

# Child India

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2022



Monthly e-Newsletter of Indian Academy of Pediatrics



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## Editor's Note

Dear friends,

Greetings from Child India.

We start the month with the World Breastfeeding Week – August 1-7 - for which we have witnessed multiple promotional programs highlighting the theme – ‘Step up for breastfeeding. Educate and support’.



August 12th is celebrated as International Youth Day - The theme for 2022 is “Intergenerational Solidarity: Creating a World for All Ages”. Solidarity across generations is considered the key for sustainable development.

This issue of Child India will focus on substance abuse. Substance use among adolescents’ ranges from experimentation to severe substance use disorders. It is an ever-increasing health issue for the adolescent all over the world and affects not only for the abuser but also for the immediate family and the society at large. We are thankful to all the contributors, especially Dr Preeti Galgali, for their inputs.

Happy reading.

Yours in IAP service,

**Dr Jeelson C Unni**

**Editor-in-Chief**

## President's Address

Dear friends,

Greetings and wishes.

In this issue of Child India we are discussing an emerging health problem in our country, namely substance abuse.

Despite all efforts to keep children off drugs, substance abuse by adolescents is on the increase in India, both in urban and rural areas; in all socioeconomic groups.

Early detection and intervention is the mantra—more the duration of drug use—greater the difficulty in managing the problem.

However, it being not easy to identify drug use early, the importance of life skills programs in schools for prevention of substance abuse and training care-givers and society on early signs of use.

We need to strengthen our programs to ensure reduction of this health hazard

Regards,

**Dr Remesh Kumar**

National President, IAP 2022



## Secretary's Message

Dear Friends,

“Success isn't always about greatness. It's about consistency. Consistent hard work leads to success. Greatness will come”

It has been an eventful month at the IAP Child India May 2021. We had a very successful Administrative Meetings with the IAP Office Bearers on 13th August 2022 and 4th IAP Executive Board Meeting on 14th August 2022 at Udaipur Rajasthan. My heartfelt thanks to everyone involved for participating in this meeting.



IAP marked the first week of August every year as IAP Breast Feeding Week. Indian Academy of Pediatrics (IAP) observed National Breast-Feeding Week from 1st August 2022 to 7th August 2022 with the theme “Step up for Breast Feeding - Educate and Support.” It has been celebrated widely across the country through various branches and our esteemed members. We are sure that this noble initiative helps to protect, promote and support breastfeeding across different levels of society. Through this initiative, target audiences, including governments, health systems, workplaces and communities, have been informed, educated and empowered to strengthen their capacity to provide and sustain breastfeeding-friendly environments for families in the post-pandemic world.

I appreciate National President IAP Dr Remesh Kumar R and all our office bearers, Coordinators and Convenors of the committees of different modules as well as days and week celebration for their efforts to make it successful.

Along with this, Indian Academy of Paediatrics organised workshops on various modules under the Presidential Action Plan 2022. 8 Workshops of Pediatric Emergency Care & Resuscitation Training Module (PECART), 7 of Demystifying Allergic Disorders (DAD), 12 of Pyrexia of Infection & Non-Infection (POINT), 3 of Ped Gastro, 7 of Pulmostar, 4 of use of Medications in Pediatrics (UMP) & 1 of Growth & Puberty- A Challenging Journey-Pediatric Endocrinology Module, 2 of Perinatology - Caring both ends of the Cord have been taking place this month.

About the flagship program of Indian Academy of Pediatrics, A total of 174 workshops of NTEP, the most prestigious and of great importance and with MOHFW, Govt of India, have been done till now. In August alone, we have planned to conduct a total of 8 workshops; out of it, we have successfully completed 3 workshops of NTEP. A total of 66 workshops of ECD have been done till date, we have planned to conduct a total of 15 workshops; out of it, we have successfully completed 4 workshops ECD.

About IAP NRP FGM, one of the flagship programs of IAP, this month total of 48 Basic NRP and 12 Advanced NRP provider courses have been planned, out of it, we have successfully conducted 29 Basic NRP and 5 Advanced NRP provider courses till date, which will be trained about 1000 trainers.

So, on behalf of IAP, I urge you to organize various activities in the best interest of the health and welfare of the country's children.

Long Live IAP, Jai IAP

In service of Academy,

**Dr Vineet Saxena**

Hon. Secretary General 2022 & 23

## President's Engagements



Inauguration of Fempedicon 2022 by IAP President Dr Remesh Kumar, graced by Dr Upendra khinjawadekar, President Elect, Lt Gen Madhuri Kanitkar VC MUHS, Dr Swati Bhawe and the minister of state for health Dr Bharti Pawar at Nashik

## President's Engagements



## President's Engagements



IAP Executive Board meeting at Udaipur - Aug 13 14



# Magnitude of Substance Abuse among Indian Adolescents



AMITHA RAO AROOR<sup>1</sup>

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PREETI M GALAGALI<sup>3</sup>



## Introduction

Adolescent Drug abuse is a global health problem and may range from sporadic use to severe disorder. The acute and long-term consequences may vary from minor to life threatening depending on the substance abused, frequency and underlying vulnerability the child possesses. Sometimes even occasional use can lead to significant harm, including overdose, accidents, violence and sexually transmitted diseases. The prevalence of the problem is on the rise in developing countries like India. Like most other NCDs, drug use disorder has been secondary to interaction of underlying biological vulnerabilities (ADHD, family History, neurodevelopmental disorders, temperamental vulnerability) and environmental factors (socioeconomic status, aborted schooling, family dynamics, parenting, peer group). Usually, initial experiments are with drugs which are easily available which further acts as a gateway to other substances over time. According to the CDC report, alcohol, marijuana and tobacco are the most common substances used.<sup>1</sup> Multiple substance use has also been documented.

## Nationwide surveys on adolescent substance use

Despite the serious consequences associated with adolescent substance use, it remains under researched in India. Most of the studies available are small scale studies at regional levels. A few nationwide surveys focusing on prevalence of adolescent substance use are shown in Table 1.

Various national surveys conducted revealed a high prevalence of substance use among Indian adolescents. The National Survey on the extent and pattern of substance use in India conducted by the Ministry of Social Justice and Empowerment, Government of India through the National Drug Dependence Treatment Centre (NDDTC), All India Institute of Medical Sciences (AIIMS), New Delhi in 2018 separately reported the prevalence of substance use among the adolescent subpopulation as shown in Table 2. Prevalence of inhalants usage was noted to be higher among adolescents than in adults.

1. Professor of Paediatrics, Adolescent Specialist, A.J Institute of Medical Sciences, Mangalore
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**Table 1: Nationwide studies on substance use**

Survey and year	Population	Number	Magnitude of substance use
National household survey 2001 <sup>2</sup>	12-18yrs, males	8587	3% used cannabis, 0.1% opioid.
NFHS 3 2005-6 <sup>3</sup>	15-19 yrs.	13008 boys and 24,811 girls	Boys-28.6% tobacco use, 11% use alcohol Girls-3.5% tobacco use and 1% alcohol use
National survey 2013 <sup>4</sup>	5-18yrs	4024	Current use: Tobacco-74.9%, alcohol 56.8%, inhalants -30.5%, cannabis 28.9%
AIIMS study 2018 <sup>5</sup>	10-75 yrs.	4,73,569	14.6% alcohol, 2.8% cannabis, 2.1% opioids, 0.7% inhalants
NFHS 4 2015-16 <sup>6</sup>	15-54 yrs. men	1,12,122	45% used tobacco, 30% alcohol
NFHS 5 2019-21 <sup>7</sup>	15-19yrs	16,385 boys and 1,22,544 girls	Tobacco-14.3% among boys and 0.8% among girls Alcohol-5.8% among boys and 0.2% among girls

**Table 2: Magnitude of substance use in the population and adolescent group<sup>5</sup>**

Drug	Prevalence in the population	Prevalence in adolescents
Alcohol	14.6%	1.3%
Cannabis	2.8%	0.9%
Opioids	2.1%	1.8%
Inhalants	0.7%	1.17%

**Table 3: Regional studies on adolescent substance use**

Study place	population	findings
Surendranagar Gujarat <sup>9</sup>	300 rural and 300 urban adolescents	Prevalence of 30.17%. Rural population (37.67%) and males (55.33%) reported higher prevalence
Jammu & Kashmir <sup>10</sup>	80 street children	Prevalence of substance use 46.25%.
Urban slums of Jorhat Assam <sup>11</sup>	174 youth aged 10-24yrs	Prevalence of 87.99% among males and 12.21% among females
UDAYA study, Uttar Pradesh and Bihar <sup>12</sup>	5969 adolescent boys aged 10-19yrs	Prevalence of alcohol/tobacco was 16%
Uttar Pradesh <sup>13</sup>	7224 students of 7 <sup>th</sup> -12 <sup>th</sup> grade	14.3% reported ever use of tobacco/alcohol
Aligarh <sup>14</sup>	1431 students 9 <sup>th</sup> -12 <sup>th</sup> grade	33% reported ever use and 12.9% current use
Delhi <sup>15</sup>	962 students of class 11 and 12	13.1% reported current smoking, 12.5% alcohol use and 1.1% hashish use

## Regional surveys on adolescent substance use

Several school-based surveys have examined the use of tobacco and various other substances. Street children are extremely vulnerable to substance use. Indian studies report that 40-70% of these children use substances<sup>8</sup>. The use of inhalants is especially common in addition to tobacco, alcohol and cannabis. Table 3 summarizes select data from the small-scale studies on youth drug use in the last decade.

