is that they're after more than the drug itself. Drinking a hot cup of coffee or a cold, fizzy energy drink is an enjoyable ritual to start the day or make it through a boring afternoon. So instead of just going cold turkey or weaning yourself from caffeine to nothing, it can be beneficial to replace your usual caffeinated fare with non-caffeinated alternatives. Replacing your old drinks with plain old water can be effective for some folks, but you may need something that feels a little "richer" to fill the gap. So, for example, as you reduce the amount of caffeinated coffee, you could replace it with decaf or herbal tea. As you decrease the amount of caffeinated soda you drink, you could swap it for fresh juice. Of course these replacements cost money, which will reduce the cost-saving benefit of quitting caffeine, but if it helps you break the habit, it can be worth it. Remember that whenever you "hack the habit loop" you keep the same routine as before, but replace the reward you used to get from your old behavior, with a new reward.

▼ **Educating caffeinated minds** - Here the students will be given thorough education on how much is too much and how it can impact their lives as well as those around them. Knowledge gives you the boost that helps you understand the difference between an everyday wake-up call to an everyday necessity. They need to be assured that there is a way to overcome their difficulty with a little work. The pros and cons of indulging in consistent intake of caffeinated products is explained to the students.

▼ **Prepare yourself mentally** - Like any task that we wish to undertake the first step is to mentally prepare ourselves to follow through with our intention. It is often seen that having made up our minds about something always makes it easier to visualize the end result which in this case would be to not be a caffeine junkie! So folks prepare yourselves well in advance before diving into the whole free- from- caffeine plan.

▼ **Build a routine** - It is important to try and get in to a daily routine and pattern that does not rely on the 'pick me up' effect of caffeine. Make a conscious decision to try to adjust your daily schedule. Whether it means going to bed an hour earlier, waking up an hour earlier or readjusting you're eating times, try to find a routine in which your natural energy levels feel comfortable.

▼ **Get up earlier** - Many people rely on a cup of coffee to be able to wake up and function in the morning. To get out of this habit, try to change your morning routine. Perhaps set your alarm for half an hour earlier so that you can wake up more naturally and do not have to rely on the artificial boost that caffeine provides.

▼ **Count your caffeine** - While doing all this adjustment in your daily routine, the first thing you need to do is keep track of how much caffeine you take in. Nutritionist suggests, "GO SLOW. Caffeine is mightily addictive, and any sort of drastic change can bring about equally dramatic symptoms. You can begin by taking accurate note of your intake over the first few days." If you're willing to do the math, bringing your caffeine intake to a reasonable level will be much easier. You'll be able to tell where you're struggling and make adjustments, or hold at a given point without giving up and buying a case of soda.



▼ **Address your habits** - Often our food and drink choices are very habitual. We accompany certain activities with certain food and drinks. If caffeine consumption is linked to a routine, you will need to address the routine. Do it one small step at a time.

▼ **Don't use coffee as a crutch** - If you are feeling stressed, anxious or tired, spend a little bit of time trying to think of the physical reasons behind these feelings instead of immediately turning to coffee for instant gratification of the symptoms. If you try to address these problems at the source, then you may find that your need for coffee will not be as strong.

▼ **Meditation** - First things first. I need to make it clear that when I say "meditation" I do not mean the type of meditation where you sit down on a cushion, close your eyes and chant some oriental syllables. Nope. What I am talking about is the type of meditation that you can do in your everyday life. You can do it while you are sitting at your desk, walking to work or driving in the car. The reason you can do this is because meditation is about training your mind. The Tibetan word for meditation is "gom" and this means "to familiarize". The idea in Buddhist philosophy is that through meditation you can familiarize yourself with your true self, your inner goodness or your Buddha-Nature. Buddhist believe that the true nature of a living being is enlightened wisdom, not evilness. This gives us huge hope. And by meditating you can actualize this hidden potential.

▼ **It also works for quitting coffee!**

You can apply meditation to many things in one's life. There is a meditation technique for every problem and overcoming addictions is one of them. Here are some simple meditations that you can do if you want to give up coffee for good.

▼ **Meditate on Compassion**

If you are addicted to any form of caffeine then chances are you are drinking more than a few cups per day. This is excess and far more than you actually "need". One way to combat this addiction is to meditate on compassion.

"When I was younger my mother would always scold me for not finishing my dinner stating that there were children in India who didn't get food for weeks. At the time I failed to see how my eating dinner would help them but as I grew older I realized that, as she did many times, my mother was teaching me about compassion."



### ▼ **Switch to a Milder Form of Caffeine**

Another method we've come across to reduce the ill-effects of caffeine isn't to completely eliminate it from your life, but rather to replace your caffeinated beverages with a milder form. Green tea and yerba mate are the most popular coffee and energy drink alternatives. There are also chocolate beverages out there that provide a mild energy boost in the form of theobromine. These alternative drinks have much less caffeine, but still provide a gentle stimulating effect. Fresh juice or packed fruit juice too have their own benefits in keeping you energized all day. What's more, they offer a myriad of health benefits.

If you're working on something especially challenging, and need a boost in focus, without the physiological effects of caffeine, try a nootropic (cognitive enhancers).

▼ **Try Half-Caf** - It may sound awful to coffee fans (and depending on how you prep it, it can be) but switching from fully caffeinated brews to half-caffeinated ones lets you drink the same amount of fluid while cutting the amount of caffeine you ingest in half. Combine this with stepping down the volume of coffee or tea you drink, and you're making serious progress.

Fall in love with the Café Diablo : This is a personal favourite, and a trick commonly used to keep one's caffeine intake in check. When you really need that afternoon cup of coffee, go for it, but instead of all coffee, make a half-cup of hot cocoa and a half-cup of coffee. The end-result is less caffeinated than a full cup, and really delicious. Watch how much sugar and milk you add, and you can even go 3/4 cocoa and 1/4 coffee instead. Just don't get hooked!

▼ **Try decaffeinated alternatives** - You may be surprised just how much of your coffee addiction is down to psychology and the act of preparation. Many people have commented on the practice of switching from caffeinated to decaffeinated beverages, including coffee and popular carbonated drinks, and the way in which consuming them had something of a placebo effect. The coffee taste remains the same but the majority of potential health risks have been eliminated. Take it slowly. Teeccino, a popular herbal tea that roasts up and is served like coffee, but is caffeine-free. You might also try roasted barley tea, or mugicha in Japanese (available at your local Asian market, or online.) Roasted barley tea is often sold with other ingredients to boost its flavor and don't have the tooth enamel-eating issues that other hot drinks often have. Both options ideal for

people who can't have caffeine for medical reasons, but even switching one or two cups of coffee or tea with it can help cut your caffeine intake without forcing you to give up the psychological comfort of a hot cuppa.

▼ **Try herbal supplements for extra energy** - Some natural herbs and medicinal mushrooms may help you stay awake. These can usually be bought as supplements at health food stores. You might try : Ginseng, Ashwagandha, Wild oats seed, Rhodiola, Holy basil leaf, Lion's mane mushroom.

▼ **Try Tea Instead** - Tea is another diet trick to help you cut down on caffeine, but it deserves a little more attention. My two caffeinated beverages of choice are coffee in the morning and tea in the afternoon. The key is to learn a little about tea, and which teas have the most caffeine in them and which have the least. We've laid out coffee and tea side by side before, but one thing is clear: if you're drinking coffee all day, or tossing back sodas, any tea will represent a cut in your caffeine intake, and can bring in some of caffeine's alertness and focus benefits without the crash you get from a sugary, caffeinated soda or a quad-shot espresso.

Green teas fall in the middle, averaging around 30-40mg per cup, again depending on blend and brew. Green teas usually don't push past 50mg, but lightly steeped pots can come in close to 10mg. White teas usually have the least amount of caffeine, partially because the plant is harvested at a young age and the leaves are very lightly roasted. White teas carry between 5-30mg per 12oz cup.

Herbal teas vary depending on the herbs that go into them. You'll have to do your homework on this one—some herbal teas (which aren't technically tea because they have no actual tea leaves in them) like Rooibos (aka Red Bush) has no caffeine, but Yerba Mate on the other hand has more caffeine than coffee. You can always play safe with Chamomile tea, Organic Tulsi tea, and Lipton Honey Green tea.

Also, keep in mind though that an average 12oz coke only has about 20-25mg of caffeine, so a one for one switch from soda to tea isn't a good idea. If you're considering tea as a substitute for coffee, you'll be decreasing your caffeine intake with the same volume intake. If you're considering tea as a substitute for soda, you'll still need to cut back. In either case, tea is a tool to help you cut back, not an overall replacement.

### **Use your willpower! –**

Around this point in the plan you will start facing withdrawal symptoms, which will probably make you and the people around you feel like a sour grape. The best way to overcome these symptoms is to stick to your schedule. It's an old fashioned technique, but sometimes the strength of a person's willpower can really work wonders. Make the conscious decision to continue on the whole give- up caffeine regime, and whenever you get the urge to grab a cup of coffee, simply tell yourself "no, not today" and choose an alternative snack or beverage to consume. If you can do this successfully, your addiction will begin to subside. You will find that over time you do not have to consciously remind yourself that you do not want coffee because you really won't crave it at all.

### **The Withdrawal Symptoms Of Caffeine :**

If one starts to immediately reduce the intake of caffeine dependence status and has realized that caffeine is the trouble factor in their diet, elimination of caffeine can lead the withdrawal symptoms that may be too tough to handle. Consequently, people may suffer from some of the following withdrawal symptoms :

• Headaches	• Lack of appetite
• Irritability	• Constipation
• Intensification of premenstrual symptoms	• Lack of concentration
• Fatigue	• Disorientation
• Generalized muscular tension	• Forgetfulness
• Nausea	

### **Fight Caffeine Withdrawal with Exercise -**

Research also noted one more creative suggestion: exercise. "One of the best ways to conquer caffeine withdrawal symptoms is to get some sort of exercise for 20 - 25 minutes. Exercise unleashes a flood of endorphins, which often helps to curb headaches." While you probably can't just go for a run or hit the treadmill every time you crave a soda or a cup of coffee, it's true that exercise—especially regular exercise—has mental and emotional benefits as well as immediate benefits.

Quitting coffee is not easy. It is a drug. It is addictive. It is all of those things that make it hard. However, you have an advantage. You now know that you are master of your own mind. Your mind does not control you – you control it. This means that when you decide to give up coffee you are going to accomplish it because you are in the driver's seat. The addiction is in your mind. So is the solution. Try these simple techniques and see if they work for you. These are just a few tips that might help you to quit caffeine.

▼ **Modeling** - Every often we are easily swayed by those who we see as authority or a role model. This can be an excellent motivating factors to get rid of this addiction. Sometimes someone else's life teaches us a very important lessons about our own self's. Here we can call people who were addicted to caffeine and have successfully rid themselves of the said addiction to talk about their experiences and their journey. Giving the audience a sense ease that if they can do it then so can I!

▼ **The Buddy System** - Even when it's not officially named as such, the buddy system helps us get through the thornier patches in life. Here the student can pair up with another friend who they are comfortable with and can talk too. As such the friend here becomes the string that will pull you back each time you feel like wanting to drop the whole idea of quitting caffeine. They can also provide you with rewards of your interest once you have accumulated a number of tokens for consistently sticking to the intervention plan. This method of token economy can actually motivate you to reach till the end as well as the buddy acting as an agent who you can't cheat into receiving the token/reward without completing the task

You don't have to give up caffeine entirely to get your intake under control. You may be ingesting way more caffeine on a daily basis than you think you do. Maybe you want to have more control over how caffeinated beverages make you feel. Whatever the reason is, you can get back in the driver's seat and learn to love your coffee and tea instead of feel like you're in an abusive relationship with it, all without feeling like death for weeks or months to get there.

### **Influential Panel Discussion –**

We can also include a panel of respected speakers who can come forth and talk to the audience about the "what", "why" and the "how" of caffeine addiction and their own personal experience in dealing with different intervention strategies during their work encounters. This can also be an open discussion forum where the students are given a chance to clear their doubts and misconceptions about their addiction and related emotional restraints.

Remember that each cup of coffee that you drink puts your adrenals and endocrine system under stress. An occasional coffee may not harm you, but drinking strong coffees several times each day can have a real impact on your health. In time, your adrenal glands may lose their ability to respond appropriately, leaving you tired, unenthusiastic and fatigued. Being caffeine-free and freeing your body of unnecessary stress is definitely something worth fighting for!

### **COUNSELLING GROUP THERAPY**

While some people are strong willed to accomplish their desired goal, others tend to need an extra push to go that extra mile. For these people we have devised a group therapy intervention so as to help them overcome their caffeine addiction. Group therapy is used to guide clients through the process of gaining insight about themselves, others, and the world around them. Through the group dynamic, clients foster hope and examine core issues that exacerbate their addictive disorders. They also work to develop their communication skills and learn to engage in fun, healthy social experiences. The group dynamic encourages honest feedback and facilitates bonding between individuals with shared experiences. Clients weigh in on the issues of others in order to offer suggestions or provide outside perspectives, broadening the individual's understanding of the conflict.

Other goals of group therapy include gaining inspiration through the recovery of others, self-identifying as a recovering addicting, and examining core values. Participants support and nurture each other like a family by reinforcing good behaviors and helping each other cope during difficult tasks. These groups further encourage exploration of emotional and interpersonal conflicts, confrontation about denial and harmful behaviors, and discussion about responsibilities and limitations. They add structure to chaotic lives and provide a safe environment in which to practice newly developed skills.

We particularly emphasize mindfulness, the concept of intentionally paying attention, and being present in the moment with compassion, with acceptance, and without judgment.

Recovery happens in three phases: "Coming In", "Looking In", and "Looking Out." During the "Coming In" phase, clients establish a trusted support system of peers and staff members. They develop healthy rituals and the self-confidence needed to honestly share their addiction stories. During the "Looking In" phase, clients learn to honour thoughts, feelings, and aspirations. By being transparent and exposing negative core beliefs, clients begin the process of forming a healthier sense of self. Transparency and introspection lead clients to find some of the deeper issues fuelling their addiction. They learn to act intentionally instead of reacting automatically to stimuli. They learn to analyse the thoughts and feelings behind their actions. They learn to acknowledge their addiction and reduce incentives to use in the future. In the "Looking Out" phase, clients have the tools needed to succeed and develop lifelong healthy habits. They can work on creating a plan for the long-term future, designed to manage cravings, relationships, etc.

#### **A list of possible group therapy activities :**

The first time attending any group therapy session can be intimidating. We find that many of the clients are unsure of what to expect, and need time to feel out the group dynamic before speaking up. This is completely natural, and you are not alone if you are uncomfortable sharing in front of a group. Going in with some idea of what to expect can help you focus on your recovery instead of on your nerves, so here are 23 caffeine abuse group therapy activities and topics you might encounter during your experience during a support group :

1. Identify and discuss triggers for substance use. What kinds of coping strategies can you use to overcome your triggers? Can you identify any patterns?

2. Discuss gratitude. What is gratitude? What are you grateful for and why?

3. Discuss the impact of language. How do certain words influence our thoughts and actions? Why are some words considered "bad" and others "good?" Are there any words that you strongly associate with substance use? How can you use your word choices to harm or support others? How can you use your word choices to harm or support yourself?



4. Make a list of activities to do instead of using drugs. What can you do when you're faced with cravings? What can you do to prevent cravings in the first place?

5. Write in stream of consciousness form for a period of time. Write down whatever comes to mind, even if it's "I can't think of anything to write;" just put pencil to paper and see what emerges. Everyone has the opportunity to share his or her writing when the time is up.

6. Make a list of the best moments in your life. Make a list of the worst moments of your life. What made them good or bad? Can you identify any patterns or similarities between the events?

7. What words would you use to describe yourself? What words would others use to describe you? What words would you use to describe an ideal person? How and why do these descriptions differ?

8. Play charades; practice expressing yourself without speaking. Discuss the importance of body language.

9. Participate in a role-playing mock interview. Play the role of someone who has been affected by your substance use (ex. a mother, a daughter, a friend, etc.) Others in the group will ask questions and you should answer in character. Discuss the importance of empathy and "walking a mile in someone else's shoes."

10. Discuss the importance of nutrition. What are your nutrition goals? What are you currently doing to achieve these goals? What can you do in the future? What should you stop doing? Would you say you have a healthy relationship with food? Why or why not?

11. Discuss the importance of physical fitness. What are your fitness goals? What are you currently doing to achieve these goals? What can you do in the future? What should you stop doing? Would you say you currently have a healthy fitness regimen? Why or why not?

12. Discuss the importance of sleep. What are your sleep goals? What are you currently doing to achieve these goals? What can you do in the future? What should you stop doing? Would you say you currently have a healthy sleep regimen? Why or why not?

13. Discuss the importance of self-care. What are your self-care goals? What are you currently doing to achieve these goals? What can you do in the future? What should you stop doing? Would you say you currently have a healthy self-care regimen? Why or why not?

14. Make a list of your bad habits. What makes them bad? What can you do instead when you are tempted to engage in the habit? Discuss ways to replace the bad habits with healthier ones.

15. Practice anger management skills. What makes you angry? What can you do to prevent getting angry? What can you do to keep your anger under control?

16. Discuss forgiveness. Is there anyone in your life that you would like to forgive? What would you say to them in that scenario? What would you like them to know? How would you like them to respond?

17. Practice meditation: close your eyes, breathe deeply, and try to clear your mind.

18. Tense up all of your muscles then progressively relax them. Discuss the impact of stress and the importance of letting it go.

19. Take turns sharing a personal, emotional story. The others in the group should try to identify the emotions you felt. Discuss the difficulty of identifying emotions, both personally and externally.

20. Discuss mindfulness and living in the moment. What things must you accept that you cannot change? What are the benefits of living in the present? Brainstorm mindfulness mantras.

21. Write a list of self-affirmations. Brainstorm affirmations for others in the group. What makes you uniquely you? Why is comparing yourself to others a useless task?

22. Discuss the concept of the "locus of control," ie. Whether or not the consequences of our actions are within our control. Compare the pros and cons of both extreme ways of thinking.



## What I Have Learned in this Module

▼ Think about what you have learned in this module and any useful bits of information, tips or strategies that you want to remember. Write them down below so you can refer to them later.

▼ Think about how you might use the information you have just learned. Write down some ways in which you could make use of this information.

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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

23.Role Playing: Two individuals should stand in front of the rest of the group and the group leader should call out a conflict scenario for them to act out. For example, the scenario could be that one person (Caffeine Junkie) is screaming at another for simply bumping into them and the two are about to get into a fistfight. After the actors act out the scene, the rest of the group should suggest ways that the situation could be handled more appropriately. After discussion, the two actors should act out the scene again, this time practicing appropriate conflict resolution.

### **MODULE SUMMARY**

▼ Caffeine is defined as a drug because it stimulates the central nervous system, causing increased alertness.

▼ Addictions are commonly referred to as "self-medicating," and despite society's collective obsession with the substance, some consumers do have a higher psychological risk of dependency.

▼ Caffeine also increases work hours and leads to insomnia to meet our jittery needs.

▼ Caffeine dependents experience a tragic barrage of symptoms destroying body and mind alike.

▼ Addiction to caffeine can begin as early as in school, or as the syllabus pressure gets the better of you in college or perhaps, when you land a job and have to course up the anxiety ridden path to office.

▼ Caffeine can boost your energy, lower risk of colon and cancer, reduced the risk of developing kidney stones, fewer asthma symptoms, may help to lose weight as it may boost the number of calories you burn per hour and it can relieve a headache as effective as an aspirin.

▼ Caffeine Encourages Dependency, causes one to experience irrational emotions and feelings like anxiousness, nervousness, and irritability, muscle twitches and tremors, raises blood pressure, causes insomnia, increased risk of heart disease and in massive doses, caffeine is lethal.

▼ Many people develop a tolerance for caffeine

▼ Quitting coffee is not easy. It is a drug. It is addictive. It is all of those things that make it hard. However, you have an advantage. You now know that you are master of your own mind. You mind does not control you – you control it.

▼ Group therapy is used to guide clients through the process of gaining insight about themselves, others, and the world around them.

# **TWO Examples of Nicotine addiction/ Smoking prevention**

## **Thank You For Not Smoking!**

After a discussion with the school counsellors at our internships, we narrowed down on Cigarette Smoking as our target area for the de-addiction module. Our target population includes adolescents from ages 12 to 18 years.

Braverman (2001) mentions that it is important for addiction prevention programmes to connect with adolescents on subjects that appeal to them, specifically social relationships and individual competencies. For this purpose, there is a focus on healthy communication (assertiveness) and on enhancing coping skills.

Our programme has been designed to include information about addiction itself (specifically addiction to nicotine, the active substance present in tobacco to which people get addicted), how to identify it, building self-esteem and self-efficacy, encouraging strong social relationships and building coping skills. Each part is explained in such a manner so as to make it easy for an instructor to conduct and a rationale follows soon after.

What is addiction?

Time taken: 10 minutes

Approach: Skit - My friend Nicotine

A small skit will be portrayed by the facilitators with the objective of explaining the effects that nicotine has on an individual. One of the facilitators will portray a student, Kiran, who has exams coming up, and the other facilitator will bring to life the character of 'Nicotine' - the addictive substance found in cigarettes. Kiran is stressed about her exams and is anxious about doing well. Her friend, Ram, comes over to Kiran's place so they can study together, but he brings his friend Nicotine along. Nicotine is an excited and bubbly person, and she and Kiran hit it off quite well. Kiran finds herself relaxing and the tension leaving her body when Nicotine is around. This helps Kiran feel calm and study better for her upcoming exams. Then, Ram and Nicotine have to leave. A little while after they're gone, however, Kiran finds the anxiety creeping in again. She needs to have Nicotine around so she can feel calm and can focus on her studies. Kiran decides to call Nicotine over. Nicotine comes in, and Kiran feels calm and stable again, owing to Nicotine's happy, excited and cheerful personality. This helps Kiran study, but whenever Nicotine leaves, she finds that her anxiety and stress rise to higher levels than what they were before Nicotine arrived. As a result, Kiran finds herself calling Nicotine over and over. However,

over time, Nicotine's excitement wears Kiran off; she's tired, exhausted, and fatigued. Nicotine is too excited for Kiran and Kiran can barely keep up anymore. Yet, Kiran is unwilling to tell Nicotine to go because she is certain that Nicotine helps her feel calm and less stressed. Kiran is weary, but relentless.

After the skit is completed, a group discussion will be held. The attendees will be asked to explain what happened in the skit and if they could understand the effects of smoking on an individual.

#### How addiction works

Cigarettes contain nicotine, a highly addictive substance found naturally in tobacco. Nicotine travels quickly to the brain and boosts the brain's reward center - triggering the release of dopamine. This causes a feeling of temporary relaxation and/or stress relief. However, this feeling is only temporary; soon, one begins to crave another cigarette. Over time, one needs more and more of the substance to experience the same 'rush' - creating a vicious cycle of dependency.

Cigarette smoking has several ill-effects, which include :

▼ **Reduced physical fitness.** Smoking reduces lung function and lung growth. It also causes shortness of breath, coughing, wheezing and increased phlegm.

▼ **Early heart disease.** Smoking can damage the heart and blood vessels which can increase the risk for atherosclerosis and heart disease. It also has a negative impact on one's immune system.

▼ **Poor oral health.** Smokers may suffer from yellow teeth, bad breath and other mouth problems

▼ **Poor skin.** Smoking is associated with skin wrinkling and early skin damage.

▼ **Emotional difficulties.** Smoking can make one more irritable, anxious, and even depressed ("The Effects of Smoking on the Body", 2017).

Aggressive behaviour, on the other hand, involves expressing anger, being intimidating, imposing one's views on another, and making demands of the other person. While the person may get what they want, they often end up hurting others in the process. Assertive behaviour, in contrast to the previous two styles, involves speaking openly, calmly; expressing one's viewpoint clearly without being aggressive. The assertive person maintains eye contact and a calm tone, is open minded, talks about why a certain situation is bothering them, and also offers possible solutions.

**LADDER describes a six-stage process for handling problems in an assertive way. These are :**

L – Look at your rights and what you want and understand your feelings about the situation

A – Arrange a meeting with the other person to discuss the situation

D – Define the problem specifically

D – Describe your feelings so that the other person fully understands how you feel about the situation

E – Express what you want clearly and concisely

R – Reinforce the other person by explaining the mutual benefits of adopting the site of action you are suggesting ("Assertiveness with LADDER", 2005).

## Self-esteem & Self-Help Diary

Time taken: 10 minutes

Approach: Paper Plate Activity & Self-Help Journal

The group will be asked to determine the worth of a paper plate. It's likely that most will say that a paper plate means nothing, is probably not worth even one rupee, etc. After getting responses from the participants, which could be in terms of money or any other value, the activity will be begun. Each person in the group will be given a paper plate. They will be instructed to write their name anywhere on the paper plate. Then, they will be asked to pass their paper plates around; the rest of the group has to write something positive about the person whose paper plate they have. In the end, each person will get their own paper plate back, filled with others' positive comments about the individual. The objective of this activity is to build each person's self-esteem through a group activity; reading positive things that others have to say about a person is likely to help with one's sense of self-worth. Participants will be asked to take the paper plate home and keep it in a place that is visible to them, just to remind themselves of their positive qualities. In the end, they will be reminded of one simple fact - everything has value, even a paper plate.

Post this, individuals will be introduced to the idea of a Self-Help Journal. A structure of the diary will be given. A stronger focus will be laid on closed-ended over open-ended items, as the latter can be quite contentious - young adolescents might struggle with writing long essays about their day. A more structured diary will make the task easier and more doable, and also more geared towards what we want - the positive aspects of the day.

The benefits of keeping a journal will also be explained, and a few pointers for diary hygiene will be discussed.

Why self-esteem and journaling are important

Self-esteem is refers to an individual's subjective evaluation of their worth. Research has linked self-esteem to addiction risk; for instance, it has been found that adolescents who have low self-esteem show a progression in their consumption of cigarettes. In other words, self-esteem can serve as a buffer against cigarette addiction (Khosravi, Mohammadpooras, Holakouie-Naieni, Mahmoodi, Pouyan, Mansourniac, 2016).



## Identifying addiction

Time taken: 10 minutes

Approach : Psycho-education

The adolescents will be asked to think of the possible signs of a bad smoking habit or addiction. They will be asked to share their own stories; for instance, have they ever thought that someone around them was addicted to smoking? What were the signs and symptoms? Of course, confidentiality will be emphasized and the students will be asked to not mention any personal details about the individual. They will then be run through the different signs of addiction via the presentation. At the end, the students will be presented with a Smoking Checklist - on the PPT as well as in the form of handouts. They will be asked to keep the checklist with them; it can help them learn when smoking is a problem and requires active intervention. The aim of this section of the workshop is to offer some basic knowledge to help adolescents identify the signs of a smoking addiction or problem.

How can you identify signs of addiction?

Identifying signs of addiction can be hard, but it's important to be aware of them :

▼ **Physical Evidence** : This refers to the rather obvious signs that indicate that a person has taken to smoking- finding cigarettes, lighters, matches in their bag; ashtrays in their room; ashes on their clothes, etc.

▼ **Appearance** : They have either put on or lost weight of late; their hair has thinned down; their lips have become dark. They may even start smelling of tobacco.

▼ **Mood Swings** : The person oscillates between being really happy or elated to feeling quite down or depressed. At times, they may be chatty, and at other times, they may be extremely quiet.

▼ **Isolation** : The person may withdraw from others and become quiet and reserved. S/he may interact with others who also smoke regularly.

▼ **Aggressiveness** : The person may have become more angry and aggressive than usual

▼ **Tiredness and Fatigue** : The person appears to be tired and fatigued most of the time ("Signs of Smoking Cigarettes", 2017).

It's important to take into account the person's context when trying to look for signs. These indicators must be treated as warning signs especially when they depict a sharp shift from the individual's usual demeanour.

Assertiveness against Addiction

Time taken : 15 minutes

Approach : Role Playing Activities

A role playing activity will be conducted to explain the concept of assertiveness, and to contrast it with its passive or aggressive alternatives. Three adolescents will be asked to volunteer; each will be given a chit with information about the sort of behaviour they have to display - passive, assertive, or aggressive. A few pointers will explain what each type of behaviour entails (for example raising one's voice or getting angry when aggressive; easily agreeing and not maintaining eye contact when passive; and using 'I' statements, maintaining calm, keeping a stable voice, etc. when assertive). A fourth student will then be asked to volunteer to complete the role play. The same situation will be used for all 3 styles: Person A (the fourth student) had borrowed some money from Person B over a month ago. Person B now has to approach Person A and ask for their money back. As each of the 3 styles are portrayed, others in the workshop have to make notes. Post each role play, a group discussion will be held talking about each style in detail. The group will then be told about the Assertiveness LADDER.

Assertiveness

Assertiveness is a skill that can help an individual cope well with various difficulties in life. Expressing oneself clearly, standing up for what one believes in, and being able to say 'no' - are all especially important for adolescents - it can come in handy with respect to combating peer pressure, which often plays a role in various addictions, including smoking/nicotine addiction.

It's important to distinguish amongst passive, assertive, and aggressive behaviour. Passive behaviour involves agreeing with others despite one's own feelings, avoid conflict/confrontation, speaking softly, and being afraid to speak up. It can be quite unhealthy as the passive person often has a hard time achieving their goals.

Journaling has several benefits. Writing about your day - especially important things that have happened - is a way for you to express your thoughts and feelings. Journaling allows a person think more deeply about themselves - their personality, their communication style - and to identify areas for self-improvement.

A plethora of research studies has established that journaling can protect individuals from stress, anxiety, and even depression. As those who are stressed, anxious or depressed are at a heightened risk of smoking, one can conclude that journaling can help one cope better with life's struggles and therefore lower the risk of consuming cigarettes. Journaling can also help with assertiveness, which requires that people change their internal dialogue and expectations as much as they change their outward behavior.

Journaling is most effective when one follows a proper hygiene :

- ▼ Do it every day: Commit to the diary and make an entry every day
- ▼ Set a fixed time: Try and incorporate the diary in your daily routine by setting a fixed time for it.
- ▼ Set a time limit: In order to avoid writing too much or feeling lost as to not knowing what to write. Setting a 10 or 15 minute time limit helps make the task more focussed.
- ▼ Be comfortable: It's important for the individual to use the diary in a space where they are alone and comfortable.
- ▼ Be honest to yourself

## Friendships against Addiction

Time taken: 10 minutes

Approach: Your Accountability Buddy

Each individual in the group will be asked to select a person from their life as their Accountability Buddy. This person could be a member of their family or a close friend, or even a classmate they are not too close to, but trust. The important thing is for the person to be able to trust their Accountability Buddy. The attendees will be told that the Accountability Buddy is someone who they can reach out to in times of distress. The Accountability Buddy is somewhat a mentor, who will help the individual by listening to their difficulties. At times when the person feels like engaging in a negative behaviour - including, but not limited to - smoking, the Accountability Buddy should be reached out to, who will then suggest something else for the individual to do. For example, instead of smoking,

Each person in the group will also be asked to choose someone for whom they would play the role of an Accountability Buddy. This would ensure that each person has an Accountability Buddy, but also is an Accountability Buddy to someone else. The role of the Accountability Buddy will be discussed in the form of telling the group what can be done to reach out to and help a friend who might be addicted.

## **Social Support**

Social support has been found to protect individuals against addiction. It also helps individuals who are addicted recover more quickly. Having the support and guidance of a trusted friend or family member can strongly help an individual work on themselves and feel better equipped to deal with life. It can also give :

- ▼ a sense of belongingness and inclusion,
- ▼ a sense of safety and security,
- ▼ reduced stress, decreased isolation and loneliness,
- ▼ an enhanced sense of meaning and purpose,
- ▼ hope and optimism about the future,
- ▼ the opportunity to escape the narrow world of one's own concerns

- ▼ Social support can counteract shame, isolation and secrecy ("Recover from Addiction: Social Support," 2016).

In the Indian context, Project MYTRI was an intervention developed on the basis of social cognitive theory and existing smoking prevention programmes. It was initially conducted in schools in Delhi and Chennai. Environmental and intrapersonal factors were targeted and three types of tobacco use were addressed, of which smoking was one. An interesting component that the project included was its peer leadership module that encouraged activism led by peers outside the classroom and even between schools. It included unique strategies such as electing peer leaders to conduct small group sessions for educational purposes (Perry, Stigler, Arora, & Reddy, 2008). It was found that children who were exposed to the two year intervention were less likely (than students in the control group) to show an increase in cigarette or bidi smoking over those two years (Perry, Stigler, Arora, & Reddy, 2009).

Mentorship programmes have been found to speed up recovery for addicted individuals. In fact, research has also established the efficacy of peer-led mentorship programmes and peer-delivered interventions, even for tobacco use. For instance, teens who had a peer-mentor showed greater reductions in levels of smoking compared to teens who did not (Dickerson, Savage, Schweinfurth, Medoff, Goldberg, Bennett, Lucksted, Chinman, Daumit, Dixon, & DiClemente, 2016).

Reaching out to a friend who might be in distress and resorting to substance use can be hard. But it can be done right :

▼ **Ask, don't assume** : Instead of going up to your friend and saying, "I know you've been smoking, now just tell me why!" take a gentler and more balanced approach, for instance, "What's going on? Is everything okay?" This will encourage an honest discussion.

▼ **Listen** : Don't jump to conclusions. Instead, actually listen to your friend and hear what they have to say.

▼ **Communicate your concerns** : Tell them you have been concerned and also tell them why. Instead of talking in terms of right and wrong, just be frank and tell them why you think smoking could be an unhealthy habit for them.

▼ **Offer support** : Tell them you'll be their Accountability Buddy, or offer support in any other way (for example, helping with exam stress, listening to their difficulties at home, etc.)

▼ **Get help from a professional** : Let them know that they can seek help from a professional, and that you would be willing to help them with that. If they agree, take them to the school/college counsellor.

## **We Can Figure It Out!**

Objective: To develop coping skills in children, encouraging them to see that there are different ways to react to upsetting events and different ways of dealing with them.

### **Initial discussion : 5 minutes**

The module begins with a quick discussion on ways we deal with an event. The instructor can give an example and ask children how they might react. Three types of reactions can be stressed upon – cognitive, emotional and behavioural (examples of all three are given in the slide). Ensuing sub-modules, Stress Management, Problem Solving, Goal Setting target ways in which children can ‘figure it out’.

The National Institute of Drug Abuse (NIDA), in its research guide for parents, teachers and community leaders listed as one of its guiding principles, that prevention programmes for middle school and high school students, in particular should increase social and academic competence (Robertson, David, & Rao, 2003). A Cochrane meta-analysis of the efficacy of tobacco addiction interventions supported this principle when it found that school based intervention programmes for smoking were effective when a social competence based curricula was used (Hartmann-Boyce, Stead, Cahill, & Lancaster, 2014).

According to the NIDA's guide, social competence includes building communication and drug resistance skills, enhancing peer relationships, inculcating self-efficacy and assertiveness and reinforcing antidrug attitudes in order to strengthen personal commitments against drug abuse (Robertson, David, & Rao, 2003). In the Indian context, Project MYTRI was an intervention developed on the basis of social cognitive theory and existing smoking prevention programmes. It was initially conducted in schools in Delhi and Chennai. Environmental and intrapersonal factors were targeted and three types of tobacco use were addressed, of which smoking was one. An interesting component that the project included was its peer leadership module that encouraged activism led by peers outside the classroom and even between schools. It included unique strategies such as electing peer leaders to conduct small group sessions for educational purposes (Perry, Stigler, Arora, & Reddy, 2008). It was found that children who were exposed to the two year intervention were less likely (than students in the control group) to show an increase in cigarette or bidi smoking over those two years (Perry, Stigler, Arora, & Reddy, 2009).

Factors like self efficacy and self esteem as well as peer support have been targeted in modules before this one. Hence, this coping module aims at increasing competence when it comes to other skills like problem solving, stress management and more.

A review of evidence-based approaches that have been found to be most effective in preventing adolescent substance use and abuse found that competence enhancement programmes typically include general problem-solving skills, cognitive skills for resisting influence of interpersonal or media forces, skills to enhance self-control and self-esteem and finally, coping skills to manage stress and anxiety. These programmes usually teach skills that can be applied to many areas of a person's life and effective programmes encourage the application of these skills to both substance abuse scenarios as well as life in general (Griffin & Botvin, 2010).

Braverman (2001) makes a strong case for applying resilience theory to substance abuse prevention programmes for adolescents. Since resilience literature places a strong emphasis on stress and coping, prevention programmes for substance abuse programmes could target individual level characteristics that act as protective factors to aid in coping. These characteristics protect from familial conflict, peer pressure and more. By building coping skills, programmes for prevention decrease the adaptive value that substances serve when it comes to dealing with distressing events.

### **Stress Management**

Objective: Help children understand that it is possible to manage extremely stressful situations. The section on reacting versus responding is designed in order to help children to learn that even when one is upset, there are healthy ways to respond to stress.

The instructor will begin by explaining our bodily reaction to stress and how prolonged stress can lead to more serious emotional and physical concerns.

The first activity involves children individually identifying parts of their body where they might feel the most stressed. An outline of a body is given to them and they can use markers to mark the areas after imagining a situation that makes them very stressed.



The instructor will then teach **Relaxation Breathing**.

Script: "Closing your eyes and begin to breathe in and out. Take even, deep breaths. In.....out. Try saying to yourself- "I am breathing in, I am feeling calm". It is okay to get distracted, try returning to your breath. Continue breathing. "

After a 2 minute pause, "Notice and enjoy that you might feel more calm and relaxed." "Now, to finish the exercise, take a final deep breath, open your eyes, stand up and stretch."

The instructor then explains the difference between reacting and responding.

Reacting might involves becoming aggressive and angry. This might cause you to act in ways that you could regret later. Try responding instead. This involves taking time to think about the situation, listening to the feelings of the other person, and then choosing a plan of action that is best for everyone.

The activity involves 3 different situations popping up on the screen. As a group, all the children must act out what they think is a reaction to the situation and what would be a good response instead. Instructors can assist and discuss possible consequences and outcomes.

As mentioned earlier, competence enhancing programmes are helpful in substance abuse prevention. By building children's competence in dealing with stress, the need to depend on substances to feel calm and more relaxed is slowly lowered. Botvin (2000) conducted a meta-analysis to assess effectiveness of school programmes for drug abuse prevention. He found that competence enhancement programmes that included stress management proved to be effective especially when it came to tobacco usage.

## **Problem Solving**

Objective : To encourage children to collaboratively come up with solutions to various problems by following a simple process outlined by the instructor.

Time taken : 20 minutes

This begins with a simple teaching on the five steps involved while problem solving. Once the teaching is complete, the activity can begin.

The activity involves asking the children to select a problem from 'The Problem Deck'. This is a deck of cards which has different problems on each. For example: "I have 1 week till exams and I haven't studied a thing!", "My friend won't speak with me because I let out her secret by mistake", "My mother insists I clean my room even when I really don't want to". Problems are to target instances related to school, friends and family. Children can work together in groups of five. To encourage them to solve using the '5 Step Process, instructors can suggest that one student lead the discussion for a particular step. For example, one student leads discussion on identifying the problem.

This module is based on the Cognitive Behavioural model in which we can view substance abuse in the context of other issues within an individual's environment. Thus, the module aims at helping students work through skill deficits and build coping mechanisms in order to face situations that could trigger drug dependence. The focus of the model is to enhance cognitive and behavioural skills in children to replace any maladaptive coping skills that lead to smoking. This is done through teaching them how thoughts, feelings and behaviour are linked (Gilley, 2017).

There are typically five steps associated with problem solving (Sternberg & Sternberg, 2011).

1. Problem identification: Is there a problem at all?
2. Problem definition and representation :  
Clearly outlining the problem in brief and specific terms.

3. Strategy formulation : This involves thinking of multiple solutions. You could either break down the problem or put together various pieces of information you have to come up with a solution.

4. Organization of information : Once you have the various solutions, it's important to eliminate the ones that will definitely not work and evaluate the ones you have left. Which solution should I choose? A pros and cons list will be helpful here.

5. Resource allocation : Once you have your solution, it's time to make a plan to execute it! This will involve you deciding how much time, money, energy you need to put into executing your plan.

### **Goal Setting**

Objective: Children must be able to understand SMART goals and evaluate certain situations to see if the goals are smart or not. Children must also apply the learning to their own goals.

Time taken: 20 minutes.

The instructor will first explain what SMART goals are.

Rohini's Dreambox is the activity that requires each team to apply their SMART learning. Each team is given a chit from the box which contains one of Rohini's dreams and the goals she's set out. They'll also be given a rating sheet in order to rate the goals according to the SMART parameters. If they find the goals falling short, they must suggest new goals according to what they've learned. Examples of dreams from Rohini's Dreambox: "I want full marks in my Mathematics exam", goals related to this dream are "Spend 10 minutes a day solving Math problems", "Get 50 on 50" etc.

Finally, children must work on their own to fill in their Journal. They must jot down one, long term goal they would like to accomplish and three different ways they wish to accomplish the same. Instructors may help if required.

Goal setting not only gives children a sense of purpose, but also instils confidence in their own abilities to accomplish tasks. Designed to enhance self-efficacy, goal setting encourages children to realise that they can forge their own path by sticking to resolutions (Gross, 2014).

SMART goals are defined as follows :

Specific : Clearly defined, no room for ambiguity.

Measurable: Is the goal obtainable and how far away is completion?

Achievable : Do you have the knowledge, skills to achieve the goal?  
If no, can you seek it out?

Results Focussed : Goals should be geared towards results and  
measure outcomes not activities.

Time bound : There should be enough time to achieve the goal.  
Ending the Workshop

Objective : To assess key takeaways from the workshop and  
to encourage children to practise skills they have acquired.

Time: 10 minutes

### **Let's Talk**

The instructor will conduct a quick discussion on skills the children have picked up. Questions like "What do you think was the best thing you learned today?", "Where could we apply these skills?", "Which was your favourite part?", "Is there anything you think you'd like to add?", "Do you have any questions?".

Instructors will also give a handout which acts as a basic guide for children. It is a souvenir that can be a reminder of skills learned at the workshop.

### **Conclusion**

While the module has been inspired and based on a number of different evidence based interventions for substance abuse prevention, it is important that we highlight a few flaws that perhaps time and practise can rectify. For starters, there is a dearth of research done with intervention effectiveness in an Indian context. Apart from Project MYTRI, there is no mention of any other interventions conducted in the country. While we have tried to make the activities as relevant as possible, it is likely that cultural differences might manifest themselves.

The module only targets students in its purview. However, a more holistic, contextual look at the issue of cigarette addiction is necessary. A more comprehensive approach that focusses on different sources of social influence as well as factors on an individual level has proven to be quite effective (O'Donohue, Benuto, & Tolle, 2014). Additionally, giving children the opportunity to participate in different activities and changing organisational structures is a promising approach. Community leadership is another area that could be explored. Ultimately, a comprehensive programme that begins with government policy and targets communities, families, schools and individual factors could prove to be effective.

There is no perfect programme that can promise a 100% success rate. However, through this module, we hope that concrete steps can be taken towards helping adolescents manage the stressors that life throws at them and be able to deal with the ups and downs of growing up in a healthy, adaptive manner.

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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

# Workshop Example 2 : Smoking prevention

Approximate time- 3 hours and a break in between

Medium- Zoom/ offline with modifications

Class size- 24- 30 students

Urban population targeted workshop

## **Topic : Tobacco Use and Management Supplies needed for workshop -**

1. Cigarette ad posters, boxes, wrappers, butts, fake cigarettes (Provided by the facilitator)
2. Art sheet
3. Pencils, scale, paints/colors/brushes/ water (any medium)
4. Dupatta, large kurta for skit (provided by facilitator)

Hello!

Good Morning/Afternoon.

I'm so glad we are here. I hope you all know why we are here.... (wait for response)

Ok.. so, today we will talk about Tobacco use and its management - a very small glimpse into addiction or now, what we call as substance use.



### **What do we mean by Substance use disorder?**

Substance use is habitual use of a substance. Any substance that is used and consumed in larger quantities, over a longer period than intended. There might be a persistent need to cut down/reduce its consumption. There might be multiple unsuccessful attempts to cut down its use. The individual may spend a great deal of time trying to obtain, use or recover from the substance. In more severe cases, all daily activities are severely disrupted if substance is not obtained and revolve around consumption of the substance. The urge to consume the substance may occur anytime but, in environments wherein the substance is consumed earlier, may trigger it more. This is called "craving". Specific reward structures are activated in the brain that are associated with the substance. Failure to maintain social obligations. It may affect work, school, home. The person may continue using the substance even though there are disruptions at work/school. This may also cause interpersonal problems. It might start affecting your relationships. Important activities- social and recreational are given up. There can be withdrawal from social activities and hobbies.

Risky use. A person may go to any lengths to obtain the substance, even though it might be physically hazardous. There may be recurrent physical and/or psychological problems. The underlying key factor being inability to abstain even though there might be a presence of difficulties being presented by the substance itself.

### **Tobacco Use Disorder**

Repeat all the points highlighting "Tobacco" as the substance of concern.

(The idea behind it being the ability to identify usage of any substance).

Even if an individual's tobacco use is not at the severity level to classify as a disorder, it might be a good idea to know more about the substance; to be informed about its components, harms and effects to us and others around us. Even a moderate amount of consumption of tobacco in ANY form is harmful. Tobacco Use is habitual use of Tobacco plants.

### **Why are we talking about tobacco use? And what is Tobacco?**

Tobacco is derived from the leaves of the genus *Nicotiana*. Tobacco in India is consumed in both smoke and smokeless forms. Various forms of consumption are Khaini, gutkha, betel quid with tobacco and zarda. Smoking forms of tobacco used are bidi, cigarette and hookah.

### **Why is tobacco addictive?**

Tobacco contains nicotine. Nicotine sustains tobacco consumption and use. Nicotine produces pleasing effects in the brain- feel good, temporary. So, you reach for another cigarette. Nicotine basically hijacks the reward pathways of the brain causing dependence on nicotine. Here is a short video that explains how our brain gets dependent on nicotine.

**<https://www.youtube.com/watch?v=PqeEGpCQhBA>**

Now that we have watched a video on how addiction is formed and how nicotine works, let's look at other aspects of tobacco consumption. Let's look at what a typical cigarette contains.

A cigarette contains many compounds.  
Anyone wants to guess?  
(Can prompt to say/type in answers)

There are around 7000 compounds. Of which 70 are proven or suspected human carcinogens including arsenic, benzene, formaldehyde, lead, nitrosamines, and polonium 210.

What are carcinogens?

Carcinogens are agents that have a potential to cause cancer. What kinds of cancer can potentially smoking lead to? It's just a cigarette.