The review of magnitude of substance use among medical students in India conducted by Gupta H revealed that alcohol (3.2-43.8%), tobacco (3.7-28.8%) and cannabis (1.6-15%) were the most common substances used by medical students.<sup>16</sup>

## Specific Substances of abuse

**Tobacco:** Tobacco use during adolescence leads to an accelerated dependency due to the inherent nature of tobacco and the effect of the same on premature adolescent brain indirectly paves the way for use of other substances. The use of e-cigarettes among youth has been on the rise globally. However, data on use of e-cigarettes among Indian adolescents is limited. Despite the Government's efforts to strictly enforce Cigarettes and Other Tobacco Products Act (COTPA) and minimal legal age for tobacco use, as per current evidence, 5% to 25% of Indian adolescents have ever used or are currently using tobacco<sup>17</sup>. Global Adult Tobacco Survey [(GATS)-2] estimated the prevalence of smoking and smokeless tobacco to be 5% and 10.9% respectively with mean age of initiation of 17.2± 8.7 yrs. The prevalence of use of any form of tobacco was 11.9%.<sup>18</sup> As per the Global Youth Tobacco Survey [(GYTS)-4] by the Ministry of Health and Family Welfare in 2019, one-fifth of the students aged 13-15 used some form of tobacco product. Prevalence of tobacco use among boys was 9.6% and among girls was 7.4%. The prevalence of smoking

tobacco was 7.3%, smokeless tobacco was 4.1%, and use of e-cigarette among the students was 2.8%. Looking at the state-wise pattern, the use of tobacco among students was highest in Arunachal Pradesh and Mizoram (58% each) and lowest in Himachal Pradesh (1.1%).<sup>19</sup> Alarming, studies in the slums of Delhi have shown the age of initiation to be as low as 6 years.<sup>20</sup>

**Alcohol :** Regular use of alcohol during early adolescence is associated with a higher rate of alcohol consumption in adult life when compared to later onset of drinking. Systematic review by Nadkarni et al showed prevalence of ever or lifetime alcohol consumption ranging from 3.9% to 69.8%; and prevalence of alcohol consumption at least once in the past year ranging from 10.6% to 32.9%. The mean age for initiation of drinking ranged from 14.4 to 18.3 years. A few factors associated with alcohol consumption included male sex, older age, academic difficulties, parental use of alcohol or tobacco and non-contact sexual abuse.<sup>21</sup>

**Cannabis:** Many studies indicate that cannabis is a common substance of abuse during adolescence. Cannabis is available as Bhang, Charas, Hashish and Ganja. A review of literature on cannabis use in India by Dube S reported a prevalence of 6.76%. Among states, the highest usage rate was reported in Sikkim (7.3%) and the lowest is recorded in Puducherry (0.0%)<sup>22</sup>

**Designer drugs:** These include stimulants, synthetic cannabinoids (Spice), and synthetic hallucinogens(N-bomb). These drugs are gaining popularity among teens as they are easy to consume and have various uses such as fitness and recreational use. The harm caused by these drugs are underestimated by youth. Such drug use usually begins with the use of ecstasy, ketamine and magic mushrooms. Ecstasy (MDMA) is a popular drug used at parties. Acute toxicity is common in these cases. The number of available designer drugs is on the rise and the trend of usage keeps changing over time. Newly emerging drugs may be missed during routine screening.

**Date rape drugs:** The use of date rape drugs is common but may be under-reported. Alcohol, GHB (Gamma hydroxybutyric acid), Flunitrazepam and ketamine are commonly used.

**Prescription drug misuse/abuse:** The misuse of prescription drugs poses a significant threat. These include stimulants, opioids, depressants etc. The perception that these drugs are less harmful leads to an increased likelihood of the abuse of these substances.

### Age of initiation of substance use

Many start the use of substances during adolescence, but most seek treatment during adulthood when complications arise.<sup>8</sup> Substance use is labelled as early initiation when the use starts below the age of 15 yrs.<sup>23</sup> Data on treatment seekers from a drug abuse monitoring system shows that most people who sought treatment at drug dependent treatment centres throughout the country initiated use during adolescence. Age of initiation was at <15yrs of age in 9-10% and was during 16-20yrs in 25-32%. Adolescents who constituted 5% of treatment seekers were those who used inhalants/opioids/cannabis.<sup>8</sup> Nationwide survey by NCPDR revealed mean age of initiation of 12.3yrs for tobacco, 12.4yrs for inhalants, 13.4yrs for cannabis, 13.6yrs for alcohol, 14.3yrs for heroin and 15.1 yrs. for injectable substances.<sup>4</sup> Street children initiated substance use 1 to 1.5yrs earlier than those living at home. Many studies show that initiation of substance use early in life influences the levels of use in later life. DeWitt et al.<sup>24</sup> and Liang and Chikritzhs<sup>25</sup> have associated alcohol dependence during adulthood with early age of initiation to drinking. Higher alcohol dependence rates were observed for those who initiated alcohol use by age 14 when compared to those who started at an older age and was a predictor of SUD during adulthood. Early-onset users have also shown neuropsychological alterations and higher polydrug use than those with a late-onset.

### Consequences of adolescent substance use

Substance use may be associated with other risk-taking behaviours and mental health disorders. Early onset substance use is associated with greater likelihood of NCDs. Tobacco use is an important risk factor for NCDs. About 5 million premature deaths in the world were attributed to smoking.<sup>26</sup> High consumption of alcohol and exposure to cigarette smoke may directly cause cirrhosis of the liver, cancer of the mouth, pharynx, pancreas and oesophageal cancer.<sup>27</sup> Many mental health problems are linked to substance abuse among adolescents. Mental health disorders can be the cause or effect of substance abuse. Substance-abusing youth are at a higher risk for depression, conduct problems, personality disorders and suicidal behaviour.

### Substance use during the covid pandemic

Impact of Covid 19 on drug abuse in adolescents is complex, having both positive as well as negative effects. The pandemic has put enormous stress on adolescents in the form of school closure, educational setbacks, decreased contact with peers and strained parent-teen relationship. As other forms of coping mechanisms such as outdoor activities and peer interactions were limited during the pandemic, there were high chances of teens using substances to relieve stress. Due to their limited availability and high cost, adolescents were more likely to seek locally available products/switch from licit to illicit substances. Some adolescents may have required emergency medical care for the withdrawal symptoms. However, due to the limited availability of substances, spending more time with family and decreased interaction with substance-using peers, some might have considered abstinence from substance use.<sup>28</sup> A systematic review by Layman HM et al that included 49 longitudinal and cross-sectional

studies from December 2019 to Feb 2022. suggested that the prevalence of youth substance use has largely declined during the 1st two years of the pandemic. The author has suggested to view this with caution, recommending long-term longitudinal studies to assess the immediate aftermath of the pandemic as well as to study the long-term effects. This review did not include any study from India.<sup>29</sup>

## Conclusion

Research on substance abuse among Indian adolescents needs to be prioritized in order to learn about the actual magnitude of the problem. Awareness must be created among the youth with regards to the harmful effects of drug abuse. More treatment centres should be launched and made easily accessible, in order to help children with substance use disorder. Paediatricians, who are usually the first point of contact with these children, need to be sensitized about drug use among adolescents.