▼ Worksheet on harms of Cigarettes

### **Harm caused by cigarettes**

Smoking can cause cancer in the body like :

- ▼ Blood (acute myeloid leukemia external)
- ▼ Bladder      ▼ Cervix    ▼ Colon and rectum
- ▼ Esophagus   ▼ Kidney and renal pelvis   ▼ Larynx
- ▼ Liver           ▼ Lungs, trachea, and bronchus
- ▼ Mouth and throat      ▼ Pancreas

#### **▼ Stomach**

Other diseases like cardiovascular diseases, pulmonary diseases.

Other visible changes on the body from smoking includes

- ▼ Premature wrinkling    ▼ Hairfall      ▼ Erectile dysfunction
- ▼ Bad breath              ▼ Effect on sense of smell and taste

**Diseases by smoking are the most preventable disease worldwide.**

▼ Every year, more than 8 million people die from tobacco use.

▼ These effects are not restricted to smokers. But, it also affects second hand smokers. Second-hand smoke exposure has also been implicated in adverse health outcomes, causing 1.2 million deaths annually.

▼ Nearly half of all children breathe air polluted by tobacco smoke and 65,000 children die each year due to illnesses related to second-hand smoke.

▼ Smoking while pregnant can lead to several life-long health conditions for babies.

▼ Over 30% of adults in India consume some form of tobacco. The number would be higher but...

▼ **Tobacco kills up to half of its users.**

▼ The absolute number of smokers is on the rise.

▼ Around 600,000 people die annually from bidi smoking alone.

▼ Smoking cessation remains uncommon—only about 5% of men aged 45–59 years are ex-smokers. India has about 4 current male smokers for every quitter at these ages.

Why are we talking about it now?

Reports suggest that adolescence is the age when most individuals try smoking/smokeless tobacco. We did a short survey. It revealed that more than 50% of the respondents had their first cigarette before the age of 18. 85% of respondents had their first cigarette between the age of 14-21. This indicates that early adolescence is the period when most individuals start smoking. More than 66% of respondents reported that they smoked with their peers, and/or to look cooler in front of their peers.

**Why is it important to talk about tobacco addiction?**

There is a misconception that certain tobacco products are safe and this has led to their increased usage. These marketing gimmicks are often used by the industries to promote tobacco products. Smokeless tobacco does not emit smoke and is considered less or NOT harmful. Smokeless tobacco is plain chewing tobacco like Khaini, Zarda, Kiwam, Bajjar/Tapkir, Masher, Gul, Gudakhu, tobacco toothpaste, tobacco water, paan with tobacco, gutkha, Mawa, Manipuri tobacco, all these are readily available and use is increasingly among children and women. An intelligent marketing strategy portrays the product's safety. **This is not true. Smokeless tobacco is one of the leading causes for oral cancer.**

Environmental Tobacco Smoke (ETS) is second hand smoking. This is a huge chunk of the population that gets exposed to the harmful emissions from tobacco smoking and is equally dangerous leading to other non-communicable diseases. There is a list of tobacco products given. There are products that are orally taken, inhaled and smoked.

### **Tobacco Industry of india.**

The tobacco institute of India has reported around 43000 crore annual market in revenue from tobacco. There are 1.3 billion tobacco users worldwide. That number would be even larger if tobacco didn't kill half of its users. Every four seconds, tobacco takes another life. The various marketing tactics and targeting youth at their vulnerable age drives this global epidemic. These industries are booming even though a pandemic that affects the respiratory system is killing lives every minute. They keep launching newer products to safeguard themselves from rules that will come up later. By then, the user will be addicted.

Tobacco and related industries continue to pressurise the government from increasing prices, and come up with newer methods to advertise their products.

What are some ads you recall that sold tobacco products?

It's also worth mentioning the working conditions of the people employed in the sector.

India's unorganised tobacco Industry.

Watch this short video.

**<https://www.youtube.com/watch?v=dazdWWVYJig>**

Take any doubts here and discuss the plight of children who are employed in this sector and the diseases they have to bear.

Here make groups of 3 randomly. If on Zoom, make breakout groups of 3-4. Give 25-30 minutes to come up with a poster/ skit/ anything creative. They can use the cigarette boxes, posters promoting cigarettes, articles that have cigarette ads in the art/ skit and use it to raise awareness.

Demonstration by each group in front of the class.

### **How does pandemic affect this?**

In a study by WHO, it was reported that the available evidence suggests that smoking is associated with increased severity of disease and death in hospitalized COVID-19 patients.

## ▼ Is it too late?

### **What do we do if we already are consuming any type of substance?**

Prochaska and Diclemente in 1981 gave 5 stages of quitting addiction. They are still as relevant today.

#### **STAGE 1**

##### **Precontemplation**

There are various reasons why one starts smoking. These lead to different patterns of smoking. This phase is when one is not thinking about quitting. Smoking is tried for experimental use which typically involves peers, done for recreational use; the user may enjoy defying parents or other authority figures.

**Regular use** - Here, the individual starts missing work. Substance use starts: The user misses more and more school or work; worries about losing drug source; uses drugs to "fix" negative feelings; begins to stay away from friends and family; may change friends to those who are regular users; shows increased tolerance.

**Problem or risky use** - there is low motivation to follow up on work and responsibilities. The individual starts missing school, may fall into legal troubles, and will go to any extent to obtain the substance.

**Addiction** - the individual may not be able to face daily life without drugs; denies problems; physical condition gets worse; loss of "control" over use; may become suicidal; financial and legal problems get worse; may have broken ties with family members or friends.

#### **STAGE 2**

##### **Contemplation**

It's known to smokers that quitting is difficult. In the contemplation stage, the smokers avoid thinking/talking about smoking. This is the stage where an individual has no intention to alter their habit in the near term (around 6 months). In this stage, individuals are often defensive, avoiding thinking or talking about their high-risk behaviour. They are often demoralised due to previous unsuccessful attempts at quitting. To progress from this stage the person has to weigh the pros and cons of their actions. They do not see their problem as being. Hereon, the individual starts thinking about changing their behavior in the near future. The individual may be aware of the risks involved in smoking. But hasn't been able to change the behavior. People can be on this

stage for a few days or even a few years. This stage involves reflections and knowing one's self and behaviors better.

### **STAGE 3**

#### **Preparation**

In this stage, the individual makes strategies to quit the addiction. Different strategies may be tried. Small steps are taken towards cessation of harmful behaviors. "I have to do something". Often, people skip this stage. This stage is necessary to make plans and strategies to adopt when one of the ways is not working. Adequate research is required to devise and maintain sustainable changes.

### **STAGE 4**

#### **Action**

Herein, the individual is making overt efforts to change. This is the beginning of tangible changes in behavior. The individual tests their 'self-efficacy,' and this is stronger than their temptation to revert to the problem behaviour. The person has to resist the urge to smoke/do other substances. This may also be aided by the external environment by making changes in lifestyle, informing people around, and using their support to begin resisting the urge to smoke.

### **STAGE 5**

#### **Maintenance**

Maintenance implies status quo in not engaging in the behavior in focus. This stage of smoking cessation can simply be defined as that the individual has not engaged in their harmful behaviour. Continued cessation focuses on the individual's satisfaction on cessation. If the temptation to smoke is too great, the pros and cons are again weighed. The individual may be tempted to begin again in the presence of other smokers or the situations in which the "craving" is triggered.

Relapse is a very natural part of quitting. But, relapse may shatter the self confidence or the motivation to quit. An individual might want to seek support from friends, family, medical, psychological assistance to quit. The problem may not be problematic on face value but, smoking is always problematic for us and others around us. An individual may relapse as many as 30 times during their attempt to stop smoking.

Growth and change are not linear. One goes through many changes and jumps stages back and forth before they finally notice a sustainable change.



One size doesn't fit all. It is very important to tailor make the withdrawal program based on each individual. One can always change their behavior. It might not be easy. Some of us require more assistance and time than others. But, we can get there together.

That was all for today!

Can we do a quick question answer session.

You can ask your doubts, give your feedback.  
After the session, we will send you a form.

Filling is voluntary to get the feedback of the session.

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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

### More Exercises

	Activity	Material Required	Purpose of Activity	Duration of Activity
1)	PowerPoint Presentation	<ul style="list-style-type: none"> <li>- PowerPoint</li> <li>- Laptop/TV/Projector to view the PPT</li> </ul>	<ul style="list-style-type: none"> <li>- Understand what nicotine is and how it affects the body.</li> <li>- Understand mechanism of e-cigarettes &amp; negative effects of it on the body.</li> <li>- Learn common reasons, symptoms and some strategies.</li> </ul>	20 minutes
2)	Talk from a former nicotine addict (optional)	<ul style="list-style-type: none"> <li>- Guest who was former t user of e-cigarettes or vape pens to share experience (preferably someone young)</li> </ul>	<ul style="list-style-type: none"> <li>- Guest can impact participants from first hand experiences through their addiction journey.</li> <li>- Can clarify any doubts regarding the topic.</li> </ul>	15 minutes
3)	Skit Preparation & Performance	<ul style="list-style-type: none"> <li>- Scenario handouts</li> <li>- A watch/clock to time the preparation &amp; performance</li> </ul>	<ul style="list-style-type: none"> <li>- Formulate ways to say no/help ppl who use nicotine products in different situations.</li> <li>- Witness the potential dialogue that may take place in these different situations.</li> <li>- Discuss the many ways to refuse these products, based on performances.</li> </ul>	20 minutes
4)	Final Reflection & Q&A's (if any)	<ul style="list-style-type: none"> <li>- Reflection sheet for participants to take home</li> </ul>	<ul style="list-style-type: none"> <li>- Based on learning from the workshop, reflect and review why participants wouldn't want to get into the habit of using e-cigs/vape pens.</li> <li>- Take home as a reminder.</li> <li>- Give a list of references to get help for oneself/loved one who may be addicted (if possible)</li> </ul>	20 minutes

# Detailed Description of Workshop

## Activity 1 - PowerPoint Presentation

**Time : 20 minutes**

**Slide 1 : Poster of workshop**

**Slide 2 : Quiz**

**Points to discuss :**

▼ You all have heard of nicotine and electronic cigarettes before, so let's play a game to see if you can answer a few questions about it.

▼ I will be reading out a question with 3 answer options and you all have to guess the right answer.

Questions to be asked (Nicotine: Nicotine Addiction", n.d.) :

1. Nicotine is: A) A drug, B) Not in E-Cigs/Vapes, C) Not addictive in small amounts (Correct ans=A)
2. Nicotine is : A) Not addictive at all B) Only addictive when you use it daily C) Extremely Addictive (Correct ans=C)
3. Electronic cigarettes lets out: A) Gas, B) Water Vapor, C) Aerosol (Correct ans=C)
4. Who is the most at risk for getting addicted to nicotine? A) Young people B) Adult ages 30-55 C) Elderly adults 75-90 (Correct ans=A)

**Slide 3 : What is Nicotine & Where can you find it?**

**Points to discuss :**

What is nicotine? (Click enter upon asking question): (Mishra et al., 2015)

▼ Nicotine is a drug that is a stimulant, which raises levels of physical or psychological activity in the body, and can be very toxic at high doses.

▼ It causes changes in brain chemistry quickly making the brain craving more, leading to addiction.

▼ Not only does it affect the brain but it adversely affects various other parts of the body like the lungs, reproductive system and throat.

- ▼ Nicotine is found in tobacco products

Where can nicotine be found? (Click enter)

Let's see where this highly addictive substance can be most commonly found:

- ▼ Nicotine can be found in tobacco and comes from tobacco leaves.
- ▼ Nicotine is found in cigarettes
- ▼ Most hookah contains nicotine
- ▼ E-juice used in e-cigs/vapes can contain varying levels of nicotine as well

#### **Slide 4 : Effects of nicotine on the body**

##### **Points to discuss :**

- ▼ Let's understand how nicotine affects various parts of our body.
- ▼ Starting with the brain, nicotine when inhaled enters into the brain through the lungs (Llamas, 2021)
  - ▼ This results in the stimulation of pleasure centers in the brain which releases dopamine (Llamas, 2021), providing a temporary feeling of pleasure
  - ▼ While this may sound simple and harmless, in reality what happens is that the nicotine stops the body from naturally experiencing pleasure (Llamas, 2021)
  - ▼ This means that the user faces a hard time in creating feelings of pleasure naturally without the use of nicotine (Llamas, 2021)
  - ▼ This leads to the user needing nicotine just to feel “normal”
  - ▼ The brain then associates the pleasure centers with nicotine and creates an appetite for it (Llamas, 2021), leading to nicotine addiction.
  - ▼ However, nicotine doesn't just have an effect on users brain, it affects other parts of our body as well (Mishra et al., 2015)
    - ▼ It can make the users heart beat faster
    - ▼ Can cause trouble breathing and majorly damaging lungs

- ▼ It can cause insulin resistance, making it risky for individuals with diabetes
- ▼ Nicotine can even negatively impact reproductive organs

### **Slide 5 : What do electronic-cigarettes contain & how do they work?**

#### **Points to discuss :**

What do E-cigs contain?

(E-Cigarettes: What You Need to Know, 2015) (Click enter twice)

▼ E-cigarettes contain propylene glycol, glycerol, nicotine, flavorings, water, and additional chemicals.

▼ Toxic ingredients have also been found in the liquid in some e-cigarettes, such as formaldehyde (a chemical that may cause cancer).

▼ The liquid also consists of various fragrances and aromas like menthol, linalool (floral), ethyl acetate (fruity), tabanone (cigarette-like) (Nowak et al., 2014).

▼ You may have heard of some of these chemicals because they're commonly found in other products/uses as well.

▼ Propylene glycol has been found in antifreeze solution.

▼ Formaldehyde is used in embalming processes

How do they work?

So let's understand how they work :

(E-Cigarettes: What You Need to Know, 2015)

▼ E-cigs provide nicotine through an aerosol which comes out in the form of a cloud full of chemicals (instead of smoke in the case of a tobacco cig).

▼ Taking a puff on the mouthpiece activates the battery-powered device.

▼ A heater then converts the liquid solution which contains nicotine, flavours and other chemicals into aerosol that the user inhales.

▼ This act of inhaling is commonly known as "vaping".

## **Slide 6 : What is so appealing about e-cigarettes & vape pens?**

### **Points to discuss :**

Let's take a look at a video which gives us more insight on how commercials influence the use of e-cigs/vapes through the lens of a former user

Click on video to play

## **Slide 7 : Why do you think people your age use e-cigarettes?**

### **Points to discuss :**

- ▼ Let's discuss some of the reasons why you think people your age use e-cigs?

Allow for discussion. Can use questions below to probe if required:

- ▼ How do you think e-cig social media/commercials influence a young adult's choice?
- ▼ How could friends influence a young adult's choice?
- ▼ Do you think boredom and stress would play a role in increased use of e-cigs?
- ▼ Could myths or misinformation about e-cigs affect a users choice?
- ▼ How do the many flavor options make e-cigs/vapes appealing?
- ▼ After 2 min discussion, enter click to view images.

▼ Researchers have found that common reasons to use e-cigarettes cited by youth were curiosity, peer influences, seeing a family member smoke and ability to use anywhere (Bold et al., 2016; Choi et al., 2012; Kong et al., 2015).

▼ Additionally, they found that the youth think e-cigarettes were "cool", have appealing flavors, are easy to hide and do not smell like cigarettes (Bold et al., 2016; Choi et al., 2012; Kong et al., 2015).

- ▼ As seen in the earlier video, e-cig industries prey on young people

▼ Their strategy is such that they know if young people get hooked on their products early in life, they'll have them as customers for years to come.

## **Slide 8 : Risks of using e-cigarettes :**

### **Points to discuss:**

Let's talk about some of the effects of using E-cigs and vape pens :

- ▼ The aerosol produced by the chemicals in e-juice, enter into the user's lungs and leave chemical residue behind.
- ▼ As we commonly know, nicotine is known to have effects on the
- ▼ Ear, eye and throat irritation is known to be common among e-cig/vape users.
- ▼ The nicotine smoked through e-cigs is addictive because of the way it works in the brain (Christiansen, 2020).
- ▼ It enters the brain quickly & activates reward pathways to release of endorphins (which are your body's natural pain-killers) (Christiansen, 2020).
- ▼ The concentrated amount of nicotine found in the juices makes it easier and more powerful to expose the brain to it (Christiansen, 2020).
- ▼ This liquid nicotine is absorbed far more quickly than nicotine from tobacco in regular cigarettes (Christiansen, 2020).
- ▼ As discussed earlier, ear, eye and throat irritation are the common symptoms of users of e-cigs.
- ▼ However, the biggest symptom would be getting addicted to the nicotine that is most commonly smoked through e-cigs.
- ▼ The use of e-cigs mainly affects three systems (Christiansen, 2020):
  - ▼ Mouth and airways: Irritation, cough and increased airway resistance
  - ▼ Heart and circulation: Chest pain, increased blood pressure and increased heart rate
  - ▼ Stomach: Vomiting and nausea



▼ What makes it more dangerous is that :

▼ The most worrisome is the high risk of more young people developing an addiction to nicotine.

▼ Since e-cig/vape products are so new all of the long-term consequences of these products are impossible to predict

▼ However, we cannot neglect the fact that the chemicals found in e-cig/vapes are not harmless to the user or the people around them

▼ For almost 20 years, health professionals did not know the long-term effects of traditional cigarette smoke either

▼ This just makes us wonder what else we will know in another 10 years about the harmful effects of these products when we have a fuller picture of all of the health consequences

▼ Studies have linked the use of e-cigarettes containing nicotine with contraction of deadly viruses that adversely affect lungs such as coronavirus (McAlinden et al., 2020).

▼ This makes users more susceptible.

## **Slide 9 : Addiction Symptoms & Prevention**

### **Points to discuss :**

▼ Now we know some of the risks and side effects of using e-cigarettes, the main and most worrisome one being addiction.

▼ In case you worry that you or your dear ones may be addicted or tend to crave e-cig/vape pens it's important to be true to yourself and answer these questions (Vaping Addiction and Nicotine Withdrawal, n.d.) :

1. Do you continue to vape even though you want to stop or think it's hurting you in some way?
2. Do you feel anxious or irritable when you want to use your vape but can't?

3. Do thoughts about vaping interrupt you when you are focused on other activities?
4. Do you still vape after getting in trouble with your parents or school for vaping?
5. Have you ever tried to stop vaping but couldn't?
6. Do you feel like you have lost control over your vaping?
7. Do you tend to use nicotine in other forms if vape pen is not available (for example cigarettes)?

If the individual answers yes to one or more of these questions, it would be crucial to consider that the individual may be addicted.

When an individual tries to quit smoking, they may face some common withdrawal symptoms, these include: irritability, restlessness, headaches, increased sweating, feeling sad, anxious, tired, disoriented, have trouble concentrating, sleeping and mainly have intense cravings for the e-cig.

Once this addiction or craving is recognized the next most important thing to do is to try to prevent it or reduce it.

Some strategies that could be used include (Vaping Addiction and Nicotine Withdrawal, n.d.): (Click enter)

1. Seeking help from a doctor or health professional.
2. Staying hydrated to help with headaches, sweating, fatigue.
3. Getting proper sleep and making it a priority.
4. Exercising and eating healthy snacks to combat feelings of hunger.
5. Getting the right support from trusted friends and family.
6. Find support groups nearby and join or seek help from a mental health professional.

## **Slide 10: Thank you & Questions**

### **Purpose of Activity 1 :**

1. To obtain knowledge about what nicotine is and about nicotine addiction.
2. To learn about the harmful effects of nicotine on the body.
3. To learn about the contents and mechanisms of e-cigarettes and vape pens.
4. To learn about the negative health effects caused by e-cigarette and vape pen use.
5. To recognise how commercials and the industry use strategies to increase use of e-cigarettes/vape pens among youth and the circumstances faced by users (through video).
6. To understand why some young adults engage in the use of e-cigarettes/vape pens.
7. To obtain knowledge on the withdrawal symptoms and strategies.

### **Activity 2 : Experience of a former addict (Optional)**

#### **Time: 10-15 minutes**

- ▼ Arrange for a former nicotine addict (preferably someone young so participants can relate & for powerful impact)
- ▼ Brief introduction and background of the former user addict of any e-cigarette/vape pen.
- ▼ Arrange for a comfortable seating/standing room for the guest.
- ▼ The guest will share his/her addiction journey.
- ▼ Aim of calling a former addict is to make the experience more personal and leave a more powerful impact on the participants.
- ▼ The guest should mainly talk about how he/she got addicted in the first place, when he/she realized, how did he/she get help and a bit more about the circumstances he/she was in during addiction.
- ▼ This will go on for not more than 10 minutes.

▼ Questions can be asked during the workshop to the guest after their experience OR if the guest is comfortable with sharing their personal email id/mobile number participants can get in touch with them later as well.

▼ Questions could also be asked to the guest after the completion of the workshop in case the guest has stayed back.

### **Purpose of Activity 2 :**

1. Hearing about the guest's experience and journey through the whole addiction and recovery phase.
2. Get firsthand personal knowledge.
3. Clarify any doubts with the expert themselves.
4. Get to know about other ways to cope for oneself/loved one.
5. Get personal one on one time with the guest in case help is needed.

### **Activity 3 : Skit Performances (Creative ways of saying NO/helping).**

**Time: 20 minutes**

### **Instructions & Material :**

▼ Now that we know more about the mechanisms behind nicotine and e-cigarettes and the risks that come with using it, let's think of creative ways to refuse using it/ helping loved ones who may be addicted, in difficult situations.

▼ I will be dividing you all into groups and giving each group a different scenario to act out wherein you have to come up with different and realistic ways to say no to the use of e-cigarettes which could possibly lead to addiction OR you may be assigned to a situation wherein a dear one may be addicted and you have to think of ways to help out.

▼ You may use any props that are easily available to you currently (if required).

▼ For example: a pen as an e-cig/vape pen.

## Activity 4 worksheet

### Activity 4 worksheet

Based on what we have learned today,  
what are some of the reasons that you would want to  
not get into the habit of smoking nicotine?

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▼ Some character ideas demonstrating different personality traits could be the trouble maker, the nerd who wants to be "cool", the social activist, the rule follower, the one who can't say NO etc.

▼ You will be given 10/12 minutes to prepare and each group will be given 2-3 minutes to perform.

▼ I will give you a warning sign when your 10 minutes are almost nearing after which all you will gather back together and start the performances.

▼ Hand out the skit scenarios

▼ Give groups 10-12 minutes to prepare their 2-3 minutes creative skits, demonstrating the different responses based on their assigned scenario.

▼ During preparation, walk around the room, helping groups as needed.

▼ One by one all groups perform, after each performance thank the group and acknowledge/emphasize on the skills used by them/ give appropriate feedback if required.

▼ This will go on for a minute while the next group sets up for their performance.

▼ Finally, after all performances, thank all the participants and reiterate the skills they used in their performances. Also, important to highlight how the different skills were illustrated based on the personality traits of characters.

### **Purpose of Activity 3 :**

▼ Learn and practice skills that will allow participants to resist e-cigarette/vape pen use.

▼ Think of ways to help someone who may be addicted.

▼ To put forward how different personality types play a role in influencing others to use/refuse/help.

▼ Gain insight on whether they have reflected and understood the information they learned from the PowerPoint & put it to use in possible real life situations.

▼ Get the participants to formulate ways to say no in different situations, in which the same nicotine product is being offered.

- ▼ To be a part of potential and realistic situations and dialogues.
  - ▼ To discuss the many ways to refuse/help, from the skills illustrated by the groups.
- (Scenario handout to be printed & given to participants)



**Instructions : Each card provides a description of a potential scenario you will be assigned and the task describes the objective of this activity**

**1) Hanging out in college**

**Scene :** You are in college, just hanging out with a bunch of mainly new friends between/after classes. One of your friends removes a cigarette/ an e-cigarette and asks if anyone would like to try it.

**Goal :** As a group your task is to discuss how each of you would respond to this new friend's offer. Use this discussion to prepare a 2–3-minute skit showing the exact scene and how different kinds of people would respond.

**2) School reunion**

**Scene :** You meet up with your closest friends from school one night. You realize that one of your friends is constantly smoking cigarettes/ using an e-cigarette the entire time.

**Goal :** As a group your task is to discuss how each of you would respond to what seems as an addiction of your closest friends. Use this discussion to prepare a 2–3-minute skit showing the exact scene and how different kinds of people would respond.

**3) House party**

**Scene :** You are at a friend's "empty" house with a few others (including the friend's brother and his friends). The friend's brother and his friends are smoking cigarettes/ using e-cigarettes and ask you and your friends if you would like to try it.

**Goal :** As a group your task is to discuss how each of you would respond to the friend's brother and his friends. Use this discussion to prepare a 2–3-minute skit showing the exact scene and how different kinds of people would respond.

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#### **Activity 4 : Reflect & Review (Last activity)**

**Time : 5-10 minutes**

#### **Instructions & Material :**

This is the last and final part of the workshop.

I will be handing out sheets on which you have to write down and reflect based on what you have learned today in this workshop, why you wouldn't want to get into the habit of using e-cigs.

This is a take home message and reminder for you all.

This activity will go on for just 5 minutes.

Ask some of the participants to read out only if they are comfortable.

Handout/email a list of references including professionals/counsellors specialising in addiction who may be able to help themselves/loved ones (if possible).

Finally, thank participants for being a part of the workshop.

#### **Purpose of Activity 4 :**

1. Push participants to review and reflect on what was learned in the workshop.
2. Get them to think on a deeper level as to why they wouldn't want to get into the habit of using e-cigarettes or vape pens.
3. To take the sheet back home as a reminder.

## Activity 4 worksheet

Reflect & Review!
Based on what we have learned today, what are some of the reasons that you would want to not get into the habit of smoking nicotine?

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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

**addiction-nicotine-withdrawal.**

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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

# **Example of Marijuana / Weed addiction prevention**

## **Workshop summary :**

This is an outline for a proposed workshop for preventing marijuana consumption among the youth. This workshop will be directed towards individuals aged 14-16. The workshop will be conducted within the school setting. This shall be a group activity, with a group of 15-20 students. The goal of the workshop is to help the participants understand what marijuana is, the effect it can have, as well as to learn healthy coping strategies they can use instead of resorting to marijuana. There will be one primary facilitator and 1 co-facilitator. The workshop will span for 2 hours at the most, participants will be given a break of 10 minutes in between.

## **Workshop schedule :**

### **Part 1: Introductions and assembly**

Students will be asked to sit in a circle. Facilitators will also be part of the circle. Facilitators will introduce themselves. The primary facilitator will also explain the topic of the workshop. The facilitator will explain that participants will not be asked to share or answer questions unless they want to. The facilitator will focus on making the students comfortable and reduce any anxiety they may have by building rapport. Questions may be asked directly, or can be written on pieces of paper and passed on to the co-facilitators and will be answered at the end of the session.

Materials needed : Small note-sized pieces of paper, pens- for questions.

### **Part 2 : Ice breaker activity**

Participants will be asked to sit in a circle. Each participant will be given a sheet of paper, along with a few crayons. The facilitator will then explain the activity. For this activity, the facilitator will mention a question or statement, and each participant has to draw or write the answer/ first thing that comes to their mind when they hear the statement. The drawings need not be elaborate or artistic, anything is acceptable. For each drawing, they will only be given 30 seconds. An example: What's your best friend's name? After all the questions are done, each person will hold up their work for others to see. If possible, participants will be asked to display the work on a corkboard.

**Activity instructions :**

So, we're going to be doing some drawing together. It's going to be super simple, and you don't need to be an artist for this. We would just like for you to enjoy the process. We'll be giving each of you a piece of paper and a few crayons. Then, I will read out a statement or a prompt, which you have to draw. For eg. draw your classroom. The drawing does not have to be good, or detailed. It can be as simple or as complicated as you like. I'll be giving you 10 such prompts, and you have to fit all of them on the same sheet of paper. You can draw on any part of the paper, it doesn't have to be in order. You are free to do what you like. There's only one condition: you'll only get 30 seconds for each drawing.

Ask if the participants have any questions before starting. After the activity is over, ask everyone to hold their drawings up. Ask if anyone would like to talk about what they have drawn. Discuss some common things that may have come up in the drawings.

**List of questions :**

1. The first letter of your name
2. An emoji you like
3. Your best friend
4. Your favorite piece of clothing
5. Your favorite food to have in your tiffin
6. A song you like
7. What do you like to do for fun?
8. Something you would buy if you were a millionaire
9. A place you want to visit
10. Something that made you happy today

**Materials :**

A4 size blank sheets of paper, crayons.

**Part 3 : Understanding what marijuana is and its effects**

Participants will be first asked to share what they think marijuana is. Then the facilitator will give details about marijuana, and the effect it has on our bodies. There will also be a discussion at the end to hear participants' views about what has been shared so far.

**Facilitator's points :**

Now that we've all settled in, we're going to get into the topic for today's session which is marijuana. I'd first like to hear what you guys have to say about this. What do you think marijuana is? Where does it come from? Okay, so marijuana goes by several names. Gaanja, charaas, bhang, dope, joint, grass, weed, hash, hemp. The drug that is consumed comes from a group of plants including cannabis Sativa, cannabis Indica and cannabis ruderalis. It usually looks like this picture- which is a combination of dried flowers, leaves, seeds, and stems from the same plant. This plant has a chemical called THC- (tetrahydrocannabinol). This is what causes the reaction that we see when marijuana is consumed. This chemical moves super quickly through the bloodstream to your brain and other parts of your body. THC's main goal is to target a part of your brain called the cannabinoid receptors. There's a lot of these receptors in your brain, and they are really important for brain development and functioning. Even more important when you're a teen because your brain is still growing. Now usually, these cannabinoid receptors are for some other natural chemicals that already exist in your brain. But what THC does, it takes the place of those natural chemicals. This over activates your neural system- and causes the 'high' associated with marijuana.

Cannabinoid receptors that get affected by weed. And these areas are involved in functions like vision, movement, memory, etc.

There are some pleasant feelings people may feel after consuming marijuana- this can be feeling happy, laughing a lot, feeling relaxed, and being talkative.



In addition to all the pleasant effects that you may have heard- there are also some really bad ones. Some of the initial aftereffects are: altered senses (for example, seeing brighter colors), altered sense of time, changes in mood, impaired body movement, difficulty with thinking and, problem-solving, impaired memory, hallucinations (when taken in high doses), delusions (when taken in high doses), psychosis (risk is highest with regular use of high potency marijuana).

These effects occur because certain brain functions are getting affected due to the THC we mentioned earlier. The main areas are thinking, coordination, learning, memory, problem-solving, and decision making. This is the part that we don't often hear or talk about- which is why it is important to know. The high lasts for a really short time. But with long-term uses, our brain can get severely affected.

#### **Part 4 : Drug abuse and Addiction**

This section will focus on helping participants understand that marijuana can also be an addictive drug.

##### **Facilitator's points :**

Marijuana, just like any other drug, can be addictive. What we mean when we say addiction is that a person is not able to stop using the drug, even when it is causing them to experience other health problems or causing social problems. This is when it becomes a substance use disorder. Research suggests that between 9 and 30 percent of those who use marijuana may develop some degree of marijuana use disorder. People who begin using marijuana before age 18 are four to seven times more likely than adults to develop a marijuana use disorder.

#### **Part 5 : Marijuana and the teenage brain**

This section of the workshop emphasizes the ways in which marijuana use affects younger individuals, compared to adults.

##### **Facilitator's points :**

All of you attending are in your early teens and your brain is still changing and developing rapidly. There's a lot of significant development that happens in your brain at this time, and that also means that marijuana can have a lasting impact. The earlier a person starts consuming marijuana, the more long-lasting its effects are. Your brain is thus much more vulnerable to addiction at this time.

Besides this, when a person starts using marijuana in their teenage years, it can affect thinking, memory, learning and also affects how the brain builds connections between areas necessary for these functions. The decline in cognitive functioning after marijuana use is also found to last much longer in teenagers than in adults. With regular use (daily or nearly daily), the alterations to the brain caused by marijuana become prolonged by frequent recurrences, which can, in turn, lead to lowered learning capabilities, a shortened attention span, and weakened verbal communication skills.

### **Part 6 : Consequences of marijuana use**

Participants will be made aware of areas of their life that can be impacted by marijuana use.

#### **Facilitator's points :**

Marijuana use is known to affect several areas of your life, so let's look at some of them. The first is physical health. The smoke from marijuana irritates the lungs and can cause the same problems as smoking cigarettes. This includes daily cough and phlegm, more frequent lung illness, and a higher risk of lung infections.

A person's heart rate also increases. This effect can last for up to 3 hours after smoking. This puts people who have heart problems or genetic vulnerabilities at risk. Regular, long-term marijuana use can lead to some people experiencing regular cycles of severe nausea, vomiting, and dehydration, sometimes requiring emergency medical attention. It also affects fertility and child development during and after pregnancy.

#### **The next area is mental health :**

In teenagers, we have seen that marijuana use is associated with mental health problems like depression, anxiety, and suicidal thoughts. Long-term marijuana use is also shown to be associated with temporary hallucinations and paranoia. There is also an increased risk of developing psychotic illnesses like schizophrenia. Long term use is associated with difficulties in thinking, problem-solving, memory, learning, attention, coordination.

### **The last area we shall look at is social life :**

Marijuana affects school performance and is shown to be associated with poorer academic performance, higher dropout rates. Marijuana is also illegal- being caught in possession of it or consuming it can both lead to criminal charges. It can cause Employment issues- increased risk of injury and accidents, increased absenteeism, increased likelihood of unemployment. People who consumed marijuana showed poorer self-reported levels of life satisfaction and quality of life. Marijuana use can also cause relationship problems with friends and family.

### **Part 7: Healthy coping strategies**

Participants will be first engaged in a discussion on some of the reasons why people may use marijuana. The facilitator will then highlight that stress and peer pressure are often common reasons mentioned by individuals. Then the facilitator will explain the need for having healthy coping strategies for dealing with stress. This will be followed by an activity.

#### **Facilitator's speaking points :**

We all experience stress and have to find ways in which we can deal with the stress. We call these coping strategies. I'm sure you all do certain things to help you deal with stress, so let's discuss them through an activity.

Activity : Participants will be divided into groups of 4. Then, all participants will be presented with a stressful situation. Each group has to respond with a suggestion of what they would do to reduce the stress in such a situation. To respond, one member from the group has to shout out the group name. The group name has to be a long-phrase- it can be a line from a song, or a rhyme eg. "Ring a ring a roses, a pocket full of posies". Groups can choose their own phrases. For each healthy coping mechanism stated, that group will get one point. 5-6 situations will be mentioned. A co-facilitator will write the group's responses on a whiteboard, and also keep track of scores.

#### **Activity Instructions :**

Firstly, we'll start by dividing everyone into groups of 4. Now, we'll be playing a game. I shall mention a situation, and you guys have to answer by telling me what you would do to reduce stress related to that situation. For eg. If you're stressed about homework that is due next week, what would you do?. To give the answer, you have to

shout out the name of your group. Now here, I want you all to choose a name for your group. It can't be a single word, it has to be a phrase. For eg. "Ring a ring a roses, pocket full of posies". You can choose a name for yourself. When you want to give an answer, one person from the group has to shout out the group phrase. The group that shouts the phrases the first will get to answer. My teammate here will be writing your answers and also keeping score.

**Materials: Whiteboard.**

Post this activity, participants will be engaged in a discussion on the coping strategies they have mentioned. Facilitators will also mention additional strategies. Facilitators will suggest that students may consider building a tool kit for themselves-a list of things they can do to reduce stress. Some examples of such tool kits will be shown on the slides.

**Part 8 : Saying no to peers**

In this section, the facilitator will talk about how one of the ways in which participants may be exposed to marijuana is through friends. The facilitator will then explain ways to say no, and also show a video regarding the same.

Video on saying no : <https://vimeo.com/129631483>

**Facilitator's points :**

You may find that sometimes your friends may try to force you to try marijuana or other drugs. At such times, it can be difficult to resist. You may also be worried about losing friends or being left out of the group because of it. It's important for you to remember that you have the choice to say no. And with some practice, learning to say no becomes easier. Let's watch a video that shows some of the ways you can say no.

Those are just some of the examples, let's look at more options in the next slide. Simply saying no. Being direct works well if it's a friendly teasing gesture. Even letting the person know that you are not interested, and being honest works. However, this can often feel difficult for most of us, so we can try other ways.

You can try saying alternatives to no, like Maybe next time; Not today.

Give a reason, fact, or excuse. An excuse often gets you away from the person or situation. Practice an excuse so that you won't hesitate and will sound confident. It's okay to use an excuse when speaking the truth may feel too difficult. Change the subject. You may suggest a different activity altogether.

Walk away. One of the most effective refusal skills is to simply walk away. You may feel obligated to stand and face "the enemy", but you need to just leave. You may also avoid situations where you know that you are likely to be pressurized by others.

Lastly, if you think things are getting heated- don't be afraid to reach out to an adult.

### **Part 9 : Summary and key takeaways**

The facilitator shall summarize what was covered. The facilitator will also ask participants to express what they learned. Participants will also be informed that they can talk to the school counselor or their teachers regarding this.

### **Part 10 : Questions and concluding remarks**

Participants will be asked to ask or write down any questions they may have and put them in a box being passed by the facilitator. Once all the questions are answered, facilitators will thank all the participants and also stay back to talk to participants who may want to discuss something privately.

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# Section I (b) : Substance Disorders

## Skill building

Not everyone tasked with delivering training has all the skills to be a great trainer.

It is no doubt important to know the subject area well, and that forms the core of the program. The Attitude Building activities and Skill Building are like additional layers added to this core. In this case, Trainers need to be updated with current trends among young people in terms of common substances being misused. Culturally, which are the factors that affect the social intermingling, the party scenarios should be known to the trainer. Street jargon for drugs, cheaper substances such as inhalants available to all socio economic sections, etc. must also be known to them. Hence, we should make it a point to have frequent discussions among the Trainers in the group so that they are all on the same page. Reading material can also be provided for give-away signs of substance use, since the young participants may also have questions about their friends.

Here are some of the most important skills you need to be a trainer and to deliver effective training, whether you are running a Train the Trainer course or delivering standard training to a team.

- |                         |                       |
|-------------------------|-----------------------|
| ▼ Active listening      | ▼ Public speaking     |
| ▼ Research and analysis | ▼ Presenting skills   |
| ▼ Communication         | ▼ Facilitation skills |
| ▼ Consulting            | ▼ Organization        |
| ▼ Group management      | ▼ Planning            |
| ▼ Creativity            | ▼ Workshop design     |
| ▼ Critical thinking     | ▼ Problem-solving     |
| ▼ Empathy               | ▼ Record keeping      |
| ▼ Flexibility           | ▼ Time management     |
| ▼ Leadership            | ▼ Self-awareness      |
| ▼ Mentoring             |                       |

Conduct a small discussion with the ToT group, seeking feedback to the following questions.

- ▼ Which of these skills do I think I already have?
- ▼ Which of these skills do I think I could work on more?
- ▼ Which of these skills do I see in my colleagues in this ToT program?
- ▼ What can I do to acquire the same skill set?

Finally, at the end of the above discussion, also discuss the future role of your ToT participants are future ToT resource persons. Here are some tips for them.

- ▼ Keep learning
- ▼ Be an active listener
- ▼ Do your research
- ▼ Plan, plan, plan
- ▼ Develop your facilitation skills
- ▼ Consider the process as much as the content of your training
- ▼ Be confident and develop authority as a trainer
- ▼ Design your training workshops intelligently and with the group in mind
- ▼ Be engaging
- ▼ Remember you are there for the group, not yourself
- ▼ Be present both mentally and physically in every session
- ▼ Invite feedback
- ▼ Measure your results and iterate



## **Section II : Non Substance Disorders**

## **Section II (a) : Non Substance Disorders**

### **Reading Material**

#### **Neurobiology of non-substance/ behavioural addictions**

Addiction is a compulsive physiological need and the inability to stop using or wanting a substance or to partake in activities like gambling, gaming, internet browsing etc. It is a complex and chronic disorder with biological, psychological, social and environmental factors influencing its development and maintenance.

The word addiction has been derived from the Latin word 'adicere', which means to be "bound to" or to be "enslaved by". The term addiction was initially linked to habits that people have and was largely independent of substance use behaviours. In the 1700's, the references to addiction were noted with excessive tobacco use. Later in the 20th century the term addiction was applied to excessive and problematic usage of opium and several other drugs. During the revision process of Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R), the Substance-Use Disorders (SUDs) Committee decided that addiction could be defined as compulsive drug use. Many questioned whether non-substance addictions could be considered as addictive behaviour. Some authors proposed some core features of addictions which were (1) continued engagement in a particular behaviour despite adverse consequences, (2) diminished self-control over engaging in said behaviour, (3) craving state before engaging in such behaviour and (4) compulsive engaging. If one takes these core features into consideration then addiction can be applied to a broad range of behaviours and not only substance use behaviour. After a lot of deliberation, pathological gambling was included with addiction in the section of substance use and related disorders in DSM-5. The word "pathological" was removed and the disorder was renamed "gambling disorder" to remove the potential stigma associated to the word. Gambling disorder is the only non-substance addiction included in DSM-5 and it can be considered as a prototypical behavioural disorder (Potenza, 2017).

The craving state or desire to experience the use of substance or behaviour before engaging can be influenced by psychological, social and environmental factors which lead to regular and excessive exposure. Such regular exposure may lead to brain changes and alterations in the prefrontal cortex (cortical) and limbic system (subcortical). These regions involve the neural circuitry of reward, motivation, impulse control and judgement which leads to cravings for drug or activity and impairments in the ability to control ("addictions", n.d.).

There are two basic types of addictions: substance addiction and non-substance/behavioural addiction. Substance addiction is a neuropsychiatric disorder wherein people suffering from it have an intense desire or need for using certain substances repeatedly. It is characterized by a recurring desire to continue consuming these substances despite their deadly consequences (Goldstein & Volkow, 2002 as cited in Zou et. al., 2017). This desire is associated with craving and loss of control which is strongly influenced by both the genetic endowment of a person and psychological and social context in which drug use occurs (Zou et. al., 2017).

The most common substances or addictive drugs are alcohol, opioids, cannabis, inhalants, caffeine, sedatives, cocaine, tobacco and other unknown substances. In addition, DSM-5 and ICD-10 included a list of anxiolytics, amphetamine-type substances, inhalants and volatile solvents to the list. Experts, with the help of neuroimaging techniques, have observed that chronic use of these drugs causes substantial changes in the brain at molecular and cellular level. These neurobiological changes in the prefrontal cortex and other regions affects the executive functioning of a person which leads to lack of control and therefore leads to uncontrollable drug use (Grant & Chamberlain, 2016).

The distinction between "substance dependence" and "substance addiction" has to be made to avoid confusion. Even though these terms are closely related to each other, they hold different meanings. Dependence is mainly characterized by tolerance and withdrawal symptoms that come about from the continued exposure of the drug to the central nervous system, whereas addiction is characterized by compulsive drug-seeking behaviour (Zou et al., 2017).

Addiction does not necessarily have to be an intake of a substance into a body. Some addictions are called so because of the innate nature of the item to create dependency. In contrast to substance/ drug addiction, a 'non-substance addiction' would embody the pathological concerns regarding certain activities like gambling, sex, screen viewing, internet browsing, among others. These addictions affect the visible behaviour of the person and are thus termed as "behavioural addictions". Behavioural addictions, as the name suggests, are understood by the compulsive behaviour of the person to continually engage in the activity which has caused a negative impact in the past. The activities that are listed under this classification of addictions are by far too common to be seen as addictive concepts (Grant et al., 2010).

However, as suggested by the American Addiction Centres (2019), if the person engages in activities like gambling, food consumption, exercise, gaming, shopping, sex etc. excessively, so much so that they find the activity a way of relieving energy, the behaviour becomes psychologically rewarding. If they tend to achieve a "high" or an excessive happy state when engaging in said behaviour, they are indeed involved in an activity which is now a non-substance addiction. It is then recommended that they be a part of a treatment program or intervention.

However, the person may not be diagnosed as facing an addiction till the time the person (i) faces mental health and/or physical health consequences, (ii) continues even though the negative outcomes resulting from it are heavily impacting the daily life (a gambling game might cost a person his money, job or even home, but he might not stop) and (iii) the relationships he or she has, start disrupting. Despite such major negative consequences which impact every aspect of the person's life, if they still do not dodge these behaviours but keep getting knee-deep into them, a diagnosis is warranted (American Addiction Centres 2019).

Fortunately, we now understand the dire consequences of addiction and aim at realizing them along the lines of their symptoms. Behavioural addictions are often referred to as impulse control disorders as they are indicative of an impulsive reaction leading to a chain of other actions, thereby forming a behaviour. However, not all impulse control disorders should be coined as behavioural addictions as some of the activities do not take place due to impulsivity but rather ideate from a reward previously obtained (Zou et al., 2017).

The two kinds of addictions (substance and behavioural) are not very far away from each other on the addiction spectrum. They both showcase a number of dangerous impacts on one's health. Both the addictions are preceded by tensed and aroused feelings, i.e. emotional dysregulations, which are relieved after the consumption of the substance or indulgence in the activity. The indulgences, even though they lead to immediate gratification, show decreased positive moods. The observable personality of people facing the two disorders is more or less similar with high levels of sensation-seeking and impulsiveness and a relatively low level of harm avoidance (Grant et al., 2010).

A study by Lawrence et al. (2009) found that both problem gamblers and alcohol-dependent groups displayed impairments in risky decision-making and cognitive impulsivity relative to controls.

### **What happens in Vegas stays in Vegas your brain.**

According to Clark et al. (2013), those with gambling disorder display certain cognitive distortions. The researchers state that these distortions are related to how the gambler thinks about randomness, chance, and skill (Ladouceur & Walker, 1996; Clark, 2010, as cited in Clark et al., 2013) as well as an inappropriately high expectation of winning. One of these distortions is a bias in the processing of random sequences, also known as Gambler's Fallacy. The gambler perceives meaning and patterns in random events like for example, coin flips. Another distortion is the 'illusion of control' which involves the perception that skill is involved in situations based on chance alone (Langer, 1975; Stefan & David, 2013, as cited in Clark et al., 2013). A recent study by Orgaz et al (2013) found that pathological gamblers have a tendency to overestimate control of positive outcomes as compared to non-gambling participants (as cited in Clark et al., 2013). Another distortion is related to 'near miss' outcomes. Gamblers often interpret near misses as evidence of mastering the game and being 'constantly nearly winning' (Griffith 1991, as cited in Clark 2009) as opposed to seeing near misses as being the same as losses (Clark, 2009; Clark et al., 2009 as cited in Clark et al., 2013). Gambling addicts perform poorly compared to controls on reward related risky decision-making (Kalkhoven et al., 2014). They are also less likely to choose delayed rewards over immediate ones (Petry 2001, as cited in Bowden-Jones & Clark, 2011) and may risk more on probability decisions (Lawrence et al., 2009, as cited in Bowden-Jones & Clark, 2011).