## References

1. Centre for Disease Control. Teen Substance Use & Risks; 2020. Available from: <https://www.cdc.gov/ncbddd/fasd/features/teensubstance-use>.
- 2- Ray R. National survey on extent, pattern and trends of drug abuse in India. New Delhi: Ministry of Social Justice and Empowerment and United Nations Office on Drug and Crime Regional Office for South Asia; 2004
- 3.- National Family Health Survey-3. International Institute for Population Sciences (IIPS) and Macro International, 2007. National Family Health Survey (NFHS-3), 2005-06, India: Key Findings. Mumbai: IIPS.
4. Tikoo VK, Dhawan A, Pattanayak RD, Chopra A. Assessment of pattern, profile and profile of substance use among children in India. New Delhi: National Commission for Protection of Child Rights (NCPCR) and All India Institute of Medical Sciences (AIIMS); 2013.
5. AIMS Study- Ambekar A, Agrawal A, Rao R, Mishra AK, Khandelwal S, and Chadda RK. Magnitude of substance use in India. [Internet]. New Delhi: Ministry of Social Justice and Empowerment, Government of India, 2019
6. NFHS4- International Institute for Population Sciences (IIPS) and ICF. 2017. National Family Health Survey (NFHS-4), 2015-16: India. Mumbai: IIPS.
7. NFHS 5- International Institute for Population Sciences (IIPS) and ICF. 2021. National Family Health Survey (NFHS-5), 2019-21: India. Mumbai: IIPS.
8. Dhawan A, Pattanayak RD, Chopra A, Tikoo VK, Kumar R. Pattern and profile of children using substances in India: Insights and recommendations. Natl Med J India. 2017 Jul-Aug;30(4):224-229
9. Jasani PK, Jadeja YM, Patel NM, Jadeja DY, Shrimali JB, Purani SK. Prevalence of substance abuse among adolescents of urban and rural community in Surendranagar district, Gujarat. Int J Community Med Public Health 2019; 6:1970-4
10. Mehbooba Rasool, T. A. Dinesh K. (2017). Substance abuse among street children of Jammu region. International Journal of Medical Science and Clinical Invention, 4(8).
11. Kovilveetil, A. N. (2021). A study on substance abuse among young people (10-24 years) in urban slums of Jorhat, Assam. Medical Science and Discovery, 8(12), 682-689
12. Srivastava, S., Kumar, P., Rashmi et al. Does substance use by family members and community affect the substance use among adolescent boys? Evidence from UDAYA study, India. BMC Public Health 21, 1896 (2021)
13. Narain R, Sardana S, Gupta S. Prevalence and risk factors associated with substance use in children: A questionnaire-based survey in two cities of Uttar Pradesh, India. Indian J Psychiatry 2020; 62:517-23.
14. Faizi N, Alvi Y, Saraaswat A, Yasir M. Knowledge, attitude, practice and pattern of substance use among adolescents and young adults from Aligarh, India. Indian J Comm Health. 2021;33(4):615-620.
15. Kumar TV. Sociodemographic determinants of substance use among school-going adolescents in Delhi, India. Int J Health Allied Sci 2019; 8:87-91
16. Gupta H, Gupta S, Rozatkar AR. Magnitude of the Substance Use and Its Associated Factors, Among the

- Medical Students in India and Implications for Medical Education: A Narrative Review. *Indian J Psychol Med.* 2022;44(3):218-226.
17. Grover S, Anand T, Kishore J, Tripathy JP, Sinha DN. Tobacco Use Among the Youth in India: Evidence from Global Adult Tobacco Survey-2 (2016-2017). *Tobacco Use Insights.* January 2020
  18. Tata Institute of Social Sciences (TISS), Mumbai and Ministry of Health and Family Welfare, Government of India. Global Adult Tobacco Survey GATS 2 India 2016-17.
  19. Global Youth Tobacco Survey 4 (GYTS 4) Ministry of Health and Family Welfare, Government of India. 2019
  - 20.- Arora M, Tewari A, Tripathy V, Nazar GP, Juneja NS, Ramakrishnan L, et al. Community-based model for preventing tobacco use among disadvantaged adolescents in urban slums of India. *Health Promot Int* 2010; 25:143-52
  21. Nadkarni A et al (2022). Alcohol use among adolescents in India: a systematic review. *Global Mental Health* 1-25
  22. Susrut Dube, Neha Dhingra. An overview: prevalence of cannabis abuse in India. *International Journal of Contemporary Medical Research* 2020;7(2): B1-B4
  - 23- Trujillo CA, Obando D, Trujillo A (2019) An examination of the association between early initiation of substance use and interrelated multilevel risk and protective factors among adolescents. *PLoS ONE* 14(12): e0225384
  24. DeWit DJ, Adlaf EM, Offord DR, Ogborne AC. Age at first alcohol use: a risk factor for the development of alcohol disorders. *Am J Psychiatry* 2000 May 1; 157(5):745-50.
  25. Liang W, Chikritzhs T. Age at first use of alcohol predicts the risk of heavy alcohol use in early adulthood: A longitudinal study in the United States. *Int J Drug Policy.* 2015 Feb 1; 26(2):131-13
  26. Ezzati M, Lopez A. Estimates of global mortality attributable to smoking in 2000. *Lancet* 2003; 362: 847-52.
  - 27- Adhikari, Kishor & Adak, Mert. (2012). Behavioural risk factors of non-communicable diseases among adolescents. *Journal of the Institute of Medicine.* 34. 39-43.
  28. Bhatia G, Chatterjee B, Dhawan A. Adolescents, Drugs, and COVID-19: Special Challenges During the Pandemic. *Indian J Psychol Med.* 2021;43(2):95-99
  29. Layman HM, Thorisdottir IE, Halldorsdottir T, Sigfusdottir ID, Allegrante JP, Kristjansson AL. Substance Use Among Youth During the COVID-19 Pandemic: a Systematic Review. *Curr Psychiatry Rep.* 2022 Jun;24(6):307-324.

## Vulnerability in adolescence – Risk and protective factors



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### 1. Introduction

Adolescence is a transitional period characterized by alterations in physical, neural, cognitive and affective functions and changes in behaviours, personality characteristics and social roles. It is associated with a 2- to 3-fold increase in morbidity and mortality compared to childhood and adulthood. The primary causes of adolescent deaths include motor vehicle crashes, suicides, and homicides. All are related to cognitive control and impulsive/risky behaviours that may be exacerbated by substance use. (1)

Adolescence is a critical risk period for the emergence and progression of alcohol and other drug use problems. An earlier age of substance use initiation is associated with a greater risk of developing substance use disorders (SUD) and related issues. (2) A myriad of factors contribute to and prevent adolescent substance use disorder development. In this article, we provide an overview of these factors.

### 2. Vulnerability, risk factors and protective factors:

There are various descriptions regarding vulnerability. (3) Here, we consider the term vulnerability as an interaction between an

adolescent's social environment and several underlying elements that, when present, put the adolescent "at risk" for adverse outcomes. Risk can be understood in two ways – 'at risk' and 'risk-taking behaviours. Risk factors in mental health are characteristics, variables, or events that, if present in an individual, make it more likely for that individual to develop a mental health disorder in comparison to the general population., (4) Protective factors or resilience balance out such risk factors.

The protective and risk factors interact with each other. The protective factor attenuates the risk factors and reduces the risk. Also, one protective factor enhances another so that the combined effect of both protective factors is more significant. Vulnerability, thus is a dynamic state reflecting converging effects of interacting and amplifying personal and environmental factors, which increase an individual's susceptibility to ill health and hampers the recovery process to normal health once ill health has occurred. (4)

### 3. Adolescents and risk of substance use disorder – Neurobiological considerations

Adolescence is a crucial time for social and physiological development and is characterized by

increased risk-taking due partly to the increased incentive to obtain arousal from rewards. They become more susceptible to greater substance use and non-substance addictive behaviours due to developmental changes in the brain circuitry of reward processing, motivation, cognitive control, and stress. (5)

Various neurobiological models attribute this increased risk of substance use and risky behaviours in adolescents to differential developmental rates of specific brain structures and neural circuits during the stage of development. Structures involved in reward processing like basal ganglia, limbic system and orbitofrontal cortex develop early during adolescence, whereas the structures responsible for controlling cognition, emotion and behaviour like the prefrontal cortex develop later in young adulthood. This mismatch leads to an immature frontal circuit and a lack of adequate behavioural control with increased reward-seeking behaviour. This common vulnerability among adolescents doesn't always translate into impulsive decision-making or risky behaviour. The complex interaction between various risk and protective factors comes into play here and can predispose or protect an individual from substance use. In individuals who start taking the substance in adolescence, the same circuits are again involved and, due to sensitisation of reinforcing property of substance, develop problematic substance use. (6)

#### **4. Risk factors for adolescent substance use disorder**

Broadly the risk factors for adolescent substance use can be classified into individual

and environmental factors.