Dopamine has been a point of focus when taking a look at neurochemical abnormalities in gambling addicts considering its involvement in both drug addiction and rewarded behaviour (Clark et al., 2013). Predisposition to addiction has been related to reduction in the level of dopamine (D2) receptors in the striatum, which inhibits further dopamine release (Kalkhoven et al., 2014). Those diagnosed with Parkinson's may experience the sudden urge to gamble alongside other reward driven behaviour like compulsive shopping and hypersexuality, as a side effect of dopamine agonist medications (American Psychiatric Association, 2013; Ambermoon et al., 2011 & Voon et al., 2011, as cited in Clark et al., 2013; Gallagher & others, 2007, as cited in Murch & Clark, 2016).

Impulsive behaviours that are characteristic of gambling disorder can be due to changes in the fronto-striatal circuits, with ventral striatum driving behaviour and prefrontal components involving ventromedial prefrontal cortex failing to control inhibitions (Fineberg et al., 2014; Fauth-Buhler et al., 2017). Altered activity in the midbrain and striatum was observed during the making of impulsive choices in high-craving trials (Miedl, Büchel & Peters 2014, as cited in Fauth-Buhler et al., 2017). Hypo-activity was observed in the ventral striatum and ventromedial prefrontal cortex, mainly during the anticipation and receipt of monetary rewards (Balodis & others 2012, Reuter & others 2005, Sescousse & others 2013, as cited in Murch & Clark, 2016). In their study, Balodis et al. (2012) found significantly reduced activity in the ventromedial prefrontal cortex, insula and ventral striatum during the prospect and anticipation phases of both gain and losses. This is consistent with a reward deficiency syndrome that drives continual engagement in high stimulation and risky behaviours (Hommer and others 2011; Leyton and Vezina 2012, as cited in Murch & Clark, 2016).

#### **'Flush' it out of your system: Preventions and corrective interventions for Gambling Disorder**

Gamblers Anonymous (GA) is a 12-step recovery program patterned after Alcoholics Anonymous (AA). The basic thought process of these groups is that an addicted individual will always have an addiction problem even if they do not engage in that behaviour again and the only thing you can do is stop that behaviour, as it will be difficult to handle the pleasure derived from that addiction (Jazaeri & Haabil, 2012). An essential part of such groups is choosing a sponsor (who is a former addict) as they provide guidance and support (Jazaeri & Haabil, 2012).

Cognitive Behavioural Therapy (CBT) was found to be effective in reducing the severity of symptoms and the amount of money lost to gambling (Cowlshaw et al., 2012; Gooding & Tarrier et al., 2009, as cited in Yip & Potenza, 2014). CBT focuses on changing unhealthy thoughts such as rationalizations and false beliefs to more healthier thoughts and also teaches the client how to fight gambling urges, deal with uncomfortable emotions instead of escaping them and thus solving the problems caused due to the addiction (Jazaeri & Haabil, 2012). The goal of CBT is to get the addicted brain to think of gambling in a new way and it also identifies irrational and negative beliefs and replacing them with healthy and positive ones which also helps the individual cope with the addiction (Jazaeri & Haabil, 2012; Mayo Clinic Staff, 2016; Segal, Smith & Robinson, 2019).



It has been observed that addiction (of all sorts) has led people to perform lower on decision making tasks, cognitive flexibility, planning and inhibition tests (Bechara, 2003, as cited by Grant et al., 2010).

Neurochemically, dopamine and serotonin are seen to play a major role in addictive disorders (an area which shall be addressed in the later sections of this paper). Extensive research on gambling addiction using brain imaging techniques reveals that the dopaminergic mesolimbic pathway involved in it are similar to those involved in substance based addictions; thereby highlighting how substance and non-substance addictions are similar (Reuter et al., 2005, as cited by Grant et al., 2010).

Non-substance or behavioural addictions have primarily been studied/understood by comparing them to substance based addictions. Currently, there is abundant data available to explain the overlapping nature of substance and non-substance/behavioural addictions, including history, onset and withdrawal, neurobiology, genetic combinations, treatment offered and reactions received (Grant et al., 2010). However, said data is primarily concerned with one specific type of behavioural addiction which has been extensively researched, namely, gambling addiction. Investigations into the nature of gambling disorder as an addiction have led to comparisons being drawn between it and alcohol and drug addictions. Due to the majority of the focus being on gambling disorder, other behavioural addictions such as internet addiction, compulsive buying, skin-picking, sexual/love addictions etc. have not been explored in as much detail and thus have limited content to offer for widening our understanding of behavioural addictions as a whole (Grant et al., 2010).

**Rationale :** Behavioural addictions are a rising concern of the 21st century. Although they have been investigated from a sociological and psychological lens that highlight their impact on life styles, sociological relations, individual functioning etc., not much is known about their biological genesis. The current review aims to bridge this gap by reporting some of the available literature on the neurobiology of non – substance addiction; with particular emphasis on the neurobiological aspects of gambling disorder, screen and internet addiction (including internet gaming, social media and porn addiction).

For the purpose of this review, non-substance or behavioural addictions have broadly been classified into two categories: those which yield concrete rewards (e.g. monetary rewards in gambling addiction) and those which yield affective and/or social rewards (e.g. internet addiction- specifically social media addiction and online gaming addiction).

### **Behavioural addictions yielding concrete rewards**

This category entails those behavioural addictions that yield some sort of a concrete reward, for example, monetary rewards in gambling disorder. This section will focus on Gambling disorder which has officially been recognized as a behavioural addiction by the DSM -5 as well as pornography addiction.

### **Gambling Disorder**

Gambling can be defined as the wagering of something of value (typically money) on an event with an uncertain outcome with the primary intent of winning a larger reward (Fauth-Buhler et al., 2017). According to the fifth edition of the Diagnostic and statistical manual (DSM 5), persistent and recurrent maladaptive gambling behaviour that disrupts personal, family, and/or vocational pursuits, is an essential feature of gambling disorder. Gambling disorder is defined as a cluster of four or more of the symptoms listed in Criterion A of DSM 5 occurring at any time in the same 12-month period (American Psychiatric Association [APA], 2013).

Gambling Disorder was introduced in the third edition of DSM (DSM III) in the section for Impulse Control Disorders and was moved to 'Substance related and Addictive disorders' (SAD) in DSM 5 (Bowden-Jones & Clark, 2011). Gambling Disorder is thus far the only non-substance- related disorder in the SAD category (Fauth-Buhler et al., 2017). The reason for this inclusion was the empirical comparisons showing the similarities between gambling problems and substance use (Gainsbury et al., 2015).

Pathological gamblers display symptoms of withdrawal (irritability when trying to stop or reduce the amount of gambling), signs of tolerance (tendency to increase the amount gambled) which are classic signs of addiction (Pettry et al., 2005, as cited in Bowden-Jones & Clark, 2011). They also show a preoccupation with the behaviour in question, diminished control over behavioural engagement and adverse psychosocial consequences related to the behaviour have been reported for behavioural addictions (El-Guebaly et al., 2012, as cited in Fauth-Buhler et al., 2017).



Voon et al (2014) investigated processing of sexual cues with distinct levels of sexual content, among a sample of individuals with compulsive sexual behaviour (CSB) and Non-CSB, with emphasis on neural regions related to drug cue reactivity in prior studies. It was found that individuals with CSB, who were presented with sexually explicit content, showed activation of the dorsal anterior cingulate, ventral striatum and amygdala. A greater substantia nigra activity was also noted in individuals with CSB. On the other hand, Dorsal Anterior Cingulate Cortex (dACC) is related to the anatomical projections sent to ventral and dorsomedial striatum, which in turn, is linked to motivation and reward system. Due to its linkage to the lateral basal nucleus of the amygdala, there is an established reciprocity, in terms of receiving information regarding emotionally salient events. dACC has multiple links in the cortical regions (premotor, primary motor and fronto-parietal cortices), making it responsible for processing pain, cognitive control and negative stimuli. Thus, according to Voon et al (2014), dACC has a role to play in experiences of sexual desires.

Apart from the dACC, ventral striatum is also positively associated with pornography since it involves anticipation of rewards. To add on, individuals who may be porn addicts/hypersexual subjects portray a diminished functional connectivity between caudate and temporal cortex lobes along with deficiency of grey matters in these regions, which could be reasons for lack of control on sexual behaviour impulses. Also, they were observed to have an increased volume of amygdala (Alarcón, Iglesia, Casado, & Montejo, 2019). These individuals can also develop a malfunctional stress response mechanism, driven by the hypothalamus–pituitary–adrenal (HPA) axis. Thus, porn addiction leads to desensitization (a need for more and more, to achieve pleasure), Hypofrontality (diminished brain activity in prefrontal areas, leading to weakened willpower) and Dysfunctional Stress Circuits (leading to relapse even by a minor stressor) (Wilson, 2014).

Dopamine has been found to play a significant role in pornography since it is related to reward stimuli. A study on compulsive hypersexuality associated with dopamine agonists in Parkinson's disease, including behaviours like compulsive use of sexually explicit content, demonstrated greater neural activity to sexual content cues that correlated with enhanced sexual desire (Politis et al, 2013, as cited in Voon et al, 2014). The role of dopamine mainly involves the exhilaration experienced while actively seeking pleasure. Pornography, being just a click away, is a means for instant gratification.

This rushed novelty leads porn to become a supranormal stimulus (Wilson, 2014). Hike in dopamine leads to DeltaFosB's (which physiologically and neurochemically alters the reward centres) production, which can have undesirable, neurochemical implications (Donald & Hilton, 2013; Alarcón et al., 2019)

### **The Psychology of Porn**

The consequences of porn addiction is noticeable in executive functioning, which includes impulsivity, inability to shift attention, learning processes affected by cognitive rigidity, poor decision making and judgement, interference in capacity of working memory, emotional dysregulation and excessive engrossment to sex (Alarcón, Iglesia, Casado, & Montejo, 2019). Excessive stimulation by porn can also weaken relationship bonds (Wilson, 2014). Clinical manifestations of porn addiction include erectile dysfunction, psychosexual dissatisfaction and comorbidity with other disorders (Alarcón, Iglesia, Casado, & Montejo, 2019). Dendritic Arborization and various cellular modifications lead to Gyrus Sculpting, as a result of learning. Addiction thus, is a very herculean form of learning, where the related neuroplasticity can be dangerous (Donald & Hilton, 2013).

### **Porn addiction and Sexual Violence**

The actual implications of pornography within a country can only be gauged by assessing the sexual crime rates for rape, voyeurism and exhibitionism in the country, since it is quite relative. Research shows consistent relationship between nonviolent pornography viewing and inception of negative attitudes towards women as well as effect on family relations. On the other hand, exposure to embedded violent sexual content, can have disturbing consequences to one's thoughts, behaviours and intentions. As compared to viewing of non-violent pornography, exposure to even few minutes of violent pornography can pave way for dangerous outcomes (Intons-Peterson & Roskos-Ewoldsen, 1989, as cited in Schneider, Gruman, & Coutts, 2012). Since most of the research has been conducted on men, effect on men include hike in sexual arousals, engagement in fantasies related to rape, desensitization to violent sexual content, increase in rapes and violence towards women as well as tolerance towards rapists. Though there is no empirical evidence to verify the same due to ethical constraints and sensitivity around the issue, the tactics of prevention would definitely work better than cure.

Another possibility is using opioid antagonists like naltrexone, which is the treatment in alcohol and drug addiction and has shown efficacy in controlled trials for problematic gambling (Grant et al. 2008, as cited in Bowden-Jones & Clark, 2011; Grant et al., 2010). There have been two double-blind, placebo controlled studies of naltrexone treatment which show significant clinical efficacy over placebo for treatment of Gambling Disorder (Kim et al, 2001; Grant et al, 2008 as cited in Yip & Potenza, 2014).

## **Porn Addiction**

### **What is Pornography Addiction?**

According to Goodman, the underlying crux of addiction disorders is the convergence of compulsive disorders and impulsive disorders with the symptoms reinforced by neurobiological mechanisms (Goodman, 1995, as cited in Alarcón, Iglesia, Casado & Montejo, 2019).

Hypersexuality or sex addiction is a broader phenomenon with various subtypes. Hypersexuality is an obsession with sexual urges, thoughts or behaviours that can cause distress. Among the umbrella term of hypersexual disorders that explore various problematic behaviours (like excessive masturbation, cybersex, telephone sex, sexual behaviour with consenting adults, strip club visitations, etc), pornography consumption one such construct that is at a high risk of translating to an addiction. Thus, sex addiction and porn addiction fall under the same bracket. Porn addiction can be defined as the use of Internet to engage in various gratifying sexual activities, among which stands the use of pornography which is the most popular activity with an infinite number of sexual scenarios accessible (Alarcón, Iglesia, Casado, & Montejo, 2019). Pornography can also be defined as any sexually explicit material that you can find offline (magazines, DVDs, peep shows) or online on the Internet (text, audio, or visual). Sexually explicit material (pornography) "depicts sexual activities in unconcealed ways, often with close-ups of (aroused) genitals and of oral, anal, and vaginal penetration" (Peter & Valkenburg, 2008, p. 580, as cited in Schneider, Gruman, & Coutts, 2012). Its primary purpose is to arouse the user sexually.

Pornography can generally be categorized into three types :

- ▼ Erotica involves nonaggressive sexual activity between willing partners.
- ▼ Nonviolent pornography differs by the fact that it occurs between casual acquaintances. Satisfaction of sexual desire is the primary aim.
- ▼ Violent pornography shows violence or coercion. Revolving around the crux of male dominance and female submissiveness, this type is based on objectification of women. It involves sadomasochism (Schneider, Gruman, & Coutts, 2012).

Sustained consumption of porn is also linked to financial, legal, occupational and relationship troubles with detrimental repercussions. However, online pornography caters as the main source and precursor to sexual health, in young male populous (Litras et al, 2015, as cited in Alarcon, Iglesia, Casado & Montejo, 2019). Thus, it becomes difficult to aptly define the boundary where pornography can transform to an addiction.

### **How is it an addiction?**

Getting addicted to porn, is a slow, gradual process. Porn can be viewed as a supranormal stimulus (exaggerated versions of normal stimuli erroneously perceived as valuable) (Wilson, 2014). At its inception, consumption of porn accompanied by masturbation, releases sexual tension and provides satisfaction. But, when an individual is continuously exposed, their brain will start to oppose. The brain shields itself, against this overdose of dopamine, by diminishing its responsiveness towards it, which leads to minimized gratification (Wilson, 2014). Thus, the individual ventures on a pursuit of actively seeking out more stimulation, which can cause physiological and neurochemical alterations in the brain. That is when pornography translates into an addiction, characterized by a never-ending craving, lack of control, and negative implications across all spheres of life.

### **Brain on Porn : The play of Brain and Neurotransmitters**

Surprisingly, individuals addicted to pornography mimic activation in similar brain regions as that of a substance-addict. In an interesting study, findings suggested that compulsive porn consumers experienced activation in the same brain regions as that of a drug addict (Voon, et al., 2014). Most of the research in the field employs neuroimaging techniques like fMRI (Functional Magnetic Resonance Imaging), MRI (Magnetic Resonance Imaging) and EEG (Electroencephalogram) to find neurobiological evidence.

### **Internet Gaming Disorder (IGD)**

Although IA as a whole has not officially been recognized as an addictive disorder by the diagnostic manuals, DSM-5 has included Internet Use Gaming Disorder in its appendix for further consideration and study (Weinstein et al., 2014; Lyons, 2019)

The International Classification of Diseases (ICD-11) has officially recognized internet gaming as a mental disorder. It has been defined as a pattern of gaming behaviour (digital or visual gaming) characterized by diminished control over gaming, giving gaming precedence over other interests and daily activities and continuation or escalation of gaming despite negative consequences. A diagnosis is warranted only if the severity of the behaviour is sufficiently high – it leads to impaired social//personal/familial/educational or occupational functioning, and only if the behaviour has been evident for at least 12 months (World Health Organization [WHO], 2018).

The DSM-5 has IGD listed under areas for further consideration and study; however a symptom list for the same has been proposed. In addition to preoccupation with gaming, neglect of other activities in favour of gaming, inability to reduce or quit gaming despite negative consequences, some of the other noticed symptoms are: emotional withdrawal symptoms when gaming is inaccessible (e.g. anxiety, sadness etc.), increased tolerance for gaming, risked/ jeopardized social relationships. In line with ICD-11, the DSM-5 also proposes that at least 5 of these symptoms must be present for a period of 12 months at least to warrant a diagnosis (APA, 2013).

### **Brain map of those with IGD: Neurobiology of IGD**

Various investigations have been carried out to study and determine the neurophysiology of IGD (e.g. Ko et al., 2014; Ko et al., 2015; Liu et al., 2013; Tian et al., 2014). Most of these have employed various neuro-imaging procedures e.g. fMRI, rsfMRI, PET Scans, EEG etc. Studies by Shaffer et al. (2004) and Spechler et al. (2016) employed an experimental and control group paradigm to investigate the neurobiological differences in individuals with IGD and healthy controls. Both studies suggested that IGD is marked with poor response inhibition and emotion regulation, hampered working memory and decision-making capabilities, impaired cognitive control and Pre-frontal cortex (PFC) functioning and a deficiency in their neuronal reward system. These deficiencies parallel those found in substance-related addictions such as alcohol and

drug addiction; thus providing further evidence that both substance and non-substance addictions share certain common predisposing factors. Owing to this, they may be categorized as a part of an addiction syndrome (as cited in Kuss et. al. 2018). For example, research on alcohol abuse by Ehlers et al. (2007) found that individuals with reduced P300 amplitude are at an increased genetic risk for alcoholism. This may suggest that similar reductions in P300 amplitude in individuals with IGD are indicative of a possible elevated risk of developing addiction –related issues (as cited in Kuss et. al. 2018).

Cheat-codes of IGD: Attention system and attentional bias in those with IGD :

Video games have been found to have an impact on the attentional networks within the brain. The anterior cingulate cortex (ACC) involved in decision making, impulse control, emotion regulation, attention monitoring (selective attention) has consistently shown functional activity while individuals play video games (e.g. Anderson et al., 2011; Baverlier et al., 2012b as cited in Palaus et al., 2017).

In those diagnosed with IGD these attention systems are altered. Kim et al. (2018) conducted an ERP based study to investigate the changes in the attention system and the extent of attentional bias towards visual cues displayed by those suffering from Obsessive Compulsive Disorder (OCD) and IGD. They made use of Late Positive Potential [LPP] as an electrophysiological marker to compare attentional bias in those with OCD and IGD. Results indicated that those with IGD showed higher LPP amplitudes to game related cues (e.g. stills from popular games) as compared to healthy controls. The same was found to be true for those with OCD towards OCD related cues. Subjective scale ratings from both groups also indicated increased arousal to disorder-specific cues. Their results showed no difference in LPP amplitudes in individuals with IGD based on differences in cues of specific games (e.g. screen captures from league of legends, FIFA, sudden attack). The lack of a difference in response to different types of specific game related cues suggested that there are certain common underpinnings of the neurobiology of craving in IGD. Their findings are of significance as they highlight how increased attentional bias towards disorder-related cues can subsequently lead to increased feelings of craving. These cravings can in turn lead the individual to act on them thereby perpetuating the endless cycle of addiction.



## **Pornography and Teenagers**

Apart from being a precursor to potential sexual violence, pornography can have serious implications on developing adolescents, too. In teenagers, extensive porn consumption can lead to unconscious brain wiring that can alter one's sexual preferences. Severe conditioning to porn can make actual sexual experience an oddity, making teenagers more vulnerable to porn addiction (Wilson, 2014). Constant viewing of porn can also influence their attitudes towards the opposite gender and lends a scope of possible perpetuation of aggression and sexual violence, with a want to re-create or experiment acts, out of curiosity (Wilson, 2014). Thus, imposing a limit on porn consumption, especially for teenagers (since they are so malleable), or avoiding it altogether, becomes a vital key to their overall well-being.

## **Prevention and Treatment / Correction**

The implications of pornography addiction are reversible and can be treated. Recovery from addiction is associated with positive changes in neural plasticity as well as expansion of gray matter, post mindfulness therapies (Donald & Hilton, 2013).

### **Simple Prevention Techniques include :**

Avoiding porn altogether.

Refurbishing environmental cues that could trigger relapse, if in the recovery phase.

Managing sexual stress/tension constructively, by choosing alternatives.

Focusing on one's creative pursuits.

### **Pharmacological interventions**

Naltrexone is a potential medication for combating behavioural addictions as well as hypersexual disorders. It functions by reducing cravings and acting as an obstacle to euphoric urges (Alarcón, Iglesia, Casado, & Montejo, 2019).

### **Psychotherapeutic interventions**

Mere reduction of porn consumption is not an adequate solution to tackle this behavioural addiction, however it is possible, since the clinical manifestations mentioned above, are reversible in nature. Areas like Cognitive-Behavioural Therapy (CBT), Psychodynamic Psychotherapy along with Family Therapy, Couple Therapy and Psychosocial treatment (Alarcón, Iglesia, Casado, & Montejo, 2019) could help to effectively deal with this issue. Joining support groups can also help.

In the end, like all other addictions, recovery highly depends on the individual's willpower to better. Thus, starting from individual level is the key.

### **Behavioural addictions yielding affective/ social rewards**

This category entails all those addictions that may not necessarily have a concrete reward but lead to short term positive affect as a consequence of engaging in that behaviour repeatedly. Internet addiction with its subtypes (internet gaming disorder and social media addiction) is the prime example of this category.

With the advent of the internet and the wave of technological advancement, use of and dependence on devices such as phones, iPads, computers, laptops etc. and the internet has increased tenfold. Due to easy access, the number of people addicted to their screens and to the internet has increased rapidly all over the world (Seok et al., 2015).

Excessive or Problematic Internet Use (PIU) or Internet Addiction (IA) is a growing concern of the 21st century. It is characterized by extreme or poorly controlled urges, preoccupation with, or behaviours pertaining to computer use and Internet access that lead to personal or social impairment and/or distress. Internet addiction has been defined as compulsive and pathological use of the Internet (Young, 1998, as cited in Seok et al., 2015). Phenomenologically, IAD can be divided into at least 3 basic sub-types, namely, internet gaming-gambling, social networking/social media usage and sexual preoccupations (cybersex) and porn addiction (Weinstein et al., 2014). Porn addiction has already been covered in the earlier section and thus this section shall focus on internet gaming disorder (IGD) and social media addiction.



### Co-op mode: Response inhibition, cue-reactivity and impulsivity in IGD

As evidenced above, those with IGD show an increased attentional bias towards addiction related cues, thus they show an increase in cue reactivity. In addition to this, they are also seen to have reduced inhibitory control (D'Hondt et al., 2015 as cited in Kuss et al., 2018). Those with IGD show signs of impaired executive control; have low impulse control capacity and thus struggle with response inhibition as compared to controls (Nichols & Martin, 1993 as cited in Kuss et al. 2018).

An investigation by Ko et al. (2014) revealed that in line with earlier findings, individuals with IGD had higher scores on dysfunctional impulsivity scale and the Barratt impulsivity scale (with high scores on lack of self-control subscale). Using an fMRI paradigm, they also found differences between IGD and control group in the brain activations for error processing and response inhibition. Their findings revealed that for response inhibition, individuals with IGD showed an increase in the activation of the fronto-striatal network and higher activation of the left inferior orbital-frontal lobe and the bilateral caudate compared to the control group. The degree of activation of the bilateral caudate nucleus was indicative of the degree of self-control they had; higher the activation poorer the self-control. Considering that those with IGD showed poor impulse control, the increased activity in the fronto-striatal network may possibly suggest that these individuals have to try harder in order to constrain the prepotent response in the No-go trials of the go/no-go task. This suggests that impaired response inhibition in IGD individuals is mediated by altered fronto-temporal network activation.

### Reward system in individuals with IGD

Research indicates that even after controlling the amount of time spent video gaming, the neural patterns in professional video game players are very different than those found in addicts (those with IGD). Unlike professional gamers, gaming addicts are seen to have increased impulsivity and perseverative errors. On a neuroanatomical level, pro-gamers are seen to have increased grey matter (GM) volume in the left cingulate gyrus and decreased GM volumes in the thalamus (Sánchez-González et al., 2005; Han et al., 2012b as cited in Palaus et al., 2017). They also show altered grey matter density (GMD) over the amygdala. This altered GMD over the amygdala may also be related to impaired functional connectivity to the frontal lobe, indicative of impulsivity (Ko et al., 2015). These alterations in the GM volume in the thalamus and left cingulate gyrus collectively may be an indication of an impaired reward system in those with IGD (Sánchez-González et al., 2005; Han et al., 2012b as cited in Palaus et al., 2017).

## Neurochemicals involved in IGD

Tian et al. (2014) investigated the different neurochemicals involved in IGD. Using PET they studied how years of overuse/addiction can lead to dysregulation of dopamine (D2) receptors in the striatum and reduced glucose metabolism in the temporal, prefrontal and limbic system. PET scans of those with IGD showed reduced prefrontal glucose metabolism as compared to healthy controls indicating dysfunction in said area. This corresponds with findings of brain area dysfunction in substance based addictions (e.g. drug addiction) (Goldstein & Volkow, 2011 as cited in Tian et al., 2014).

Their investigations revealed that chronic gaming behaviour may result in dopaminergic pathway dysfunction in the striatal region. Further, availability of D2 receptor in striatum was found to be positively correlated with the level of glucose metabolism in the orbitofrontal cortex (which is involved in the process of decision making, especially regarding assessments of rewards and punishment of a particular action/behaviour given the specifics of a situation).

## **Prevention and intervention for Internet addiction and IGD**

### God mode activated: Preventive strategies

The primary preventive strategy for internet addiction and gaming addiction is regulating and monitoring screen time. In today's day and age, complete abstinence from internet and screens is not feasible, owing to their importance in work culture, academics, leisure activities etc. However, limiting the amount of time spent in front of screens and on the internet (for whatever purpose - work/leisure) can act as an effective preventive strategy to avoid this dependence from turning into a full blown disorder.

Young children and adolescents are most vulnerable to the development of this addiction. To avoid this from happening, parents must monitor and limit the amount of time their children spend on the internet/in front of screens playing games etc. Instead of taking away the screen as punishment for bad behaviour/spending too much time on screens playing games, they must adopt better grooming methods like the 'trade-off' technique. In this technique, the child is promised limited screen time in exchange for completing a particular task first (e.g. homework, household chores, learning a new skill etc.). These ideas also help in the development of bonds and self (Kurniasanti et al., 2019).

In today's day and age children as young as 2 years old can operate a hand-held device (e.g. phone/i-Pad etc.) with ease. In such situations wherein 'trade-off' technique is inapplicable, parents must take other measures such as password protection to prevent children from accessing the screens. In addition to the general phone lock, they must also have locks for certain apps to ensure that the child does not see content that may be inappropriate for their age (Kurniasanti et al., 2019).

Apart from parents, other bodies responsible for preventive action against screen and internet addiction include educational institutes e.g. schools etc. Institutions play a crucial role in preventing internet addiction by spreading awareness on wise internet use (awareness regarding how much time and what kind of content is appropriate). They are a good place for early screening of internet addiction symptoms as adolescents are more prone to it. Conferences should be organized on problems of internet addiction for all (Kurniasanti et al., 2019).

On a large-scale level, government can implement an age restriction on internet access (e.g. for certain websites in particular), time spent on gaming and social networking sites etc. Finally, those suffering from internet addiction can be given incentives to decrease their internet usage, like creative outdoor activities (Kurniasanti et al., 2019).

#### 'Calling for back up': Intervention strategies for IA and IGD

Three main interventions have been found to be effective for internet addiction and IGD, they are as follows:

**Pharmacotherapy** : refers to medical treatment given by means of drugs. There was a significant decrease in gaming hours and internet gaming addiction symptoms using antidepressants such as bupropion and escitalopram. These two drugs are commonly prescribed for depression. They were found to be superior to the placebo and no medicine control group. Bupropion was more effective than escitalopram in reducing internet gaming symptoms. Two medicines prescribed for ADHD namely atomoxetine and methylphenidate also showed reductions in these symptoms. (Han, Hwang, & Renshaw, 2010 as cited in Zajac et. al., 2017)

**CBT** : Researchers used CBT based psychotherapy intervention in a group based project on 40 young adults. One non randomized group received CBT intervention/treatment while the other group was on wait list (i.e. they did not receive intervention during that time). After 6 weeks, the group which received CBT intervention

showed decrease in weekly gaming hours and internet gaming addiction symptoms. (Zhang et al., 2016 as cited in Zajac et. al., 2017). When CBT was combined with the antidepressant bupropion there was greater reduction in gaming hours and internet gaming disorder symptoms than when only medication was given. (Kim et. al., 2012 as cited in Zajac et. al., 2017)

Family therapy interventions: they have also resulted in symptom reduction. In a study done by Shek and colleagues in 2009, 59 adolescents received 15-19 months of treatment and multilevel intervention which included family therapy sessions, motivational interviewing, behavioural contracting and development of a career plan showed significant reductions in addiction severity (Zajac et. al., 2017). Other researchers who used family therapy as an intervention for internet and gaming addiction mainly focused on improving communication, resolving conflicts, discussing and reframing symptoms of addiction, and discussing the stages of change. (Liu et al., 2008 as cited in Zajac et. al., 2017).

### **Hooked to FACEBOOK : Social Media Addiction**

Social media addiction can be viewed as one form of internet addiction (Griffiths, 2000 & Starcevic, 2013, as cited in Hou et al., 2019). It can be defined as an urge or compulsion to excessively and irrationally use social media to the extent that it interferes with other aspects of daily life (Griffiths, 2000, 2012, as cited in Hou et al., 2019; Karaiskos et al., 2010, as cited in Sriwilai & Charoensukmongkol, 2015). The various social media platforms and frequent access to them through portable devices and easily available internet has created innumerable opportunities for addiction to social media (Griffiths, 2000, 2012, as cited in Hou et al., 2019; Sriwilai & Charoensukmongkol, 2015).

Social media addiction is not mentioned in the DSM 5. Individuals addicted to social networking sites (SNS) experience many of the symptoms of substance addiction such as changes in mood depending on SNS status, preoccupation with their SNS accounts, tolerance i.e. constantly increasing use, withdrawal and relapse (Kuss & Griffiths, 2011; Turel & Seneko, 2012, as cited in He et al., 2017).

Neuroimaging studies have put forth some similarities as well. The brain's reward system, which consists of striatum and amygdala responds to drug consumption, gambling disorder and social rewards the same way (Meshi, Morawetz, & Heekeren, 2013 & Suckling & Nestor, 2017, as cited in Meshi et al, 2019). Structural differences have been reported between subjects with and without Screen Dependency Disorder (SDD) in

both grey and white matter in prefrontal and additional brain regions, such as limbic structures (Sigman, 2017). He et al. (2017), in their study, found that the Grey Matter Volume (GMV) of the amygdala is negatively associated with SNS addiction scores. Research has found that the striatum and amygdala are smaller in both excessive SNS users and substance abusers (He, Turel, Brevers, & Bechara, 2017; Suckling & Nestor, 2017, as cited in Meshi et al., 2019). These brain regions are involved in value based decision-making (Bartra, McGuire, & Kable, 2013, as cited in Meshi et al., 2019) and thus individuals with substance use and behavioural addictions have difficulty in making value-based decisions (Bechara & Martin, 2004, as cited in Meshi et al., 2019). Impaired executive functioning and inhibitory control, both of which are typical to addiction, are connected to lower functional connectivity in fronto-striatal circuits (Sigman, 2017).

According to fMRI studies, internet addiction is associated with brain areas related to reward experience and addiction (Doug et al., 2013, as cited in Pontes et al., 2015). Imaging from fMRI studies suggested that such addictions involve more sensitivity to reward processing and reduced prefrontal inhibitory control as well as less sensitivity to negative consequences (He et al., 2017; Pontes et al., 2015). Nuclear imaging research also indicates that Screen Dependence Disorder (SDD) is associated with dysfunction of dopaminergic systems (Sigman, 2017). Abnormal dopamine regulation of the prefrontal cortex is also thought to underlie the loss of control over screen activity, typical of addicted subjects (Zhu et al., 2015, as cited in Sigman, 2017). Meshi et al. (2019), in their study found that excessive SNS use is associated with worse performance in the last 20 trials of the Iowa Gambling Task (IGT). This poor performance indicates impaired decision-making (Bechara, Damasio, Damasio, & Anderson, 1994 as cited in Meshi et al., 2019). Individuals dependent on substances as well as individuals with gambling disorders have deficient performance in the IGT (Meshi et al., 2019).

Studies on social media usage have found that continuous use of social media is positively associated with various mental health issues such as stress, anxiety, and depression and negatively associated with long-term well-being, social functioning, and life satisfaction (Andreassen, 2012, as cited in He et al., 2017; Hou et al., 2019; Rosen et al., 2013, as cited in Sriwilai & Charoensukmongkol, 2015). It also affects their sleep hygiene and long term cardio-metabolic health (Turel et al., 2016, as cited in He et al., 2017). Research has also discovered that multi-tasking on social media has negative effects on learning and social media addiction can affect academic performance (Huang, 2014, Nida,



2018 & Wood et al., 2012, as cited in Hou et al., 2019). Social media addiction can also have negative effects on self-esteem of an individual (Andreassen, Pallesen, & Griffiths, 2017; Błachnio, et al., 2016 as cited in Hou et al., 2019; Valkenburg et al., 2006, as cited in Sriwilai & Charoensukmongkol, 2015).

### **Prevention and correction : reduce the 'story time'**

For substance addiction and behavioural addiction like gambling, along with various treatments, abstinence (stopping the consumption of substance or behaviour completely) is practiced as a way to prevent relapse. However, total abstinence from internet for SNS is not an option as the internet is a very crucial part of academic, professional and leisure culture (Echeburua & de Corraal, 2010, as cited in Kuss & Griffiths, 2011).

What can be done instead is to reduce and control the usage of the internet, especially social media. Relapse prevention can be done using various strategies developed through cognitive-behavioural therapies, which can help reduce the addiction as well as improve mental health and academic performance (Echeburua & de Corraal, 2010, as cited in Kuss & Griffiths, 2011; Gupta, Arora, & Gupta, 2013 & Young, 2007, as cited in Hou et al., 2019). Cognitive-behavioural therapy helps the addicted individual identify false beliefs and also triggers associated with the addictive behaviour (Przepiorka et al., 2014 & Khazaal et al., 2012, as cited in Pontes et al., 2015). It helps them control the thoughts and feelings that may make an individual want to escape into a virtual world (Przepiorka et al., 2014). Physical exercise may help compensate the decreased dopamine levels due to reduced internet usage (Cash et al., 2012 as cited in Pontes et al., 2015).

Liu et al. (2015) found that multifamily group therapy (MFGT) was an effective strategy to reduce internet addiction related behaviours in adolescents (as cited in Pontes et al., 2015).

Therapy and medication can be sought for other related mental health conditions. Pharmacological treatment has been derived from treatment meant for substance addictions. Antidepressants, antipsychotics, and opioid receptor antagonists like naltrexone are some of the medications that have shown some efficacy in the treatment of internet addiction (Cash et al., 2012, Winkler et al., 2013, as cited in Pontes et al., 2015; Przepiorka et al., 2014,).

## **Conclusion**

As is evidenced from the researches listed above, non-substance addictions do prevail. Although most of them (except gambling disorder) have not yet officially been recognized by the DSM, there is plenty of data available highlighting their existence and prevalence. Unlike substance addictions, the tricky part of non-substance addiction is the swift shift from frequent use/indulgence in the behaviour to dependence which may then very easily manifest into an addiction. These addictions, due to their seemingly sudden onset are often very hard to notice. Therefore it becomes very important to look out for signs from the very beginning so that appropriate interventions and measures can be employed. The effectiveness of said measures can be enhanced by customizing them based on neurobiological data specific to the addiction in question. If we understand the neurobiology of the addiction, we can aim to tackle it at the very core, thereby hopefully uprooting it completely. The current paper was an attempt to identify some of the available literature on the neurobiology of the different behavioural addictions so that future researches can look at the application of this knowledge. This may help to not only understand the addiction better but also increase awareness on the same, thereby aiding prevention and enhancing methods for help and cure.

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# NEUROBIOLOGY OF NONSUBSTANCE ADDICTION

## INTRODUCTION

Both addiction and compulsion involve operant learning but in addiction, dopamine is released as a reward. Compulsion entails engaging in an action or the desire or need for it irrespective of whether it is correct or incorrect. It need not result in pleasure for the person, whereas addiction does. Addiction can follow compulsive behaviour wherein the individual engages in the behaviour to feel pleasure or satisfaction.

Another distinction is that from obsessive-compulsive disorder where it is the obsession that leads to the compulsive behaviour and need not necessarily be pleasurable for the person. Addiction can also be seen as a transition between impulsions and compulsion. When the impulsion gets trained excessively, it develops into a compulsive habit.

With respect to behavioural addiction or non-substance addiction/abuse, the addiction is to the feeling that is brought about by engaging in the concerned action. It involves engaging in a natural reward- a rewarding non-substance related behaviour.

The list of non-substance addiction is not unanimously agreed upon. A few of the agreed upon ones are gambling addiction- which is the only one that has a diagnosis criteria in the DSM, Internet Gaming Disorder, Problematic Internet use, Hypersexual Behaviour/Problematic Hypersexual Disorder, Food addiction, Exercise Addiction.

A meta analysis by Chen et al (2017) found that substance addictions entailed more impaired basic cognitive functions when compared to non-substance addiction. In non-substance addiction intertemporal choice, which is choosing between outcomes which are available at different times in the future and involves integration of information about the size of the reward and the time delay, may predict the severity of the addiction. Delayed reward discounting is an intertemporal choice. Individuals place more value on immediate gain than future rewards, and an immediate reward is preferred over a larger but delayed reward. This is more pronounced in people with both substance and non-substance addiction, although it might vary from addiction to addiction- the delay discounting for money related more with people with a gambling addiction than for those with a substance addiction. Thus indicating that money delay discounting is a better predictor of gambling addiction than it is for substance addiction.

Non-substance addiction is also impacted more by exogenous factors (nature and nurture). While substance addiction can result in severe effects generally due to relatively permanent brain damage, decline in cognitive functioning, and genetic factors, these changes were not noticed in individuals with non-substance addiction.

# SIMILARITIES AND DIFFERENCES BETWEEN SUBSTANCE AND NON SUBSTANCE ADDICTION

The understanding of the many important similarities between substance addiction and non substance addiction is crucial to help in the treatment process.

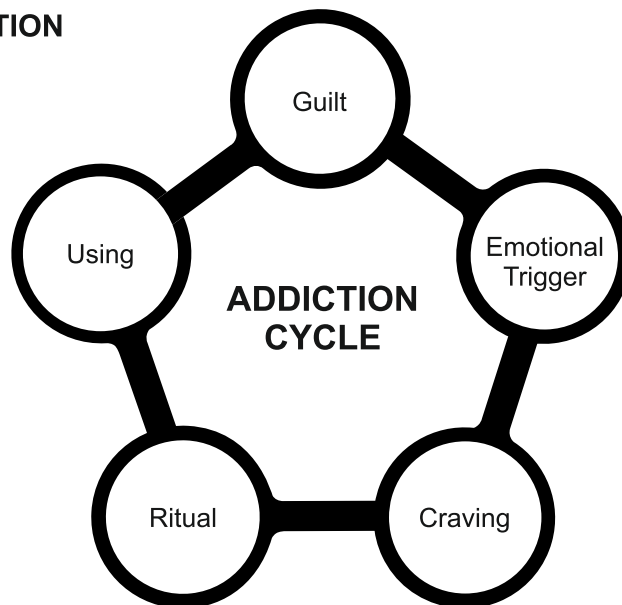
## **Similarities :**

- ▼ Both develop during adolescence and young adulthood
- ▼ Both have similar pattern of severity and relapse and like substance addiction most people recover on their own without formal therapy
- ▼ Irrespective of whether it is a behavioural substance addiction neuroscience has a similar neurobiological theory for both type of addictions
- ▼ An important feature of both types of addictions is ambivalence hence motivational interviewing can be used.
- ▼ Cognitive behavioral therapy can be used since cognitive distortions are highlighting features of both types of addictions.
- ▼ Both types have 12 step programs. (for example, alcoholics anonymous, Gamblers anonymous etc)
- ▼ It is very common to have psychological comorbidities in both kind of addictions The Diagnostic criteria behavioural addiction itself have been adapted from chemical addictions
- ▼ The Diagnostic criteria behavioural addiction itself have been adapted from chemical addictions

## **Differences :**

- ▼ Firstly most behavioural addictions are not listed in DSM 5. Many also doubt whether these behaviours are addictions at all.
- ▼ Defining abstinence is tricky for behavioural addiction especially in the case of food or sex addiction as these are essential human needs.
- ▼ It is obvious that withdrawal from behavioural addictions do not have severe withdrawal symptoms so as to lead to medical emergency but withdrawal symptoms are present and are included in the diagnostic criteria.

## CYCLE OF ADDICTION



The cycle of addiction begins with emotional triggers. At times when a person feels lonely, frustrated or experiences internal or physical pain. Those symptoms demand to be relieved. Which gives way to craving. Our brain also feels rewarded just planning or imagining the behaviour which is termed the ritual phase. The more the dopamine is released incentivizing us to further act out the behaviour the more the cycle is strengthened. Once the cycle is completed the person is again left feeling lonely and guilty. Our brain feels rewarded everytime dopamine is released when engaging in addictive behaviours which is the similar feeling as in substance abuse. One of the reasons why it is difficult to stop engaging in addictive behaviours is the same as in substance abuse, i.e., withdrawal symptoms that could range from insomnia, weight loss/gain, angry outburst, depression, to name a few. An addicted brain is chemically as well as physically different from the normal brain and the cycle of addiction stems due to that and it continues unless an outside or an inner intervention occurs. In spite of being self aware of the cycle of addiction most addicts are unable to break the cycle until they seek help.

**Any behaviour is termed as addiction when it meets the following condition :**

- ▼ Continuously engaging or inability to stop the behaviour leads to physical or mental health issues.
- ▼ Behaviour affects important relationships at home and work.
- ▼ The chronic engagement of the behaviour leads to serious other negative consequences, for example bankruptcy due to extreme gambling.



Despite the visible consequences the person is unable to stop the behaviour.

▼ Further, according to the criteria of the World Health Organization (ICD-10) and the American Psychiatric Association (DSM-IV) any behaviour is termed addiction if it meets at least three of the following; (1) Tolerance: increase in the use of the particular drug or engagement in that particular behaviour over time (2) Withdrawal: attempts to abstain from the drug or behaviour leads to physical or emotional withdrawal symptoms like, anxiety, vomiting, depression, irritability, nausea, etc (3) Limited control: using the substance or engaging in the addictive behavior more than originally intended which is followed by guilt or regret but the addict still doesn't seem to be able to limit the further engagement of that behaviour (4) Negative consequences; severe effects on job , important relationships, finance etc.(5) Neglected or postponed activities; (6) Significant time or energy spent on planning, engaging ,or concealing the use of that drug or engagement in the behaviour (7) The desire to cut down: but inability to do so.

### **TYPES OF ADDICTIONS**

Diminished control over behaviour may be caused due to short-term rewards, despite being aware of its adverse consequences. One view suggests that these behaviours lie on the impulsive-compulsive spectrum, thus being classified as impulse control disorders. Another view posits conceptualizing them as non-substance or 'behavioural' addictions (Grant et al., 2010). Below are some of the Behavioural or Non-substance addictions:

#### **Pathological Gambling :**

Pathological Gambling, or gambling disorder is the first disorder to be a part of DSM-5 under the section - 'Substance Use and Related Addictive Disorders" (5th ed.; DSM–5; American Psychiatric Association, 2013) is being preoccupied with thoughts of gambling and losing control over such thoughts even after being aware of its social, physical, and psychological consequences. Criteria proposed in DSM-5 is as follows,

Persistent or recurring problematic gambling behaviour leading to clinically significant impairment or distress, as indicated by the individual exhibiting four (or more) of the following in a 12 month period :

1. Needs to gamble with increasing amounts of money in order to achieve the desired excitement;

2. Is restless or irritable when attempting to cut down or stop gambling;
3. Has made repeated unsuccessful efforts to control, cut back, or stop gambling.
4. Is often preoccupied with gambling (e.g., having persistent thought of reliving past gambling experiences, handicapping or planning the next venture, thinking of ways to get money with which to gamble);
5. Often gambles when feeling distresses (e.g., helpless, guilty, anxious, depressed);
6. After losing money in gambling, often returns another day to get even ("chasing" one's losses);
7. Lies to conceal the extent of involvement with gambling;
8. Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling;
9. Relies on others to provide money to relieve desperate financial situations caused by gambling.

The gambling behaviour is not better explained by a manic episode (5th ed.; DSM–5; American Psychiatric Association, 2013).

#### **Video game Addiction :**

Pathological gaming or or problematic online gaming or Internet gaming addiction includes a pattern of problematic behaviour with respect to video games and online games. It is different from its umbrella term of Internet addiction, as this is exclusively concerned with excessive usage of gaming and not other activities that can be conducted online (Király et al., 2014). In DSM-5, Internet Gaming Disorder has been included in Section 3 of 'Conditions for Further Study' (5th ed.; DSM–5; American Psychiatric Association, 2013). Criteria proposed in DSM-5 is as follows,

Persistent and recurrent use of the Internet to engage in games, often with other players, leading to clinically significant impairment or distress as indicated by five (or more) of the following in a 12-month period :

1. Preoccupation with Internet games;
2. Withdrawal symptoms when Internet gaming is taken away;

4. Unsuccessful attempts to control the participation in Internet games;
5. Loss of interests in previous hobbies and entertainment as a result of, and with the exception of, Internet games;
6. Continued excessive use of Internet games despite knowledge of psychosocial problems;
7. Has deceived family members, therapists, or others regarding the amount of Internet gaming;
8. Use of Internet games to escape or relieve a negative mood
9. Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of participation in Internet games (5th ed.; DSM–5; American Psychiatric Association, 2013).

#### **Internet Addiction :**

Internet Addiction covers a broad spectrum of the various purposes the Internet is extensively used for. However, Internet Addiction or Problematic Internet Use (PIU) is not listed in the DSM-5 as addiction to a medium of delivery cannot be distinguished now from other overused mediums like messaging. In addition, it is considered to be too heterogeneous as it covers other online behaviours, which can be addictive, such as gambling, gaming, shopping, etc. (Starcevic & Aboujaoude, 2016).