#### **4.1 Individual factors**

Individual factors contributing to substance use disorder include:

##### **4.1.1 Personality traits**

Two disinhibited personality traits of sensation seeking, characterised by higher sensitivity to reward, and impulsivity, characterised by poor behavioural or inhibitory control, have been related to both substance use onset and transition from controlled to compulsive drug seeking and taking(2)(7). In addition, rebellious traits and impairment in emotional regulation have also been associated with substance use. (7)

##### **4.1.2 Externalizing and Internalizing disorders**

Externalising disorders such as attention deficit hyperactivity disorder (ADHD) and conduct disorder or subclinical increases in externalizing traits are linked to increased risk for problem substance use in adolescence. Internalising disorders such as major depression, anxiety or subclinical increases in internalising traits also increase the risk for adolescent problem substance use. Both externalising and internalising factors can co-exist together. Adolescents are more susceptible to substance use when they have externalising problems, emotional dysregulation, negative affect, and internalising problems. (2)

##### **4.1.3 Academic performance**

Adolescents who perform poorly academically are more likely to use drugs and



later abuse them. Academically successful students are more likely to form wholesome bonds with their schools, encouraging them to adopt prosocial behaviours that lower their chance of developing substance use. The lack of this link makes people more prone to abnormal behaviours, such as substance abuse(8)

#### 4.1.4 Genetic predisposition

Adolescents with family histories of alcohol or other SUDs are approximately 4 to 8 times more likely to develop an alcohol or other drug use disorder. This family-history-associated risk is amplified in individuals with more biological parents, grandparents, and other family members with SUDs (9)

#### 4.1.5 Lack of perception of harm from drug

An adolescent's understanding of harm associated with drug use, its availability in the neighbourhood and perception of the lack of community or legal enforcement against drugs forms an independent risk factor. This is more so established in studies related to cannabis use. (7)

### 4.2 Environmental factors

The unfavourable environment during the developmental stage has a profound and long-lasting impact on the development of the brain, cognition, behaviour, and the concept of self.

#### 4.2.1 Family factors

Family of origin forms a significant part of an adolescent's environment, and any disturbance within the family of a subsystem can lead to adverse developmental trajectories, including substance use disorder. It includes parental

personality traits and attitudes, behaviours, child-rearing practices, and the nature of the parent-child and marital relationships. (2)(10)

As discussed, heritability studies have already evaluated the risk of SUD in offspring and siblings of SUD. Apart from genetic contribution, a family history of SUD also forms an environmental risk factor. Studies evaluating parental smoking suggested that smoking in offspring is higher and would require a specific intervention to prevent adolescent substance use. (2) Pre and peri-natal substance use is also an independent risk factor for adolescent substance use. This is both genetic and an environmental risk with the interaction of 2 risk factors, i.e. substance use in the mother is noted to affect the parenting/ caregiving ability of the mother as well. (7) This can apply to paternal substance use as well.

Parenting is an essential part of development. Any adversities in parenting/ attachment such as a single parent, separated or divorced parent, distant parent-child attachment, or authoritarian or uninvolved parenting, can lead to adolescent substance use. (10) Family conflict, whether between the parent and partner or parent and offspring, is related to adolescent substance use and dependence. (2) Further, the individual sociodemographic profile of parent, s like low educational status and income, also predisposes adolescents to substance use. (2)(7)

#### 4.2.2 Peer-related factors

Personal characteristics influence the adolescent's decision on peer alliances. Substance usage is directly correlated with both individual elements and peer affiliations. Adolescents who exhibit emotional restraint, hold more unusual

views, and suffer from high levels of affective discomfort, as well as those who associate with rebellious peers, are more prone to take drugs. (10)

The most consistent predictors of teenage substance use across all ethnic groups are peer substance use and peer encouragement of substance use. The relationship between adolescent substance use and peer substance use is reciprocal in that one might be influenced by their peer or find peers who use substance if adolescents are already using the substance. (2)(7) Peer norms that support drug use are also crucial. Adolescents are more inclined to use drugs if they believe that the majority of other teenagers their age do. As a result, drug prevention initiatives can take advantage of this “perception bias” by giving accurate information about the proportion of teenagers who use drugs. (2)

Being a part of the peer group is an essential part. Rejection from a peer group can lead to social isolation, leading to low self-esteem and putting the adolescent at risk again. (7)(10)

### 4.2.3 Adverse childhood experiences (ACE)

Adverse childhood experiences can be a single event or chronic and persistent. ACE can be physical abuse such as violence, sexual abuse or violent maltreatment, or emotional abuse such as bullying, neglect, social isolation or witnessing any traumatic event, including domestic abuse. Adolescent victims may use drugs to ease the painful psychological consequences of victimization and in part, to self-medicate symptoms of post-traumatic stress disorder. (2)(10)

Adverse childhood experiences can lead to blunted stress reactivity. This may be a marker of risk for addiction. An altered motivational and behavioural reactivity to stress that contributes to disinhibited behavioural reactivity and impulsivity, in turn leading to increased vulnerability to substance use (2)

### 4.2.5 Schooling and neighbourhood factors

Schooling influences substance use in adolescents both directly and indirectly. Lack of rules enforcement and low safety level can act as predisposing factors. Indirectly frequent changes in schools and deviant peer groups can also contribute to substance use (2)

Similar to schooling, neighbourhood factors affect adolescent substance use directly and indirectly. The direct effect includes the availability of drug the or offering of a drug to adolescents or lacking social control. Similarly, indirect factors consists of stress, violence and deviant peer group exposure. (2)

## 5. Protective factors

We need to understand that risk and protective factors don't exist in isolation but are correlated and cumulative. Risk factors tend to be positively correlated with one another and negatively correlated to protective factors and vice-a-versa. In other words, people with some risk factors have a greater chance of experiencing even more risk factors, and they are less likely to have protective factors. Also the effect size of various risk and protective factors increases when together.

A better way of understanding protective

factors would be to look at them through the lens of prevention programs. These programs seek to enhance protective factors and to reduce risk factors.

## **5.1 Individual-level protective factors - might include positive self-image, self-regulation, or social competence.**

### **5.1.1 Self-regulation**

Self-regulation refers to the ability to alter one's responses; that is, an adolescent's affect, behavior, and cognition are consistent with an adolescent's ideals, values, morals, and social expectations supportive of the pursuit of his/her long-term best interests. Self-regulated behaviors include the ability to: 1) delay gratification, 2) rapidly transition between different tasks, 3) focus attention, and 4) control one's emotions and behaviors. Adolescence is a critical period for the formation of the brain mechanisms related to self-regulation. Impaired self-regulation (that is, self-dysregulation) is associated with the initiation and maintenance of a variety of risk-taking and health compromising behaviors including the experimentation and use of substances. Research has demonstrated an inverse correlation between self-regulation and substance use. Thus, when self-regulatory skills fail to emerge or are impaired during adolescence the likelihood of serious substance use-related harm is increased.

### **5.1.2 Higher intelligence**

Adolescents with higher intelligence are protected from abuse of substances because of their better ability to negotiate high-risk environments(1,2).

### **5.1.3 Resilient temperament**

One of the inferences from the research on risk factor was that despite having significant number of risk factors, many adolescents did not develop behavioral problems. This led to the concept of resilience. It refers to the higher than expected adaptive functioning despite the presence of multiple risk factors(3,4). The developmental pathways to substance use often highlight the importance of temperament. Salient findings of the Australian temperament project cohort suggested that easy temperament, and a shy and cautious temperament acted as early age protective factors(5).

### **5.1.4 Social and emotional competence**

It refers to the spectrum of interpersonal skills those which aid the person incorporate emotions, thinking, and behaviors to specific social and interpersonal goals (6). Social and emotional competence in childhood is a protective factor, reducing the influence of risk factors for alcohol abuse (Finland cohort study) and illicit drug use (New York cohort study) (7). Its importance is also highlighted by the effectiveness of prevention programs such as Life skill training in reducing substance use in school populations (8).

### **5.1.5 Religiosity**

Religiosity refers to the moral sanctions taught through religious institutions or families, that an individual considers before engaging in problem behaviors. Studies suggest a strong inverse correlation between religiosity and substance use (9). Also, religious parents tend to rear religious children and those parents

share their behavioral values with their children. Likewise, they are more likely to support and monitor their children; they tend to be more actively engaged in authoritative parenting (rather than authoritarian parenting); and, they are more likely to set a strong and clear example of healthier lifestyles (10).

### **5.1.6 Other individual protective factors**

These includes perceived risk of use, a positive sense of self, disapproval and avoidance of peers who use substances, affiliation with prosocial peers, a focus on academic performance, academic competence, healthy social skills, healthy coping styles (including empathy and problem-solving skills), a strong internal locus of control, and the use of psychopharmacotherapy when indicated for attention-deficit/hyperactivity disorder (ADHD) and other possible childhood psychiatric disturbances.(10–13)

## **5.2 Environmental protective factors**

Environmental protective factors can be conceptualised as a combination of parenting practices and adolescents community with a special focus on school and peers.

### **5.2.1 Parenting style and practices**

#### **5.2.1.1 Parenting style**

Parenting style characterized by firm and consistent limit setting, careful monitoring, nurturing, and open communication patterns with children are protective against substance use and other negative outcomes. Authoritative parenting, as opposed to rigid authoritarian parenting, is a key protective factor(14,15).

### **5.2.1.2 Parental Monitoring**

Parental monitoring refers to “parental awareness, watchfulness, and supervision of adolescent activities in multiple domains (i.e., friends, school, and behavior at home), and communication to the adolescent that the parent is concerned about, and aware of, those activities”(16). It involves age-appropriate adult supervision of activities inside and outside the home, enforcing household rules, establishing curfews, and knowing their child’s friends. In a metaanalytic review of longitudinal studies, parental monitoring was recognized as the strongest protective factor for adolescent drinking which was inversely correlated with both delayed alcohol initiation and reduced levels of alcohol use in adolescence (17).

### **5.2.1.3 Family engagement and support**

Adolescents with strong bonding to their parents and a cohesive family might be more motivated to obtain out their parents’ support if they face a substance use problem. In short, a cohesive and loving family not only provides support but also a context to learn, enact, reinforce prosocial coping behaviors. Evidence is mounting to suggest a direct correlation between higher parent adolescent relationship quality and better substance use related outcomes(17–19).

### **5.2.1.4 Parental attitude towards substance use and health**

Parental attitudes toward substance use and health in general represents an indirect means of social modeling for children. A strong belief in maintaining good health and parental

disapproval of substance use were predictors of improved outcomes for substance use (20).

In summary, protective factors related to connectedness to family include cohesive and loving family relationships and a strong and stable attachment to parent. There is also the role of positive parental guidance in the avoidance of substance use with the display of a strong example at home, increased parental presence and, increased parental supervision and monitoring of adolescent's activities with peers with clear and consistent rules of conduct and boundary setting that are followed within the family structure.

## 5.2.2 Community protective factors

### 5.2.2.1 School connectedness

School connectedness has protective effects on substance abuse (21). School protective factors can be divided into: (i) supportive teachers, (ii) high academic aspirations, and (iii) positive academic achievement. Teachers can act as a tremendous source of support especially in situations where there is a lack of familial support. Teachers can provide a unprejudiced point of view, and help adolescents feel connected

to school, provide prosocial examples, and buffer negative peer interactions (10).

### 5.2.2.2 Peer relationships

Peer relationships where friends are not engaged in substance use and general school environment and peers disapprove of its use is an important protective factor against their use (12,22).

Table 1 summarizes risk and protective factors for adolescent substance use.

## 6. Conclusion

Vulnerability is a dynamic state with a complex interaction between risk and protective factors. Adolescents are generally at higher risk due to neurocognitive status, wherein additional risk factors can predispose them to substance use disorder. Protective factors can reduce the predisposition. Understanding risk and protective factors facilitate clinicians in addressing not only the presenting substance use but also the underlying vulnerability. Preventive measures need to be taken at the individual and community level to reduce risk factors and increase protective factors.

**Table 1: Overview of adolescent risk and protective factors**

Risk factors		Protective factors
<ul style="list-style-type: none"> <li>– Externalizing and internalizing disorders</li> <li>– High impulsivity, sensation seeking</li> <li>– Rebelliousness and alexithymia</li> <li>– Low intellectual development</li> <li>– Lack of perception of harm from substances</li> <li>– Family history of SUD</li> <li>– Adverse childhood experience</li> <li>– Poor academic performance</li> </ul>	<p><b>Individual Factors</b></p>	<ul style="list-style-type: none"> <li>– Higher self-efficacy</li> <li>– Average intelligence</li> <li>– Good social skills</li> <li>– Spirituality/religiosity</li> <li>– Good coping skills and problem-solving</li> </ul>
<ul style="list-style-type: none"> <li>– Parental SUD</li> <li>– Parenting style</li> <li>– Parental psychopathology</li> <li>– Single parent</li> <li>– Parental separation</li> <li>– Parental neglect/ Authoritarian style</li> <li>– Low parental education</li> <li>– Family mental illness</li> <li>– Poverty</li> <li>– Overcrowding</li> </ul>	<p><b>Family Factors</b></p>	<ul style="list-style-type: none"> <li>– Authoritative parenting style</li> <li>– Fewer siblings</li> <li>– Parental presence</li> <li>– Family cohesion</li> <li>– Parental value towards schooling and risk behaviours</li> </ul>
<ul style="list-style-type: none"> <li>– Deviant peer group</li> <li>– Social isolation from peers</li> <li>– Neighborhood</li> <li>– Cultural factors</li> <li>– Exposure to violence</li> <li>– Easy access to substances</li> </ul>	<p><b>Community Factors (Includes peer, school, neighbourhood as well as cultural factors)</b></p>	<ul style="list-style-type: none"> <li>– Peers with prosocial norms</li> <li>– School with drug policies</li> <li>– Access to role models</li> <li>– Access to healthcare and education</li> <li>– Employment opportunities for adults</li> <li>– Clear expectation of behaviours</li> </ul>

## 7. References

- a) Hammond CJ, Mayes LC, Potenza MN. Neurobiology of adolescent substance use and addictive behaviors: treatment implications. *Adolesc Med State Art Rev*. 2014 Apr;25(1):15-32. PMID: 25022184; PMCID: PMC4446977.
- b) Brook, J.S., Pahl, K., Brook, D.W., Morojele, N.K. (2015). Risk and Protective Factors for Substance Use and Abuse. In: el-Guebaly, N., Carrà, G., Galanter, M. (eds) *Textbook of Addiction Treatment: International Perspectives*. Springer, Milano. [https://doi.org/10.1007/978-88-470-5322-9\\_101](https://doi.org/10.1007/978-88-470-5322-9_101)
- c) Beth Clark, Nina Preto. Exploring the concept of vulnerability in health care *CMAJ* Mar 2018, 190 (11) E308-E309; DOI: 10.1503/cmaj.180242
- d) Blum RW, McNeely C, Nonnemaker J. Vulnerability, risk, and protection. *J Adolesc Health*. 2002 Jul;31(1 Suppl):28-39. doi: 10.1016/s1054-139x(02)00411-1. PMID: 12093609.
- e) Nock NL, Minnes S, Alberts JL. Neurobiology of substance use in adolescents and potential therapeutic effects of exercise for prevention and treatment of substance use disorders. *Birth Defects Res*. 2017 Dec 1;109(20):1711-1729. doi: 10.1002/bdr2.1182. PMID: 29251846; PMCID: PMC5751741.
- f) Edalati H, Doucet C, Conrod PJ. A Developmental Social Neuroscience Model for Understanding Pathways to Substance Use Disorders During Adolescence. *Semin Pediatr Neurol*. 2018 Oct;27:35-41. doi: 10.1016/j.spen.2018.03.005. Epub 2018 Jun 20. PMID: 30293588.
- g) Nawi, A.M., Ismail, R., Ibrahim, F. et al. Risk and protective factors of drug abuse among adolescents: a systematic review. *BMC Public Health* 21, 2088 (2021). <https://doi.org/10.1186/s12889-021-11906-2>
- h) Kendler KS, Ohlsson H, Fagan AA, Lichtenstein P, Sundquist J, Sundquist K. Academic Achievement and Drug Abuse Risk Assessed Using Instrumental Variable Analysis and Co-relative Designs. *JAMA Psychiatry*. 2018;75(11):1182-1188. doi:10.1001/jamapsychiatry.2018.2337
- i) Acheson A. Behavioral processes and risk for problem substance use in adolescents. *Pharmacol Biochem Behav*. 2020 Nov;198:173021. doi: 10.1016/j.pbb.2020.173021. Epub 2020 Aug 29. PMID: 32871140; PMCID: PMC7554110.
- j) Whitesell M, Bachand A, Peel J, Brown M. Familial, social, and individual factors contributing to risk for adolescent substance use. *J Addict*. 2013;2013:579310. doi: 10.1155/2013/579310. Epub 2013 Mar 20. PMID: 24826363; PMCID: PMC4008086.