#### **Sexual Addiction (non-paraphilic hypersexuality)**

ICD-11 has given the term Compulsive sexual behaviour disorder (CSBD) for sex addiction or hypersexual disorder. However, this disorder has not been included in the DSM-5. This form of addiction is characterized by poor control of one's sex drive in order to receive short term gratification of sexual needs (Starcevic & Khazael, 2017). Patrick Carnes has defined sexual addiction as "any sexually-related, compulsive behaviour which interferes with normal living and causes severe stress on family, friends, loved ones, and one's work environment" (IITAP, 2011). Behaviours under sexual addiction include, pornography, prostitution, compulsive masturbation, indecent phone calls, compulsive relationships (homosexual and heterosexual), and in extreme cases even child molesting, incest, rape and violence (Blum et al., 2012).

### **Exercise Addiction :**

Excessive exercise can be harmful as well as addictive. Though exercise is beneficial, some individuals take it to the extreme and exercise compulsively, causing both physical and psychological damage. Excessive exercising includes not just dependence but also compulsive features. Exercise addiction is not included in the DSM-5 (Petry, 2016).

### **Food Addiction or Binge-eating disorder**

Food addiction is when the basic dependency on food for the purpose of survival exceeds leading to its overconsumption. The habits or behaviours that come under food addiction are cycles of limited and restrictive foods followed by over-eating which is more than necessary for survival (Petry, 2016).

## **BRAIN AREAS INVOLVED**

### **Pathological Gambling**

People with pathological gambling were found to perform poorly in decision making tasks similar to those with substance abuse disorders. The ventral striatum which is associated with decision making and reward-related behaviour shows diminished activation in fMRI studies. Research has also found lowered ventral medial prefrontal cortex activity which is associated with impulsive decision making in risk-reward assessments. Lowered ventral striatal activity has been found to be related to cravings in behavioural addiction and substance abuse (Grant et al., 2011).

The pathways model of gambling (Blaszczynski and Nower, 2001) takes ecological factors like accessibility, learning theories, biological and personality factors into account to explain pathological gambling. Once there is availability and accessibility to avenues to gamble, operant conditioning occurs through variable ratio reinforcement schedule which strengthens the behaviour. And when a win occurs, it is akin to a 'drug induced high'. And when it is repeatedly paired with gambling associated cues, classical conditioning strengthens the behaviour. A neo-Pavlovian point of view explains that through cortical excitation, a 'neuronal model' of habitual behaviour is built. Gambling-related cues trigger the behaviour completion mechanisms. An attempt to resist it results in aversive arousal (a drive) to complete the behaviour. Distorted cognitive schemas like poor judgement of probabilities occur and lead pathological gamblers to seek immediate rewards and disregard delayed gratification. The strength and pervasiveness of these

these schemas increases with an increase in gambling activities. Debilitating financial debt due to losses adds pressure to engage in it further.

Delayed reward discounting (DRD)- a term borrowed from behavioural economics- explains that a reward loses its value depending on the delay in time. Immediate rewards are sought after even if they are small. It also explains the lack of self-control seen in behavioural addiction (MacKillop et al, 2012). The more severe the gambling disorder is, the higher the delay discounting (Chen et al, 2017) Heuristics also play a major role. Most notably Gambler's Fallacy- which is named after the cognitive distortion pattern seen in pathological gamblers- involves a thinking pattern wherein, after a particular result occurs multiple times in a row leads to the erroneous conclusion that the opposite result will occur the next time. Other heuristics like illusory correlations result in having a "lucky number" or a "lucky" piece of clothing for example. They also seem to selectively focus on the memory of their wins which rationalises their engagement in gambling for them. The illusion of control, wherein they believe that they have control over the outcome of events, also clouds judgement along with overconfidence.

### **Internet Gaming Disorder**

Whang et al. (2018) used surface-based morphometry to study cortical thickness and found that the insula played a role in maintaining craving in people with Internet Gaming Disorder (IGD) and weakens inhibitive activities. The bilateral insulae and right inferior temporal gyrus showed increased cortical thickness. The insula integrates interoceptive states into conscious feelings and decision making processes that involve uncertain risk and reward (Verdejo-Garcia et al., 2012 as cited in Petry and Nancy). The bilateral insula showed increased activity in individuals with problematic Internet use while completing a monetary reward task. The results showed that they sought immediate monetary rewards even if they entailed long-term negative consequences. However, the study did not find conclusive evidence of whether the sensitivity to monetary reward was altered (Yoon et al, 2015).

The orbitofrontal cortex, which is involved in memory and emotion and calculates the value of a reward, and its volume is inversely related to impulsiveness, was found to have lower gray matter which can explain why individuals with Internet Gaming Disorder's focus on immediate rewards. Frontal lobe dysfunction has also been associated with the same.

Game cue-associated brain activation in Internet Gaming Disorder occurs in the same brain regions associated with cue reactivity in drug abuse like the basal ganglia, specifically the caudate nucleus and nucleus accumbens. These areas are involved in reasoning, and decision making. Lesions in the accumbens nucleus core were related to impaired learning of delayed reinforcements and an increase in impulsive choices (Cardinal and Howes, 2005). A meta-analysis study found that those with Internet Gaming addiction had an attentional bias towards online-gaming related words. It was similar to what researchers had found in people with substance abuse disorders (Chen et al., 2017).

### **Problematic Hypersexual Behaviour/Hypersexual Disorder**

Disinhibition of the limbic system and frontal lesions due to injury, stroke, or lobotomy have been associated with Problematic Hypersexual Behavior/Hypersexual Disorder. Erotic rewards are associated with anterior insular activity and amygdala activity. The anterior insular activity is also associated with food rewards. Along with alterations in the frontal lobe and amygdala, hippocampus, hypothalamus, and septum alterations were found to play a role in hypersexual disorder. The ventral tegmental area (VTA) involved in associative learning, positive-valenced emotions, and motivational salience, along with the striatum, and the nucleus accumbens which is also involved in Internet Gaming addiction, are associated with hypersexual disorder (Kühn and Gallinat., 2016).

The ventral striatum, dorsal anterior cingulate, and amygdala are also activated in drug addiction indicating similarities between non-substance and substance addiction.

According to the Reward/Executive-Function Theory mesolimbic system and medial frontal lobe alterations perpetuate hypersexual disorder. Impairment of executive control has been found to have significant correlation with problematic excessive behavior. A study using echo-planar imaging blood oxygen level-dependent (EPI-BOLD) method found that decreased dorsolateral prefrontal cortex and right inferior parietal cortex during incongruent Stroop tasks indicating that these areas may be involved in behavioural characteristics of Problematic Hypersexual Behaviour. It might indicate deficits in discriminating relevant and disregarding irrelevant information. This might make suppression of sexual cravings or behaviour. The dorsolateral prefrontal cortex is involved in working memory functioning, executive function, and response selection. The inferior parietal cortex is involved in visual attention and maintains selective attentional control and disregarding irrelevant stimuli (Seok and Sohn, 2018).



Grant and Steinberg (2005) found that 19.6% of individuals with pathological gambling, also exhibited compulsive sexual behaviour indicating similar underlying processes in both.

According to the Reward Deficiency Syndrome theory proposes that a deficit in

The caudate nucleus which is involved in game-cue associated activation in individuals with Internet gaming disorder, is also associated with the motivational component of sexual desire and with stimulus-response learning, and the maintenance of addictive behaviour. Along with it, the right dorsolateral prefrontal cortex- associated with working memory, planning and inhibition, and other executive functions, and the right anterior cingulate cortex- involved in attention-allocation, impulse control, emotion, reward anticipation, and decision making, are also involved. Impaired salience attribution due to disrupted functioning of the dorsolateral prefrontal cortex, results in heightened sensitivity to addictive cues in both addictive behaviours and substance abuse, and a decreased interest in normal rewarding stimuli. Hence, individuals with hypersexual disorder may be paying more attention to sexual stimuli. The area also has implications in food addiction- it showed increased activation when exposed to food related stimuli in obese individuals with binge-eating disorder. The prefrontal cortex which is interconnected to dorsal anterior cingulate cortex, caudate nucleus, and parietal lobe is involved in regulating the limbic reward regions and executive function.

### **Food Addiction**

Unlike binge eating disorder where the individual engages in binge eating due to concerns with their body shape and weight, food addiction is a result of a dependency on a physical reaction caused by consumption of a certain food. And unlike binge-eating disorder, food addiction is not episodic- individuals may engage in "grazing" behaviour i.e., eating continuously throughout the day. Neither do individuals feel a sense of guilt after eating. However, food addiction does share some of the symptoms of binge eating disorder. Apart from the reward circuits of the brain like the striatum, amygdala, insula, nucleus accumbens, and the orbitofrontal cortex, the hypothalamus which is responsible for the regulation of eating behaviours and peripheral satiety networks, shows increased activation in neuroimaging studies. Individuals who obtained high scores on the Yale Food Addiction Scale exhibited activation in the left anterior cingulate cortex, left medial orbitofrontal cortex, and left amygdala when presented with a highly palatable food cue.

They also showed lowered activation in the lateral orbitofrontal cortex while ingesting highly palatable food. Increased functional connectivity in the dorsal striatum positively correlated with food craving scores (Kalon et al., 2016).

Studies show that satiety signals can be affected by highly palatable food, which can be worsened by increased reward system activation and lead to turning eating into a reward-driven behaviour rather than a homeostatic process. Researchers have found evidence of food addiction in lean individuals but obese individuals have shown higher endorsement rates (Gearhardt et al., 2013). Hebebrand et al (2012) suggest changing the terminology to 'eating addiction' to elucidate the problematic hedonic eating.

### **Exercise Addiction**

Exercise addiction has also been included in the list of behavioural addiction. It has two classifications-

1. Primary exercise addiction- the excessive exercise is the primary problem. It may be used as an escape from other life troubles (stress, anxiety, or conflicts in the social, personal, or professional life).

2. Secondary exercise addiction- where the excessive exercise stems from other psychological conditions. It occurs alongside other disorders (generally eating disorders like anorexia nervosa). It might be accompanied by strict diet plans and is in an effort to lose weight.

According to the Thermogenic Regulation Hypothesis, the increase in bodily temperature due to exercise may start a relaxing state which may help reduce anxiety as well. The lowered anxiety levels and increased relaxation become positive reinforcers to continue exercising. This can lead people to exercise every time they feel an increase in anxiety levels. More stressful situations will call for intense exercise, and as that happens a tolerance can develop. Another theory is the Catecholamine Hypothesis. Catecholamines are involved in mood and affect regulation and the reward system. This might explain the addiction to exercise. This has however no conclusive evidence has been found for it. The changes in catecholamine levels in the brain due to exercise are unknown.



As per the Affect Regulation Hypothesis, exercise increases positive affect and reduces negative affect. However, the effect is temporary. This leads to shorter intervals between workout sessions to reduce the negative affect because the longer the interval, the stronger the negative affect. Increase in exercise sessions becomes necessary to increase positive affect which acts as a positive reinforcer (Berczik et al., 2014).

### **GENETICS, HORMONES AND NEUROTRANSMITTERS INVOLVED**

Various studies conducted with small families have shown that first-degree relatives of probands with behavioural addictions like pathological gambling (Black et al., 2006), kleptomania (Grant, 2003), shopping (Black et al., 1998), etc had higher rates of alcohol or other substance addictions, and mental disorders as compared to their control groups in the study.

#### **Pathological Gambling**

The Vietnam Era Twin Registry study conducted by Eisen et al. (1998) of 6,718 men examined vulnerability to gambling due to inherited factors and various environmental experiences. The environmental experiences were assumed to be of risk to both kinds of twins - monozygotic and dizygotic (Petry, 2016). The results showed heritability estimates to range between 50-60% for problematic gambling (Lobo & Kennedy, 2009). A further study showed that the severity of problem-gambling increased with greater genetic contributions (Blanco et al., 2011). Early studies found the involvement of the D2A1 allele of the dopamine 2 receptor gene (DRD2) in pathological gambling and substance use disorders, with frequency of the gene increasing in individuals, from non-problematic gambling to pathological gambling (Petry, 2016; Comings, 1998). Men were found to be at risk of gambling disorder due to the contribution of a variant of serotonin transporter gene (5-HTTLPR) in a study by Comings et al. (1997) (Petry, 2016).

Dopamine, serotonin, opioid and norepinephrine are the neurotransmitters that have shown highest involvement in pathological gambling across various studies. In a study of Iowa Gambling Task, participants did not show dopamine release during the baseline tasks between the groups, but participants with pathological gambling showed increasing levels of dopamine release as the severity increased (Joutsa et al., 2012). Increased dopamine, norepinephrine and cortisol levels were observed in a study aiming

to find the effect of casino gambling on neuroendocrine responses. Differences were found between the baseline levels, on the onset of the casino game and after the game. Both groups' levels increased but problem gamblers showed higher levels of heart rate, norepinephrine and dopamine as compared to non-problem gamblers. Cortical levels gradually increased in both groups (Meyer, 2004). Various radiochemical and PET scans showed that Pathological Gambling is associated with reduction in mu-opioid receptor availability in the cingulate cortex as the increase in these levels can be seen in alcohol and cocaine dependence (Majuri et al., 2016). Evidence for involvement of serotonin in pathological gambling was found in an investigation in which levels of cerebrospinal fluid (CSF) of 5-hydroxyindole acetic acid (5-HIAA - a metabolite of serotonin (5-HT)), inversely correlated with impulsivity and sensation-seeking levels (Blanco et al., 1996).

### **Video Game Addiction**

Changes in the levels of dopamine associated with variants of the DRD2 Taq1A1 allele contribute to compulsive gaming and thus had higher prevalence in adolescents with internet gaming addiction. The study also found that the allele was related to higher self-reported reward dependence in male gamers. On the contrary, lower levels of the allele Cal158Met in the catecholamine-O-methyltransferase (COMT) genes was found as compared to the control group participants as COMT is responsible for regulating the dopamine levels in the prefrontal cortex (Han et al., 2007).

### **Internet Addiction**

Homozygous allele variant of serotonin transporter gene (SS-5HTLPR) was found to be higher in the group of male adolescents with excessive internet use than the control group in a study aiming to find the role of serotonin genes in Internet Addiction. SS-5HTTLPR is also related to harm avoidance and is also common among depressed patients (Lee et al., 2008).

In a study designed to scan brains using single photon emission computed tomography (SPECT) to determine if the striatal dopamine transporter (DAT) levels were altered in individuals with Internet Addiction disorder (IAD). SPECT brain scans found differences between the individuals with IAD and the control subjects, wherein the bilateral corpus striatum of individuals with IAD. Thus, the neuroimaging findings of the study illustrate that IAD may lead to significant dysfunctions in the dopaminergic brain systems, causing serious damages to the brain (Hou et al., 2012)

Another study found positive correlations between internet game overuse and impulsivity in young male adults, who had altered resting-state glucose metabolism, especially in major dopamine brain regions - striatum and orbitofrontal cortex and sensory regions affecting impulse control and reward processing (Park et al., 2010).

### **Sexual Addiction**

A study conducted using 75 sexual addiction recovering couples, it was found that genetics did play a role in the development of many disorders. Of the 75 couples, 36% participants had a parent with sexual addiction, and 40%, 33%, and 7% with substance dependency, eating disorder, pathological gambling, respectively (Schneider and Schneider, 1996). The results from this study were supported by another study with monozygotic and dizygotic twins, showing heritability of 33% for sexual promiscuous behaviour (Zietsch et al., 2009).

### **Exercise Addiction**

Many exercises experience an intense feeling of euphoria after a long and intensive run. This is known as the "runners' high" hypothesis. Contrary to the belief that one would feel exhausted, they have a sensation of flying achieving the goal of being in "the zone" (Goldberg, 1988; Boecker et al., 2008). Boecker et al. (2008) conducted PET scans on athletes at rest and after 2 hours of running and found that the ratings of euphoria negatively correlated with opioid receptor availability in the prefrontal and limbic/ para limbic brain structures. During exercise, the body releases endorphins which leads to dependence on exercise, similarly to morphines (Farrell et al., 1982).

### **Food Addiction**

Family history does play an important role in the eating patterns of an individual - whether it is for under-eating, obesity, food addiction or just food tastes and choices. In a study, it was found that vulnerability of about 40-60% for obesity can be attributed to genetic factors (Volkow & Wis, 2005). In another investigation, Segal & Allison (2002) found that people with a first-degree relative who is obese has a 10-fold higher rate of obesity (Petry 2016). Various studies found that presence of Taq1A1 polymorphism of the dopamine D2 receptor (DRD2) gene predicted an increase in body mass. The presence of the gene also moderated the negative relation between Body Mass Index and the presence of saliva when shown palatable versus unpalatable foods (Stice et. al, 2010; Stice et. al 2008). However, at present, there hasn't been any genetic study that directly aims to investigate food addiction (Petry 2016).

Binges of various nutrients, such as fats and sugars, release excessive dopamine (DA), similarly observed in effects of drugs. In addition to DA, release of acetylcholine in the nucleus accumbens (NAc), caused by bingeing on sugar (Avena et al., 2009). Similarity between the effect of food and drugs on the brain, including dopaminergic and opioidergic systems as frequent consumption of energy, fat and/or sugar-intense food leads to concomitant changes in neural pathways of the brain (Koob & Volkow, 2009). Neuropeptides like leptin, insulin, orexin, ghrelin, etc. modulate rewarding food properties by interacting with dopamine neurons through cognate receptors in ventral tegmental area (VTA) which project to NAc and prefrontal and limbic regions, which are a part of the brain reward system, also found in substance abuse (Volkow et al., 2012).

### **TREATMENT FOR NON SUBSTANCE ADDICTION**

The understanding of the fact that addiction is a neurological disorder is important to tracking its development as well as designing its treatment. People coming with behavioural addiction can also present other comorbidities and just like in substance addiction there is no one straightforward formula to solving the problem and hence the integration of various different therapies is required.

#### **Treatment for Gambling addiction :**

Comorbidity is not new when it comes to gambling disorder hence, these should first be ruled out. Irrational thoughts is one of the highlighted features of gambling which is evidently seen in problem gamblers than non-problem gamblers. Most gamblers exhibit an illusion of control over the gambling habits and gambling fallacy. Many others report intrusive thoughts and urges that obstruct normal functioning and ability to concentrate.

Understanding of gambling urges, training them in identifying cognitive distortions and awareness of these rational beliefs and cognitive restructuring are crucial steps in therapy.

A review of 14 studies proved that CBT does help in reducing behaviour but for how long is not known.

Again, "pathway model of problem and pathological gambling" was proposed by Nowers et al., According to them all gamblers are not similar and so they categorise them into three groups 1) behaviourally conditioned 2) emotionally vulnerable 3) antisocial and impulsive. And hence treatment should be specifically carved to meet the special needs.

Effects of psychological treatment methods like behavioural therapy cognitive behavioral therapy, cognitive therapy, motivation interview, brief intervention have been proved. Combination of CBT and intervention or CBT and mapping enhancement treatment is better than CBT alone. Workbook groups along with motivation intervention have lower probability of gambling after six months plus lesser financial loss compared to just workbook groups. Although this method is not as effective as cbt given by therapists, for a method with minimum strength self oriented therapy manuals or reading therapy have been proven most effective for gambling addicts.

#### **Treatment for Internet addiction :**

Psychotherapy mainly consists of cognitive-behavioral therapy, motivational interviewing, Mindfulness Based Cognitive Therapy, group therapy, family therapy, multi-mode psychotherapy and "eight stages and three parts therapy" etc

When adopting cognitive behavioral therapy for internet addiction following are important aspects to tap on :

Practicing management strategy, identifying factors that could trigger internet addiction (for example certain emotional states, life events, distorted cognition

Learning to control impulse and managing emotions( for example breathing relaxation and muscular relaxation training).

Learning to communicate as well as looking into alternate activities to meet those psychological needs.

Research everywhere has proved group counselling is one of the most effective treatments for internet addiction which effectively helps to curb the addictive behaviour and get rid of internet addiction. Additional therapies that could be included in Group Therapy are family psychotherapy, supportive therapy, relaxation training, cognitive therapy etc.

According to Young, family based intervention is crucial in the treatment of internet addicts, because the method of treatment needs to be passed on to the members of the family. The parents of the addicts need to be educated and trained in the following :

Improving Awareness of internet addiction symptoms.

Learning to identify children's emotional states effectively.

Communicating among family members.

Making an effort to understand children's psychological growth as well as learning tangible solutions to the problems faced and methods to navigate and control those emotions and behaviours in children.

A research group led by professor Tower and based on neuropsychological mechanisms came up with "eight stages and three parts" therapy. The general aim of this therapy was to increase the motivation in internet addicts to ask for help by including psychological treatment technologies and help them to objectively describe the mental and physical symptoms, reason out predict the behaviour as well as control the symptoms in order to achieve a sense of full self control of internet use thereby eventually improving the personality.

#### **Treatment for sexual addiction :**

Sexual addiction is not mentioned in DSM as a disorder. Even though its prevalence has been noted as early as 1886 by a German psychiatrist.

Certain reasons back its not being included in the DSM:

- ▼ It is difficult to distinguish between abnormal and normal sexual behaviour
- ▼ Determining when exactly the loss of control occurs is difficult too.
- ▼ Culture plays a certain role and it's difficult assessing it.

(Carnes, 1998) Most sex addicts have a history of abuse, neglect or trauma. Most have a past of traumatic attachment (Bichard, 2015). Hall (2013) put forth the opportunity, attachment and trauma model. She says the opportunity is a key factor in leading to sexual addiction especially with the internet increasing opportunities.

The term addiction interaction disorder is used when various psychiatric comorbidities exist and sexual addiction very often exists with other addictions and hence



should be screened. Therapeutic relationships are extremely crucial to getting positive results in therapy. Bichard (2015) also emphasizes the importance of therapeutic alliance. The ability of the therapist to talk about sex and understand it without expressing disgust over anything discussed is crucial.

The main step towards treatment of sexual addiction is educating oneself about it. (Hart et al, 2012) Understanding the addiction cycle and shame reduction is the major difference between substance and sexual addiction therapy. (Bichard, 2015) The concept of supernormal stimuli and that artificially induced excitement is greater than excitement in reality has been very helpful in making addicts understand the role pornography plays in sexual addiction. The Internet has further only made supernormal stimuli more accessible. Which makes it difficult for them to have meaningful intimate relationships.

#### **Treatment for food addiction :**

An integration of psychological education, motivational enhancement and cognitive behavioral strategies are the basis of psychological therapy for food addiction.

#### **Bulimia nervosa**

A good amount of research backs CBT for bulimia nervosa which leads to rapid change in behaviour of the patient. The participation of parents in the teenagers' bulimia nervosa therapy could prove beneficial. CBT with interpersonal therapy and dialectical therapy have proved to be effective for treating bulimia. There is no significant difference between Cbt and IPT ,though, interpersonal therapy has shown significantly better results than behavioral therapy.

#### **Binge eating disorder**

Research studies support dialectical behaviour therapy (DBT) to be effective in treating BED. DBT is a third generation therapy taking from CBT and integrating mindfulness strategy by Zen Buddhism. For overweight BED patients weight management behaviour could be applied.

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This piece was contributed by MA I students of Psychology (2020-21) at SNDT Women's University.

## **Section II (b) : Non Substance Disorders Attitude Building**

### **Introduction**

A new challenge before Shackelfree is the ubiquity of the screen in lives of young people, a factor even further underlined during the pandemic. Non substance addictions such as smartphone usage, selfies, gaming, and pornography are far more easily accessed, cheaper and less likely to leave behind any tell tale signs of addiction such as smell, symptoms, or injection marks, as drugs can. Also, many of the devices through which addictions creep into the lives of young people are also essential devices for education and entertainment. Further, demand supply is far more insidious, and even harder to trace. Yet, activities that can take place in this domain are as if not more addictive, and have equally high potential for conflicts with the law.

In that sense, The RAGAP project was ahead of its time is expanding the scope of addiction prevention to non substance or behavioural addictions.

## **General Introduction**

▼ Start with interacting and asking where you ask the participants simple questions which they can relate to.

1. who has a smart phone?
2. How many games are present in your the mobile?
3. Can you access internet easily?
4. What do you surf on the net?
5. What kind of games do you play?
6. Is the content meant for young adults, adults or children?
7. Talk about what do you think addiction is?
8. Do you think addiction is limited to drugs?
9. What do you think is a behavioural addiction?

▼ Each participant shares their experiences with the internet, smartphone, and the current gaming scene.

▼ Each one is expected to share and reflect on how an addiction like this one can be prevented.

▼ Every participant can come up with their own methods to prevent and remain on the path of a de addictive behaviour.

Caution :

If you come across anyone in the group who seems to need treatment/intervention rather than prevention, helpline numbers and therapist details can be provided to the participants. Please keep them handy.

## **Workshop module for Prevention of Binge watching online**

### **Binge Bait : Addiction Prevention Workshop for Binge Watching**

**Aim :** To raise awareness regarding the harms of Binge watching and encourage healthy TV viewing habits amongst the youth.

#### **Workshop Goals**

- ▼ Through an interactive, activities-based approach, the workshop intends to spread awareness among youth about :
- ▼ The nature of binge watching – what is Binge watching?
- ▼ Major causes/ antecedents of Binge watching
- ▼ Major consequences of binge watching: physical, emotional, psychological and social
- ▼ Strategies that can be adopted to prevent/ reduce binge watching

#### **Need/purpose of the Workshop**

The rise in the number of OTT platforms, release of entire seasons of a show on the same day and ad-free streaming of episodes have all led to an increase in the tendency for individuals to binge watch.

As per recent studies and news reports, there has been an increase in the number of cases of binge-watching, especially among the youth; with 3 out of 4 individuals self-identifying as 'binge-watchers' (Jenner, 2016; Iyer, 2019). In the backdrop of the pandemic, wherein our options are limited, this number has increased exponentially, as more and more individuals turn towards OTT and other streaming platforms to keep themselves entertained.

While most TV enthusiasts are happy about the availability of such services, binge watching as the 'new normal' has raised some concerns among health experts everywhere. The current workshop intends to raise awareness about what is binge watching, what causes it to be so addictive, how it impacts one's health and well-being, and lastly, how it can be managed/prevented.



### **Target Audience**

Although there has been a marked increase in the TV viewing habits of individuals across generations, the tendency to binge watch seems to be particularly high among people from 15-22 years of age. Thus, the current workshop is designed keeping this age group as the primary target audience. The workshop will cater to about 25-30 participants/attendees at a time.

### Workshop outline

Sr. No.	Activity	Time
1)	<b>Introduction</b> Participants will be welcomed and given a brief introduction of the facilitator and the general scope of the workshop.	10:45 am - 11:00 am
2)	<b>Ice breaker: 'I spy a lie'</b> Through a game of 'two truths and a lie' information about participants' TV viewing behaviour will be obtained. The game will also serve to familiarise participants with each other and the workshop format	11:00 am - 11:30 am
3)	<b>Presentation – the making of a couch potato</b> Through the aid of a PPT, participants will be explained the difference between regulated TV watching and binge watching. Some statistics regarding the current rise in binge watching will also be presented.	11:30 am – 11: 45 am
4)	<b>Activity 2 : Heads up!</b> Each participant must pick a card at random and place it on their forehead without seeing what's written on it. They must use the clues provided by other group members to guess the word on their card.	11: 45 am – 12 noon
5)	<b>Presentation – 'Just one more episode'</b> The facilitator will highlight the common causes/antecedents for binge watching and outline the psychology behind binge watching.	12 noon - 12:30 pm
6)	Break	12:30 pm – 1:00 pm
7)	<b>Activity 3 : Follow My Voice!</b> A fun competitive race with a twist to teach participants about the different negative consequences of binge watching.	1:00 pm – 1:15 pm
8)	<b>From real to reel : life within the screen"</b> The attendees will be informed about the psychological, physical, emotional and social consequences of binge watching	1:15 pm – 1:30 pm
9)	<b>Activity 4: Spin it, pin it</b> Through an arts-based activity, participants will list out activities they can do in place of binge watching.	1:30 pm – 2:00 pm
10)	<b>Presentation: Beat the binge! - Ways to manage, reduce and prevent binge watching</b> Participants are informed about a list of possible actions, behaviours that can be adopted to manage, reduce and/or prevent excessive binge watching.	2:00 pm – 2:30 pm

<b>Sr. No.</b>	<b>Activity</b>	<b>Time</b>
11)	<b>Activity 5 : Ball it, call it</b> A closing session activity, intended to make participants recap whatever they took back from the workshop	2: 30 pm – 2:45 pm
12)	<b>Closing – feedback session</b> Participants will be asked to write their feedback about the workshop and their overall experience on a sheet of paper and drop it in a box.	2: 45 pm – 3:00 pm

### **Workshop Detailed Description**

#### **Introduction**

After a brief introduction of the workshop facilitator, the topic of the workshop shall be introduced to the audience.

#### **About the workshop :**

Over the recent past, the rise in online streaming platforms and increased accessibility of media content has led to largescale increase in the viewership of online content. It has also resulted in many individuals binge watching. Although regarded as fairly healthy and harmless by many, there is a rising concern among health care officials regarding binge watching and the risks/consequences associated with it. The current workshop is designed as a primary preventive strategy, intended to raise awareness about said consequences and promote healthy TV viewing habits amongst the youth.

#### **Basic equipment/material needed for the workshop**

- ▼ 30-35 chairs for participants to sit
- ▼ A spacious room – to accommodate all workshop attendees
- ▼ 4 large tables – 3 placed at the back of the room, one in the front of the room
- ▼ Projector – to project the PPT
- ▼ Laptop and clicker – to play the PPT with ease
- ▼ Refreshments – bottles of water, light snacks for the participants, placed at the back of the room on one of the tables

### **Activity 1: Ice breaker – 'I spy a lie'**

#### **Description :**

Participants introduce themselves to the group and tell the group 3 statements regarding their TV viewing behaviour. Two of these statements must be true, while the third is false. The group must try and guess which one of the three statements is false. While the participants engage in the activity, the facilitator must keep track of any behaviour commonly mentioned across the participants.

#### **Instructions :**

"We are going to play a fun game to get to know each other a little better. Take five minutes to think about your TV viewing habits. Once the time is up, each person will come up, introduce themselves and then share 3 things about their TV viewing behaviour. Two of these should be true while one is a lie. The group will try to guess which one of the three statements is a lie"

#### **Purpose :**

The ice breaker activity is intended to serve two main purposes. One being to make the attendees a little more comfortable with each other as well as the workshop format. The other purpose is to get a rough understanding of their TV viewing behaviour. While the activity is on, the facilitator will be making note of any common patterns of behaviour reported by the attendees. These observations will be used to initiate a discussion about the various TV viewing habits and to introduce the concept of binge watching – what it is, latest statistics regarding the rise in binge watching cases etc.

### **Presentation – The Making of a Couch Potato**

The facilitator's observations made during the ice breaker will be used to lead the conversation towards the formal understanding of binge watching, its characteristics and some statistics regarding the same.

#### **What is Binge Watching?**

Binge watching has been defined as the viewing of multiple episodes (3 or more) of the same television series in a single sitting (Walton-Pattison, Dombrowski & Presseau, 2018).

With the availability of media content online and easy access to internet across multiple devices, we are no longer limited to the TV to watch content. Devices such as laptops, phones and tablets are being used just as often, if not more, as compared to TV in order to consume online media content. All this has resulted in making binge watching a typical consumption pattern of video content in the current society.

### **Numbers don't lie**

As per recent studies, 63% - 73% Americans and 51% Europeans reported displaying binge watching behaviours (Ampere Analysis, 2020; Deloitte's Digital Democracy Survey, n.d.; Shim & Kim, 2018 as cited in Forte et al., 2021). Of these, about 60% binge watchers (particularly young adults) reported binge watching at least once a week.

Since the Pandemic began, the average time spent binge watching increased from 1-3 hrs to 5+ hrs across four south Asian countries (Bangladesh, India, Indonesia and Nepal (Dixit et al., 2020). As per a report by the Data Sciences Division of the Dentsu Aegis Network (DAN), on average, Indians signed up to three new OTT platforms since the lockdown began. Of those surveyed, 65% also showed a preference for OTT platforms compared to traditional TV (ETBrandEquity, 2020).

From these numbers it is quite evident that TV viewing, and binge watching are on a rise. Before we begin to understand what the potential negative consequences of binge watching can be, it is important to understand some factors that contribute to this behavioural pattern. The next activity and subsection address the same.

### **Activity 2 : Heads up!**

#### **Description :**

Participants will be randomly divided into groups of 10. Each group will do the activity independently. Each member of the group must pick a card from a deck of cue cards, placed face down on the table. The member must hold/place the card on their forehead without reading its content. Using the clues provided by the other members of the group, they must try and guess the word on their respective cards. The group to guess the maximum number of words correctly wins.

### **Materials (Check Appendix A for cards)**

- ▼ 3 sets of a deck containing 11 cue cards each (so 33 cards in total).
- ▼ each card will have one cause/reason for binge watching printed on it.

### **Instructions :**

"We are going to play a fun team game now. First, stand in a line. Beginning from the left, each person counts a number from 1 to 3, and then repeat. So, 1,2,3,1,2,3... until the line ends. (After all are done counting) All 1s are group 1, all 2s are group 2 and all 3s are group three. Please stand with your respective group members.

This game is going to be played within each group. As you can see, there is a set of cards on the table in front of each group. All the group members must draw a card from the deck at random and place it on their foreheads without seeing what is written on it. Once each member has a card, the group must sit in a circle and begin conversing with each other. Goal of the game is to provide your group members with clues that will allow them to guess the word written on their own cards. The group which manages to correctly guess the maximum words within 15 minutes wins".

### **Purpose**

The game is intended to energize the participants, facilitate team building and communication and educate them regarding some popular causes for binge watching.

### **Presentation – 'Just one more episode'**

The causes of binge watching guessed in the previous activity will be elucidated on in this presentation.

Studies have identified certain common causes for binge watching, these can be grouped together under the following broad categories:

#### **1) Social causes**

▼ **Social Interaction** : binge watching allows individuals to have content to comment upon during social interactions.

▼ **Peer Pressure** – a lot of individuals report bingeing TV shows because they are recommended by their friends and family. Some also report feeling pressured to watch it.

▼ Fear of Missing Out (FOMO) – The rising popularity of various series means virality of content consumption. Individuals report bingeing shows in order to not feel left out during social interactions wherein everyone seemingly seems to be talking about the latest 'popular, binge-worthy' series.

## **2) Media content**

▼ cliff hangers – shows ending on cliff hangers often leave the viewer with unanswered questions, wanting to know what happens next. This encourages them to view the next episode immediately.

▼ content and genre – people are reportedly more likely to binge watch if the content is of their favourite genre and/or the storyline is gripping, with interesting characters.

▼ favourite actors – when a series contains one's favourite actor(s), individuals are more likely to binge watch, as a means to satisfy their fandom.

## **3) Technology**

▼ Auto-play - most streaming platforms have the option of auto-play of the next episode as a default setting. This results in a greater probability of viewers watching the next episode immediately, even if they didn't plan for it earlier. When coupled with cliff hangers, this facility compels viewers to binge.

▼ Easy accessibility – most OTT platforms now have apps of their own through which the shows can be accessed at anytime, anywhere. Thus, allowing more time for viewers to catch up on their shows – e.g.: while traveling, in bed etc.

## **4) Others**

▼ Procrastination – people often watch multiple episodes in a single sitting as a way to avoid certain responsibilities/tasks they must accomplish. Some reports also suggest that people may binge watch as a way to 'emotionally tune out' and escape the difficulties of their daily lives by investing themselves into a fictional world.

▼ Entertainment – when done occasionally, binge watching can be a welcome change that one indulges in for the sake of entertaining oneself.

▼ Relaxation – individuals may turn to binge watching as a means of relaxation, especially after a long and stressful period and when they do not have the energy to engage in social interaction.

## **The Psychology Behind Binging**

Apart from the reasons identified above, individuals may also binge watch because of the way binge watching affects our brains. As per experts, viewing multiple episodes of a show we like produces extra dopamine in our brains, activating our reward system. The activation of this system in turn reinforces the activity of binge watching; thereby giving it a drug-like quality, leading to a pseudo-addiction.

### **Break**

#### **Instructions**

We will take a quick break now. You all can use this time to refresh yourselves, have something and get re-energized. Also try to reflect on what all we have discussed till now.

### **Activity 3 : Follow My Voice!**

#### **Description :**

All participants will pair up in teams of two. In each team, one participant will be the leader, while the other will be the follower. The followers shall be blindfolded and it is the responsibility of the leader to guide them through the obstacle course successfully in order to reach the end line. All teams will be competing with each other simultaneously, the first team to reach the end line wins.

#### **Materials :**

- ▼ List of negative consequences of binge watching. Each consequence will be printed on a separate sheet of paper, in the largest font possible
- ▼ Tape, scissors (to attach the sheets of paper to the chairs)
- ▼ Chairs
- ▼ Blindfolds (15-20)



## **Instructions**

“After a good meal we often feel sleepy and ready to get all cosy, but none of that here! We are going to play a fun team game to wake ourselves right up and get all charged. First, I want you all to form teams of two; in each team decide who will be the leader and who will be the follower.

(After the teams are formed and roles decided, the following instructions are relayed)

The followers represent individuals who like to watch TV and are vulnerable to binge watch. All followers will stand in one end of the room blindfolded. From across the room the leader must guide the follower to reach the finish line. In the middle of the room, chairs will be laid out randomly as obstacles; each of these chairs will be labelled as one negative consequence of binge watching such as disturbed sleep schedule etc.

The goal of the activity is to attempt to reach the finish line without colliding into any of these consequences / minimum number of these consequences.

All teams will be competing together and the one who reaches the finish line first wins. It might get loud and chaotic, but let's see how well you all work as a team! Remember to listen well! And let the games begin!”

## **Purpose**

This Activity intends to not only energize the participants and facilitate team work, but also educate them about the various negative consequences of binge watching that act as hurdles in our path of practicing healthy TV viewing behaviours. Once the activity concludes, the negative consequences of binge watching will be elucidated on by the facilitator.

## **Presentation – 'From real to reel: Life within the screen'**

Occasional binge watching may allow one to destress and recharge, however, if done excessively it can cause various unforeseen negative consequences. It is important to be aware about said consequences so as to take active efforts to prevent them from occurring. These consequences can broadly be divided into 4 categories, namely: psychological, emotional, physical and social. Each of these has been elaborated upon underneath :

## 1. Psychological Consequence

▼ As stated earlier, excessively binge-watching episodes results in the release of dopamine and activation of the reward system; leading to greater reinforcement of the behaviour. However, when this behaviour is repeated too much, and too often, it creates a sense of dependence, as is common in other forms of addiction (e.g.: substance dependence).

▼ Episodes ending in cliff hangers, setting of episodes being on auto-play, all make it particularly difficult to exercise control, this coupled with the knowledge of how this behaviour affects our brain chemistry helps explain the poor impulse control one might experience as a result of bingeing.

▼ Excessive binge watching also hampers one's productivity. We may put off important work to watch 'just one more episode' or may be too preoccupied with the thoughts about the show which takes away our focus from the work at hand; thereby negatively influencing our performance.

## 2. Emotional Consequences

▼ Feelings of sadness and emptiness – according to New York Time's Mathew Schneier, the feeling of sadness/ mourning reported by viewers when forced to stop watching a show/ after finishing a show is called 'post-binge malaise' (as cited in Celeste, 2020). It is a sense of emptiness that makes one wonder 'now what' after bingeing an entire series. This feeling possibly stems from the fact that the story the viewer so deeply immersed themselves in for hours on end has suddenly gotten over, and now they are left wondering what to do next.

▼ Feelings of depression, loneliness - although momentarily binge watching may seem relieving and exciting, if done over a prolonged period of time, it may result in feelings of depression and sense of loneliness because it leaves the viewer with the realization that they haven't accomplished everything they planned for that day. It may also stem from a sense of monotony that sets in because of repeatedly doing the same thing for hours on end.

▼ Mentally draining/exhausting – although the plot of the shows can be very captivating, it can also lead to mental exhaustion after a while.

Disturbed emotions (e.g.: feelings of anxiousness, frustration, anger, nervousness etc.) due to the content of the series.

### **3. Physical Consequences**

▼ Without realising it, many individuals tend to binge watch late into the night. This not only disturbs their sleep schedule but also deteriorates the quality of their sleep – leaving the body unable to recoup and recharge properly

▼ Delay in circadian rhythm increases the release of acids in digestive system causing indigestion and other gastric issues.

▼ Headaches and eyes hurting– constant exposure to the screens can result in regular, prolonged headaches. The constant screen time causes strain to the eyes, which may result in them hurting.

▼ Weight gain – many have the tendency to snack while binge watching, and more often than not these snacks are unhealthy foods high in fat and carbohydrates. When coupled with the fact that people tend to passively sit while bingeing (with minimal physical movement), it helps explain the weight gain.

▼ Compromised posture and passive sitting – Experts have distinguished sitting in front of a screen for binge watching and working as follows: while working on a screen for hours on end, individuals engage in what is called 'active sitting' – because they are carrying out some degree of physical activity. However, while binge watching, there is barely any movement at all, and only passive consumption of content. Research indicates that greater negative physical consequences (e.g.: back aches, joints pains etc.) are associated with passive and not active sitting. Many people also tend to sit/lie in unnatural, awkward positions during binge watching, this too affects their physical state.

▼ Many also tend to forego their basic hygiene when bingeing, this compromised hygiene also negatively affects not only their physiology but also their social interactions.

▼ **Social Consequences** Strained social relationships – owing to the number of hours spent in front of the screen, individuals have lesser time to engage in social interactions, thereby negatively affecting their relationships with friends and family.

▼ The pre-occupation with thoughts about which series to binge, the content of the show they are currently bingeing etc. also affect the manner in which one interacts with others, this is typically negative.

▼ Individuals may also avoid, delay household chores and professional responsibilities (school and/or office work) for binge watching, thereby not only affecting their productivity but also their relationship with all others involved in said activities.

#### **Activity 4 : Spin it, pin it**

##### **Description**

Each participant will make a spin wheel for themselves. Each section of the wheel must contain activities that they enjoy and which they can do in place of excessive binge watching, whenever they get the urge for the same.

##### **Materials**

- ▼ Circular card-board cut outs (30-35)
- ▼ Card board cut outs of arrows (30-35)
- ▼ A box of pins (to attach the arrows to the card-board wheel)
- ▼ Art supplies: pens, pencils, erasers, colour pencils, sketch pens, scale, scissors, tape, paper (of different colours) etc.

##### **Instructions**

"On the table in the back of the room are a bunch of art supplies. Each participant must pick out a pre-cut cardboard circle and arrow for themselves. Using the art materials provided, you must make a personalized spin wheel for yourselves. In each section of the wheel add an activity that you enjoy and can do in place of excessive binge watching. You may decorate and design it as per your liking".

##### **Purpose**

This activity simply intends to get the participants to list out alternative activities to binge watching. Making a list of alternative activities to do may help the individuals to better manage themselves when they get the urge to excessively binge watch. Often, despite having other activities one can do, individuals continue binging because they are unable to decide on what to do instead. Using a spin wheel with alternative activity options can be an effective and entertaining way to solve said problem - they can simply do the activity that the arrow lands on.

**Presentation – Beating the binge :  
ways to effectively manage/reduce binge watching**

▼ Occasionally binge-watching TV shows can be a welcome change, and actually help to alleviate stress. However, problems arise when binge-watching occurs to a point that borders on addiction, affecting our mental, emotional, physical and social well-being. Listed underneath are a couple of ways one can manage/reduce their urge to excessively binge watch.

▼ Recognizing there is a problem – to effectively alter a problematic behaviour, it is first important to make note of said behaviour. Start by monitoring the amount of time spent in front of screens binge-watching, number of times one avoided/delayed important work to watch ‘just one more episode’.

▼ Time management – one can make a daily schedule with dedicated ‘TV time’ which they must not exceed. Setting the TV time in the evening after a long day of work can act as a reward for the work done throughout the day. Instead of a pre-set time limit, one can also choose to set a limit on the number of episodes they will watch in a single sitting.

▼ To prevent oneself from binging into the night, thereby disrupting their sleep schedule, one can adopt the ‘no screens in bed’ rule.

▼ Practicing mindfulness – binge watching may be a way to escape life stressors and avoid negative emotions for many. Instead of attempting to avoid their current life circumstances, through mindfulness training -individuals can be trained to better deal with said issues.

▼ Finding healthy alternatives – listing activities one can do instead of binge watching, something that is more productive and engaging than sitting in front of the screen for hours on end. The same was covered in the arts-based activity done earlier.

▼ Decluttering – following the ‘out of sight, out of mind’ rule, one can attempt to reduce binge watching tendencies by uninstalling the OTT platform apps from their devices and/or temporarily unsubscribing from them.

▼ To prevent oneself from excessively binge watching, one can also attempt to alternate between different genres. Alternating between one's favourite genre and other genres can be a good strategy to begin weaning off from binge watching, until it becomes more manageable and one can attempt to have longer breaks between two episodes.

### **Healthy TV viewing habits:**

▼ Snacking while watching TV is a habit for many. The same also results in consumption of excessive junk food, thereby affecting their physical health. As a way to avoid this, one can switch to healthier items to snack on such as fruits and vegetables, instead of fried, unhealthy snacks.

▼ Watching TV for hours on end is a sedentary activity which is unhealthy for the body. This can be avoided by engaging in some light physical activity while watching TV. Getting up and walking around in between episodes can ensure regular body movement. One can also set alarms for the same.

▼ To prevent oneself from over-exceeding the pre-set episode limit/TV time, one can choose to keep alarms (human alarm – asking someone to stop you, or electronic alarm – on phone/device etc.) to remind themselves to stop. There are also apps available that lock your device for a pre-set time, rendering it inaccessible for said period of time. Such apps can be useful in preventing one from bingeing into the night on their phones etc.

### **Activity 5 : Ball it, call it!**

#### **Description :**

All attendees will stand in a circle. The facilitator will start the game of Catch by passing a ball to one of the attendees. Each individual must call out one thing they learnt about/took back from the workshop, before throwing the ball randomly to another member in the circle. The process will be repeated until everyone is covered at least once.

#### **Materials :**

1 Plastic beach ball – medium size

#### **Instructions :**

"I want you all to form a circle. We are going to play the game of Catch. I will randomly throw the ball at anyone from the group, when you catch the ball, you must say one thing that you learnt or will take back from the workshop today. Once you are done, you have to throw the ball at someone else from the group and the process continues".

**Purpose :**

The activity is intended to act as a closing exercise to revise the contents of the workshop and gauge how much the participants took back from it.

The game of catch will be followed by the viewing of a short video intended to summarize the contents of the workshop, along with some additional pointers and cover all those points that the participants failed to mention during the game (Link for the video is available in Appendix C).