## 8. References for protective factors

- Hawkins JD, Catalano RF, Miller JY. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance abuse prevention. *Psychol Bull* [Internet]. 1992 [cited 2022 Aug 16];112(1):64-105. Available from: <https://pubmed.ncbi.nlm.nih.gov/1529040/>
- Werner EE, Smith RS. Overcoming the odds : high risk children from birth to adulthood. 1992;280.
- Masten AS. Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. *Dev Psychopathol* [Internet]. 2011 May [cited 2022 Aug 16];23(2):493-506. Available from: <https://www.cambridge.org/core/journals/development-and-psychopathology/article/abs/resilience-in-children-threatened-by-extreme-adversity-frameworks-for-research-practice-and-translational-synergy/DEC2D214DEF5E55769B1A5E8D33CA9D3>
- Masten AS. Resilience in children: Vintage Rutter and beyond: revisiting the classic studies. G. Balint, Antala B, Carty C, Mabieme J-MA, Amar IB, Kaplanova A, editors. *Uniw śląski* [Internet]. 2012 [cited 2022 Aug 16];204-21. Available from: <https://experts.umn.edu/en/publications/resilience-in-children-vintage-rutter-and-beyond-revisiting-the-c>
- Williams B, Sanson A, Toumbourou J SD. Patterns and predictors of teenagers' use of licit and illicit substances in the Australian Temperament Project cohort. Melbourne: University of Melbourne. 2000;
- Masten AS, Best KM, Garmezy N. Resilience and development: Contributions from the study of children who overcome adversity. *Dev Psychopathol* [Internet]. 1990 [cited 2022 Aug 16];2(4):425-44. Available from: <https://www.cambridge.org/core/journals/development-and-psychopathology/article/abs/resilience-and-development-contributions-from-the-study-of-children-who-overcome-adversity/9D84A6A2339F9B66E7B0B0D910F841CC>

7. Loxley W, Toumbourou JW, Stockwell T, Haines B, Scott K, Godfrey C, et al. The prevention of substance use, risk and harm in Australia: a review of the evidence. 2004 [cited 2022 Aug 16]; Available from: [https://espace.curtin.edu.au/bitstream/20.500.11937/30403/2/19135\\_19135.pdf](https://espace.curtin.edu.au/bitstream/20.500.11937/30403/2/19135_19135.pdf)
8. Botvin GJ, Griffin KW. Life skills training: preventing substance misuse by enhancing individual and social competence. *New Dir Youth Dev* [Internet]. 2014 Mar 1 [cited 2022 Aug 16];2014(141). Available from: <https://pubmed.ncbi.nlm.nih.gov/24753278/>
9. Marsiglia FF, Kulis S, Nieri T, Parsai M. God Forbid! Substance Use Among Religious and Nonreligious Youth. *Am J Orthopsychiatry* [Internet]. 2005 Oct [cited 2022 Aug 16];75(4):585. Available from: [/pmc/articles/PMC3043382/](https://pubmed.ncbi.nlm.nih.gov/articles/PMC3043382/)
10. Kliewer W, Murrelle L. Risk and protective factors for adolescent substance use: findings from a study in selected Central American countries. *J Adolesc Health* [Internet]. 2007 May [cited 2022 Aug 16];40(5):448–55. Available from: <https://pubmed.ncbi.nlm.nih.gov/17448403/>
11. Brown EC, Catalano RF, Fleming CB, Haggerty KP, Abbott RD. Adolescent substance use outcomes in the Raising Healthy Children project: a two-part latent growth curve analysis. *J Consult Clin Psychol* [Internet]. 2005 Aug [cited 2022 Aug 16];73(4):699–710. Available from: <https://pubmed.ncbi.nlm.nih.gov/16173857/>
12. Kulig JW. Tobacco, alcohol, and other drugs: the role of the pediatrician in prevention, identification, and management of substance abuse. *Pediatrics* [Internet]. 2005 Mar [cited 2022 Aug 16];115(3):816–21. Available from: <https://pubmed.ncbi.nlm.nih.gov/15741395/>
13. MARIA E. McGEE AND AVRAM H. MACK. Prevention of Adolescent Psychoactive Substance Use. In: *Clinical Handbook of Adolescent Addiction* (2012). 2012. p. 125–6.
14. Becoña E, Martínez Ú, Calafat A, Juan M, Fernández-Hermida JR, Secades-Villa R. Parental styles and drug use: A review. <https://doi.org/10.3109/096876372011631060> [Internet]. 2011 Feb [cited 2022 Aug 16];19(1):1–10. Available from: <https://www.tandfonline.com/doi/abs/10.3109/09687637.2011.631060>
15. Čablová L, Pazderková K, Mioviský M. Parenting styles and alcohol use among children and adolescents: A systematic review. *Drugs Educ Prev Policy* [Internet]. 2014 [cited 2022 Aug 16];21(1):1–13. Available from: [/record/2014-02904-001](https://pubmed.ncbi.nlm.nih.gov/record/2014-02904-001)
16. Dishion TJ, McMahon RJ. Parental monitoring and the prevention of child and adolescent problem behavior: a conceptual and empirical formulation. *Clin Child Fam Psychol Rev* [Internet]. 1998 [cited 2022 Aug 16];1(1):61–75. Available from: <https://pubmed.ncbi.nlm.nih.gov/11324078/>
17. Yap MBH, Cheong TWK, Zaravinos-Tsakos F, Lubman DI, Jorm AF. Modifiable parenting factors associated with adolescent alcohol misuse: a systematic review and meta-analysis of longitudinal studies. *Addiction* [Internet]. 2017 Jul 1 [cited 2022 Aug 16];112(7):1142–62. Available from: <https://pubmed.ncbi.nlm.nih.gov/28178373/>
18. Rusby JC, Light JM, Crowley R, Westling E. Influence of Parent–Youth Relationship, Parental Monitoring, and Parent Substance Use on Adolescent Substance Use Onset. *J Fam Psychol* [Internet]. 2018 Apr 1 [cited 2022 Aug 16];32(3):310. Available from: [/pmc/articles/PMC5920742/](https://pubmed.ncbi.nlm.nih.gov/articles/PMC5920742/)
19. Visser L, De Winter AF, Reijneveld SA. The parent-child relationship and adolescent alcohol use: A systematic review of longitudinal studies. *BMC Public Health* [Internet]. 2012 Oct 20 [cited 2022 Aug 16];12(1):1–16. Available from: <https://bmcpubhealth.biomedcentral.com/articles/10.1186/1471-2458-12-886>
20. Nawi AM, Ismail R, Ibrahim F, Hassan MR, Manaf MRA, Amit N, et al. Risk and protective factors of drug abuse among adolescents: a systematic review. *BMC Public Health* [Internet]. 2021 Dec 1 [cited 2022 Aug 16];21(1):1–15. Available from: <https://bmcpubhealth.biomedcentral.com/articles/10.1186/s12889-021-11906-2>
21. Weatherson KA, O'Neill M, Lau EY, Qian W, Leatherdale ST, Faulkner GEJ. The Protective Effects of School Connectedness on Substance Use and Physical Activity. *J Adolesc Health* [Internet]. 2018 Dec 1 [cited 2022 Aug 16];63(6):724–31. Available from: <https://pubmed.ncbi.nlm.nih.gov/30269908/>
22. SUIJ J, PARERA N. Protective factors against drug use among young adolescents. *J Adolesc Health* [Internet]. 2004 Feb 1 [cited 2022 Aug 16];34(2):135. Available from: <http://www.jahonline.org/article/S1054139X03004300/fulltext>



## Substance Abuse Management in Office Practice



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Adolescence is a period of experimentation/ exploration as well as opportunity. Many risky behaviours like substance use have their onset in adolescence. Substance use before the age of 18 years is associated with an eightfold greater likelihood of developing substance dependence in adulthood<sup>1</sup>. Substance use disorder (SUD) is associated with problems in all spheres of an adolescent's life namely individual, family, school, and society. It can cause a fall in academic performance, juvenile delinquency, rape, promiscuous sexual behaviour, HIV, hepatitis, family conflict, runaway behaviour, depression, or suicide attempts<sup>2</sup>. Drug-crime correlation has been noted with the consumption of substances, for example, cannabis intake is linked with murder, inhalants with rape, and opioids with snatching-related crimes<sup>3</sup>. Children affected by substance abuse are considered as 'children in need of care and protection under the Juvenile Justice Act, 2015. Every year, the international day against drug Abuse and illicit trafficking is celebrated on June 26 with the aim to sensitize

individuals and communities around the challenge of drug abuse and addiction as well as its impact.