**Closing – Feedback Session****Description**

Participants will be asked to give their feedback regarding the workshop and the facilitator. They may report on their overall experience and make suggestions for improvement, if they so wish.

**Materials :**

- ▼ Sheets of paper
- ▼ Stationary – pens, pencils etc.
- ▼ Drop box (placed in the front of the room)

**Instructions :**

"Before we end for the day, I would kindly request you all to please write a few words about your experience of today's workshop. Your over-all review about the same, and any suggestions that you may have for us, so that we can improve the next time round. You can write your reviews on the papers provided here, and once done, you can drop them into the box in front of the room".

**Closing**

All attendees will be thanked for their time and participation. In case they wish to learn more about the topic, they will be provided with the appropriate resources to read up more. The facilitator will also be open to answering any doubts that may have remained unanswered.

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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.



## **Appendix A**

### **Materials for Activity 2 : Heads Up!**



**Auto  
Play**



**Cliff  
Hanger**

# Favourite Star

A graphic featuring a large, light gray heart and a large, light gray five-pointed star. The heart is positioned to the left of the star, and they overlap slightly. The text "Favourite Star" is centered over these shapes.

# Social Interaction

A graphic featuring two stylized human figures in the foreground, one slightly behind the other. Above each figure is a speech bubble containing horizontal lines, representing text. The text "Social Interaction" is centered over the figures and speech bubbles.

# FOMO

[Fear Of  
Missing Out]

# Peer Pressure



An illustration of a person standing and holding a laptop. Surrounding the person are several icons: a computer monitor, a document with a heart, a landscape photo, a document with lines of text, a musical note, and a document with a checkmark. The entire scene is set against a dark gray background.

# Content + Genre

An illustration of a large, open padlock. The padlock is light gray and is set against a dark gray background. The text 'Easy Accessibility' is overlaid on the padlock.

## Easy Accessibility



# Procrastination



# Entertainment



3 sets of these cards will be prepared, each team will get one set each.

## ▼ Appendix B

### Material List for Activity 3 :

1. Given underneath is the list of the negative consequences of binge watching. Each word will be printed on a separate piece of paper in the largest font feasible and each paper will be attached on one chair.

- |                          |                                     |
|--------------------------|-------------------------------------|
| a. increased dependence  | h. disturbed sleep                  |
| b. poor impulse control  | i. headaches                        |
| c. hampered productivity | j. eyes hurting                     |
| d. sadness + emptiness   | k. weight gain                      |
| e. exhaustion            | l. strained social relationships    |
| f. loneliness            | m. procrastinating responsibilities |
| g. frustration           |                                     |

- |           |               |
|-----------|---------------|
| 2. Chairs | 4. Scissors   |
| 3. Tape   | 5. Blindfolds |

## ▼ Appendix C

### Link for the summary Video

<https://youtu.be/hxve4C2pVoo>

### **Workshop module 1 for Smartphone addiction**

The age group of the workshop consists of adolescents (**15-19 years old**). The duration of the workshop will be **2 hours and 30 minutes**. The only **materials needed would be blank sheets of paper and pens as well as coloured crayons**. No personnel apart from the person taking the workshop is required, however this is a workshop designed for an in **class experience** and not online. The maximum amount of students should be around 15 as this is more of an interactive session which would need them to also give their inputs and discuss with the person taking the session. A workshop like this can be conducted in junior college classroom, by then dividing the class in to two, and taking two separate workshops at one time. It would be best if the chairs are pushed aside and the classroom is empty so the attendees can sit on the ground especially for the ice-breaker.

At the **start** of the workshop, everyone will be requested to switch off their smartphones and put them in the cardboard box in front of the class. They will be instructed that the phones will be returned to them after the session ends. There will then be a small meditation period before the workshop begins, officially. They will be told to sit straight but comfortably and close their eyes as the meditation music plays.

This following video (Tibetan meditation music) will then be played for 5 minutes. <https://youtu.be/NPszteX0z7k> They will be told the following; "Just let your mind wander.. and think what it wants to, let the thoughts come in as they do naturally. Feel your shoulders relax, release the tension in your body .. as the music stops playing, slowly open your eyes." This is done before the session to calm one's mind down, which is always full of many thoughts, and start refreshed.

**The Ice breaker** is called the 'Chinese whispers drawing game'. This could take up to 30 minutes. Then, the person in charge will arrange them such that they are sitting in a single straight line, one after another, with their backs turned towards the front.

The instructions given to them will be the following ;

"We will now play a fun game that combines Chinese whispers and drawing. It is not necessary to be good at drawing to play this game. Everyone please sit in one line with your backs to one another, keeping some distance. I will be giving you these blank pieces of papers and crayons, but only to half of you. Now that the required people have the sheets of paper, I will tell you how we play this game.



The very first person has to decide on a funny and nonsensical phrase. For eg: 'An egg man frying omelettes', 'A duck who went to school', or something along those lines. This person has to whisper this phrase to the next player, who has to draw it to the best of their ability, in 1-2 minutes, and they have to tap the back of the person in front of them and show them the drawing. They have to guess what the sentence might be and again whisper that to the next person, who draws it and the cycle repeats, and this goes on until the end of the line. It alternates between drawing and whispering. The final person will then try to guess out loud what the sentence was, and ask the first person if they are correct. In the end everyone shows their drawings to each other, and everyone sees the transitions from the first drawing to the last one."

Usually, the result of this activity is humorous as people guess what they can from their interpretation of one's drawing. It is a good activity to break the ice and get everyone comfortable and familiarised with each other even if they are shy and do not like speaking up in front of others. This also to orient them to the fact that they can play games not on their smartphones and still have fun.

The game when played out looks somewhat like this ; we will discuss about the impact of the smartphone in today's technologically savvy world, our reliance on it and just how much we depend on it, and whether it is a sign of the times or if it is something that should be a cause of concern. The person would also mention that although research has shown that there is excessive smartphone dependence, whether problematic cell phone use is truly an addiction or the result of an impulse control issue is a topic of debate between mental and medical health professionals. However, the data pertaining to their age group is concerning and, shows the highest reported time spent on their devices and it is related to decreased self control. Before we discuss further, the following activity will be conducted for about 20 minutes. They will be given a checklist with a few questions and they have to check next to the sentence if it applies to them.

**The questions are given below -**

Does this apply to you ?

- ▼ The first thing you do when you wake up is check your phone
- ▼ You reach for your phone the moment you're alone or bored.
- ▼ You sleep later than from the moment you actually get in bed, because you spend some time scrolling through your phone.

- ▼ You feel anxious, upset, or short-tempered when you can't get to your phone.
- ▼ You find yourself spending less time doing activities you like/ on your hobbies because you are on your phone.
- ▼ Phone use interferes with your or schoolwork/ performance, or relationships.
- ▼ People in your life are concerned about your phone use patterns.
- ▼ When you try to limit your use, you relapse quickly.
- ▼ You feel like your phone is sometimes ringing even when it is not.
- ▼ You sometimes use your phone while driving or crossing on the road.
- ▼ Your phone use has caused you to have a (minor or major) accident or injury.
- ▼ You rarely put your phone on 'do not disturb' or flight mode, even in places like a theatre
- ▼ You find yourself scrolling through your phone even when there isn't any notification/ an incoming call.
- ▼ You often multitask while using your phone
- ▼ You immediately respond to text messages, no matter what you are doing at the time.
- ▼ You're spending more and more time using your phone.
- ▼ The more checks a person has the more that person uses their phone on a daily basis.

(Note: this is not a clinical scale of any sort and is just to create awareness among the attendees about their own smartphone usage).

They are then familiarized with new terms related to smartphone addiction and its pathological usage. Nomophobia is actually termed as the fear of going the fear of going without your phone. "FOMO" (Fear Of Missing Out), which is the fear of being without a cell phone, disconnected or off the Internet, many people in their age group use this term colloquially as well. Similarly, textaphrenia is the fear that you can't send or receive texts. There is also a reported Phantom vibration and phantom ringing syndrome, which is is a type of hallucination reported among mobile phone users in the general population. It is the feeling that your phone is alerting you when it really isn't. We will then discuss thoughts about the checklist, just to create self-awareness about their own phone usage, and also

take inputs from them, asking what they think and their opinions about this. Questions such as if they think they would be able to significantly curb their smartphone usage, and how much do they think they can exercise self-control over using their smartphone, as well as identifying where or when do they tend to use their phones when it is not needed at all (for eg, while having lunch, going to the bathroom), and noting that these are places where they most definitely can stop using their smartphones. What could they accomplish in the time that they spend using their phone will also be discussed, this could concern more time spent on hobbies or finishing their tasks. Discussion will also center around why they think people might be addicted to their smartphones. Questions related to mental health (anxiety, depression, self-control, self-esteem) and smartphone usage may also be touched upon.

Next, there will be a few activities that can highlight among the students just how dependent we are on our smartphones in our daily lives. This would take around 40-50 minutes.

The first activity is for their bodily posture. They are instructed to sit with their back hunched and neck bent as if on their phone, for about 2 mins. Then, they are instructed to sit with back straight and neck not bent, but looking at their eye level, for 2 mins, again. They are then asked if they find a difference in sitting in these two ways, whether they noticed a difference between the two, and what they feel is better for their bodies, and more comfortable.

Attendees are then told how excessive phone usage can provoke physical symptoms such as dry eyes, carpal tunnel syndrome (which is a numbness or weakness in your wrists/ hands), repetitive motion injuries, wrists, neck, back and shoulder pain, migraine headaches and numbness and pain in the thumb and the index and middle fingers. They are also told that studies have found that using a smartphone for a prolonged duration could negatively affect body posture. Whether they face such issues due to sitting in awkward positions while using the phone are then discussed, as well as good postures, the ones which they found comfortable during the exercise are also noted down.

For the next activity, they are given a grocery list like the one below. They are instructed to look at the list of words below for two minutes and to memorize as many words as they can in this amount of time. They are then told write down as many words as they remember, on a sheet of paper. This should be done in two minutes, without looking

at the list. After 5 mins, the activity should be completed. We then discuss how many items they were able to remember. They are also asked what techniques they used to remember the words. We also touch upon the fact that they would have ideally used their phone to note down a grocery list if they were shopping/ or written it on a paper and if any of them would have made any attempts to possibly remember the list, instead of having it on their phones.

Their next exercise would be to instruct them to try and memorize a 10 digit phone number for example, using a randomly generated number, such as 9855592129 . They are instructed to look at it for a minute and try to memorize it, and write it down on their sheet of paper. They are then asked if they were able to recall it. The person taking the session also highlights how we usually do not remember phone numbers anymore as instead put them in our phones immediately. The attendees are then asked how many people's phone number they would be able to remember without having to look at their phones. The phenomenon of 'Digital Amnesia' which is where our brains are losing their ability to remember as we become increasingly reliant on technology to retain data, is discussed. Factors such as distraction due to multi-tasking, looking at information in multiple apps at once, and hence only half-focusing on learning something new makes information difficult to be stored in long term memory. Similarly because we are so used to having everything at the click of the finger, our attention spans also become much shorter. Sleep cycle interruption as a result of smartphone addiction is also discussed. They are explained how we need deep sleep to detoxify the brain, which is when the brain processes new information. Interrupted sleep can cause impairment in our ability to retain new information and form new memories. The attendees are then asked if they think they would be able to perform these trivial daily functions without using their phones. Whether they can possibly cut down this multi-tasking using their phones, and try to do one thing at a time, keeping their phone aside especially when using another device such as a laptop is also discussed.

They are encouraged to try to learn new numbers and grocery lists by heart without having to use their phone, using memory techniques such as 'chunking', 'peg system', creating visualisations or mind maps and any other techniques they can think of to improve memory for everyday purposes is also discussed.

We then move towards the social media aspect of smartphone usage. A few questions involving this are asked to the attendees, they are given below. This would take around 20 minutes.

1. Is social media use heavily integrated into your daily routine?
2. Do you find yourself spending progressively more time on social media to get the same satisfaction?
3. Do you rely on social media as a source of excitement, or to cope with boredom or loneliness?
4. Do you feel a need to use social media and feel edgy or anxious when you cannot?
5. Do attempts to quit or reduce social media use fail?
6. Does social media cause problems in your life or conflicts with loved ones?

Answering in the affirmative to three or more questions points toward a social media addiction. This is then discussed, along with their general thoughts about their social media use.

'Do you think social media apps have changed your perception towards certain things?' And 'What do you feel when a post you made doesn't get the likes/ upvotes / good reactions?' The attendees are then explained how internet usage activates the reward system of the brain, in the form of a 'kick' of the feel-good chemical called 'dopamine' and this happens whenever we check a notification or click a new link. We tend to feel happy and euphoric when we receive new messages and the same way, we might feel disappointed when we do not. They are explained that this is why it makes it difficult to quit or reduce usage, and slowly cutting down, starting with keeping your phone aside for 15-20 minutes a day and then moving on to longer time durations would probably be more effective than a total and complete detox, which is what people attempt right at the start. The last discussion involving practical ways to cut down smartphone usage will be around 30 minutes. Methods such as removing time-consuming apps from your phone and accessing them through a device that one don't carry with you all day, setting reminders on certain apps that send you warnings after a certain time limit of app usage is exceeded. For example on Instagram, there is an option to set a limit reminder. Changing settings to eliminate push notifications and other disruptive alerts, that might distract them while studying or working, for non-essential social media apps. Setting your screen to gray scale to keep it from waking you at night, is also recommended by many researchers. Placing some barriers around your phone use that force you to think about what you're doing. For example, students could create a lock screen background with writing on it that warns them against using their phone excessively, as a reminder. Keeping the phone out

of sight, as much as possible. Charging it somewhere besides their bedroom, and not using it to set alarms, instead investing in an actual alarm clock, so there is no excuse to carry it to bed. Lastly, they are also told that keeping oneself accountable is also important. For this, they can install an app that tracks smartphone habits, like MyAddictometer (for Android users ) or Moment (for apple users) , so that they can set a specific usage goal and see how well they stick to it.

Then, the image below is shown to them; which are of the negative consequences that come with excessive phone usage, that were discussed in the session.

The blank pages of the same sheet are then passed around to them and they are told to fill in how they personally think their excessive phone usage affects them negatively. After they are done filling it in, they are instructed to keep it with themselves and take it home. If they can, they could paste it on a wall near their desk or anywhere where they can see it clearly, every day so it works as a visual reminder to cut down screen time on their phone.

And lastly, the attendees are told to remember that is supposed to be learning experience. Brief relapses, adjustments, and withdrawal symptoms are part of a journey toward healthier phone use. They are to not to expect to get it right immediately, but expect some setbacks, and learn from each experience. At the end of the session, 15 minutes are set aside for any further questions they might have and before ending it, their phone are returned to them. One way to check if prevention has worked is to ask the students to either turn their screen time on or download an application such as moment which records the screentime stats on their phones a week before the workshop, and check the daily average. Two weeks after the conduction of the workshop, one can again ask them to turn in their screen time and check the daily average stats if it has reduced to a noticeable extent compared to the one before. The other way is to keep them accountable constantly and ask them to hand in their screen time statistics to their parent or guardian at the end of every day, for a week at least. This will help them realise their daily phone usage and how much they should be cutting it down. It may or may not have a long term effect on their smartphone usage, however, if it has got them thinking or at least aware of just how just how much they use their smartphones and that they can use some self-control as well as other techniques to reduce their smartphone usage, then that will be a start.



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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

## **Workshop module 2 for smartphone addiction**

### **Session outline :**

- 1) Introduction (5 mins)
- 2) Ice-breaker activity : Would You Rather?  
(5 mins explanation + 10 mins activity + 5 mins reflections)
- 3) Smartphone addiction : concept, definitions, signs and symptoms  
: Who gets affected and why?  
: Causes  

5 min. break
- 4) Poster : How to control phone usage (10 mins+ 15 mins)
- 5) Closure activity : Circle, Square, triangle activity  
(15 mins) + wrap up the session (5 mins)

Target audience : FYJC students, just entering junior college or students of the same age enrolled in similar courses. (age : 16 year-olds)

Time : 2 hours

Materials required : 1) Would You Rather activity sheets

2) Circle, Square, Triangle activity A4 size sheets

Set-up for the PPT.

**NOTE** : the workshop can be adapted into an online format as well, to be conducted on Google Meets/ Zoom. The activities will be slightly modified, wherein for the ice-breaker activity, students would have to be divided into smaller breakout groups to interact with fewer students at a time. Similarly, for the closure activity, it can be conducted individually instead of as a group, and students can share their responses post that.

### **Introduction**

Today, as you all are aware, I will be conducting a workshop with you all, about smartphone addiction. It will be a 2-hour long workshop and we will be taking a short 5 min break in the middle. Please remember that if at any point you have any questions or you want to share something, then feel free to do that. Also, before starting the workshop, we will all need to follow a basic rule throughout the workshop. Can anyone guess what the rule is? ... yes, that's correct! Everyone will need to put their mobile phones on silent or turn it off, and keep it inside your bag or somewhere from you can not constantly see it.



Since this is still your first week in college, I am sure that everyone is not as familiar with each other in the class. So why don't we start with an ice-breaker, by the end of which, hopefully you all will know your classmates slightly better.

▼ **Ice breaker** – Would You Rather? activity

**Would You Rather...**

Read a book or	Surf the Internet?
Ride a bicycle or	Go on the ferris wheel?
Listen to the same song on loop or	Binge watch on Netflix?
Watch cricket or	Watch football?
Use a chopstick or	Use a fork?
Live in the countryside or	Go viral on the Internet?
Prefer to have summer all year round or	Winter?
Watch all Harry Potter movies or	Watch Bigg Boss?
Give up social media or	Eat the same dinner for the rest of your life?
Have a pet cat or	Pet dog?

All of you have received a sheet for this exercise/game. It's called 'Would You Rather'. As you can see on the sheet, there are 10 sentences printed, and each sentence has two interesting options. What you have to do is go to different people in the class and ask them what they would rather do, given these choices. And remember to start each sentence with a 'Would you rather...?'. It will be better to approach people whom you haven't spoken to yet, and this will be a good way to learn something new about them today. But remember, 'Neither' or 'Both' are not allowed. There are no rules about how many questions you can ask to each person, that entirely depends on you. You will have a total of 10 minutes for this exercise. Does anyone have any questions before we start? (Address the questions asked)

Okay then, let the games begin!

Post 10 mins : Alright, and with that the 'Would You Rather' game comes to an end, but remember, there is no end to learning about one another, and I hope that will continue even after today. Would anyone like to share anything from this exercise?... That's a great insight. Thank you for sharing that with us.

Let us now move on to the discussing the main topic of today's workshop. (Start the PPT)

So what comes to your minds when I say 'Smartphone Addiction'? (Discuss answers)

Alright, those were some very interesting insights. As you all just described, we are looking at a form of addiction, which has been on the rise very much in the last decade. I am sure that people were not addicted to the small Nokia phone we had 20 years back. It is the all-encompassing smartphones with their extensive battery life, hundreds of applications, brilliant cameras and 'everything a click away' phenomenon'. You look around and see almost every other individual hooked to their phones. Undoubtedly, the smartphone has made all our lives easier, we are literally a click away from anything we want. So one would argue, how can it be wrong to use your smartphone? Here is where the addiction part comes in. As we all know, anything done in excess has the potential to harm us in one way or the other, be it alcohol consumption, excess use of the internet or online gambling.

Smartphone addiction is not recognised by the DSM-5 as a form of addiction, however it does have overlaps with Internet addiction, which is a widely studied phenomenon.

Smartphone addiction is a behavioural addiction characterized by compulsive usage of a smartphone and an inability to minimize the urge of using it. The addiction has impact on the physical and psychological health of the individual and impairs the daily functioning. In simple words, being hooked to your phone all day. It is also referred to as 'Nomophobia', which is the fear of not having your mobile phone on you.

The picture you see on the screen is something we all see on a daily basis around us, where a bunch of kids, younger than you even, are all busy on their phones instead of playing or actually engaging with each other. Once, I actually saw a few kids complaining to a boy's father because the boy would be on his phone all the time and not play with them. Parents having to force their children to go play. Funny, isn't it?

Now you would ask me, I use my phone for my studies, referencing, occasional gaming and social media use. Do I have smartphone addiction too? Well, it is not as simple as that. The pandemic has definitely not made our lives easier when it comes to controlling the use of our phones or laptops for taking classes. So let us look at some signs and symptoms of cell phone addiction, and what that would mean for us.

## **Psychological Symptoms**

▼ **Sleep problems/ Insomnia** : insomnia can be caused by staying awake till late hours on a smartphone. Also, continuous exposure to blue light emitted from the screen disrupts sleep quality, reflecting in decline in success in school and work.

▼ **Stress**

▼ **Restlessness**

▼ **Substance addiction** : there is a significant correlation between cell-phone abuse, school failure, depressive symptomatology, cannabis, and other drugs, smoking, and consumption.

▼ **Associated psychiatric disorders and problems** : anxiety, depression, and stress are observed, as well as problems with sleep and loneliness. Relationships between cell-phone abuse, chronic stress, emotional stability, and depression have also been found.

▼ **Personality and psychiatric problems**

### **Neurological effects**

▼ Activation of 'reward pathway', leading to any form of behavioural addiction

▼ Attention deficits

▼ Impaired concentration

▼ Memory

▼ The more highly people scored on a scale measuring smartphone addiction, the less activity and volume they had in the right anterior cingulate cortex, a brain area associated with empathy, impulse control, emotion, and decision-making that's also affected in other types of addiction.

Who is at risk?

Can you all tell me when did you all receive your first personal smartphone? (Take answers) ... as we can see from your responses, some received their first smartphone as early as 10/11/12 years of age (depending on the responses). I would say that is still better than the kids today, because a lot of them have personal tablets at the age of 2-3 years!

In today's time, on an average, people start using their smartphones at around 13 years of age. This is their first experience with such a device, and they have complete control over it. They are exposed to its myriads of features and this exposure is most often unlimited. Thus, it is most likely that teens, i.e. people between the age of 13-18 get most addicted to their smartphones. This does not imply that adults are immune to the power of the smartphone, but one develops such unhealthy smartphone usage habits in these early years of exposure. Here are some of the statistics pointing to the state of affairs as of 2021.

- ▼ 50% of the teens consider themselves addicted to their phones.
- ▼ 63% people use their smartphones 4-7 hours daily.
- ▼ Indian college students check their phones at about 150 times a day on an average
- ▼ Teenagers who spend 5 hours a day on electronic devices are 71% more likely to have suicide risk factors than those with one-hour use.

### **Causes**

There are various factors that may contribute to the addiction.

▼ **Loneliness** : feelings of loneliness can make a person really helpless. The presence of a smartphone with all the social media applications where you can communicate with innumerable people may make the person feel less lonely and may feel that there is someone who can listen to them.

▼ **Stress** : stress from work, school, college is bound to exhaust an individual. Smartphones can be a mode of relieving the stress temporarily by watching movies, reading e-books, talking to friends and so much more.

▼ **Unstable home environment or work environment** : Families where parents are often engaged conflicts, addicted to substances, a boss who is autocratic are difficult, to deal with. Using smartphones can be a way of escaping from the challenges that need to be faced on a daily basis.

▼ **Anxiety in social situations** : some individuals experience a great deal of discomfort in social gathering. For such individuals, smartphones are a way to connect with people at their own ease and peace.

## Signs and symptoms

Recent work by Lin, et al (2014) identified 6 behavioural criteria that had the highest diagnostic accuracy for the diagnosis of smartphone addiction :

**1. Continued inability to resist the impulse to use the smartphone** : Don't we all suffer from this. Any time we are bored, our first impulse is to check our phones, be it to check the time or for unread messages.

**2. Symptoms of dysphoria, anxiety, or irritability after a period of withdrawal from use** : similar to substance withdrawal, one might also experience anxiety, irritability and dysphoric mood while trying to disengage from their phones.

**3. Using the smartphone for a period longer than intended** : How often does it happen that you picked up your phone to check something, and ended up scrolling through something completely different, and half an hour passed by without you realising it?

**4. Persistent desire and/or unsuccessful attempts to quit or reduce smartphone use**

**5. Heightened attention to using or quitting smartphone use**

**6. Persistent smartphone use despite recurrent physical or psychological consequences**

The more we look at these symptoms, the more we realise that we have been through these at least once, or maybe even more, and it is time to actually take a re-look at our phone usage.

In addition, they identified 4 functional criteria :

1. Excessive use resulting in **persistent or recurrent physical or psychological problems**

2. Use in a **physically hazardous situations** (such as while driving or crossing the street) or situations that have other negative impacts on daily life

3. Use that **impairs social relationships or performance** at school or work

4. Use that is very **time-consuming** or causes significant distress

From being asked to not drink and drive, we are now warned to not text and drive. How many accidents have occurred due to us being glued to our phone screens?

Have any of you watched the show 'Black mirror', which portrays the adverse effects of technology on mankind? ... That is great, so you must have watched the episode 'Smithereens' which talks about this exact issue, people texting while driving and that leading to an accident. It is here that the protagonist says. "The sky could turn purple, and you wouldn't know!", while referring to the young kids who are so glued to their phone screens all the time, that they just don't notice what is going on in the world around them. Be it the train, or the bus, or just sitting by ourselves, our own company seems to scare us, and the smartphone comes quick to our rescue.

Smartphone addiction also has a lot of physical effects which are very real. Some of it is already visible, with kids less than 5 years already wearing spectacles, due to increased screen exposure.

### **Physical Symptoms**

- ▼ Muscle pain and rigidity

- ▼ Carpal Tunnel Syndrome: causes numbness in hand, thumb and little finger structural deterioration, pain, squeezing. Symptoms such as a decrease in strength are observed as well.

- ▼ Neck pain

- ▼ Vision problems such as dry eyes, blurred vision, and eye fatigue

- ▼ Pain and weakness in thumbs and wrists

- ▼ Lethargy

Apart from these symptoms, everyday activities such as even eating food is accompanied with using our phone. Nutritionists suggest that eating food while using one's phone makes the person miss their satiety signals, especially for kids, and one doesn't know when to stop eating. This may also lead to issues of constipation, obesity or problems in assimilation of nutrients.

▼ **Availability of resources** : the availability of an up-to-date mobile phone with all the features, 24/7 internet connectivity are also important causes of addiction. The better the resources available, the higher is the probability of an individual to be making maximum use of the resources.

Knowing the causes, the effects, and the people who are the highest risk of developing smartphone addiction, let us now look at some of the constrictive measures that you can take to limit your phone usage. It is important to realise that most of us cannot completely discontinuing using our phones, and that is not a practical option. So the aim here is to limit our use, and also to recognise the unhealthy addictive usage that we might be engaging in, in order to prevent further development of an addiction.

#### **How to control phone usage :**

- ▼ Keep a track of the amount of time spent on the phone each day.
- ▼ Keep a designated space for your phone in the house.
- ▼ Set a time for replying to emails and texts.
- ▼ Avoid sleeping with your phone in the bedroom.
- ▼ Remove unnecessary applications from the phone.
- ▼ Turn off the notifications from unimportant applications.
- ▼ Restrict the usage for entertainment purposes.
- ▼ Avoid checking your phone as soon as you wake up.

These might sound difficult and unnecessary at first, but trust me, they do work. Another extremely important thing that we need to focus on is our posture. Hold your phone at face level (as shown in the ppt), so as to not bend your neck the whole time while using it. Holding your phone in such a way might be a little irksome, and hopefully this would make you use your phone less!

Important : The following activity may be used for ANY workshop, since it provokes the participants to THINK over what they have learned.

### ▼ Closure Activity : Circle, Square and Triangle activity

At the end of a workshop, it's important to reflect on the things you've learnt, the things you still need to work on and how the things you've learnt in the workshop will help you improve. This activity encourages post-session reflection. I will now divide you all into smaller groups of 4, and you will all be given A4 size sheets with these 3 figures drawn- a circle, a square and a triangle. What do these figures mean?

**Circle** : What's still going around in your head?  
What do you still not understand?

**Square** : What's squared away? What do you really understand?

**Triangle** : Which three takeaways could you use in your personal or work life?

You as a group need to reflect on these three things, and note it down on the sheet given to you. I will give you roughly 10 minutes to work on this, post which you can share your points with the entire class, and also ask any other questions that you may have.

(Post 10 minutes) Ask the class to share their responses, address any questions and wrap up the session. Challenge everyone to turn their 'circles' into a 'square'.

Okay so with that, I believe that we have reached the end of this session. Thank you to you all for coming today and actively participating in the activities. I hope that the content made sense to you all and that it will affect your everyday decisions regarding cell phone usage. Hope you all had an equally good time. Lastly, I would like to tell you all- You may now switch your cell phones on again!



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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

## **Let's Talk Censored!**

### **An Awareness & Prevention Workshop against Porn Addiction**

#### **Aim :**

To create awareness and sensitise adolescents with regard to Porn Addiction.

#### **Goals :**

- ▼ Conduct a Pre-Post Assessment (before and after the workshop), to gauge the pre-existing knowledge with the adolescents and what they learnt during the workshop;
- ▼ Impart basic knowledge pertaining to Sex Education, along with providing a takeaway handbook for reference;
- ▼ Address the topic of Pornography, along with effects of its prolonged use and how it can translate to an addiction along with providing a takeaway infographic;
- ▼ Discuss ways of preventing/combating Porn Addiction.

#### **Need / Purpose :**

Sex Talk is still seen as a Taboo due to which growing children can be unaware. In the pursuit of sexual curiosity and exploration, they might even end up getting the wrong information. Hence, understanding implication of consuming porn maybe a far shot. In such a scenario, it becomes imperative to sensitise individuals, especially adolescents regarding porn addiction and its implications as part of prevention. Along similar lines, porn can have an intense effect on one's perceptions towards the opposite gender as well, which can be rigid. For instance, objectification of women. In severe case, the thin line between reel and real can blur. Hence, addressing these issues are important.

#### **Target Audience :**

The workshop can be conducted for 8-10th Standard Children/Adolescents (13–15-year-olds), from an English Medium School, hailing from middle-upper/upper class and can be conducted class wise, with not more than 30 students at a time. In case of multiple divisions, it will be advisable to take one division at a time. The workshop is meant to be conducted offline, i.e., in-person and in English Language.

Seeing the risk at which an even younger age group is , given their ease of access to the internet, the workshop MAY be scaled down and offered to an even younger age group, provided the parents and other adult authorities give consent.

### Workshop Rationale :

Since the topic is sensitive and complex to address, in case an adolescent is unaware or is wrongly informed with respect to the areas of sexuality, the rest of the session will not render that much awareness and could create more confusion. Hence, while the aim of this workshop is to sensitise adolescents regarding porn addiction, a section on sex education has been incorporated, to ensure the adolescent is aware and gets maximum benefit from the prevention workshop.

Workshop Schedule / Itinerary	Time	Topic Addressed/Activity Conducted :
Sr.No.		
1	09:00 AM	Pre-Assessment form
2	09:15 AM	Ice-Breaker
3	09:25 AM	Introduction
4	09:30 AM	Sex Education Session (with activities)

#### 10:30 AM - Break

5	10:50 AM	Video
6	10:55 AM	Pornography (with activity)
7	11:05 AM	Porn Addiction
8	11:10 AM	"The more you've it, the more you want it" phenomenon
9	11:20 AM	Signs/Symptoms of Porn Addiction (with activity)
10	11:45 AM	Implications of Porn Addiction (with activity)

#### 12:00 AM - Tea Break

11	12:10 PM	Preventing and Combating Porn Addiction
12	12:25 PM	Q/A session
13	12:40 PM	Post-Assessment Workshop/Handing out souvenirs
14	01:00 PM	Wrap up & Lunch

**Definition :**

Printed or visual material containing the explicit description or display of sexual organs or activity, intended to stimulate sexual excitement. There may be a display of erotic behavior, designed to arouse the viewer.

**Caution :** Ensure that this module is used only with adolescents or young adults. The trainer may need practice before running the module, to ensure that there is no discomfort sharing these concepts.

**Initial exposure :**

Children are exposed to this material initially when they have no clear understanding of what is being shown. They are not aware and slowly this changes into viewing the same thing again and again. Children firstly get exposed to pornography through friends and many other sources. Today everyone has access to internet, even if a child is not interested he is forced by his peers then the child is curious to know more. Children are also achieving puberty early and thus may have high levels of curiosity.

**Escalation :**

There is a rapid increase in exposure as curiosity is aroused and sources are found. The imagery is firmly fixed in their minds and may lead to more explicitly sexual behavior.

**Desensitization**

What was initially viewed as taboo, or repulsive now seems acceptable, and this is the real risk. The common belief, which must be broken, is that “everybody does it”. This is not true. However, it leads to high risk sexual behaviors, and acting out.

▼ Sadly, India is the fifth highest consumer of pornography in the world. In surveys it is seen that some children may be exposed to it as early as age 10.

▼ Indian populations are found to spend on an average 8 minutes and 22 seconds every day on pornography sites.

▼ This is slightly lower than the worldwide average at 8 minutes and 56 seconds. There was also a steady increase in people using smartphones to access pornographic videos.

▼ 9 out of 10 Internet pornography users only access free material, whether it be samples of pay material, illegally copied versions of pay material, or amateur material. 1 in 5 mobile searches are for pornography.

▼ Every second 28,258 users are watching pornography on the internet

▼ Every second approximately \$3,075.64 is being spent on pornography on the internet.

▼ 56 percent of divorces involve one spouse having an obsessive interest in online pornographic content.

▼ Pornography can lead to prostitution and misuse of children, violence against women, and human trafficking.

**Questions for participants, to set off a group discussion :**

**Goal :**

1. To get the group to think of this issue scientifically, instead of feeling curious.
2. Understanding that they could be at risk, as could their friends, siblings, etc.

What do you make of these numbers?

Do these facts make you think of the innocent young people you know who could be at risk?

- ▼ What impact might such an addiction have on their future lives?
- ▼ Do you think someone is making profit here, out of creating risk for young people? Should we be a party to such profiteering or should we help put a stop to it?

**Solutions :** Getting informed, building scientific information.

This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University Seeking counseling.

# Workshop for prevention of Video Game Addiction

## Session outline

The workshop is on prevention of video game addiction. It will be conducted with students from the 8th standard to 10th standard, that is, 13 to 15 years of age. For an active participation from the students during the workshop, a group of maximum 25 students will be present at a time.

The workshop will begin with a brief introduction of the facilitator.

### Activity 1 (Icebreaker)

- ▼ The Logo Game
- ▼ Materials required - PowerPoint Presentation
- ▼ Personnel required - Nil
- ▼ Allotted time - 10 minutes

Instructions - We are going to start with a fun game first. I am going to show you some logos on the screen, one logo at a time. The logos will be of popular video games. You have to tell me the name of the game by looking at the logo. After showing you the logo, I will give you 5 seconds to think, after which you have to raise your hands if you wish to answer. Does anyone have any doubts? Shall we begin?

Description - The Logo Game is the icebreaker of the workshop. The students will be presented with fourteen logos that they have to identify and name. The games chosen for the logo game are gender-neutral. The purpose of the game is to make the students comfortable and excited to participate proactively in the workshop. The facilitator will provide feedback after the completion of the game.

## **Activity 2**

How many can you relate with?

- ▼ Materials required - Sheet of paper with statements and Pens/Pencils.
- ▼ Personnel required - Nil
- ▼ Allotted time - 10 minutes
- ▼ Video Game Addiction 3

Instructions - I am going to give everyone a sheet of paper with a few statements on it. You have to read each statement carefully. After reading each statement, you have to give yourself a score of 1 if you can relate to the statement. If you do not relate to the statement, then you have to give yourself a score of 0. Answer as honestly as possible. Does anyone have any doubts? Shall we begin? (The facilitator will distribute the sheet of paper with statements and pens/pencils to every student).

Description - The students will be given a sheet of paper with fourteen statements on it. The purpose of the current activity is to get the students to think about their gaming habits. The statements simply give a score of the gaming habits that each student can relate to, and hence, is not a standardized scale to assess video game addiction. The students will get a total score after answering to every statement, which will be used for Activity 3 (This or That Game). The facilitator will provide feedback after the completion of the activity.

After the completion of Activity 2 (How many can you relate with?), the facilitator will briefly define addiction, video game addiction, reasons why video games can become addictive and psychological symptoms of video game addiction (Griffiths, 2008).

## **Activity 3**

- ▼ This or That Game
- ▼ Materials required - Nil
- ▼ Personnel required - Nil
- ▼ Allotted time - 10 to 15 minutes

Instructions - Now, we are going to play another fun game. The name of the game is "This or That". For this game, first we need to divide you all into two groups.



The groups will be divided on the basis of the scores everyone received on the previous activity. Everyone who got a score of five or less will be "Team This". Similarly, everyone who scored six or above will be "Team That". Let's divide ourselves now. (The students will divide themselves according to the instruction given to them. The facilitator will help them if required.)

Now, "Team This" consists of students who do not play a lot of video games, and "Team That" consists of students who play video games more than "Team This". I want "Team This" to think of reasons why not playing video games is good, and "Team That" to come up with reasons why playing video games is good. Please note that one person from each team will give only one reason at a time. Anyone who has a reason must raise their hand. There are no right or wrong answers. The responses can be as silly as, "We get to sleep more because we do not play a lot of video games". Does anyone have any doubts? Shall we begin?

Description - The students will be divided into two groups based on their scores on Activity 2 (How many can you relate with?). The two groups, simply put, will be pro video games and against video games. The students then have to present their own arguments to support their stand. The purpose of this activity is to allow the students to themselves think of reasons to support their stand, allowing them to reflect on why they engage in their respective gaming habits. By including them in this activity, they can stay alert and engage in it actively. This can be more effective than the facilitator giving them reasons why over-indulging in video games can be detrimental. To ensure a reasonably balanced team distribution based on the scores of the students, the group limit of maximum 25 students at a time has been set. There will not be any winners and the game will be stopped when either of the groups cannot produce any more arguments. The facilitator will provide feedback after the completion of the game.

After the completion of Activity 3 (This or That Game), the facilitator will present the advantages and disadvantages of video gaming (Prot et al., 2012). The points will be elaborated by the facilitator if necessary.

#### **Activity 4 (Concluding activity)**

- ▼ Tips to take home
- ▼ Materials required - PowerPoint Presentation
- ▼ Personnel required - Nil
- ▼ Allotted time - 10 minutes

Instructions - Now that everyone understands the advantages and disadvantages of video gaming, I am going to give you all some tips that you take home and can apply to reduce your video gaming.

(The facilitator provides the students with tips to reduce video gaming.) We are going to conclude our workshop with a Question and Answer session. Please feel to ask questions or provide any feedback.

Description - The facilitator will provide the students with some tips that can help them reduce video gaming. Each tip will be elaborated on by the facilitator. The workshop will be concluded with a Question and Answer and feedback session, and a note of thank you.

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# Workshop for prevention of Video Game Addiction

## Appendices

Appendix 1 (The Logo Game) (material for this game is in the Resource package)

▼ 1 Ludo	▼ 8 Candy Crush
▼ 2 Pokémon Go	▼ 9 Minecraft Video Game Addiction 8
▼ 3 Pacman	▼ 10 Pubg (Player Unknown's Battle Ground)
▼ 4 Super Mario	▼ 11 Temple Run
▼ 5 Angry Birds	▼ 12 Subway Surfers
▼ 6 Plants vs Zombies	▼ 13 Fruit Ninja
▼ 7 Clash of Clans	▼ 14 Bubble Shooter

## Appendix 2 (How many can you relate with?)

You have to read each statement carefully. After reading each statement, you have to give yourself a score of 1 if you can relate to the statement. If you do not relate to the statement, the you have to give yourself a score of 0. You do not have to share your scores with anyone, so answer as honestly as possible.

### Statements Score

- 1) I feel great while playing video game/games.
- 2) I get angry when someone asks me to stop playing.
- 3) I tend to feel unhappy or irritable when not playing.
- 4) I crave or seek more playing time.

- 5) I spend most of my time with video game systems.
- 6) I tend to think about the game when I am not playing.
- 7) I like to spend time playing games rather than spend time with family or friends.
- 8) I try to reduce my playing time but cannot.
- 9) I often play more than I had planned.
- 10) I prefer video games over outdoor games.
- 11) I sometimes lie about how much time I spend playing.
- 12) I sometimes manage to sneak time to play, before school or late into the night.
- 13) In order to play games, I neglect my responsibilities, such a homework, family chores, etc.
- 14) My parents and I have had arguments about how much time I spend playing.

**Total =**

### **Appendix 3 (Brief notes)**

Griffiths (2008) defined addiction as any behavior that fulfills the six criteria of salience (behavior dominates the person's life), mood modification (behavior acts as a high or an escape), tolerance (increase in behavior to achieve the desired moodmodification effect), withdrawal symptoms (physical manifestations, like irritability, as a result of not indulging in that behavior), conflict (with self, others or necessary activities), and relapse (reverting to old behavior after abstinence or control). Addiction can be categorized as substance addiction and non-substance or behavioral addiction (Griffiths, 2008).

Video game addiction is a form of behavioral addiction. It entails a problematic, uncontrolled and compulsive use of video games, which can negatively affect other areas of life. However, it is important to differentiate between healthy excessive behaviors and addictive behaviors. Griffiths (2008) proposed that healthy excessive behaviors "add to life, whereas addictions take away from it" (Griffiths, 2008; p. 29). Video game addiction is similar to gambling addiction in the sense that winning acts as a motivator to continue the game. Other factors like game scores, establishing new friendships via internet gaming, and feelings of escape and freedom can encourage people to engage in video games (Griffiths, 2008).

Griffiths (2008) stated seven psychological symptoms of addiction -

1. Having a sense of well being or euphoria while at the computer or playing a video game.
2. Inability to stop the activity.
3. Craving more and more time at the computer or playing the video game.
4. Neglect of family and friends.
5. Feeling empty, depressed, irritable when not at the computer or playing the video game.
6. Lying to employers and family about activities.
7. Problems with school or job.

#### **Appendix 4 (Advantages and Disadvantages of video gaming)**

##### **Advantages :**

1. Familiarity with technology.
2. Understanding the importance of rules.
3. Increase in eye-hand coordination.
4. Increase in empathy.
5. Can be a family activity.

### **Disadvantages**

1. Can promote social isolation → Poor social life.
2. Neglect of responsibilities.
3. Aggressive game themes can increase aggressive thoughts and behaviors.
4. Graphic portrayal can lead to desensitization.
5. Poor academic performance.

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### **Appendix 5 (Tips to take home)**

1. Inform yourself about the content of the game.
2. Set limits to playing time.
3. Keep gadgets out of the room at night to prevent playing at night.
4. Complete homework and chores before playing.
5. Ensure that classes are not missed to play games.
6. Find other outdoor and non-technological activities.
7. Engage in social activities.

This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University.

## **Module 2 Video game addiction awareness workshop**

The workshop will spread awareness and comment about why video games are so addictive. It will go into details about how video games impact a person's daily life, mental health, and physical health. Lastly, it will talk about how one can set limits and take charge of their gaming behaviour.

The workshop will be held for school going teens, that is, age group of 12 to 16. Around 20 children can attend the workshop at a time. The number of participants can be increased with the help of more supervisors. It will be a two hour workshop which will consist of three parts. Each part will go on for about 30 minutes. There will be a 10 minute break between each part and the last 10 minutes will be dedicated to questions. The participants will be asked to get a book and a pencil. The workshop is assumed to be held on an online forum due to the pandemic.

The first part will be dedicated to understanding the appeal of video games and why they are so addictive. The second part will detail how video games impact our daily lives, mental health, and physical health. The final part will discuss how to manage our gaming hours and how to take charge of our gaming behaviour.

### **Part – I**

At the beginning, the participants will be welcomed and introduced to the counselor. The counselor will begin the workshop with a game of 'scavenger hunt'. The counselor will ask the participants to get three things and give them three minutes to do so. The counselor will ask the participants to get :

- ▼ A red colour item/object
- ▼ A round item/object
- ▼ An object you can wear on top of your head

Once they showcase the items to the counselor and the counselor has interacted with the participants then the counselor will address how they played this game without the use of their screens. This will kick-start the workshop. The participants will be told that this is a video game awareness workshop and will be told very briefly what to expect from the workshop. Next the participants will be told to take out their books and pencils. They will be asked to write down what motivates them to play videogames. The counselor will also give examples of what to write such as, "I play videogames when I'm bored" or "I play videogames when I'm stressed to relieve myself from stress" to better explain what she

expects from them. They will be given 4-5 minutes to write the same. Once they are done, counselor will ask them to keep this to themselves. The counselor will proceed to show the power point presentation (PPT).

The first and the second slide will be shown. The counselor will show the second slide and talk about why are video games are so addictive. She will state the five reasons and explain them briefly :

▼ Easily Accessible – Earlier videogames were available on DVDs and you would require a console to play them. You would have to attach the console to the T.V., insert the DVD, sit in front of the T.V., and then play the game. Additionally they were expensive. Now videogames are freely available on your phones and laptops and can be played anywhere, at home, outside, in another city.

▼ Escape from Problems – Everyone faces problems on a day to day bases, in school with friends and family members. Videogames provides them a temporary escape from these problems. They can go into the world of videogames and temporarily forget or ignore their problems.

▼ Sense of Achievement – Videogames are short and after accomplishing something you win reward points. When you win the game and you win rewards you feel like you have achieved something.

▼ Social Activity – Now it is not just you but all your friends play videogames. If you're the only one not playing videogames, you feel left out and you want to join your friends. Now games like PubG, Call of Duty allow you to play in groups or squads. So you and your friends can interact and play together.

▼ Challenging – In every game there is always a new level to reach, a boss to defeat, or a new skin or armor to get. This makes the game challenging and these challenges give you a sense of purpose which in turn makes you want to play the game more.

The counselor will explain these points clearly with examples to make it easier for participants to understand. The counselor will state that all these points contribute to making videogames more appealing and addictive.

After this, the counselor will give the participants a 10 minute break. This will end the Part I of the workshop.



## **Part – II**

The second part will commence with a game. The counselor will conduct the game of 'crack the code'. In this game the participants will have to crack a numerical code. They will be given 3 minutes to do so. Afterwards the counselor will ask for the answer and explain how to get to the answer for those who couldn't get it. Then the counselor will move onto the next activity.

The counselor will ask the participants to bring out their book and pencils. The counselor will ask them to write down negative impacts that gaming has had on their lives. The counselor will give examples of the same such as, "I don't have time to do my schoolwork because of gaming" or "I don't get enough sleep because of gaming" or "If I lose a game I get very upset and angry" The counselor will give the participants 4-5 minutes to write these down. The counselor will now go back to the PPT.

The counselor will now go through 3rd to 6th slides. The counselor will talk about how gaming impacts daily life, physical health, and mental health. The 4th slide states 6 things gaming impacts :

- ▼ Relationships – If you play games all day you wouldn't have time to interact with family members or friends and wouldn't share a bond with them.

- ▼ School work – Playing games all day will not leave you much time to do attend to your schoolwork or studies.

- ▼ Sleep – If you play games during the nighttime you'll not sleep and won't get enough rest for the next day.

- ▼ Food intake – Many games are played in real time and this may lead to delayed meals or skipping them all together.

- ▼ Social life – Playing games all day you won't be able to hang out with your friends and won't have a social life.

- ▼ Hobbies – Gaming is an easy activity and other activities such as playing an instrument, dancing, drawing, etc. all require effort. So such effortful hobbies are completely discarded.

Moving onto the 5th slide, the counselor explains to the children how problematic gaming (when gaming is a preoccupation and doesn't leave time of anything else) impacts one's physical health. The counselor states that problematic gaming may lead to increase in weight, posture problems, and staring at a screen for too long may lead to strain in the eyes. Repetitive stress/ strain injuries are also caused due to repetitive movements of hands and fingers which almost all videogames require. One example of such injuries will be the carpal tunnel syndrome. Lastly some studies have also suggested that long hours of gaming may also lead to epileptic seizures but these occur in very extreme cases of gaming and are rare.

Moving onto the 6th slide, the counselor now explains the impact of problematic gaming on mental health:

▼ Behavioural & Mood Problems – There are many ups and downs in a game. If you win a game you feel good, happy and content. But there is also a possibility of you suddenly being killed in a game and you lose the game. This is frustrating makes you upset and angry. You experience all these emotions in a span of half an hour or an hour. This leads to a lot of changes in mood. If your mood keeps fluctuating your behaviour will also change. Many research studies have also associated gaming with aggressive behaviour.

▼ Sleep disorders – Short and irregular sleeping hours may lead to insomnia and various other sleep disorders.

▼ Depression/Anxiety – Many studies have also found that problematic gaming will also lead to depression and anxiety.

▼ Most importantly, problematic gaming will result in internet gaming disorder which is characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes priority over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences. With this Part II will come to an end.

### **Part - III**

The counselor will ask the participants to open their books again and ask them to write down activities other than gaming that they like to do. They can write down the activities they did before they got into gaming or activities that they like but haven't yet engaged in. The counselor will give examples of activities such as, playing the guitar, cooking, or gardening. Then the counselor will give them 2 minutes to think and write down these activities.

After this the counselor will move onto the last chunk of the PPT. From the 7th to the 9th slide, the counselor will talk about how to control one's gaming behaviour and how to take charge of it. Starting from the first point :

▼ Identifying negative impact – Firstly we must identify the negative impact of gaming on our lives. As we wrote down today, we can spend more time and identify all the ways in which it negatively impacts our life and add it to this list.

▼ Identify motivation to play – Today we also wrote down why we play and what motivates our play. Here again, we can spend more time and identify what other reasons for us to play and add that also to our list. Identifying reason to play, can help us switch gaming with another more productive activity.

▼ Counting hours of play – We must also identify the number of hours we play, we talk about play with our friends, and we watch game play videos. Identifying and noting down this number can help us take the next step of setting limits to our video gaming hours.

▼ Set Limits – After identifying how long we spend gaming each day we must start putting time limits on ourselves to reduce the hours we spend gaming. For example, gaming only an hour a day. Limits must be set after taking into consideration other daily activities that we must do, for example, schoolwork, chores, spending quality time with friends and family, food, sleep, etc.

▼ Ask parents to supervise you – It may be annoying to tell your parents to keep an eye on you, but they are the one who will be consistent and as concerned as you are about your gaming behaviour. Tell them about your time limits and inform them about when you usually play and tell them to help you adhere to these self-set limits. If not your parents ask your older sibling to help you out with this.

▼ Discard the games you don't play and restrict access – Give away the games you no longer play. For the games you do play make it harder to access them. If you play games on your phone, delete the app each time you are done playing the game. This would make it harder for you to access the game and you are likely to do another easily accessible activity.

▼ Find new activities to do – Today we also wrote down other activities/hobbies that we like to do. Spend time thinking about the same and add more to this list. Find multiple activities which are mentally challenging, achievement based, at-home, and social activities.

▼ Commit to change – Once you have taken all these steps commit to them. The counselor will elaborate and explain the above in as much detail as possible with examples whenever necessary. The counselor will open the last slide which will talk about more activities one can do.

The counselor will play a game of scattergories before ending the workshop. The counselor will divide the participants to smaller groups. The counselor will herself choose an alphabet or ask one of the participants to choose an alphabet. Now just like the game name, place, animal, and thing, starting with the chosen alphabet each team must write down words or phrases for 10 categories. The teams will get one point for each word and if all the teams write down the same word there will be no points for that word. After the alphabet is established, the counselor will send the participants into break-out rooms and give them 90 seconds to think and write down words. This will be repeated for one or two rounds as time permits.

With this game the workshop will come to an end. The counselor will end with saying that video games in themselves are not bad but excess of it and losing control over gaming behaviour may lead to various problems. The counselor will also state that games which were played today during the workshop were fun and were played without using the screen. The games played during the workshop made them think creatively, critically, were mentally challenging and were also social in nature. Finding other things that they care about and not dedicating their entire life to gaming is the way to go. Lastly the counselor will answer any questions that participants have. Three pamphlets will be handed out to the attendees virtually. She will thank them for listening to her and actively participating in the workshop.

This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University

# Social network addiction prevention

Social networking sites is one of the applications of the social media, which contains web 2.0 capacities of producing, and collaborating online content. The virtual communities, websites or mobile applications where we can create individual public profiles, interact with friends and meet other people based on shared interest regardless of location are called Social Networking Sites (SNS). The most used and popular SNS (i.e. Facebook) was developed for the Harvard students in the year 2004. However, the fame of Facebook expanded very quickly and currently it has more than 1.9 billion users. The other SNS which allows interaction through text or photos include Instagram, Twitter, Snapchat, Reddit, Pinterest, LinkedIn, YouTube, Tinder. The SNS addiction is defined as any usage which leads to problems in daily functioning, task completion, relationships and causes psychological deficits (Kuss & Griffiths, 2017).

## **Rationale**

The excessive users of SNS are observed to be in the age range 18 to 22. Additionally, many studies suggest that the students in this age range use SNS at least 3 hours a day on average. Furthermore, according to the Telecom Regulatory Authority of India, 164.81 million teens and students use social networking sites (Bhargava & Rani, 2015). Therefore, the current workshop will be planned for the college students.

## **Workshop Phase one :**

In order to ensure proper interactions among the participants, few people (approximately 100) will be allowed to participate in the workshop. In the first phase of the workshop, participants will be divided to groups. Groups will be divided in such a way, which consists of 8 or more members. The groups will be made as small number as possible, so as to ensure mingling between all the participants. The participants will be asked to introduce themselves in the groups. This is done because studies have shown that SNS have reduced the face to face interaction among the college students (Kolhar, Kazi & Alameen, 2021). In my understanding, the participants might be in the same departments, but they won't know each other or they know others only through social networking sites. Hence, these initial steps are crucial and are done to make them understand the importance of communication in the real world.

**Phase two Slide presentation :** The purpose of presenting the slides with various kinds of information regarding the SNS is to give them awareness about the over usage. (Slide sets are available in Resource package)

**First Slide :**

What is SNS?

The SNS will be introduced to the participants as 'the websites where in the individuals can interact, create public profiles and meet people based on their shared interest'.

**Second Slide - (pop quiz):** time required for this is 10 minutes approximately.

As an icebreaking session, one of the members from each group will be asked to name one of the applications shown in the slide. The questions will be asked in such a way that anyone in the group can answer it. Along with naming the application, they will be asked what is the main feature of the application. For instance, if the application is 'YouTube', they can attach the feature as 'watching videos'. Another example is that, if the application is 'Snapchat', they can say the feature as 'snap'. This is done to give an idea about various SNS.

**Third slide - (game) :** the participants will be given approximately 30 minutes for the game.

As the next step, a short game will be conducted in order to make the communication more possible in the group. The game will be introduced as 'Accept MY friend request'.

Materials required: To conduct this game, we require sticky notes and tapes.

The facilitator will introduce certain pairs of words like Facebook and Likes, Messenger and chatting, Instagram and camera, Snapchat and Snap, Twitter and tweet, WhatsApp and Texting, TikTok and acting, YouTube and videos, Pinterest and fashion, Telegram and movies, in the screen. The words will be displayed in the screen throughout. One of the pairs of words will be written on one paper, for example, Twitter on one and Tweet on another paper. Then the volunteers will tape/ stick the paper on the back of each individual in all the groups and will make sure they can't see it. And it will be ensured that the people with the papers 'twitter' and 'tweet' are far away from each other. Then the participants will be instructed as follows, "When I say the word 'go', you need to mingle within the group and find your pair. You are supposed to ask Yes/No questions only, in order to figure out who they represent. Once you find out your own word, it becomes easy to find your partner. After you find your partner, you need to ask each other, "how often

use these apps, \*how long you use these apps and \*if these apps are not available, how will you feel, \*will you be able to stop using this particular app".

### **Icebreaker session/ Game**

**Purpose :** Studies have shown that social networking overuse have negatively affected on the relationship with family members and friends and have made face-to- face communication more challenging (Kolhar, Kazi & Alameen, 2021). Hence, the main purpose of the icebreaker session is to enable students to comfortably interact with each other. The game also gives them an opportunity to compare and analyse how often others are engaging with these applications. This gives them the knowledge that, they are not alone in the cage of SNS.

#### **Fourth slide**

I believe that all of you have shared your experience with each other and realized how much time from your life you spend for these sites. As you can see in this slide, there is water and internet sign shown in the arrow. Now you should ask yourself, which arrow you would choose. Hypothetically speaking, there are more chances that we may choose the internet arrow, so that we can upload our pictures and update our status in SNS. Nowadays, when people are in their vacation and goes to certain places in order to 'enjoy', their first intention is to capture the pictures and share it in SNS, rather than enjoying the moment. In other words, we can say, being in a SNS, creating and posting pictures in it has become the status quo. Additionally, today's technology loving culture motivates people to engage in online social networking, so that, they won't miss out, they can connect and stay up to date.

#### **Fifth slide**

Now I want you to watch this video.

'After the video'

What kind of life experiences he is missing in his life?

Is he really happy? What is your opinion?

How many of you have felt this as relatable, at least in some ways?



These questions will be asked to the participants and whoever likes can add on to it. After the participants add their viewpoints, the content of the video will be shortly explained to them. The boy in the video is actually living in the social networking sites in other words, in a world of lies. He doesn't care about the outside world. He is doing everything for gaining likes from others in the virtual world. He doesn't have any concern for his future, about his health and academics.

It will be said to the participants that, if they felt this video relatable in any ways then they require to analyse their life and proper measures will have to be taken. These will be explained in the coming slides.

### **Sixth slide**

We use SNS for many purposes. It can be used to socialize and meet new people. However, this can have heavy impact on face to face communication.

It helps to keep in touch with our family and friends. The SNS helps to maintain proximity even in long distance relationships. SNS sites can be used to kill boredom and enable us to get lot of information regarding current trends, literature, music and news. We can share our viewpoints with others and understand others' opinion. Moreover, it enables us to know about the world in our finger tips. A lot of companies have been using it as their main marketing strategy for promoting their products. When we surf through the apps, we have come across a lot of ads. At time it will be surprising that most of the ads are based on our interest or our search history. Studies have shown that there are special artificial intelligence systems which can understand our psychology and which shows content based on our interest. So, even though all the apps mention that they protect privacy; all our data, our likes, dislikes are being watched. Actually knowingly/ unknowingly we are only giving them the access by accepting their terms and conditions (Brandtzag & Heim, 2009, McDavid, 2020).

### **Seventh Slide**

The overuse of SNS can be addictive. The symptoms of SNS overuse are similar to those of alcohol/drug addiction and these sites are the main reason why people always check their smartphones. Studies shows that the SNS use activates the same reward centers in the brain, that get activated when using the chemical compounds.



SNS are found to be attractive, act as immediate reinforcers, and easily assessible, all of these factors are present in any addiction. All social networking sites users are not addicted to it. It is said that people who are addicted to SNS use the internet for more social functions rather than non-addicts (Cuadrado, Rojas & Tabernero, 2020).

### **Eighth slide - Task**

Materials required: blank A4 size paper and pen The participants will be given a blank A4 size paper. "I will ask you certain questions and if your answer to those questions is 'yes', then you will have to fold the paper one time and if your answer is 'No', then you can unfold it. In addition to this, if your answer for certain question is 'yes', then write in the particular folding what you have missed in your life by doing that.

1. My mind remains on SNS while I'm studying or engaging in other activities.
2. Whenever I'm upset, I depend on SNS.
3. The first thing I do after waking up in the morning is checking SNS.
4. These days I spend a lot of time on SNS, that is I'm not able to control my usage.
5. I feel irritated and frustrated when I'm not able to log in to SNS or when it is unavailable. (For example, when there is no Wi-Fi or network connection)
6. I spend a lot of time in SNS, which even makes me ignore my sleep.
7. I tried a lot to reduce my SNS usage, but I am not able control it.
8. I prefer to spend time on SNS rather than spending time with my family and friends.
9. I often ignore my duties because of SNS.
10. I often fear that I may miss something if I'm not always available on SNS.  
(eg: I may miss new posts, new updation, certain news etc)

The main purpose of this task is to give awareness to the participants about how much they are addicted to the SNS and this gives them an understanding about what all things they have missed as they spend a lot of time on these sites.

The participants will be debriefed about this task and they will be informed that even though the task was a fun task, it is important to understand the hidden meaning in this. The number of folds in the blank sheet indicates how much you are dependent on these sites. That is as the number of folds increases it shows that you are not able to control the usage.

Now let us look in to the problems that these sites might have caused and later we can discuss how can we manage the usage.

### **Ninth slide**

SNS addictions can lead to many problems. The most importance cause is that, it can decrease face to face communication. In the earlier video also we saw that, the boy is not at all interested in his outer world or in real friendship. He was trying to build relationship through creating fake identity. Firstly, SNS creates a tendency in people to interact with others through online rather than in person, simply because it has made the process simpler. Several studies have shown that even most of the romantic relationship among the teens is made through online. Surprisingly, it was noticed that they have never met in person. These online communications have negatively impacted people by hindering them from developing intimate relationships.

Secondly, overuse of SNS reduces the time people get to communicate in the real world, which in turn reduces their communication skills.

Now I want you to watch a video.

After the presentation of the video, the participants will be summarized about the content.

Initially, the family is not even able to start a conversation. This shows how these social media have hampered the close bonding in the family. The girl in the video is not able to spend a few minutes without her smartphone. Nowadays, the 'family time' and the 'me time' is taken by the SNS. SNS do not make us more "social", rather it further isolates us from our family, friends and loved ones.

### **Tenth slide**

The next most important problem of the SNS is that, it reduces self-esteem and self-worth.

The video will be played.

After the presentation of the video, the participants will be summarized about the content.

SNS takes over people's identity. We try to create fake identities in SNS, in order to get identified by others. The filters in these applications were not created by child psychologist to nurture us. However, the main motive behind this algorithm was to mislead people's mind, i.e. these filters enable social approval that they may not get otherwise. So, they continue posting their photos for likes and they define their self-worth through these likes. The girl in the video is already inferior of her 'self'. So, by one comment she feels completely down and which further deteriorates her self-esteem.

Another important cause of SNS is that, the users are exposed to other's glorified self-representation, which in turn reduces the viewer's self-esteem. For instance, frequent social networking users believe that others are happier and perfect than themselves, especially when they do not know the other users offline.

### **Eleventh slide**

SNS triggers social comparison, SNS creates an impression that others' life is better and more successful than our self, which causes dissatisfaction with our self and our reality. We never realize how manipulative people are through these sites. Studies show that people who are more prone to depression engage in higher level of social comparison.

Another problem of the SNS is that, a lot of crimes are being conducted through this.

For instance, one cyber crime that reported was the 'Bois locker room'. In this 11th and 12th grade students created an Instagram group which consists of 100 boys. This group was created to send obscene images of minor girls, controversies arise when several users shared screenshots of leaked chats. After this many reported this group, that exposed the member who started the conversation in group named Siddharth. Later it was found that, the person is actually a minor girl and she sent those messages in order

to check the strength of the character of the receiver boy.

Like these many crimes are being held through these sites. This kind of cyber-crimes can cause psychological, emotional, and physical stress among the victims.

The overuse of social networking sites can reduce the academic performance.

Firstly, once people get addicted to these sites they start multi-tasking while studying. This affect their academic performance and their ability to concentrate on a task because of the distractions brought by social media.

Secondly, the students writing skills have been affected. In order to type more faster, they use short forms while chatting. Additionally, all these social sites provide spell check feature, which reduces the students' ability to write without relying to the spell check feature. These can have worse impact on their spelling, grammar and communication skills in a formal setting.

Other serious consequences of excessive use of SNS include, this can lead to many accidents.

'Now the video will be played'

The addiction towards these sites forces people to use these sites even while they are walking, driving etc and which makes them forget the world around them. The drivers who are on social networking sites behind the wheel, often are drawn away by visual, manual, auditory and cognitive distractions. Some activities they engage in include: taking selfies while driving, livestreaming on Instagram and Facebook, scrolling through Instagram feeds, and impressing others with Snapchat's speed filter. Studies have shown that more than 30,000 people use hashtag #drivingselfie on Instagram. The National Safety Council reported that nearly 3,90,000 injuries happen each year from accidents caused by texting while driving. The distraction caused by SNS can hence lead to serious consequences.

### **Twelfth slide**

The psychological issues caused by the overuse of SNS :

Studies shows that, when users spend more time on SNS, such as Facebook, Instagram, then it can present classic symptoms of depression. When using SNS frequently, users are more prone to compare themselves with others and which develop feelings on envy among them. Envy could be associated with depression and loneliness. Additionally, people look for popularity in the online platform and at times they won't receive it as much as they expect. This can lead to depression and anxiety. Furthermore, lack of face to face communication makes people more isolated and can develop in to depression. The resultant depression is then dealt with continued engagement in SNS which leading to a vicious cycle of addiction.

Now the video will be showed - **thirteenth slide**

After the presentation of video

The girl only received one sarcastic comment and all other comments were good, but she is discounting all the positives and thinking about the negative comment over and over. This can hamper her self-esteem and can lead to depression, hopelessness, anxiety, suicide ideation and sleep disturbances. At times we won't be able to track time and there may be more interesting content in these sites, which reduces our sleep and which can even lead to insomnia.

There can be a lot of body shaming happening in SNS as we have seen in the video. Body shaming can amplify the thoughts of eating disorder. Body shaming also reduces self esteem and confidence. It can induce high level of social anxiety. The constant mention of person's weight and appearance can create stress and can lead to eating disorders.

The overuse of SNS can lead to long-term anxiety. SNS is commonly used by users as a coping skill to deal with stress, still it can create more anxiety in future. When the user become more dependent on these sites as a stress management tool, their usage can take up a large amount of time. In some cases, this can create more anxiety as they neglect other responsibilities in order to interact on these sites.

Fear of missing out (FOMO) may lead to greater engagement with SNS, leading to low life satisfaction, and well-being. Not to miss out anything, people might 'on' the

notifications for all applications and which notifies everything when some new content is available. This may increase people's urge to check the new content and lead to constant use of SNS.

Nomophobia is fear of being without one's smartphone. Nomophobia can lead to impulsive use of smartphone and thus can contribute to SNS addiction. (Kuss & Griffiths, 2017)

#### **Fourteenth slide**

Other health problems include, too much blue- light from phone can lead to unhealthy sleeping patterns and eye problems. The sleep deprivation can cause serious heart problems. Heavy usage of smartphones can cause chronic body and neck pain due to poor posture.

In addition to this, spending one's free time on SNS can lead to lack of physical activity, which can increase one's risk of developing diseases such as obesity, hypertension, diabetics and other lifestyle disorders (Kolhar, Kazi & Alameen, 2021).

#### **Fifteenth slide**

Now, do you feel trapped in these sites?

That you have tried many times to stop this overuse, but couldn't make it practical.

#### **Sixteenth slide**

Then, these are some tips that will help you to prevent or control the over use.

The first step is to determine if there is a problem. If you don't realize that you have a problem, then you are not likely to seek treatment or make changes.

Take it slow- as I mentioned earlier this is some kind of addiction, so we need to take this slow.

▼ First, we can check which application we use the most. Then we can set time limits for these application (i.e. if you are spending 2 and a half hours on a particular application, then reduce it to 2 hours then after some days reduce it to 1 hour 30 minutes and later on fix a goal time that you wish to reach) and disable notifications for these applications. This can reduce the time we open these applications. Then always track the positive outcome that we gained by setting the time limit.

▼ Delete the applications that we don't use.

▼ Unfollow the influencers and celebrities in the Instagram. The content posted by these influencers can facilitates our curiosity and motivates us to check that every now and then. After this follow only the real friends.

▼ Rather than using these sites to fill in your boredom, engage in your hobbies, activities and spend time with friends and family and most importantly give time to yourself.

▼ Avoid watching the suggested content in these sites. These sites are created in such a way that, this shows contents based on our interest and based on our search history. That is, when they are showing contents based on our interests, there are more chances that we engage in these sites without any limits. Therefore, it is always good not to surf through the suggested contents.

Now the participants will be asked to do a task.

Materials required : Color papers will be distributed to the participants and they will be given approximately 10 minutes to complete the task.

▼ Write down the 5 advantages that you got by over using these sites?

▼ Write down the 5 disadvantages that you felt about over using these sites?

Now take a picture of what you have written. Then keep it as a reminder note in the lock screen.

Lastly, 'you are not alone' as you have earlier discussed in your groups. And finally, if you are not able to succeed in applying these tips in your life. You can always seek help of a professional.

### **Seventeenth slide**

Poster : Let us get connected to real life- "Disconnect to connect"

The idea: the first image in the chart depicts the level of usage and the dependency to the SNS, hence, the logos of sites have been brightened. In the second image, the logos of SNS are blurred out, which depicts that the SNS over usage is an addiction and therefore, as mentioned earlier the management of SNS use need to be taken slowly and gradually. Finally, the third image shows a healthy lifestyle that need to be followed.



Background : Red colour is used as it is a warm colour and so as to draw attention.

Time Required	
Activity	Time taken (approx. minutes)
Pop quiz	10
Game- AccepT MY friend request	30
Task	30
Lock Screen Task	60
Overall Slide Presentation	10
Total Time	2 hours 20 minutes

### Expected Outcomes

The idea: the first image in the chart depicts the level of usage and the dependency to the SNS, hence, the logos of sites have been brightened. In the second image, the logos of SNS are blurred out, which depicts that the SNS over usage is an addiction and therefore, as mentioned earlier the management of SNS use need to be taken slowly and gradually. Finally, the third image shows a healthy lifestyle that need to be followed.

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updates, connecting with friends, posting pictures and more, after a point does arise to be a matter of concern. One wouldn't know when and how they've entered the maze and certainly wouldn't even be aware of the consequences of excessively using the same.

This eventually leads an individual to consistently depend on a particular substance or activity. Here it's a behavior i.e. using Social Media. Teens often find themselves unable to detach or keep their phones away; without even noticing that it's hampering their own life.

Thereby, Behavioral Addiction is a form of Addiction which involves a compulsion to engage in a rewarding non-substance related behavior. Here in this scenario, the behavior is the excessive use of Social Media. While on the upfront the individual with an intent to simply pass-time does engage in watching videos, connecting with friends and loved ones; on the inside isn't really aware of the ways this "kill-time" activity influences one's mind. Although, one can become so accustomed to scrolling through posts, images and videos that it interferes with other areas of one's life.

This may or may not be the case for everyone using Social networking sites, but for some, it does become addictive per say, leading to Social Media Addiction. It can be defined as

" A Behavioral addiction that is characterized as being overly concerned about social media, driven by an uncontrollable urge to log on to or use social media, and devoting so much time and effort to social media that it impairs other important life areas." (USAddiction Center)

Thus with the idea of spreading awareness about how one can prevent being addicted to Social Media, a Workshop for the same is planned out below. As one is aware about and is certainly practicing Social Distancing during such times, why not give this one a try too! Thereby the Workshop is titled: Social Media Distancing. This title too has its own significance.

To elaborate; no one amongst us might have thought upon such a crisis to occur, which would restrict day-to-day travel, work, meet, and have fun so to speak. But here we are bound to restricting ourselves from stepping out, just to prevent ourselves from being addicted. Partially not wholly is the case with Social Media and its usage; where it isn't something harmful, but we need to learn and at some points restrict ourselves from being around it too much. To prevent ourselves from getting infected with Addiction.

## **Social Media Distancing! - A Prevention and Awareness Building Workshop**

**Goal :** To promote awareness about the extensive use of Social Media among teenagers

**Age :** Teenagers (13-19years)

**Non Substance :** Social Media Addiction

**Duration :** 1 hour 15 minutes

### **Pre Workshop preparation :**

1. Powerpoint Presentation
2. Wordsearch printed sheets
3. Stationary

### **Proceedings of the Workshop :**

The facilitator greets the crowd gathered and asks about their whereabouts, followed by their own introduction with a small icebreaker activity.

#### **Two truths and a Lie Activity : (5 minutes)**

**Instructions :** "In this activity one by one all of you have to describe yourselves in 3 statements out of which 2 are actual truths or facts and one is a lie. But the twist here is you don't have to already reveal which one is what. While one participant is giving out 3 sentences, the others as an audience have to make a guess about which out of the three is a lie." Just an initial activity to get to know about one another without actually knowing each other.

▼ After this, the facilitator will explain the next activity before distributing the material.

#### **The First Three : (15 minutes)**

**Instructions :** "This is a game of simple word search but without the words or categories pre given to search. Which means, the word search sheet would not have words besides already mentioned to search. Here one has to navigate through the entire wordsearch puzzle and mark out the first three words they find."

The facilitator will then move towards sharing the Powerpoint Presentation and begin by explaining the topic of the workshop.

▼ Shahnawaz, M., & Rehman, U. (2020). Social Networking Addiction Scale. Cogent Psychology, 7(1), doi: 10.1080/23311908.2020.1832032

This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University

# Social media distancing : awareness and prevention

The title of this workshop is a play on "Social Distancing"!

## Introduction

Today's Gen Z has been well versed with almost everything that comes their way. Right from basic behavioral advancements to up-to-date technological advancements they've had an upper hand over most of the functionalities. With technological development over generations that has taken place, one aspect has been there vital throughout all the generations; Social Media.

Social Media as an entity in its own has ample of knowledge and material within, which needs to be explored and evolved with time. Most in the generation have faced some kind of hindrance and disruption in understanding what Social Media is and what role it plays in one's life. Everyone as and how they get familiar with it, have curated their own notion about this entity and made use of the same as per their convenience. Thus, Social Media has been dynamically defined; where one such technical definition is :

"Social Media is a computer-based technology that facilitates the sharing of ideas, thoughts and information, through the building of virtual networks and communities."

The concept of Social Media initially held a simple goal and purpose, so as to connect with remote friends, family and interacting as a whole. But it went on advancing its scope and reach towards being of help in the business sector as well. Be it from improving a particular product, branding, creating something new, acquiring knowledge, promotion and a lot more so to speak. A sense of connection and togetherness does develop when making utmost use of this entity. This very platform has not just upgraded one's life and made things easy going, but also upgraded its impact on individuals and things.

Coming to discuss the positives, it has been extremely beneficial with little nuances that have now led to great developments. Whereas on the other hand, the negatives or effects have been crucial to understand and rectify. As mentioned earlier, Social Media has been age-old, but there's certainly one thing that has recently bloomed; Today's youth. Teenagers. They are the ones most susceptible to fall in their way of exploring this vast platform. Fall here doesn't intend to fail, but to some extent fall prey to instances and situations where they might get inclined towards behaving in a particular fashion. Treating Social Media and its various platforms as new toys to play and explore with, the teens might not necessarily want to leave the screen. Being glued to checking

## **Powerpoint Presentation Slides (45 minutes)**

### **SLIDE NO. 3 Tap-Scroll-Follow!**

**Instructions : (Offline)** "For this activity, you are asked to leave your seats and form a semi-circle. I will demonstrate what actions you need to show for each of the three words.

**Tap :** Tap on the shoulder of the person standing to your right

**Scroll :** Gesture with your arms as though you are opening an ancient scroll

▼ **Follow :** Follow the person to your left with whatever actions they do. This goes on for a couple of rounds. I will call out any of the three words and you need to pay attention and act quickly."

▼ This activity would act as a break between the knowledge that has been gained and also to bring to realisation that these Social Media related terms could also be used and interpreted otherwise.

### **SLIDE NO. 5 Social Media Engagement**

The 4 types of Social Media Engagements

1. Acknowledgement: Refers to when someone reacts to your content. For example on Facebook, you share a meme or see one, you instantly react with a 'ha-ha' emoji reaction. This in a way is an acknowledgment of your post.

2. Association: Refers to when someone not just reacts but also leaves behind a comment or follows you. For example when you post some of your artwork and if people find it relatable with them, they might interact with your content by 'so true' or 'I can relate' something on those lines. This in a way develops an association between you and the viewer through the medium of your post.

3. Amplification: Refers to when you happen to like a particular post or quote, you tend to post it as a story or share it with someone with whom you can relate the content with. This in a way amplifies the content, making it reach out to more crowds and thus increase the engagement.

4. Action: Refers to when you happen to like a particular product online, you tend to click on it and most probably proceed to check more or buy. This in a way has led to some action just by viewing the content, therefore in return leading to some form of social media engagement.

## **SLIDE NO. 7 Two sides of the same coin**

### **Positive Impact:**

▼ Develops Awareness in ways like current affairs, knowing what is happening around in the world. Also during these COVID times, a major chunk of Social Media updates are involved in spreading awareness about bed availability, vaccine centers, food distribution centers and to name a few.

▼ Develops Social Skills through platforms like Twitter, LinkedIn, etc. Where one gets to connect, know and spread knowledge about not just one particular sector but an overall social development takes place.

▼ The impact of Social Media is that it inspires people to take that first step, or get inspired by someone while watching a TED Talk. It could be as little as getting inspired to take up a new art and practice it.

▼ These skills aren't just developed through school/college textbooks but also through Social Media. Could you give me some examples as to how you feel this skill can be developed through social media?

### **Negative Impact :**

▼ Mental health has been impacted to a major extent when one tends to misuse social media. Problems like lack of sleep, low self esteem, social comparison, loneliness, at risk of depression, envy, jealousy, to name a few.

▼ Distorted body image here refers to the concept one develops about an ideal body or shape through the influence of social media, just boils down one's understanding of their own self. A lot of body shaming does occur in today's youth.

▼ Risky Sexual behavior is one such impact where a person may make an attempt to enact or behave in a way that they've observed over social media or watched in videos.

▼ As surfing on social media is termed as one of the most common leisure time activities, it tends to distract the students to such an extent that they might not devote their time and attention towards studying.

Thus this would bring an end to the workshop and the space would be then open for any questions or discussions to take place.

Thereby the facilitator would thank the participants for their time and active involvement in the activities.

Appendix :

1. The First Three! (Word Search Activity)
2. Powerpoint Presentation attached along with the mail
3. <https://youtu.be/OINa46HeWg8>

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This piece was contributed by MA II students of Psychology (2020-21) at SNDT Women's University

## Section II (C) : Non Substance Disorders

### Skill Building

Not everyone tasked with delivering training has all the skills to be a great trainer.

It is no doubt important to know the subject area well, and that forms the core of the program. The Attitude Building activities and Skill Building are like additional layers added to this core. In this case, Trainers need to be updated with trends among young people in terms of use of online platforms and social media, gadget use and popular gaming and other activities which are trending currently. Hence, we should make it a point to have frequent discussions among the Trainers in the group so that they are all on the same page.

Here are some of the most important skills you need to be a trainer and to deliver effective training, whether you are running a Train the Trainer course or delivering standard training to a team.

- |                         |                       |
|-------------------------|-----------------------|
| ▼ Active listening      | ▼ Public speaking     |
| ▼ Research and analysis | ▼ Presenting skills   |
| ▼ Communication         | ▼ Facilitation skills |
| ▼ Consulting            | ▼ Organization        |
| ▼ Group management      | ▼ Planning            |
| ▼ Creativity            | ▼ Workshop design     |
| ▼ Critical thinking     | ▼ Problem-solving     |
| ▼ Empathy               | ▼ Record keeping      |
| ▼ Flexibility           | ▼ Time management     |
| ▼ Leadership            | ▼ Self-awareness      |
| ▼ Mentoring             |                       |

Conduct a small discussion with the ToT group, seeking feedback to the following questions.

- ▼ Which of these skills do I think I already have?
- ▼ Which of these skills do I think I could work on more?
- ▼ Which of these skills do I see in my colleagues in this ToT program?
- ▼ What can I do to acquire the same skill set?



### **SLIDE NO. 8 Watch This!**

#### ▼ Let's Talk

How would you react if in place of the girl in the Cafeteria?

How would you talk to the girl on the swing if given a chance?

What do you think the birthday girl is feeling?

Was there something that bothered you in this clip? If yes please share.

### **SLIDE NO. 12 Signs to begin Distancing :**

▼ Answer these questions for yourself with the first response that comes to your mind, without filtering it.

### **SLIDE NO. 14 Strategies to Prevent Addiction :**

▼ Uninstall an App beginning with for a few hours until your target work is achieved.

▼ Mute notifications of the App that you find is not important.

▼ Find your way back to an old hobby or any activity that you loved doing, but haven't done since a long time. For example collecting and cutting out pictures of your favorite hero or heroine from the newspapers or magazines and sticking them in a book or creating a huge chart of the same.

▼ Spend quality time with loved ones by playing games for the whole day over the weekends or going through old family albums and relive the moments.

▼ Set a time limit over the apps which after a point would cease your usage of the app for a while.

▼ Mindful Scrolling is something that one needs to do often. As one often finds themselves randomly scrolling without even actually seeing what they are scrolling through. Just as an act of distraction. Thus after every 30 mins of spending time over the internet, one could jot down pointers about what they saw or what they felt.

▼ Certainly would you have heard about taking breaks while studying but why not try in between surfing through social media as well.

## **SLIDE NO. 16 Declutter your Mind**

▼ Some ways to declutter your mind :

1. Be kind to yourself
2. Allow yourself to be not okay and not avoid that feeling
3. Clean up your space of work
4. Talk about what is disturbing you or make art
5. Go out for a walk

## **SLIDE NO. 19 Like-Comment-Share!**

▼ For this end note activity the facilitator will give out instructions.

**Instructions :** "In this concluding activity, no I won't ask you to like, comment or share with each other on social media, but something to bring to real life. So this activity as you see involves 3 aspects; I want each one of you to come up and talk about these three things about any person or thing present here. For example :

**Like :** I like xyz's smile/ I like this flower pot.

**Comment :** Comment something about yourself that you would want to change or like the most.

**Share :** What is that one takeaway of this workshop that you would like to share with others.

## **Conclusion (10 minutes)**

▼ The facilitator will share about the very first word search activity that the participants were asked to solve. That wordsearch not only had social media related words but also some nature related words. It was on what the participants first found out would indirectly imply what is constantly on their mind.

▼ The facilitator would then conclude the presentation on this note, leaving behind a message that, "It's not Social Media as an entity which is harmful, but the way we delve into and at the same time let it delve into our mind; that holds an impact at the end!"

▼ The facilitator would then ask the participants as to what they felt after the entire workshop and talk about the essence of such a non-directive content of the session.

Finally, at the end of the above discussion, also discuss the future role of your ToT participants are future ToT resource persons. Here are some tips for them.

- ▼ Keep learning
- ▼ Be an active listener
- ▼ Do your research
- ▼ Plan, plan, plan
- ▼ Develop your facilitation skills
- ▼ Consider the process as much as the content of your training
- ▼ Be confident and develop authority as a trainer
- ▼ Design your training workshops intelligently and with the group in mind
- ▼ Be engaging
- ▼ Remember you are there for the group, not yourself
- ▼ Be present both mentally and physically in every session
- ▼ Invite feedback
- ▼ Measure your results and iterate

## Section III: Counselling underpinnings of universal prevention

The WHO publication (2004) focusing on primary prevention says "One of the primary goals of the World Health Organization (WHO) Department of Mental Health and Substance Abuse is to reduce the burden associated with mental, neurological and substance abuse disorders. Prevention of these disorders is obviously one of the most effective ways to reduce the burden. A number of World Health Assembly and Regional Committee Resolutions have further emphasised the need for prevention." The document goes on to explain a fundamental concept that Universal, Selective and Indicated preventive interventions are included within primary prevention in the public health classification, where Universal prevention is defined as those interventions that are targeted at the general public or to a whole population group that has not been identified on the basis of increased risk; Selective prevention targets individuals or subgroups of the population whose risk of developing a disorder is significantly higher than average, as evidenced by biological, psychological or social risk factors and Indicated prevention targets high-risk people who are identified as having minimal but detectable signs or symptoms foreshadowing a disorder or biological markers indicating predisposition for a disorder but who do not meet diagnostic criteria for disorder at that time.

Simultaneously of course, we attempt health promotion, which aims to promote positive physical and mental health by increasing psychological well-being, competence and resilience.

### Planning of such Universal interventions

Once again, to quote from the same WHO report (2004) titled "Prevention of Mental Disorders: Effective Interventions and Policy Options": ""The goal of most school-based education programmes is to change the adolescent's smoking, drinking and drug-taking beliefs, attitudes and behaviours, or to modify factors such as general social skills and self-esteem that are assumed to underlie adolescent smoking, drinking and drugtaking (as well as in the present instance, online behaviors and gadget usage).

Earlier school programmes based on informational approaches and teaching students about the effects and dangers of drug use have been found to increase knowledge and change attitudes towards alcohol, tobacco and drug use, but actual substance use has remained largely unaffected. When school-based interventions have used the most recent normative education and **resistance-skill training innovations**, they have generally produced preventive effects but these seem to be short-lived unless accompanied by ongoing booster sessions."

Drawing from these pointers, it seems to be advisable to plan a **single day intervention** drawing upon the wealth and variety of material presented in Shackelfree, and then repeating such workshops and interactions with the same group after a span of about 6 months, drawing upon different material to preserve the freshness of the initiative.

#### Building your own one day workshop

Now that all the material required is with the Trainers, they need to curate it to "build" their own planned workshop.

It is suggested that you first **select readings** from all the ones provided in this Handbook, and share them with the group beforehand. So if your planned workshop is in the Substance Addiction domain, those readings will be shared selectively depending on whether you perceive the need is greater for knowledge about, say alcohol, or about hard drugs.

Then during the actual session, you can merely choose case examples or refer to the relevant substance during role plays, and not spend precious workshop time sharing information.

After this, plan your workshop carefully selecting icebreakers from the ones provided. This activity can take about 30 minutes.

The next 4 hours can be spent in attitude building, again selecting from the materials shared in the previous sections. One break can be introduced after the first 2.5 hours, and the remaining 1.5 hours can be after the break.

Interspersed with the latter, can be an hour of skill building activities selected from those described in the sections above. Skill building activities can be selected from either substance or non substance sections.

Hence, overall, this is what the final program will look like, but each will be 'uniquely constructed' by you to suit your needs!

Hour	Activity
	The session will start with coffee/tea and mingling, during which participants will wear name and affiliation badges so people get to know one another.
First half an hour	Ice breaking activity
Next 2.5 hours	Attitude building activities for the specific purpose of the workshop
BREAK (one hour)	Brief working lunch, again encouraging interactions among participants, who know each other much better by now.  The participants can be put into smaller groups to sit and eat together, and after a while, can be asked to mingle and regroup, continuing their food and interactions.
Next 2 hours	A mix of 1.5 hours of attitude building exercises and activities along with one hour of skill building activities
Last half an hour	Q and A and closure.

## **Section IV : Staying Shackelfree : The concept**

## **Section V : Staying Shacklefree : The concept**

The key element of staying healthy in the present day world ridden with temptations in the form of addictive substances and addictive activities, is to STAY SHACKLEFREE. If you never let yourself succumb to the wiles of these temptations, the chances of living a healthy, happy life are much higher.

So this section will highlight the importance of primary prevention, one of the best ways to ensure that our high risk population of young people stay healthy and happy.

**Let us take the example of alcohol, easily the most abused substance in human history.** We attempt highest taxation on alcohol and hope it will act like a speed breaker. But this merely brings down sales of legal alcohol and pushes sales of illegal alcohol.

In other words, supply reduction does not really seem to provide an answer.

What about media campaigns against alcohol? They are at best weak.

School and college efforts that are made against partaking of alcohol are community based, but they are not really integrated into the educational system. Similar efforts abroad, Unplugged being a case in point, are successful because the modules are woven into the school curriculum.

Nevertheless, the Rotary Global Grant (RAGAP) team in India HAS made efforts to adapt Unplugged and the Mini Unplugged program has been piloted successfully in Mumbai and Pune.

**Is giving of information the key to addiction prevention?** To whom should this information be given? And at what age? How should it be given? How do you test that what we are doing is right?

Overall, after a lot of thought, the true answer seems to lie not in Supply reduction, but in Demand reduction. Programs need to be built to target the social influence model and social competency model. Life Skills need to be built in young people so that they stay away from peer influences and group norms that may lead them toward addictive behaviour.

1) creating normative realistic beliefs about substance use.

2) target their perceptions about possible harm, consequences and disapproval about drugs.



3) problem solving skills programs such as "take charge of your life"

4) Demand reduction is only possible through public awareness and youth targeted prevention efforts.

5) Other possible strategies include early identification and intervention as well as treatment and relapse prevention but these are largely environmental strategies and do not target the motivation and value system of the individual.

In today's world, social networks have tremendous power and influence. Cliques, community groups, peer groups, school society groups, sports groups and hobby groups abound and the dynamics of these are also altered by social media.

Media based interventions such as public service announcements can be utilized, but these too are often fear messages. However, they may be of value in preventing or at least delaying first exposure. They may also convince occasional users to stop.

#### **Which age group needs to be addressed?**

Primarily, it is the young population that needs to develop an attitude of saying 'no' to addictions of any kind, and of developing the necessary resilience to stay with that decision.

What follows is a piece written by Dr. Anuradha Sovani for an International symposium focusing on Adolescent Health and Mental Health.

# **Vulnerability and over view of various addictions in adolescence**

**Dr.Anuradha Sovani**

## **Introduction**

Adolescence is a developmental stage which offers high risk for addictions of various sorts, ranging from addictions to substances like alcohol, marijuana, cocaine, hallucinogens, to non substance addictions such as social media addictions, addictions to pornography, gaming, and gambling.

Young people succumb easily to peer pressure, and have more freedom and time away from parental control than they did in school. The adolescent brain is relatively low on impulse control, and thus succumbs to incentives and socio-emotionally loaded messages. There is an increase in risky choices and risky behavior. Several studies have highlighted age-related increases in social behavior and risk-taking as well as novelty-seeking (Spear, 2000, Tamm et al, 2002)

What renders adolescents more at risk at this age is the tendency towards comparatively higher per occasion use due to relative insensitivity to drugs. Gardner and Steinberg (2005) also note that adolescents are more likely to engage in risky choices, largely due to peer influence. More importantly, they found that adolescents took more risks, focused more on the benefits than the costs of risky behavior, and made riskier decisions when in peer groups than alone, and were markedly more likely to do so than were adults. An additional finding was that risk taking and risky decision making decreased with age, which underlines the need for addressing these vulnerabilities in adolescents earlier rather than later.

In another very interesting paper, Steinberg (2004) elaborates that there is a sort of disjunction between novelty and sensation seeking on the one hand, and the development of self-regulatory competence on the other. A desire for novelty and sensation seeking is known to increase dramatically at this developmental stage. However, the ability to regulate one's own behavior does not fully mature until early adulthood.

What is most important to remember is that this disjunction is biologically driven, and normative. It cannot be easily remedied through educational interventions designed to change adolescents' perception, which is the pathway chosen by most experts in the field of health and mental health. Attempts to modify the young person's appraisal, or understanding of risk may not prove very successful. Rather, it appears wiser to design interventions that take it for granted that adolescents are inherently more likely than adults to take risks. These interventions should then focus on reducing the harm associated with this risk-taking behavior.

Crews et al (2007) define adolescence as a critical period of cortical development important for establishing life long adult characteristics that are disrupted by alcohol and drug use. Frontal cortical development in late adolescence contributes to refinement of reasoning, goal and priority setting, impulse control and evaluating long and short term rewards. All of this hangs in balance and may be disrupted if addictions begin early in life for the adolescent.

Sharma et al (2018) have found similar patterns in technology addictions during adolescence, and suggest psychosocial interventions for the same. Their work has resulted in the establishment of the SHUT clinic in Bangalore, India (an acronym for Service for Healthy Use of Technology).

India shows large increments in alcohol sales and in terms of per capita alcohol consumption. A direct measure of this is percentage of earnings spent on alcohol, and indirect measures include road accidents, domestic violence and absenteeism linked to alcohol consumption.

High taxation on alcohol has not helped to reduce the trend, and in fact seems to encourage illegal brewing of alcohol. Media campaigns are at best weak, and school based interventions are spotty and not integrated into the educational system. Family norms for no consumption of alcohol are breaking down. All of these facts add to the psychosocial reasons for increasing alcohol and drug use and do not bode well for substance use among adolescents.

The scenario for smart phone and social media addictions is equally if not more bleak. (Joshi et al, 2013) Children and adolescents are social media natives whereas the adults monitoring their behavior are social media migrants, and lack the necessary mastery over technology to nip adolescent media use habits in the bud.

# Basic concepts to remember for office practice

If one comes across an adolescent who appears to be at high risk for either substance addiction, or addiction to technology, or any gadget such as a smart phone or a gaming console, here are some quick interventions that would help. None of these are grounded in hardcore psychotherapy which would require special training and expertise.

▼ Find out exactly at what time and in what circumstances the adolescent seems to be at highest risk. eg. In the presence of friends or at a party when it comes to drugs or alcohol, or lonely hours at home when parents are not around for gadget addictions. Disrupt these high risk pockets of time by suggesting changes in schedule.

For instance, if a child comes home and immediately begins using the smartphone because wifi is freely available at home, meal times can be used to disrupt a long online sessions.

▼ Train the youngster to set external reminders to STOP eg. Setting a reminder on the phone itself, or an alarm clock. This can also work with junk food addiction.

▼ Attempt goal setting and ensure that these are very specific, well defined and relatively achievable goals. For eg. If the adolescent is online for five hours a day, this could be cut to three.

▼ In some cases, complete abstinence is the only answer, eg. For smoking, drinking alcohol or drug use, and also for gaming when violent games are involved.