Based on effects on the central nervous system, drugs are classified as depressants, hallucinogens and stimulants<sup>4</sup>.

1. Depressants: These substances decrease arousal by decreasing activity in the CNS. They include sedative-hypnotics such as benzodiazepines and barbiturates, alcohol, inhalants, and opioids.
2. Stimulants: This group includes drugs that stimulate the CNS and produce arousal and behavioural activation. These include cocaine, amphetamines, caffeine, and nicotine.
3. Hallucinogens/ Psychedelics: These are drugs that produce psychedelic or mind-altering experiences, such as perceptual abnormalities like hallucinations. They include psilocybin, lysergic acid diethylamide (LSD), and dimethyltryptamine (DMT).<sup>5</sup>

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In recent times, e-cigarettes have become popular amongst the youth, even though they have been banned in India. These are battery-powered devices used to smoke or vape nicotine and may be flavoured. Like cigarettes, e-cigarettes may result in nicotine addiction and toxicity. E-cigarettes use is also associated with acute lung injury and death.

### Challenges in office management of SUD in adolescents:

Adolescents are almost always brought by a parent or guardian to the pediatrician's office, and most of them do not seek help on their own. Some problems which frequently occur in such situations are as follows:

- The child may not want to discuss about substance use in front of the guardian.
- The child may not perceive substance use as a cause for concern.
- The child may want to continue using substances as it serves some purpose, such as being accepted in a particular peer group, coping with stressful situations or mood.
- The child may be afraid of being reprimanded about using substances.
- Substance use may be a consequence of developmental vulnerabilities such as ADHD, adverse childhood events, inconsistent parenting, poor social support, poverty, or unidentified primary mental illness such as depression, bipolar disorder, anxiety disorders and so on.

### Approach to an adolescent with substance use presenting to the OPD:

It is important to maintain a high index of suspicion for substance use in adolescents, and to identify vulnerabilities which may potentially lead to substance use. However, approaching the interview with a non-judgmental, empathetic stance is necessary in order to overcome the

above-listed challenges.

- The adolescent may feel more comfortable to discuss about substances when interviewed alone, without the presence of the guardian. Permission may be sought from the adolescent to conduct part of the interview alone.
- Discussing about confidentiality beforehand may help the child to speak more openly about substance use.
- Ask the child what their perception about substance use is, and what they plan to do about it.
- Ask permission to provide information and facts about various substances and their short and long-term negative effects.
- Once confidence of the child is gained, detailed evaluation can be started, to identify if the child meets the criteria for substance use disorder, according to the Diagnostic and Statistical Manual, 5th Edition (DSM 5)<sup>6</sup> or the International Classification of Diseases, 10th Edition (ICD-10). [Table 3]

### Role of the Paediatrician in adolescent SUD:

The paediatrician is often the first point of contact with the child and parents. The child may be brought with various complaints such as academic decline, absenteeism, rule-breaking at school, decreased interaction with friends and family, anger outbursts, physical aggression, sleep disturbance, decreased appetite, discrete change in behaviour compared to usual self, being caught with substances or paraphernalia. Evaluation and management would consist of the following:

#### A: At the individual level

- Step 1: Screening and initial evaluation
- Step 2: Therapeutic interventions
- Step 3: Referral and liaison with other services.

## B: At the parental level

## C: At the community level

### At the individual level:

#### Step 1: Screening and initial evaluation for SUD

All adolescents should be screened for SUD. The HEADSSS interview focuses on the assessment of the Home environment, Education and employment, Eating, peer-related Activities, Drugs, Sexuality, Suicide/depression, and Safety from injury and violence to screen for risk and protective factors, co-morbid high-risk behaviour, mental disorders and involvement with the juvenile justice system. During HEADSSS screening of an adolescent, anticipatory guidance reinforcing avoidance of drug use should be given to abstinent adolescents. Suggested screening questions are-‘Do any of your friends or family members use cigarettes, alcohol or drugs?’ ‘Has anybody asked you or forced use to use drugs?’ ‘Sometimes young people use drugs, what do you feel about drug use?’

In case of adolescents using or having used substances, the CRAFFT questionnaire can be used for initial assessment of substance use in adolescents. It is a free-to-use substance use screening tool for adolescents, validated for use between the ages of 12-21 years.<sup>7</sup>

### The CRAFFT Questionnaire

- Have you ever ridden in a CAR driven by someone (including yourself) who was “high” or had been using alcohol or drugs?
- Do you ever use alcohol or drugs to RELAX, feel better about yourself, or fit in?
- Do you ever use alcohol or drugs while you are by yourself, or ALONE?
- Do you ever FORGET things you did while using alcohol or drugs?
- Do your FAMILY or FRIENDS ever tell you that you should cut down on your drinking or drug use?
- Have you ever gotten into TROUBLE while you were using alcohol or drugs? Scoring and Interpretation: Score (1) point for each “YES” answer. A score of (2) or more indicates the need for a detailed assessment.

Along with this, other non-specific signs (Box 1), and substance-specific signs (Table 2) are additional features that can be evaluated in the initial screening. Specific drug history including the type of the drug/s used, the extent of use, setting of use, and degree of social, educational, and vocational disruption should be elicited.

### Box 1: Nonspecific flag signs

- Efforts to mask the smell as evidenced by frequent rinsing and washing hands, use of perfume or deodorant, chewing mint
- Avoiding eye contact and hug by parents.
- New set of (senior) friends
- Social isolation with loss of interest in activities the teenager enjoyed earlier.
- Scholastic deterioration.
- Poor hygiene altered appetite and sleep pattern.
- Changed preference for movies and music which depict high action and drug abuse.
- Unexplained irritability and increasing conflicts with parents and teachers.
- Spending extra time in the toilet.
- Stealing money/valuables from the house

**Table 2: Drug-specific clues**

Drug used	Physical symptoms	Look for
Alcohol	slurred speech, relaxed inhibitions, impaired coordination, euphoria during intoxication.  Restlessness, anxiety, tremors, tachycardia, diaphoresis, sleep disturbance during withdrawal.	Smell of alcohol on clothes or breath, intoxicated behavior, hangover, glazed eyes
Tobacco	Irritability, frustration, anxiety, restlessness, depressed mood, increased appetite during withdrawal.	Smell of tobacco in breath, tobacco staining in oral cavity, and burns at tips of fingers.
Marijuana	Red conjunctiva, increased appetite, dry mouth, tachycardia during intoxication.,  Irritability, anxiety, sleep disturbance, tremors, headache, pain abdomen, chills during withdrawal.	Rolling papers, pipes, dried plant material, odour of burnt hemp rope, roach clip
Hallucinogens (Lysergic acid diethylamide, Psilocybin, MDMA)	Altered mood and perceptions focus on detail, anxiety, panic, nausea, synaesthesia ( ex: smell colours, see sounds) in intoxication.	Capsules, tablets, microdots, blotter squares
Opioids (opium, heroin, codeine)	Euphoria, drowsiness, insensitivity to pain, pinpoint pupil, in intoxication. Cold moist skin, runny nose, increased tearing of eyes, gooseflesh skin, restlessness, body pains, nausea, loose stools during withdrawal.	Needle marks on arms, needles, syringes, spoons, “cough syrup”, capsules and tablets
Stimulants (cocaine, amphetamines,)	Alertness, talkativeness, wakefulness, hypervigilance, stereotyped behaviours, increased blood pressure, chest pain, tachycardia, loss of sleep and appetite, hyperactivity in intoxication.  Fatigue, increased appetite, insomnia or hypersomnia, dysphoric mood, vivid dreams during withdrawal.	Glass vials, glass pipes, razor blades, white crystalline powder, syringes, needle marks , Pills and capsules
Date rape drugs e.g. Flunitrazepam,  Barbiturates	Amnesia	Tablets, ampules, syringes