▼ Creating buddy support systems and support groups.

▼ The family can be a huge support system in these cases. Vulnerable adolescents are already maligned and blamed for their habits. If they are supported and encouraged to abstain by family members, they would be helped to ensure that habit formation does not take place.

## **Practice applications** (illustrative case scenario)

P.R., a young, intelligent boy studying in grade seven in a school located in a mid-sized town in Maharashtra, usually very shy and timid in class, had no real friends in his class or in his vicinity because he kept himself quite aloof from others. He did not have a negative attitude towards others; he was just shy.

He did get along to some extent with two older boys in school, studying in a higher grade. He probably hung out with them just because they spoke "his" language – this language was that of online games and the gamer community.

To most others he seemed to be an alien since he hardly spoke, and if at all he did, it would sound like Greek and Latin to the rest. He used to mention names of online games which nobody had heard of, and so they would shy away and wonder what he was talking about.

Of late, he had been reaching school late very often, and so was reprimanded for the same. His only reason for the delay was not being able to get up in time for school, since he stayed up late into the night gaming. His parents were called in for parent teacher meetings several times and threatened by the school but in vain. They said they had no time to come for meetings and that the school should just deal with their son and discipline him.

P.R.'s parents had no clue what the boy was up to every night. He slept in a separate room, away from their bedroom. Since the school complaints had started coming in, they noticed that his room was locked most of the night, for more than ten hours at least, post early dinner which was a norm in the home. So if everybody ate at eight pm, they could not check what he was doing till at least 6 am next morning, and after that they would see he was sleeping and just could not wake up till noon.

Nobody made an attempt to talk to him since he refused to answer, and if they persisted he threw a fit of rage and was extremely aggressive and violent with his parents as well as anyone else who tried to speak to him. The parents did think of drug addiction but found no needles or powder packets when they searched his room in his absence, nor did they see needle marks or tracks on his arms, which is what they had been asked to look out for.

Gradually his grades dropped, he started coming to school unkempt and disoriented and actually looked unhealthy since he was not eating or sleeping well. After a lot of probing, intervention and coaxing by his favorite teacher who incidentally also was a game buff, he admitted that he hated school and home. All he loved were online games. The teacher asked further, and luckily knew the right questions to ask. This probing and investigation revealed that he was hooked on to online gaming with strangers across the world, he had to stay awake to match up to their time lines which lead to lack of sleep and increased dependency.

His condition worsened when he stopped eating and sleeping because he felt these activities were just a waste of time, and took him away from gaming. His hands trembled and he was violent when the gadget on which he was gaming was taken away from him.

By now the teacher had shared with the parents what was really going on and requested that they consult mental health professionals. The parents, still in disbelief, were also extremely superstitious, and invited priests to conduct a "hawan" , a sort of prayer and incantation, to deal with "his curse" as they believed it to be, and to bless him and cure him.

Precious time was lost in this as he missed school further. By then he was almost constantly online and gaming for 14 to 15 hours a day. Finally he made an attempt to harm himself which fortunately failed. This finally led the family to consult mental health professionals and the case could be handled in a scientific manner.

P.R. has now dropped out of school and is currently under treatment for de-addiction. The family and school authorities hope he will be back on track soon and get back to studies.

(Thanks are due to Responsible Netism for sharing the case. This case is also included in Dr. Anuradha Sovani's SAGE publication, Abnormal Psychology : Neuroscience Perspectives on Human Behavior and Experience. Indian adaptation of William Ray)

### **Take home messages**

Any intervention designed for adolescents to deal with addictions, either substance or non substance must focus on symptoms, functioning and well being.

Symptoms include physical as well as psychological symptoms, which are not dealt with at length here since it is not within the purview of this talk which focuses on vulnerability of adolescents.

Functioning includes performance of daily living tasks which include school or college work, physical activity, maintaining relationships and involvement with the community.

Wellbeing would include Life satisfaction, Quality of life and overall Self esteem.

### **Conclusion**

Active intervention on part of health and mental health professionals as well as family members is required to ensure that adolescents do not fall prey to substance as well as non substance addictions. Increasing screentime, gaming addictions due to lack of any supervisory body in this space, and alcohol use among adolescents is on the rise and needs to be curbed.

# Appendices

# Appendix A

Results of **All India Survey on Addiction Awareness and Prevention** carried out by **Department of Psychology, SNTD Women's University, Churchgate**, in collaboration with **Association of Adolescent and Child Care in India (AACCI)**. The report, generated by students acknowledged in Appendix B, is attached below.

The survey was carried out online using Google Forms, and the data was collated and worked on by five Masters students of the Department of Psychology, SNTD Women's University, Churchgate campus.

## Sample Description

A total of 197 individuals responded to the survey. Of these, 30.46% were males and 69.54% females. The respondents of the survey ranged from 12 years to those 25 and above, with the maximum number of respondents belonging to the 18-21 year bracket (39.29%). Data regarding their marital status, family structure, living condition, occupation and location were also gathered. The same has been reflected in Table 1 underneath.

**Table 1**

### Demographic Description of the Sample (N = 197)

<b>Personal Characteristics</b> Age (in years)	<b>Frequency (N)</b>	<b>Percentage</b>
12-14	4	2.04
14-16	10	5.10
16-18	6	3.06
18-21	77	39.29
21-24	32	15.82
25+	68	34.69

<b>Gender</b>		
Females	137	69.54
Male	60	30.46
Other	0	0



A clear understanding of both, the functioning of the adolescent brain , or the biological substrate of vulnerability, and the psychosocial context in which they live, will lead to a cogent plan to ensure that adolescents do not fall prey to addictions. Addiction would prove to be a bane in their adult years and needs to be addressed as early as possible.

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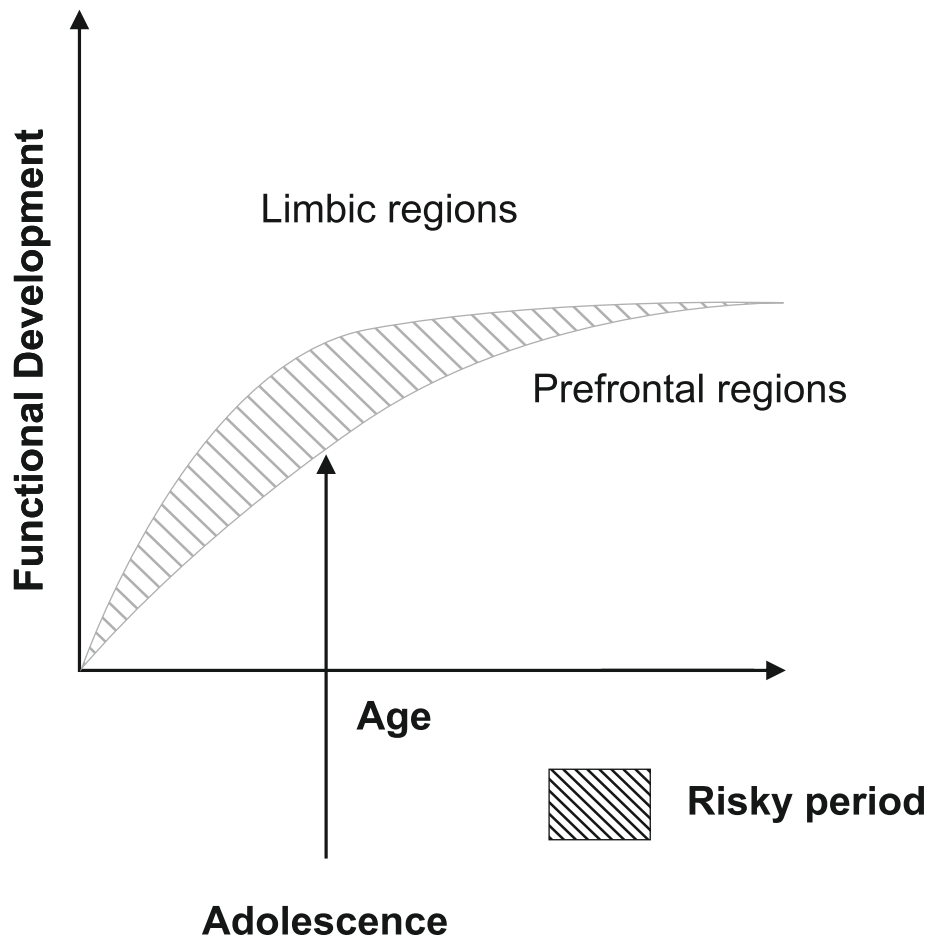
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This paper was presented by Dr. Anuradha Sovani in a symposium talk at the International Advanced Training Program on Adolescent Health held at D.Y. Patil, Pune in October 2019.



This figure is taken from the paper, The Adolescent Brain, by Casey, B.J., Jones, R.M. and Hare, T.A. (2008) Annals of the New York Academy of Science. 1124: 111-126.

<b>Marital Status</b>		
Unmarried	136	69.03
Married	59	29.95
Divorcee	2	1.01

<b>Occupation</b>		
School Student	21	10.66
College Student	100	50.76
Employed	33	16.75
Self-Employed	28	14.21
Other	15	7.61

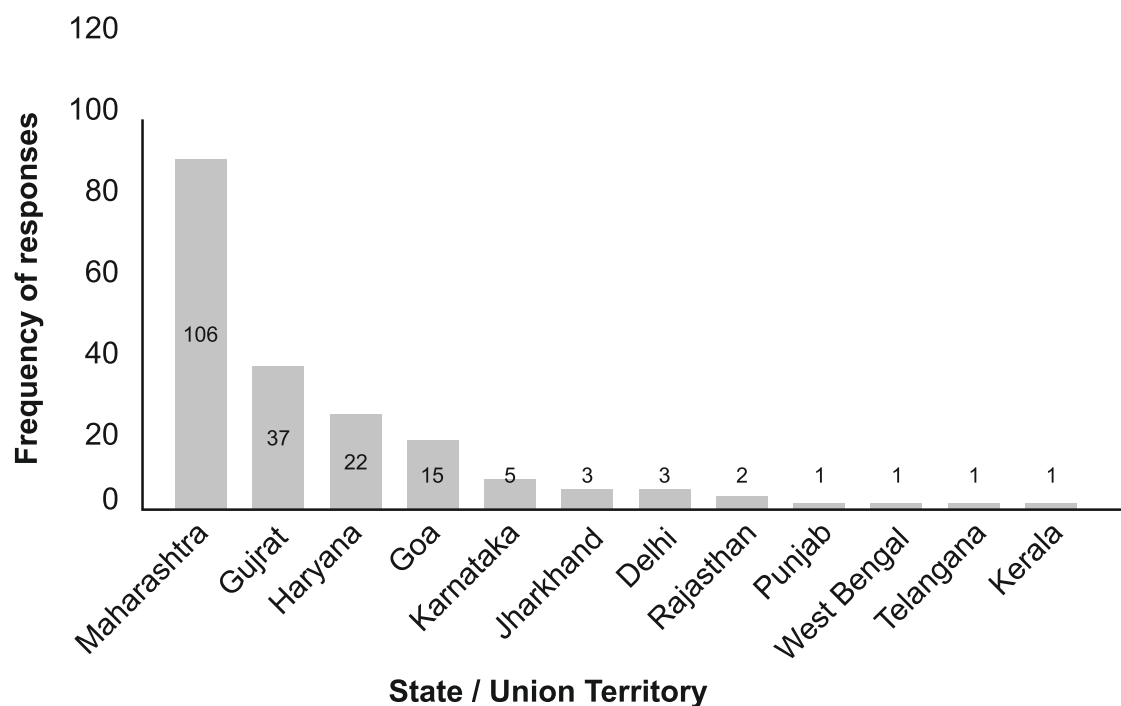
<b>Living Status at time of Survey</b>		
Living Alone in PG/Hostel	6	3.04
Living Alone at Home	11	5.58
Nuclear Family	109	55.33
Family with Three Generations	56	28.43
Joint Family	15	7.61

<b>Location - Area of Living</b>		
Urban	173	87.82
Rural	24	12.18

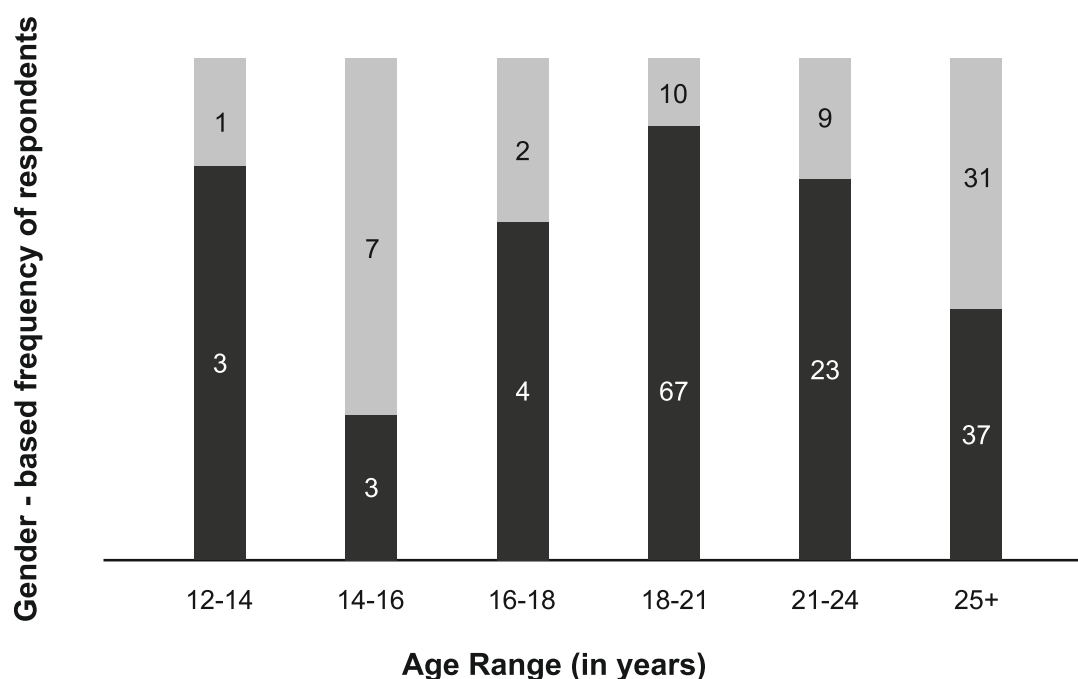
<b>State</b>		
Punjab	1	0.51
Haryana	22	11.22
Jharkhand	3	1.53
Rajasthan	2	1.02
Gujarat	37	18.88
Maharashtra	106	53.57
West Bengal	1	0.51
Telangana	1	0.51
Karnataka	5	2.55
Kerala	1	0.51

<b>Union Territory</b>		
Delhi	3	1.53
Goa	15	7.65

This was a national level study. Figure 1 graphically represents the number of respondents from the different states/ union territories. Maximum respondents were from Mumbai and surrounding areas (Navi Mumbai, Thane and Kalyan - 70), followed by those from Pune (25) and Baroda (20). From the north, around 17 responses were gathered from those residing in Gurgaon, 3 from Delhi and 5 from Faridabad. Responses from the south were scattered across Bangalore (2), Manipal (2) and Trivandrum (1).



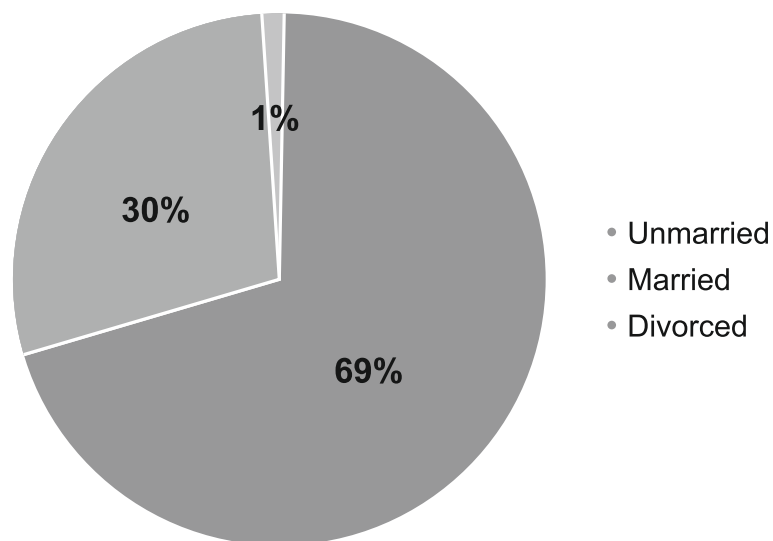
**Figure 1 :** Union Territory/ State-wise demographic distribution of responsesThe gender-based distribution of the sample for each age range has been graphically presented as a stacked bar graph in Figure 2.



**Figure 2 :** Gender-based sample distribution for age-ranges.

From the total of 197 participants, 137 participants identified as females, 60 identified as males. A maximum of the female participants were between 18 and 21 years of age, whereas, a maximum of the male participants were above 24 years of age.

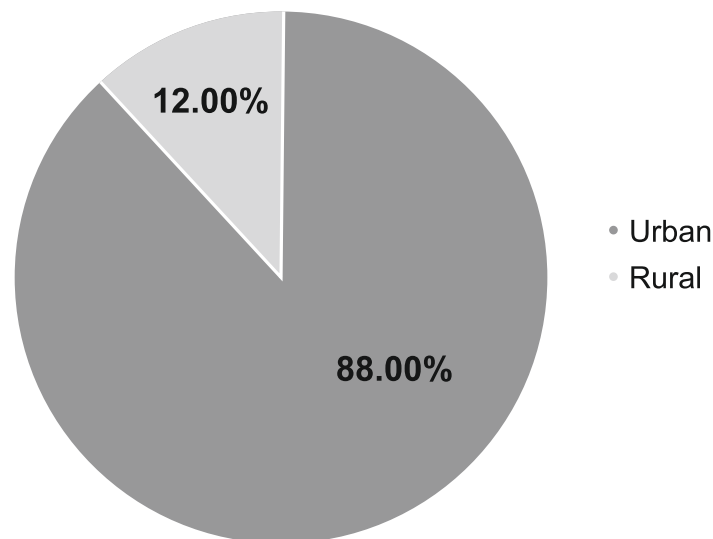
The marital status-wise demographic distribution of the sample has been depicted via a pie chart in Figure 3.



**Figure 3 :** Marital status-wise demographic distribution of responses.

A majority of the participants (69%) were unmarried, followed by approximately 30% of the participants who were married, and 1% who were divorced.

The occupational status-wise demographic distribution of the sample has been depicted via a pie chart in Figure 4.



**Figure 6 :** Location-wise demographic distribution of responses

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Figure 6 clearly depicts that more than three-quarters of the sample (approximately 88%) resided in urban areas. On the other hand, approximately 12% of the participants were from rural areas, of which, a majority were unmarried, female college students.

### **Results and Discussion**

The purpose of the study was to examine the degree of awareness and understanding of addiction in the community. Using a Google Forms format, questions were administered to 197 participants to investigate what they perceived or knew about addictive properties of substances and screen and internet focused behaviours. The impact of the same, and what they felt was the cause, if any. Furthermore, an inquiry as to what they considered to be protective factors against addiction and what would help recover from addiction was also carried out.

#### **Extent of Exposure**

The participants were first asked questions about their access to devices and internet usage. This was explored using three questions that highlighted their access to the internet through a personal device; their willingness to borrow a device in the absence of one and lastly, an exploration of the various social media platforms they used on a regular basis.

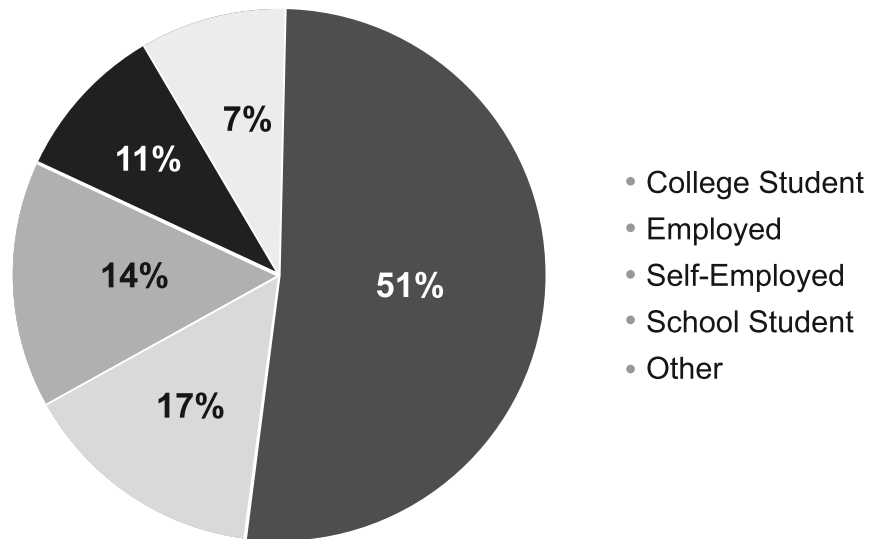
The participants were first asked the question “I own the following devices that can connect me to the internet (You can choose more than one).” They were given multiple options and could select all the ones that they felt were pertinent. The options provided, as well as the frequency of their endorsement, have been reflected in Table 2 and Figure 7.

**Table 2**

Devices owned by the participants to access the Internet

Option	Frequency (N)	Percentage
Smart Phones	187	94.92
Tablet	48	24.37
Laptop	153	77.66
Desktop	59	29.95
Own no device	4	2.03



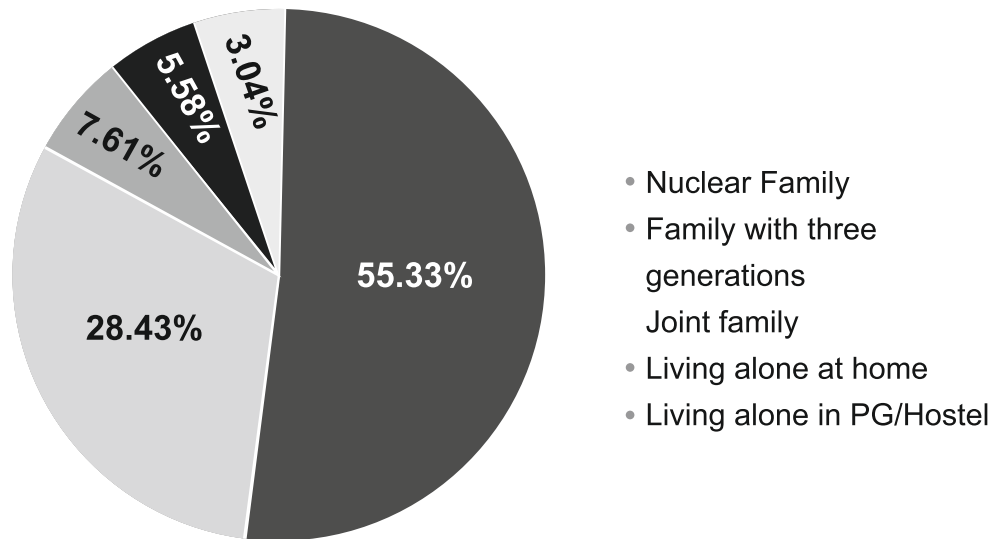


**Figure 4 :** Occupational status-wise demographic distribution of responses

Approximately half of the participants (51%) were college students, followed by those who were employed (17%). 14% stated that they were self-employed, and around 11% were school students. The remaining 7% of the participants stated that they did not belong to the aforementioned occupational statuses.

Additionally, it can be deciphered from figures 3 and 4 that most school and college students (except one) were unmarried. A majority of the participants who were married were either employed, self-employed, or had another occupational status. Moreover, it was seen that all the participants that were divorced were self-employed.

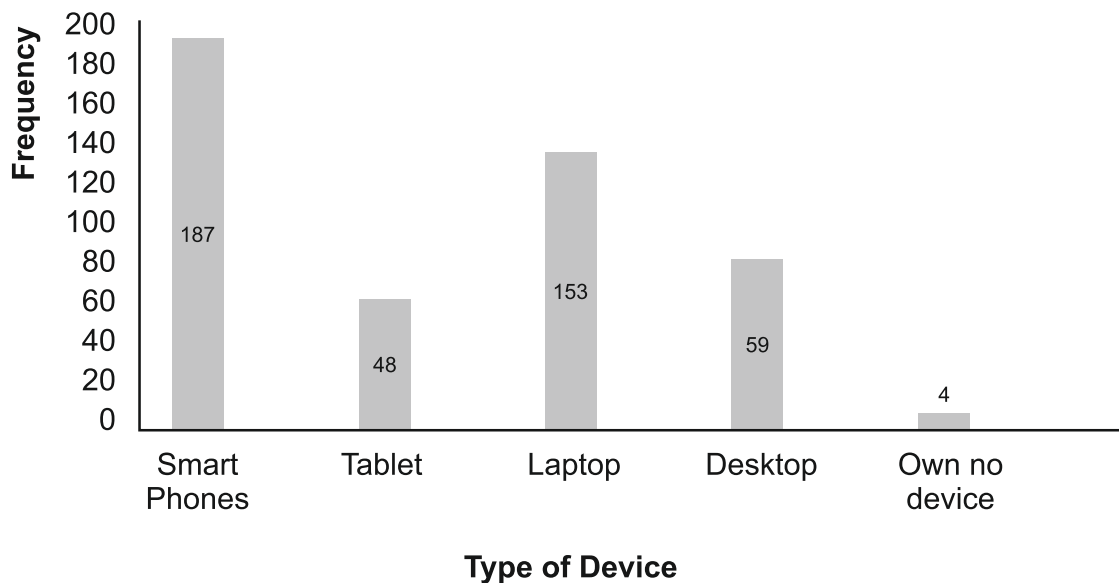
The living status-wise demographic distribution of the sample has been depicted via a pie chart in Figure 5.



**Figure 5 :** Living status-wise demographic distribution of responses

More than half of the participants (nearly 55%) lived in a nuclear family, followed by approximately 28% of the participants who lived in a family with three generations. Around 8% of the participants lived in a joint family, 6% lived alone in a PG or hostel, and nearly 3% of the participants stated that they lived alone at home.

The location-wise demographic distribution of the sample has been depicted via a pie chart in figure 6.



**Figure 7 :** Devices owned by the participants to access the Internet

The figure demonstrates that a majority of participants used ‘Smartphones’ (94.9%) or ‘Laptops’ (77.7%) to access the internet. A considerable number of participants also used ‘Tablets’ (24.4%) and ‘Desktops’ (29.9 %) for the same. Only 2% of the participants indicated

“I have no device’.

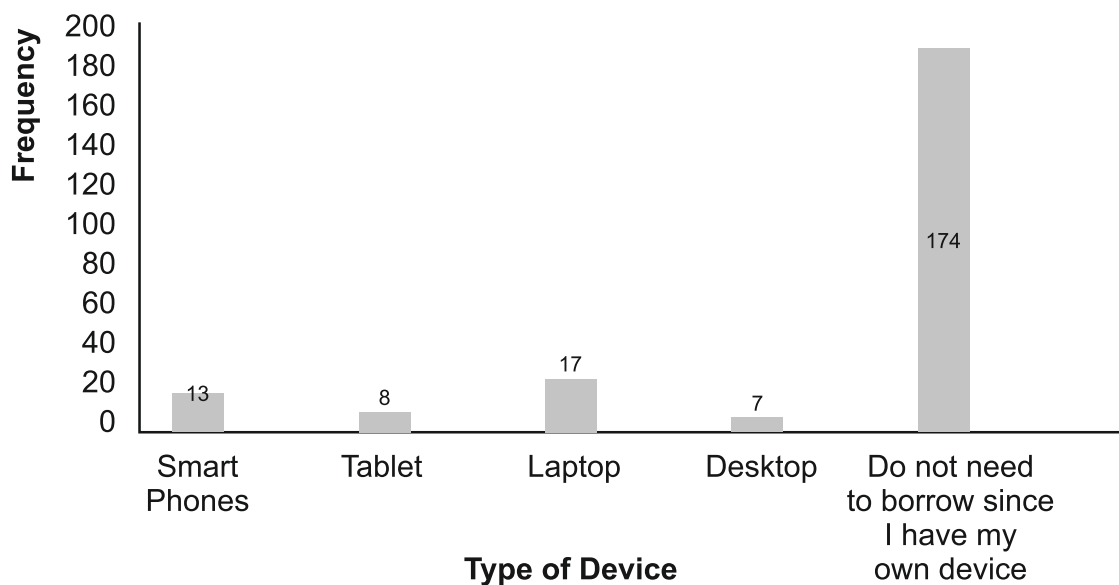
These responses reflected the type of devices owned by the participants that connected them to the internet. The results indicated that the participants used a variety of devices to access the Internet, of which smartphones and laptops were the most popular choice. Moreover, albeit a minority, some participants did not own a personal electronic device.

Along a similar vein, the next question, “ I do not own any device that can connect me to the internet, but I can use one when I need to, by borrowing one” inquired about the participant’s access to devices that could be borrowed, if they did not own one themselves. They were given multiple options and could select all the ones that they felt pertinent. The options provided, as well as the frequency of their endorsement, have been reflected in Table 3 and Figure 8.

**Table 3**

Devices not owned by the participants but accessible through borrowing

<b>Option</b>	<b>Frequency (N)</b>	<b>Percentage</b>
Smart Phones	13	6.60
Tablet	8	4.06
Laptop	17	8.63
Desktop	7	3.55
Do not need to borrow since I have my own device	174	88.32



**Figure 8 :** Devices not owned by the participants but accessible through borrowing

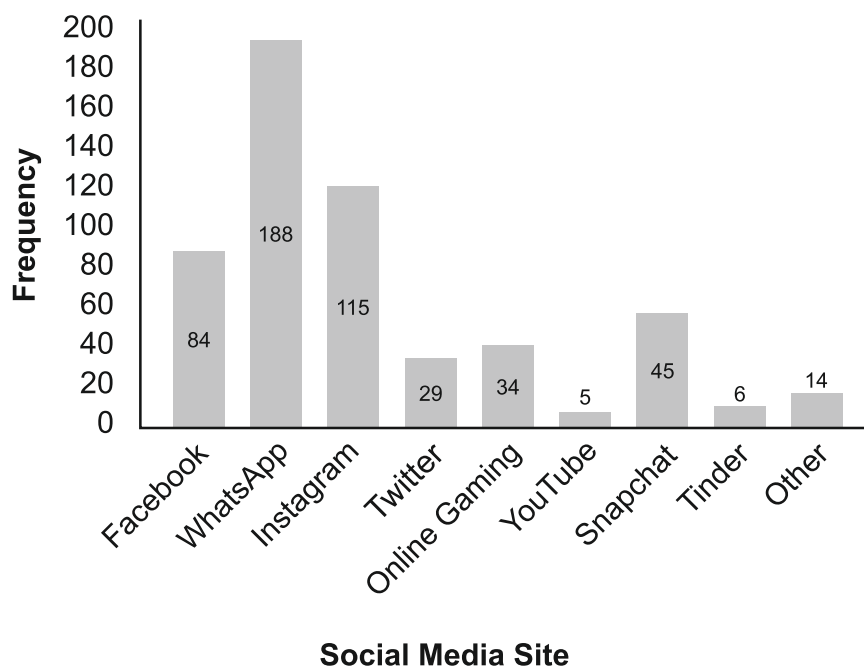
The majority of participants (88.3%) reported ‘ I do not need to borrow devices as I have my own device. However, a small proportion of participants had to borrow devices since they did not own ‘Laptops’ (8.6%) or ‘Smartphones’ (6.6%). This was followed by their access to ‘Tablets’ (4.1 %) and ‘Desktop’ (3.6%). These responses reflected the accessibility of participants to devices that could connect them to the internet through personal ownership or borrowing. This findings also blasts the myth that young people do not always have easy access to devices that could take them online. Data show that they in fact, do have such access.

After determining participant access to devices through which they could reach the internet, they were also asked “I have regularly used (you can choose more than one)” regarding social media platforms. They were given multiple options and could select all the ones that they felt pertinent, as well as add any “other” response. The options provided, as well as the frequency of their endorsement, have been reflected in Table 4 and Figure 9.

**Table 4**

Social Media applications regularly used by the Participants

<b>Option</b>	<b>Frequency (N)</b>	<b>Percentage</b>
Facebook	84	42.64
WhatsApp	188	95.43
Instagram	115	58.38
Twitter	29	14.72
Online Gaming	34	17.26
YouTube	5	2.54
Snapchat	45	22.84
Tinder	6	3.05
Other	14	7.11



**Figure 9 :** Social Media applications regularly used by the participants

Majority of the participants (95.4%) reported that they used 'Whatsapp' regularly. This was followed by 'Instagram' (58.4%) and 'Facebook' (42.6%) usage. It was noted that few participants used other social media applications including 'Snapchat' (22.8%), 'Online gaming platforms' (17.3%) and 'Twitter' (14.7%). Only 3% of participants reported their usage of the online dating app - 'Tinder'. With regards to the 'other' category, among 7.1% respondents, 1 participant each entered the options for 'Bumble,' 'Spotify,' 'LinkedIn,' and 'Telegram'. The options for 'Pinterest' and 'Discord' were entered by 2 participants each and 'Youtube' by 5 participants. Finally, 1 participant said that they did not use Social Media.

These responses reflected the social media sites used most regularly by the participants. Herein, it was seen that WhatsApp was the most regularly used social media application followed by Instagram and Facebook, potentially due to their instant messaging features. The other response category also highlighted that a minority of participants used apps like Pinterest, LinkedIn, Telegram, Bumble and Discord frequently.

### **Awareness of Causes and Impacts**

The next 6 questions in the survey focused on the participant's awareness of the multitude of causes and impacts of addiction on oneself. The questions focused on participant's awareness of the addiction inducing capabilities of substances or screen gadgets, their perceptions of what these substances and habits pertaining to screen gadgets are, as well as whether they have been cautioned against the same by parents/family members. They were also asked if they had seen people under the influence of overuse of substances or screen gadgets, and whether they believed such behaviour could harm one's body & brain.

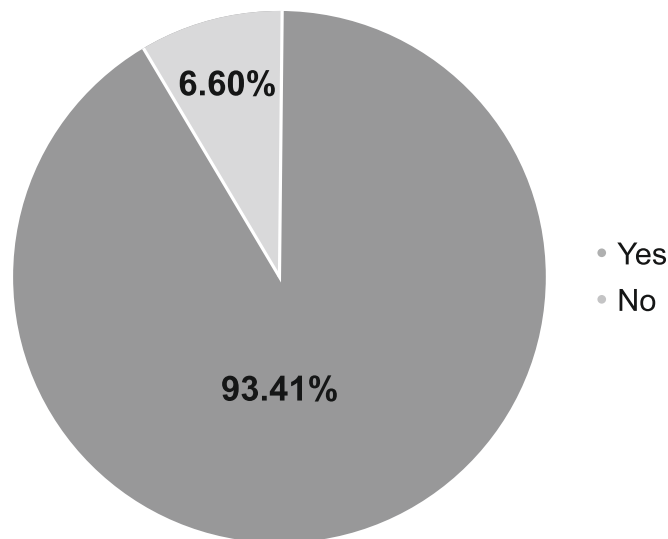
In one of the questions, participants were asked whether "I am aware that there are a) some substances which once we start taking them, or b) certain habits we develop on the internet using screen gadgets, are very difficult to give up , once we start them." They were given the options 'yes' or 'no' to select. Their response has been reflected using descriptive statistics in Table 5 and Figure 10.

**Table 5**

Participant awareness of difficulty giving up substances and screen habits once they are used

<b>Option</b>	<b>Frequency (N)</b>	<b>Percentage</b>
Yes	184	93.41
No	13	6.60





**Figure 10 :** Participant awareness of difficulty giving up substances and screen habits once they are used

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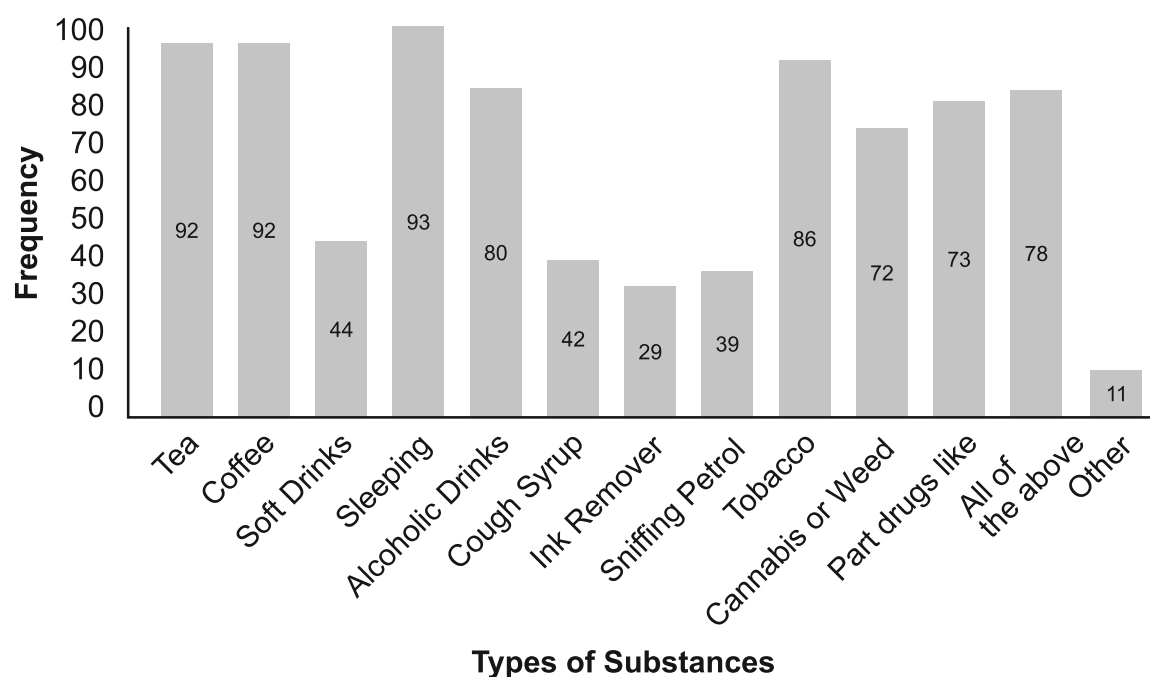
The option that had the highest number of selections was ‘Yes’ whereby 93.4% of participants selected this response. Conversely, 6.6% participants selected the ‘No’ response. These responses reflected the participant’s awareness of the addictive capabilities of certain substances and screen-based habits, wherein a majority of the participants acknowledged their awareness of the same. However, a minority stated that they were not aware that some substances or habits could be difficult to give up.

Following enquiry into whether participants were aware of addictive capabilities of substances and gadgets in general, another question sought to enquire their awareness about the substances that one could get addicted to. The question was as follows: “I think the following substances can come under a list of substances one gets dependent upon (you can choose more than one)” They were given multiple options and could select all the ones that they felt were pertinent, as well as add any “other” response. The options provided, as well as the frequency of their endorsement, have been reflected in Table 6 and Figure 11.

**Table 6**

Participant perceptions of which substances lead to dependence

<b>Option</b>	<b>Frequency (N)</b>	<b>Percentage</b>
Tea	92	46.70
Coffee	92	46.70
Soft drinks	44	22.34
Alcoholic drinks	93	47.21
Sleeping medication/tablets	80	40.61
Cough Syrup	42	21.32
Ink Remover	29	14.72
Sniffing Petrol	39	19.80
Tobacco	86	43.65
Cannabis or Weed	72	36.55
Part drugs like Ecstasy	73	37.06
All of the above	78	39.59
Other	11	5.58



**Figure 11 :** Participant perceptions of which substances lead to dependence

The option that had the highest number of selections was 'Alcoholic Drinks' and 47.2% of participants chose the same. It was followed closely by 'Tea' and 'Coffee', chosen by 46.7% of participants each, 'Tobacco' by 43.7% and 'Sleeping medications/tablets' by 40.6%. 'Cannabis and Weed' were selected by 36.5% of participants, and 'Drugs like Ecstasy' by 37.1 (n=73 selections). The option 'Cough Syrups' was selected by 21.3% of participants, 'Sniffing Petrol' by 19.8% and 'Ink Remover' by 14.7%. Finally, the 'all of the above' option was selected by 39.6% of participants. For the 'other' category" 5.6% of respondents chose to make an addition. Within this category, 4 participants contributed responses identifying electronic gadgets/screens and OCD habits, while 1 participant each entered the responses of 'Pica (eating disorder)', 'Acid/LSD/smelling paint,' and 'Youtube'. The option for 'none/nothing' in the list being an addictive substance was entered by 3 participants, while the response stating that 'To some extent all of the above' were addictive was entered by 1 participant.

These responses reflected the participant's perceptions about what substances one could get dependent on. Alcoholic drinks, tea, coffee, tobacco and sleeping medication/tablets were acknowledged as significant dependence-inducing substances. The additional responses also reflected the awareness of the dependence-inducing capability of inhalant based substances, and that some respondents did not find any of

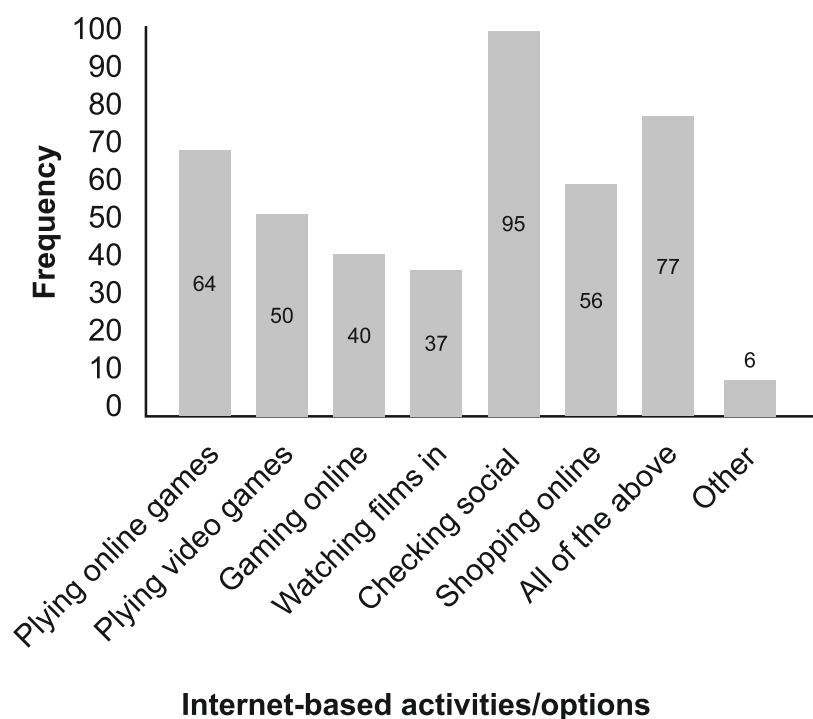
be capable of inducing dependence.

On similar lines as the previous question, the next question inquired “I think certain habits on using screen gadgets and use of the internet from the ones below that one often feel like giving up, but cannot (you can choose more than one)”. Participants could select multiple options from those given, and could add responses under the ‘other’ category. The options provided, as well as the frequency of their endorsement, have been reflected in Table 7 and Figure 12.

**Table 7**

Participant perception of which internet and screen-based habits are difficult to give up

Option	Frequency (N)	Percentage
Playing online games	64	32.49
Playing video games	50	25.38
Gambling online	40	20.30
Watching films in secret – that I should not	37	18.78
Checking social media sites	95	48.22
Shopping online	56	28.43
All of the above	77	39.09
Other	6	3.05



**Figure 12 :** Participant perception of which internet and screen-based habits are difficult to give up.

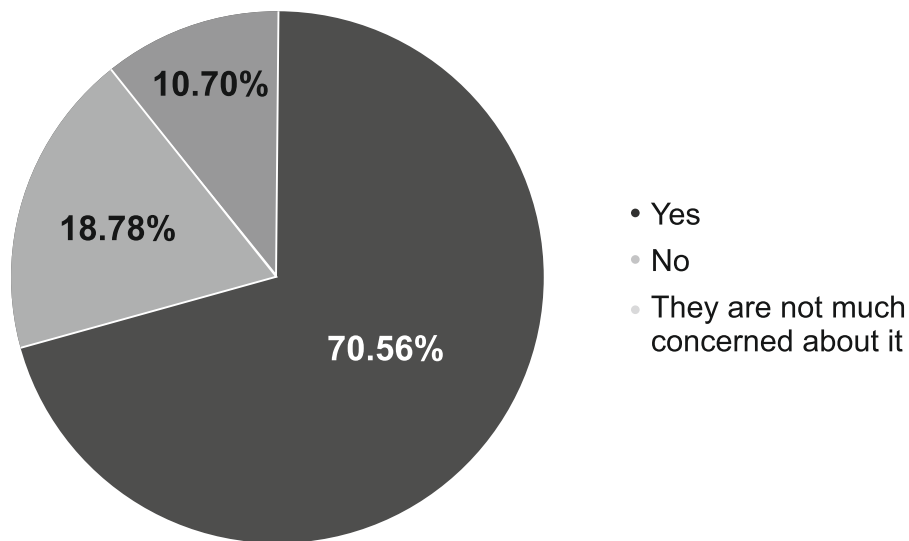
The option 'Checking Social Media sites' was most endorsed (48.2%) followed by 'Playing Online Games' (32.5%) and 'Shopping Online' (28.4%). 'Playing Video Games' was selected by 25.4% of respondents, and 'Gambling Online' by 20.3%. For the option 'Watching films in secret that I know I should not', 18.8% made the selection and for 'all of the above' 39.1% of participants selected the same. In the 'other' category 3% of respondents chose to make an addition. These included the addition of Checking social media sites for 30 minutes a day as per one respondent, blogging and reading by another, and being involved in texting one's friends or video calling by yet another participant. Watching YouTube or scrolling Quora was introduced by 1 respondent and another 1 also noted online reading graphic novels and watching animated series as an addictive habit. Finally, 1 respondent provided the option 'none' stating that none of the internet and screen-based habits were difficult to give up. Thus, checking social media, playing video games and online games, and online shopping were identified as the most difficult internet/ screen-based habits to give up.

Having enquired about participants' perceptions of which substances and habits are most addictive, the next question enquired as to whether they have discussed the same with their parents/ family. The question posed was: "My parents/ family members have spoken to me about these substances & over use of screen gadgets and have advised me to stay away from them" They were given the options 'Yes', 'No' or 'They are not much concerned about it' to select from. Their response has been reflected using descriptive statistics in Table 8 and Figure 13.

**Table 8**

Participant's acknowledgement of being cautioned against substance or overuse of screen gadgets by loved ones

<b>Option</b>	<b>Frequency (N)</b>	<b>Percentage</b>
Yes	139	70.56
No	37	18.78
They are not much concerned about	21	10.70



**Figure 13 :** Participant's acknowledgement of being cautioned against substance or overuse of screen gadgets by loved ones

The option 'Yes' was selected by 70.6% of participants, while 'No' was chosen by 18.8% of respondents. Additionally, 10.7% of participants responded that (their loved ones) 'are not much concerned about' substance/gadget over-use.

The responses reflected participant's perception about whether they had been spoken to and cautioned against the overuse of substances and screen gadgets wherein a majority of the participants acknowledged that they had discussed and been warned away from the same. Interestingly, a minority of participants acknowledged that their loved ones were not concerned about substances and gadgets overuse or warned them off them, while another minority set reported that their loved ones had not discussed or warned them off the same.

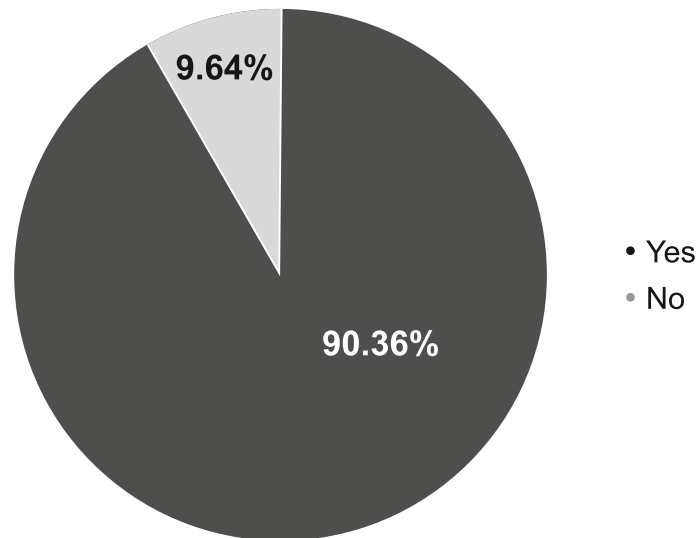
Taking a more holistic viewpoint, the penultimate question enquired as to whether "I "have seen people under the influence of these substances and screen gadgets over-use". They were given the binary options "Yes' or 'No' to select from. Their response has been reflected in Table 9 and Figure 14 below.

**Table 9**

Participant acknowledgement of having seen people influenced by substance and screen gadgets over use

Option	Frequency (N)	Percentage
Yes	178	90.36
No	19	9.64





**Figure 14 :** Participant acknowledgement of having seen people influenced by substance and screen gadgets over use

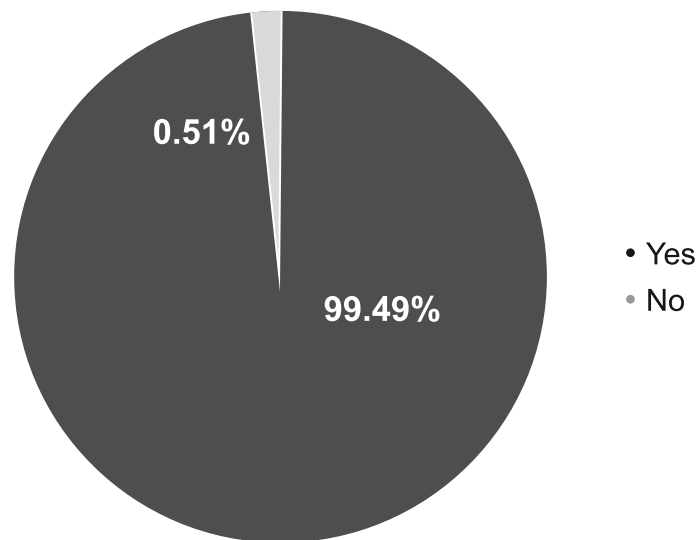
The maximum number of selections were made for the option 'Yes' by 90.4% of participants, while 9.6% of participants selected 'No'. The responses reflected whether participants had encountered people under the influence of substance and/ or screen gadget overuse. A majority of the participants acknowledged that they had seen such individuals, although a minority stated that they had not.

Having examined participants' awareness and exposure to addictive substances/ gadgets and those inflicted by the same, the next question determined participants' perception of the impact of these addictions. They were made to respond to the following statement: "I think using these substances and screen gadgets for a long time can harm one's body & brain." They were given the options 'Yes' or 'No' to select. Their response has been reflected using descriptive statistics in Table 10 and Figure 15 below.

**Table 10**

Participant perception of impact of substance and gadget overuse on body and brain

Option	Frequency (N)	Percentage
Yes	196	99.49
No	1	0.51



**Figure 15 :** Participant perception of impact of substance and gadget overuse on body and brain

Almost the entire sample, 99.5% of participants responded to the option ‘Yes’, while only 0.5% of the sample selected ‘No’. The responses reflected whether participants believed that overuse of substances and screen gadgets could harm one’s body and brain. While the majority acknowledged the same, interestingly, one participant did not believe that such overuse could impact the body and the brain.

### **Reasons for Addiction and Support for Recovery**

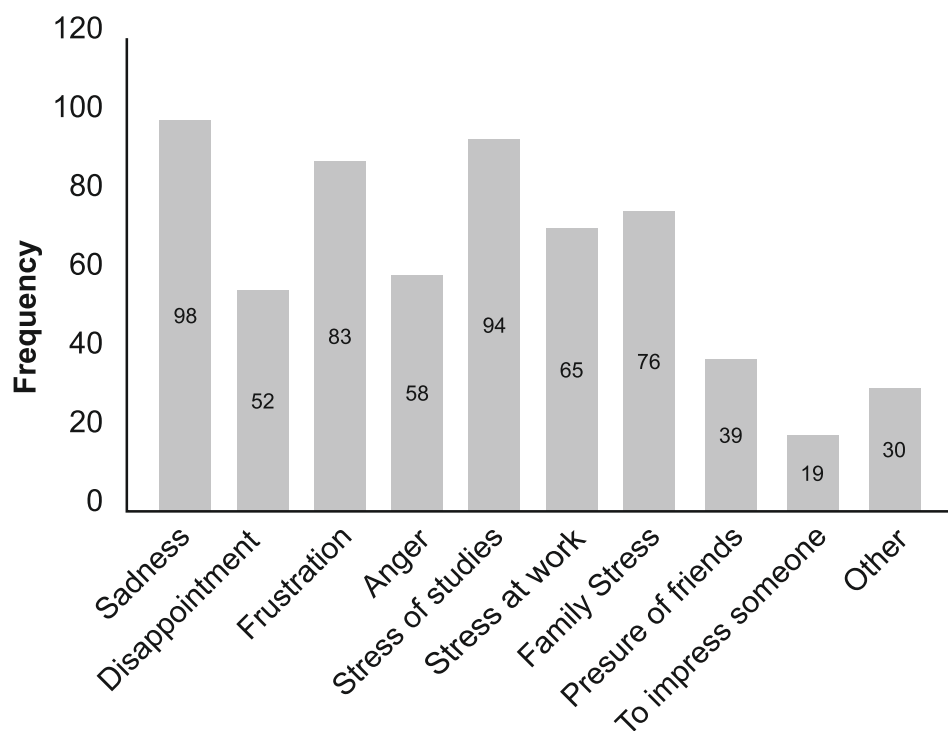
The last few questions in the survey focused on the participant’s perceptions of how they would manage situations associated with addiction. The questions focused on possible reasons one might develop an addiction, what would help them avoid it, and what they would need to recover from it. They were also asked if the process of responding to this survey helped them understand the importance of knowing about addiction.

In one of the questions, participants were asked “If ever I do get addicted to any of these substances, I think the reason will be (you can choose more than one)” to consider some of the reasons that could lead to them developing an addiction. They were given multiple options and could select all the ones that they felt pertinent, as well as add any ‘other’ response. The options and their frequency of their endorsement, have been reflected in Table 11 and Figure 16.

**Table 11**

Factors that could lead to addiction

Option	Frequency (N)	Percentage
Sadness	98	49.75
Disappointment	32	26.40
Frustration	83	42.13
Anger	58	29.44
Stress of studies	94	47.72
Stress at work	65	32.99
Family stress	76	38.58
Pressure of friends	39	19.80
To impress someone	19	9.64
Other	30	15.23

**Potential Factors that could lead to addictions****Figure 16 :** Factors that could lead to addiction

The response that had the highest number of selections was 'Sadness'. It was chosen by 49.7% of the participants, followed closely by 'Stress of Studies' (47.7%), 'Frustration' (42.1%), 'Family Stress' (38.6%), 'Stress at Work' (33%), 'Anger' (29.4%), 'Disappointment' (6.4%), 'Pressure of Friends' (19.8%) and 'To Impress Someone' (9.6%). In the 'other' category, 15.23% of participants made an addition. Out of these, 7 participants stated loneliness as a possible reason for addiction. Three participants stated that they do not think the given options would apply to them, and they would ensure they do not get addicted. One participant stated that 'none' of the options were viable reasons and 4 participants stated boredom, wasting time, or finding a way to pass time as possible reasons. One participant said that mental health concerns like depression, anxiety, suicidal ideation, paranoia, phobia, traumas could lead to addiction, while another stated 'happiness without stability', and another stated that addiction may occur as a 'coping response to mental illnesses' (n=1). Loneliness (n=1), knowing something useful (n=1), being a job requirement (n=1), wanting to stay updated (n=1), curiosity (n=2), fun (n=1), and pleasureseeking were also mentioned. One respondent stated the possibility of addiction occurring due to an individual being forced to consume the substance or being injected with them, while 2 respondents mentioned an instant loop pleasure cycle or re-indulgence due to happiness.

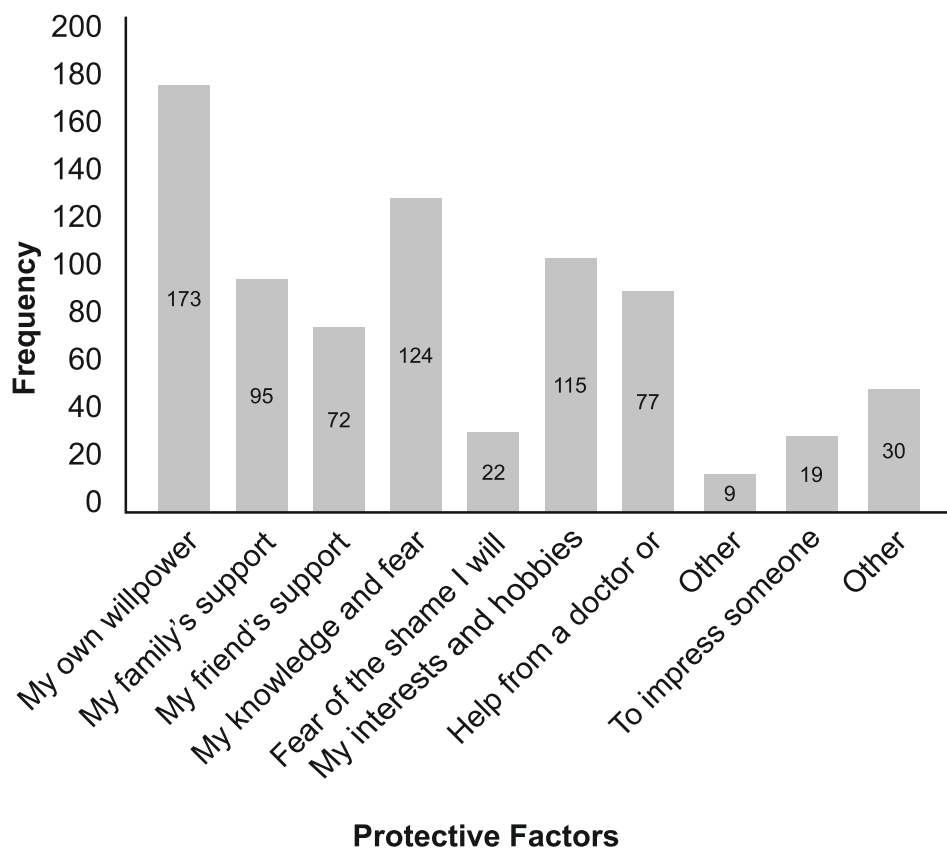
These responses reflected the participant's awareness about reasons behind addiction and the role that one's emotional health could have on behaviors related to addiction. Negative emotional states such as sadness, frustration, stress, disappointment, pressure were all acknowledged as significant contributors. The additional responses also reflected an awareness of how routine activities like wanting to stay updated, as well as the need to experience pleasure, seek fun etc. are also seen as possible factors that could lead to addiction. Some participants stated that they would not let themselves get addicted, while others mentioned it being a byproduct of boredom.

After investigating perceptions of causes of addiction, the next question examined prevention and asked "If I want to stay away from using these substances, I think these will help me (you can choose more than one)". They were given multiple options and could select all the ones that they felt were relevant to them, as well as add any "other" response. The options provided, as well as the frequency of their endorsement, have been reflected in Table 12 and Figure 17.

**Table 12**

Factors that could prevent addiction

<b>Option</b>	<b>Frequency (N)</b>	<b>Percentage</b>
My own willpower	173	87.82
My family's support	95	48.22
My friend's support	72	36.55
My knowledge and fear about harmful effects of these substances my mind and body	124	62.94
Fear of the shame I will feel if I am out	22	11.12
My interests and hobbies e.g.	115	58.38
Help from a doctor or therapist	77	39.09
Other	9	4.54



**Figure 17 :** Factors that could prevent addiction

'My own willpower' was considered to play an important role by most participants, as 87.8% of participants chose this response. This was followed by 'My knowledge and fear about the harmful effects of these substances on my mind and body' and 'My interests and hobbies, e.g.: sports' which were chosen by 62.9% and 52.8% of the participants, respectively. Besides this, 48.2% chose 'My family's support', 39.1% chose 'Help from a doctor or therapist', 36.5% chose 'My friends' support' and 11.2% chose 'Fear of the shame I will feel if I am found out'. A few additional responses were also given by the participants, which fell in the 'other' category (4.6%). Within this category, 2 participants stated that the given responses did not apply to them, while other participants (n=3) suggested having a peer group with diverse interests, engaging in household chores (n=1), and setting routines (n=1) as preventative factors. One participant mentioned channeling addiction in positive work and another 1 mentioned 'working from the heart'.

The responses reflected participants' understanding of what factors or variables could protect or prevent one from getting addicted. The pattern of responses obtained

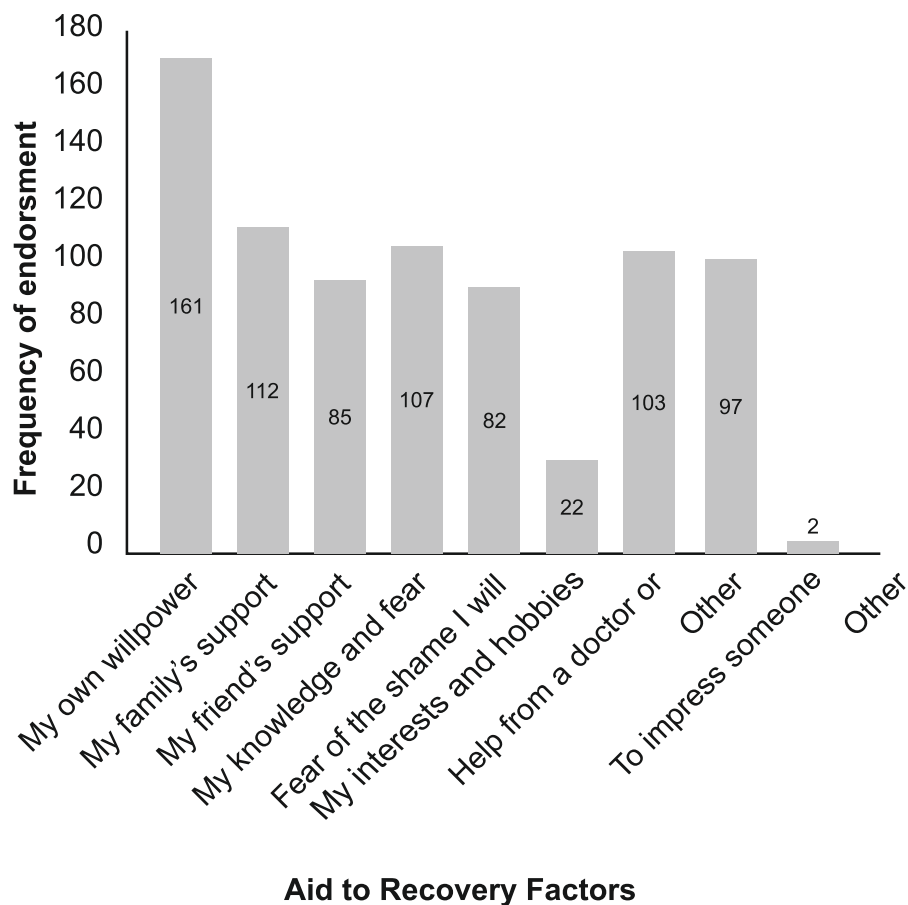
reflected that participants in the current sample placed a greater emphasis on their own abilities and strengths such as knowledge, willpower and interests as being helpful in preventing addiction to substances. Lesser importance was placed on external sources like support from friends, family or professionals. The 'other' responses introduced the elements of peer support, routine and productive work habits.

After examining preventative factors, the next question examined the perception of recovering sources; the question was as follows –“If by chance I ever get caught into one of these habits, I think I will be able to get out with the help of (you can choose more than one).” Participants were given multiple options and could select all the ones that they felt pertinent, as well as add any 'other' response. The options provided, as well as the frequency of their endorsement, have been reflected in Table 13 and Figure 18

**Table 13**

Factors that could help one recover from addiction

<b>Option</b>	<b>Frequency (N)</b>	<b>Percentage</b>
My own willpower	161	81.73
My family's support	112	56.85
My friend's support	85	43.15
My knowledge about de-addiction where to get help	107	54.31
Fear of long-term effects	82	41.62
Fear of the shame I will feel if I am out	22	11.17
My interests and hobbies e.g.	103	52.28
Help from a doctor or therapist	97	49.24
Other	2	1.01



**Figure 18 :** Factors that could help one recover from addiction

The most chosen response, (81.7%) was 'My own willpower' which was followed by 'My family's support' which was chosen by 56.9% of the participants. 'Knowledge about de-addiction' was chosen by 54.3% of the participants, and 'Interests and hobbies' was selected by 52.3% of the participants, which shows that about half the sample endorsed these factors. Besides this, 49.2% of respondents chose 'Help from a doctor or therapist'; 43.1% chose 'My friends support'; 41.6% chose 'Fear of the long-term effects' and 11.2% chose 'Fear of the shame I will feel if I am found out'. The 'other' category (1.01%) had 1 response that stated 'this is not applicable', and another 1 that stated 'setting a routine, exercise'.

The responses reflected the participants' understanding of what factors and sources could help one recover from an addiction. The pattern of responses was similar to those obtained in the previous question, wherein one's own willpower and knowledge were endorsed more than external sources of support. However, 'Family support' was strongly endorsed as a recovery aid. The role of support from friends and family was also



80.92% of the urban population and only 54.15% of the rural population owned a laptop. Additionally, 32.37% of the urban population, and 12.5% of the rural population owned a desktop. On the other hand, 26.59% of the urban population and 83.3% of the rural population owned a tablet. Furthermore, the ownership of laptops was found to be higher amongst participants living in nuclear families (52.94%) as compared to participants living in 3 generational families (29.41%) or joint families (8.5%). All participants living in a PG or Hostel owned mobile phones and laptops, and only some participants also owned a tablet. In sum, 2.03% of the sample did not own any device, whereas 8.63% of the sample owned all 4 devices (mobile phones, laptops, desktops, and tablets). All 4 participants who did not own a device borrowed a mobile phone, and 2 of the 4 participants borrowed either a laptop, desktop, or a tablet when they needed to use a device.

### **Discussion about Addiction**

When examining the discussions about addiction with loved ones, 22.4% of participants in the age range of 12-24 reported they had not been warned about the dangers of substance/gadget use. Similarly, it was observed that about 43% of the sample above the age of 25 reported that they either weren't warned against the use of substance or behavioral addiction or that their parents weren't much concerned about it.

### **Behavioural Addictions**

An investigation of the different types of potential behavioural addictions revealed that gambling was reported as an addiction difficult to give up by participants above the age of 25 (25%) more often than by the participants below the age of 24. From those between 21-24 years of age, around 15.6% stated that it could be an addiction, and from 18-21 years of age, around 19.5% acknowledged the same. Thus, on average, from those below 24 years of age, around 17.5% participants reported gambling as a behavioral addiction difficult to give up.

Online shopping was regarded as a potential behavioural addiction more often by those above 25 and between 18-21 years of age (both - 32%) as compared to those between 21-24 years of age (12.5%).

Social media was reported as a potential behavioural addiction more often by the participants above the age of 18 (50.84%) than participants below 18 (45%), while online gaming and video games were reported as potential behavioural addictions more often by the participants below the age of 18 years (60%) than participants above 18 (39.8%).

Additionally, it was observed that a majority of individuals above the age of 18 reported Social media (50.5%) more often as a behavioral addiction than they reported playing online games and video games combined (39.3%). On the other hand, participants below the age of 18 reported video games and online games (45%) as causes of behavioral addiction more often than they reported Social media (55%).

### **Substance Addictions.**

Around 23.16% of those 18 and above reported cough syrup as an addictive substance, and only about 5% of those below 18 years did the same. Addictive properties of recreational drugs like cannabis/weed were more often acknowledged by those above 21 years of age (63.25%) than those between 12-21 years (40.13%). The varied age based responses highlights the lack of available and accessible information about substance and behavioral addictions, for the different age-based cohorts.

### **Potential reasons for addiction.**

A minority of the total sample acknowledged all options provided as possible reasons leading to addiction. Sadness and stress of studies were identified as the most common precipitating factors by all age groups, followed by frustration and family stress by those 25 years and above. The detailed statistics for the same are provided underneath.

When asked about possible reasons they may develop an addiction, 2.03% of the respondents (n=4) selected all the 9 given responses, while 19.7% chose only one out of the given 9 responses (n=39). Most respondents, however, chose between 3-5 responses. Sadness and Stress of studies were also the most chosen responses across the study. Out of the 49.7% of respondents who selected sadness, most were from urban areas (82.6%), female (70.4%), and college students (63.2%). A similar pattern was seen with the response 'stress of studies' being chosen by largely female (69.1%), college students (63.8%), and urban (85.1%) respondents. Notably, out of all the respondents who chose the response 'to impress someone', most (57.89%) were in the 18-21 age range, unmarried, and college students. Besides this, among the respondents who chose 'stress at work', all the males who chose this response were from urban areas (36.9%).

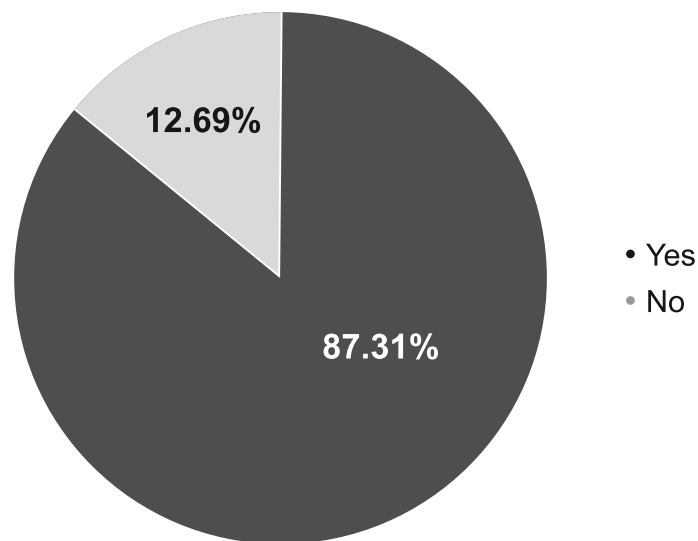
considered more important for treatment than for prevention. The 'other' response mentioned setting a routine as an aid to recovery.

In the end, participants were asked to reflect upon their experience of responding to this survey through the question "After doing the survey I realised the importance of knowing more about addictions - prevention and management." They were given the options 'yes' or 'no' to respond to. Their response has been reflected using descriptive statistics in Table 14 and Figure 19.

**Table 14**

Participant's take back from the survey  
about importance of knowing about addiction

Option	Frequency (N)	Percentage
Yes	172	87.31
No	25	12.69



**Figure 19 :** Participant's take back from the survey about importance of knowing about addiction

These results reflected that the majority of the participants (87.3%) responded 'yes', while 12.7% responded 'no.' The responses reflected the participants' takeaways from the surveys about the importance of knowing about addiction. A majority believed that doing the survey helped them understand the importance of having knowledge regarding addiction, its prevention, and management. However, nearly 1/4th of the participants did not have the same takeaway from this survey.

### **Demographic analysis**

In addition to the analysis of the individual survey questions, a secondary demographic analysis was carried out for some of the items; results of which are reflected herein.

### **Access to Electronic Devices**

While investigating the ownership of different devices, it was observed that mobile phones were owned by most of the sample, irrespective of their demographic category. On average, laptops and desktops were owned more by those belonging to an urban set-up than those from the rural area. However, this pattern was reversed with respect to ownership of tablets, with more individuals from the rural sector than urban sector owning them. Individual laptop ownership was more common in nuclear families than in 3 generation families or joint families. A detailed analysis of the same is as follows :

The largest age cohort was those 25 years and above (34.69%), who reported stress at work (51.47%), family stress (42.6%), frustration (41.17%) and sadness (38.2%) as the sources that are most likely to lead to an addiction. Among the 18-21 year old age group, and 21-24 year old age group, sadness and stress of studies were the most chosen responses. For the 18-21 year old cohort, Stress of studies (64.9%) was chosen more than Sadness (58.4%) whereas for 21-24 year old cohort, the reverse was true, with Sadness (59.37%) being chosen more than Stress of studies (50%).

### **Protective and Supportive Factors**

Obtained data suggested that respondents placed greater emphasis on factors intrinsic to the individual e.g.: willpower and personal responsibility, while discussing the potential factors that could act as protective factors against addiction and facilitate in case of treatment. Only 39.1% respondents believed seeking professional help (doctor/therapist) would be helpful in addiction prevention. On the other hand, 49.2% were of the opinion that professional help (doctor/therapist) could be effective in aiding recovery from addiction. Furthermore, while considering the age demographic, it was observed that only 3/20 respondents below the age of 18 stated that help from a doctor or therapist can be considered to prevent addiction. The role of support from friends and family was also considered more important for treatment than for prevention. Fear of shame and engaging in interests were considered of equal importance in both scenarios.

### **Learnings from the survey**

A majority, 87.3% of the participants stated that responding to the survey made them understand the importance of gaining knowledge about addiction, as well as ways to prevent and manage it. However, the remaining 12.7% (n=25) did not feel the same. The majority of individuals in this group lived in urban areas (96%), were unmarried (84%), being either school or college students (72%), and were all from 4 states: Maharashtra, Haryana, Gujarat, and Goa. Overall, about one third of the respondents of the study reflected on the importance of gaining knowledge about addiction through this survey.

## **Limitations, Implications and Scope for Future Research**

### **Limitations**

Although the study gathered pertinent information about awareness and understanding about addiction, it was not without its limitations.

For one, there was a degree of ambiguity in the questions asked to participants. Therefore, there is a possibility that some participants may have interpreted certain questions differently and responded accordingly.

The characteristics of the current sample also need to be considered while examining the drawbacks of this study. With regard to demographic factors, particularly age, gender, marital status and area of living, the responses were highly skewed. This limited the generalizability of the current findings, and therefore, must be taken into consideration while making use of the results of this study.

For example, the study gathered data from a range of age cohorts. The final sample consisted of 20 participants under the age of 18, while 177 respondents were 18 and above. The vast age gap means that these individuals could have had increasingly varied experiences with respect to different types of addictions, their causes, impacts etc., thereby influencing their responses about the same (e.g.: social media and gambling regarded as more addictive by older population than younger population; video games regarded as more addictive by younger population than older population).

### **Implications and Scope for Future Research**

The data was gathered from 197 participants from a variety of demographic domains to examine their perceptions and understandings of addiction- including the substances or habits that can induce the addiction, its impacts and causes. Additionally, data were gathered about the participants' perception of what they considered to be protective factors against and recovery factors for addiction. Therefore, the implications were plentiful and the scope for future research significant.

A significant majority (87.82%) of the sample respondents were from Urban locations, while only 12.18% hailed from rural localities. Furthermore, a majority of responses were obtained from metropolitan cities such as Mumbai and its suburbs (n=70), Pune (n=25), Gurgaon (n=17), Delhi (n=3), Baroda (n=20), Bangalore (n=2) etc. These results implied that there was a fair degree of awareness about addiction in urban areas and metropolitan cities. However, there were few responses obtained from rural areas and smaller cities such as from Faridabad (n=5), Manipal (n=2) and Trivandrum

(n=1) etc. Therefore, with regards to further research one can contact citizens from these locations and examine their opinions and degree of awareness. Additionally, the obtained results suggest a need for more widespread awareness about addiction in rural localities and smaller cities.

Additionally, the greatest number of responses hailed from age groups 18-21 (39.29%), 21-24 (15.82%) and above 25 (34.69%), while few responses were obtained from the lower age groups of 12-14 (2.04%), 14-16 (5.10%) and 16-18 (3.06%). The lower number of responses from a younger age bracket imply that there is a need for increasing awareness of addiction among the school going cohort. School-based awareness drives in particular can be pertinent in widespread awareness and serve as preventative measures before individuals become exposed to addictive substances and habits. Additionally, to combat increased utilisation of screens and the internet in school, such awareness programs could help educate students about maintaining control over screen based habits by practicing healthy screen habits, etc.

Moreover, when examining which substances the participants thought were addictive, the maximum number of response selections were for the options 'tea' (46.7%), 'coffee' (46.7%) 'alcoholic drinks' (47.2%), tobacco (43.7%), 'sleeping medication/tablets' (40.6%). Although these items were clearly identified as having addictive properties, there were fewer selections of options such as 'sniffing petrol' (19.8%), 'cannabis or weed' (36.5%) 'party drugs like ecstasy' (37.1%) 'ink remover' (14.7%), 'all of the above' (39.6%). These results suggest that there is a need for improving awareness of the addictive capabilities of less conventional substances such as ink remover and sniffing petrol etc.

While examining participant awareness of the potential dependence-inducing capabilities of substances and gadgets, 6.6% of participants responded that they were not aware that gadgets and substances were difficult to give up once they start being used. Therefore, the findings suggested that there is a need for facilitating a more holistic understanding and awareness about dependence inducing capabilities of a variety of substances and gadgets (i.e.: substance and behavioural addictions); with a particular emphasis on the latter (behavioural addictions - sources, behaviours, impact etc.). Furthermore, although a minority, 1 respondent did (0.5%) state that they did not think substance and screen gadgets overuse could harm one's body & brain. Such a result suggested that more widespread elucidation and elaboration of the long term and short



term impact of addiction on oneself must be conducted during awareness drives on substance and behavioural addictions.

Additionally, when investigating discussions about addiction, a minority of participants responded that their loved ones had not discussed or cautioned them about the dangers of substances/ gadgets over use (18.8%) or were "not much concerned about it." (10.7%). Therefore, while the participants may have been aware of the dangers of addiction, there may be less discussion within and understanding among families about the same. These results indicate that there is a need for increasing awareness of addiction across generations and facilitating intergenerational communication about the same. Additionally, the demographic analysis observed that compared to lower age cohorts, 43% of the sample above the age of 25 reported the lack of discussion. Therefore, it would be especially pertinent to spread awareness and introduce discussions about addiction (both substance and behavioural) among older individuals and their families.

Moreover, around 39.1% of individuals reported that all the options pertaining to Screen Gadget and Internet use could possibly lead to a behavioral addiction. Though this is a sizable population, it still indicates that the majority population did not view that all the options could lead to potential behavioral addiction. This suggests that there is a need for spreading awareness regarding screen-based addictions, and its various forms, as well as educating individuals about healthy screen time usage.

Participants reported WhatsApp (95.4%) to be the most used social media platform, followed by Instagram (58.4%) and Facebook (46.2%) suggesting that these platforms are the most easily accessible and preferred medium of online communication. Given this, one could potentially use said platforms to conduct programs, awareness drives etc. (e.g.: discussion groups on WhatsApp, live sessions on Instagram/Facebook etc.). Additionally, WhatsApp might also be an effective medium to target school students who are relatively less active on the other social media platforms.

A notable observation was that a majority of participants reported stress (47.72%), frustration (42.13%) and sadness (49.75%) as factors that could serve as causes of addiction. Therefore, interventions targeting mindfulness, encouraging social support and honing stress management may be steps to combat and evade the same.

When considering protection against such factors, fewer people acknowledged



the help required from a medical/ mental health professional (39.09%) and social support (friend's = 36.5%, family =48.22%) as a preventative factor for addiction. The greatest onus was on selfcontrol and willpower (87.82%) of the individual in ensuring prevention of addiction. Similarly, a significant majority of participants reported their own willpower (81.73%) as an aid to recovery factor, as compared to the help of mental health/medical professionals (49.24%), family (56.85%) and friends (43.15%). These results reflect the current societal attitude towards addiction - which places the onus of prevention and treatment more on the individual than the society. It is important to change this perception and view addiction as a systemic and societal problem that can best be dealt with by a combination of intrinsic and extrinsic factors including family, friends and professional support; both, at the prevention and treatment stage. For the same to happen, there is an increasing need to de-stigmatize the fear associated with seeking assistance for addiction, and instead emphasize the benefits in utilizing social support and professional resources for support and prevention.

Finally, when considering future research, in order to gauge the increase in awareness of the addictive capacities, perceived causes, and consequences of the substances, a baseline measure of the degree of awareness could be taken for the sample population, followed by an "Addiction Awareness" intervention program/workshop, and an end-line. This process might be more accurate in gauging the effectiveness of the survey/intervention since participants come from different educational backgrounds and might differ in their initial level of awareness, which may have confounded the results of the survey.

Thanks are due to Association of Child Care in India (AACCI) for partnering with the Department of Psychology, Churchgate campus of SNDT Women's University to distribute this survey questionnaire across the country online. We thank Dr. Swati Bhawe, Director AACCI and Dr. Samir Shah for this joint effort.

The following students of MA Psychology, Churchgate campus of SNDT Women's University have put the above report together.

(alphabetical listing: Arima Bhatnagar, Jill Mota, Nicole Mehta, Sakshi Kharbanda, Shivani Amin)

## Appendix B

**Students of Department of Psychology, SNTD Churchgate, acknowledged for their contributions to this Handbook.**

One of the unique features of this Addiction Prevention project which was completed by Department of Psychology, SNTD Women's University Churchgate, with Dr. Anuradha Sovani as Principal Investigator, in collaboration with Rotary International and RAGAP (Rotary Action Group for Addiction Prevention) was deep and continuous student involvement. Dr. Sovani, in her capacity as Professor and Head, Department of Psychology, and Dean, faculty of Humanities was successful in creating this partnership between Academicians and Practitioners, which is lauded the world over as a good practice.

The project was designed in such a way that students were involved in building resource material such as workshop modules, posters, quizzes, games and activities that could be used to train young people to say no to addictions. A young age group with good knowledge of Psychology creating and delivering these materials would naturally be better appreciated by an equally young audience, rather than older professionals creating and delivering materials. Materials created by youngsters, using the jargon of their generation, would naturally appeal more to the recipients. Pilots were run in college Departments and school classrooms in Mumbai to test this assumption. The sessions were very well received, and led to feedback being given by the participants which was woven back into the sessions.

Further, it is anticipated that the NSCAP, the National Scientific Committee for Addiction Prevention which has now emerged through the efforts of Rotary and CMHARTS, of which Dr. Anuradha Sovani is a member, will be engaged in empirical studies which will further test the validity of modules created, such as Mini Unplugged and Shacklefree.

The three volumes that are the deliverables resulting from the collaborative project are now included in the revised Masters Curricula for Counselling Psychology of SNTD Women's University. The reference material is adopted by the Board of Studies in Psychology, and by the Faculty of Humanities and the Academic Council of the University. This will ensure that the material continues to be used for posterity, continually revised and adapted, and kept fresh as new batches come through the portals of the University.

The following Masters' students of Psychology at the University Department of Psychology, Churchgate were actively involved in the RAGAP project and their

contributions to the project material are acknowledged. Many of them have created workshop modules included in this Handbook, and also conducted Research studies for the Dissertation component, which drew upon substance and non substance addiction related psychological variables.

**The names in bold were the students who served as Research Assistants on the project.**

Khadija Bharmal, Haveesha Buddhadev, Ambreen Bungalowwala, Rashi Chaturvedi, Munira Chitalwala, Dubaree Deka, Namrata Falcao, **Abisha Fernandes**, Aditi Ghatole, Sukeshi Hakani, Jayanthi Iyengar, **Alisha Kalidhar**, Ayesha Kazi, Seema Khan, Rajika Mehra, Dhvani Mundra, Rishmita Naidu, Amba Prabhu, Vrinda Pradhan, Zainab Rajkotwala, Rutuja Risbud, Shivani Samant, Shaista Shaikh, Sanazehra Shayda, Reshma Tanna, Arya Tendulkar, Maherra Khambaty, Munira Kapadia, Vishwa Mody, Aparna Ladha, Zahra Diwan, Lima James, Abhilasha Thakur, Amita Sonawane, Amrita Kajaria, Divya Pillai, Puja Dedhia, Yashika Shah, Pratyusha Vatsalya, Rutuja Kaushik, Vamakshi Painter, Rahat Sanghvi, Adeeba Qureshi, Minal Shirke, **Ariba Choudhary**, Shivani Fotedar, Rachna Savla, Tejaswini Vyas, Mehjabin Idris, Rukhshana Shaikh, **Kruttika Agasty**, Shahana Arab, Kamal Chheda, Fatema Dhanerwala, Lynette Fernandes, Ujwala Guntewar, Rhea Kambli, Aditi Kapse, Dhanashree Karambelkar, Mrunali Kataria, Shubhangi Kejriwal, Udit Kejriwal, Unnati Karia, Soniya Kothari, Saumya Malhotra, **Parinitha Mehta**, Shruti Nair, **Satori Pansare**, Nidhi Pasad, Paavani Rai, Prekshita Rao, Shweta Ravi, Sucheta Ravichandran, Pooja Shah, Heena Sinha, Shivani Tekale, Manjeet Yadav, Rhea Bajaj, Misbah Bhombal, Sailee Biwalkar, Trisha Daruwala, Rhea D'Lima, Sneha D'Silva, Rashna Elavia, Trupti Ganer, Jemima Jacob, Nikita Kadolkar, Payal Karde, Drishti Keniya, Supriya Khade, Swati Khade, Asma Bano Khan, Siddhi Khapre, Ketaki Mhatre, Jenita Nandu, Neena Narvekar, HIRAK Patel, Kanika Shah, Jahanvi Thakkar, Pooja Thakkar, Anaita Veigas, Maitree Vora, Tanishqa Arora, Meghana Barve, Tanisha Bhan, Karishma Daiya, Vidhi Dandekar, Anusha Damani, Maitri Doshi, Aashraya Gattamraju, Simran Goyal, Krina Haria, Zikra Ishqui, Rhea Jagtiani, Shivaani Jaswani, Zaheda Jeewa, Ketaki Joshi, Srushti Kaushik, Shami Kundalia, Radhika Maheshwari, Vandana Basant, Mrunmayi Meshram, Ila Mhatre, Khadija Motiwala, Beverly Noronha, Sakshi Salian, Samruddhi Sawant, Urvi Shah, Janvi Thakkar, Prajakta Vaishampayan, Nikita Kadolkar, Purva Chonkar, Pradnya Kanade, Kajol Kanchan, Sarika Karnad, Manasi katkade, Jameela Khokhawala, Aarushi Chitlangia, Radhika Mapuskar, Dhruvi Mehta, Madhureema Neglur, Ruchita Pagare,

Harshada Panchal, Stella Panikar, Kunashni Parikh, Bhumi Pasad, Manali Pathare, Vrinda Ruparelia, Surabhi Sagwekar, Miti Shah, Kirti Srivastava, Vishwa Talsania, Zalak Nandu, Neha Vishwakarma, Arya Vyas, Siddhi Atkar, Tazeen Badami, Dhara Bhanushali, Shivani Bhave, Pranoti Chidrawar, Vrishali Dadke, Aasiya Inamdar, Paridhi Joshi, Nisha Karamchandani, Richi More, Mitali Muralidhar, Sirat Nirh, Purnima Pujara, Gargi Ranade, Ishika Ratish, Anisha Samant, Palak Sanghvi, Fenny Savla, Hasti Shah, Jhanvi Shah, Wafa Shaikh, Vallari Singh, Aayushi Thakkar, Kareena Thakkar, Mahima Vedant, Swamini Waradkar, **Shivani Amin**, **Arima Bhatnagar**, Neha Bhoge, Manasi Chindarkar, Kruti Dharod, Bhargavi Gajjar, Anukriti Goyal, Hanna Mary Hyjan, Amrit Kalkat, Pratiksha Kaserwal, **Sakshi Kharbanda**, Ashni Kothari, Ashwini Lokare, Vijayata Mane, Feba Mathews, Tanisha Mayekar, Nicole Mehta, **Jill Mota**, **Kalpana Nahata**, Gauri Saxena, Anokhi Shah, Sakshi Shah, Simi Susan Shibu, Pooja Valmiki, Shrishti Vaz.

## **Appendix C : Vik(s)tories..... an idea whose time has come**

Why do addiction prevention trainings have to be undertaken only for senior school and junior college students? The thought behind this was usually that adolescents are at a high-risk age, and hence these Universal prevention modules have to be run for them.

However, the idea is well accepted the world over, that the younger the age at which certain pro-health attitudes are embedded in young minds, the more firm are their beliefs in positive and preventive practices, and efforts that would help promote their own mental health and that of others around them.

It was with this in mind that Dr. Sovani utilized the platform of the RAGAP collaboration to create stories for children under 10 years of age. Simple stories using a stream of consciousness approach were created by her, and illustrated by a talented student of SNDT WU Department of Psychology Churchgate who is acknowledged in Appendix B above.

The content of these stories was meant to simply reflect the flow of thoughts of a young child and to encourage curiosity about science in the world around him. The content of the stories also subtly challenged the concept that emerges later in life, that addictive behaviours such as smoking or drinking, gaming or overusing the internet and social media, are “cool”. Embedding the idea in the young mind that it is actually smarter and healthier to shun these activities would ensure that the chances of youngsters engaging on them once they reach their teens, is lower.

In other words, the idea was to embed a sort of reverse stigma in young minds, setting their attitudes against addictive practices, rather than the stigma arising from peer pressure that sets in later in life, when they reach their teenage years, when it becomes “Uncool” and “Geeky” to not fall in line with their peers and their unhealthy behaviours.

The protagonist of these stories is a little boy Vik, so named so that the series becomes a series of Victories over addiction, with a play on the words Vik-stories. These books are made available as hard or soft copies , so that parents can go through them and decide whether or not to let their little ones read these stories.

### **Pilot studies showed that**

- ▼ Children between 5 and 9 enjoyed the stories
- ▼ The stories created curiosity about the scientific facts embedded therein, which was a positive psychology message that was intended
- ▼ The stories were perceived as simple enough to understand in terms of language, and not too long for a child to read
- ▼ The young people who were shown the material during the pilot enjoyed the illustrations
- ▼ The story stayed in their mind and they discussed it with their parents
- ▼ Parents did have some inhibitions about introducing concepts of the unhealthy effects of smoking, alcohol and gaming at a very early age, and that freedom is always given to them, to decide when to introduce this material to their wards
- ▼ The material is seen as having potential for use in primary schools as a reading-aloud activity, followed by a discussion
- ▼ The series will be an ongoing one, and will also be placed on the RAGAP website and on Kindle and other online sources, ensuring wide readership.

## Appendix D :

### Excerpt of a sample story by Dr. Anuradha Sovani, with illustrations by a Student of MA Psychology, SNTD Churchgate.

(full story and colored illustrations are in resource package and on website)

#### A box of treasures

The whole world slept, but Vik was awake. Actually, the whole world can never be asleep at the same time, Vik thought. The earth is round, so while it is pitch dark here, there is a sunny morning somewhere else, and a bright afternoon in some other place. Vik felt good that someone somewhere was awake when he was.

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It had been an amazing Sunday. Vik's mom and dad had cooked up a delicious meal for them all, and Vik had eaten till he thought he would burst. Then with thick curtains drawn against the sun blazing outside, Vik had been lulled to sleep under the lazily turning fan. He had woken up when the shadows were long, and was not at all sleepy now. He did not mind. This was fun too. Night time was mystery time.

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Vik wondered whether to take out his biscuit box of treasures from under his bed. But he decided to unpack it in his head instead. There was the tooth, of course, which had just fallen out. He had not yet had time to bury it in the garden. His friend had told him that if he buried it deep in the soil, his new tooth would come out straight and strong. Vik knew that was not true, but it would be fun to bury it anyway.

He wondered what other people's treasure boxes would contain. His mother's box would surely have lots of books

His father's box would probably have tools; hammer, nails, pliers, and stuff to make things with. Big gardening shears and tools to dig the soil. Those were good treasures, he thought. Just a few treasures could help you make so many more.

The Uncle next door? His treasure box would be full of cigarettes. Vik knew where he hid his cigarettes because people at his house did not let him smoke. Uncle coughed when he smoked; his fingertips looked yellow, and his teeth looked kind of black and his face looked grey. Vik did not like to get into the lift with him, because his shirt smelt of smoke.

There are no treasures inside cigarettes, Vik wanted to tell the Uncle next door. Dad's toolkit would make shelves and grow flowers, and Mom's treasure box would have stories and poems and pictures. Maybe his teacher in school would stuff words and letters and numbers inside her treasure box because she loved writing them all on the blackboard in her neat handwriting.

But Uncle's treasure box would have black stuff that looked like mud, rolled up into tubes of paper, and maybe some smoke and some bad smells and depressing colors. What use were those? I can try telling him, thought Vik sadly, but I don't think he will listen. His cigarettes will call out to him louder than I can.

I guess each one of us had to build their own treasure box, Vik thought. Whether to make it happy or ugly was our choice.



**“Shacklefree” is a universal prevention program in the area of  
Substance and Non substance/Behavioral Addiction Prevention.**

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It is the result of a collaboration between  
Department of Psychology, SNDT Women’s University,  
Rotary Club of Mumbai, Ghatkopar  
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ROTARY ACTION GROUP -ADDICTION PREVENTION (RAG-AP) works through the RAG-AP  
International Scientific Committee and the National Scientific Committee on Addiction Prevention.