**Table 3: DSM 5 has the following criteria for diagnosing substance use disorders:**

1. Substance is often taken in larger amounts and/or over a longer period than the patient intended.
2. Persistent attempts or one or more unsuccessful efforts made to cut down or control substance use
3. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from effects.
4. Craving or strong desire or urge to use the substance
5. Recurrent substance use resulting in a failure to fulfil major role obligations at work, school, or home.
6. Continued substance use despite having persistent or recurrent social or interpersonal problem caused or exacerbated by the effects of the substance.
7. Important social, occupational or recreational activities given up or reduced because of substance use.
8. Recurrent substance use in situations in which it is physically hazardous.
9. Substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
10. Tolerance, as defined by either of the following: <ul style="list-style-type: none"> <li>a. Markedly increased amounts of the substance in order to achieve intoxication or desired effect.</li> <li>b. Markedly diminished effect with continued use of the same amount.</li> </ul>
11. Withdrawal, as manifested by either of the following: <ul style="list-style-type: none"> <li>a. The characteristic withdrawal syndrome for the substance.</li> <li>b. The same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms.</li> </ul>
<b>Mild:</b> 2-3 symptoms present
<b>Moderate:</b> 4-5 symptoms present
<b>Severe:</b> 6+ symptoms present

## Step 2: Therapeutic Interventions

In 2016, the American Academy of Paediatrics endorsed the simple to use and implement, Screening Brief Intervention Referral to Treatment (SBIRT) model to manage substance use in adolescence. The SBIRT model is used along with the Screening to Brief Intervention (S2BI) tool<sup>8</sup>, which uses a stem question and forced-response options (none, once or twice, monthly, and weekly or more) in a sequence to reveal the frequency of past-year use of tobacco, alcohol, and marijuana. If these questions elicit positive responses, then further questions on prescription drugs, illegal drugs, inhalants, and herbs or synthetic drugs are asked.

- Use the Screening to Brief Intervention Tool (S2BI Tool) given below: <https://www.mcpap.com/pdf/S2Bi%20Toolkit.pdf>

### Screening

Quickly assess the severity of substance use and identify the appropriate level of treatment.

### Brief Intervention

Increase insight and awareness of substance, motivation toward behavioral change.

### Referral to Treatment

Provide those identified as needing more extensive treatment with access to specialty care.

## Management according to the severity of drug use is as follows:

1. No substance use: Paediatricians should give positive reinforcement, encourage being 'drug-free' and discuss the risks of drug use and skills to withstand negative peer pressure.
2. No substance use disorder (SUD) is when the adolescent has used the substances

only once or twice in the past 1 year. The pediatrician should give brief advice regarding the consequences of drug use. Discuss and deal with 'stressors' that trigger drug usage and reduce other risky behaviour.

3. Mild/moderate SUD is when the adolescent admits to monthly use. Here the paediatrician should give motivational intervention. This is based on the principles of expressing empathy, developing discrepancy between life goals and the need to use drugs which could be stumbling blocks towards reaching the goals, enhancing self-efficacy to resist drug use, and rolling with resistance if the adolescent refuses to get motivated to decrease/ stop drug use.
4. Severe SUD is when the adolescent uses substances weekly or daily. Paediatrician should refer such cases to an adolescent friendly psychiatrist for cognitive behaviour therapy and motivational intervention. Family therapy in the form parental support, love, better communication, reduced blame and encouragement for the change should also be planned.

## Step 3: Referral and liaison with other services

Adolescents with severe SUD, severe withdrawal symptoms, polysubstance use, complications of SUD can be referred to psychiatry or addiction medicine setups, where facilities will be available to address above issues and provide substitution therapy and detoxification where necessary. Non-pharmacological interventions such as motivational interviewing and relapse prevention therapy can also be initiated by clinical psychologists. Psychiatric social workers can work with the family in terms of addressing parenting styles, negative expressed emotions and family discord.

### B: At the parental level

In a parental guidance session, the following tips could be given.

- Teach children to be goal oriented and in tune with their culture and beliefs. Provide a loving and supportive environment. Be a role model, avoid using drugs and seek medical help early if already 'on' drugs and to discourage even casual use of drugs
- Use an authoritative parenting style and set 'clear limits'. Monitor behavior, media exposure, and peer group. Have 'realistic expectations' and teach life skills: enhance self-esteem, develop the coping, assertive, critical thinking, and communication skills. Ensure a healthy lifestyle and appropriate sleep and media hygiene.
- Screen and seek early treatment for comorbid disorders. Look for 'flag signs' of substance abuse. Make it clear to the child that they can approach parents and punitive action will not be taken in case of problems.

## C: At the community level

At the community level, School-based drug prevention programs form the cornerstone of preventive interventions.

- The school authorities and teachers should be sensitized about ensuring school connectedness, to emphasize on all round development, to teach life skills, to screen and refer learning disorders and other emotional problems as early as possible, to have regular parent-teacher meetings, to have a 'drug-free' environment, to look for 'flag signs' of drug use and define a clear and usable drug abuse prevention module in the school and implement it.
- They should involve the students and parents in the formulation, implementation, and follow-up process.
- A non-judgemental, empathetic, approachable school counsellor should be appointed, who can identify problems and make appropriate

referrals to pediatric, psychiatric and addiction medicine services.

## Conclusions

Substance use disorder is not being given much importance in pediatric office practice. Substance abuse is a medico-social-economic problem that can start during adolescent life and track into adulthood. Early identification and intervention will prevent progression to dependence and subsequent negative consequences of substance use. Health professionals need to partner with parents, schools, mental health professionals, and the community to prevent. Treatment requires a multidisciplinary approach along with parental and peer support.

## REFERENCES:

1. Tims FM, Dennis ML, Hamilton N, J Buchan B, Diamond G, Funk R, et al. Characteristics and problems of 600 adolescent cannabis abusers in outpatient treatment. *Addiction*. 2002;97(suppl 1):46-57.
2. Hingson RW, Zha W. Age of drinking onset, alcohol use disorders, frequent heavy drinking, and unintentionally injuring oneself and others after drinking. *Pediatrics*. 2009;123(6):1477-1484.
3. Shuja QS, Goel RK, Jagjeet S, Ahluwalia SK, Pathak R, Bashir H. Prevalence and pattern of substance abuse among school children in Northern India: A rapid assessment study. *Int J Med Sci Public Health* 2013; 2:273-82.
4. Galagali PM, Somashekar AR. Substance Use in Adolescence. *Mission Kishore Uday Manual 2018-2019*; 48-52
5. Koob GF, Arends MA, Le Moal M. *Drugs, addiction, and the brain*. Academic Press; 2014 Jul 12.
6. American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders (5th edition)*. Arlington, VA: American Psychiatric Publishing.
7. Knight JR, Sherritt L, Shrier LA, Harris SK, Chang G. Validity of the CRAFFT substance abuse screening test among adolescent clinic patients. *Archives of pediatrics & adolescent medicine*. 2002 Jun 1;156(6):607-14.
8. Levy S, Weiss R, Sherritt L, et al. An electronic screen for triaging adolescent substance use by risk levels. *JAMA Pediatr*. 2014;168(9):822-828

# Motivational Interviewing for Pediatricians



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## Introduction to Motivational Interviewing (MI)

MI is a collaborative, person-centered form of guiding to elicit and strengthen motivation for change (Miller & Rollnick, 2002). MI should not be viewed as a technique, trick, or something to be done to people to make them change. Rather, it is a gentle, respectful method for communicating with others about their difficulties with initiating change and discussing possibilities to engage in different, healthier behaviors that are in accord with their own goals and values. There are several ways to include MI in clinical work, ranging from MI in brief settings like a busy pediatrician's clinic to using MI as a starting platform or gateway to further treatments and interventions.

## Indications for MI

When the person expresses low motivation, hesitancy to engage in treatment, or difficulty in changing behaviour.

## Principles of MI

The 4 principles of MI are to: (1) express empathy, (2) develop discrepancy between the person's values and goals and their current problem behaviours, (3) 'roll' with resistance by exploring the adolescent's point of view, emphasizing personal choice and avoiding arguments, and (4) support self-efficacy by reinforcing their confidence in their ability to effect change.

## Suitability of MI for adolescent substance users

Research suggests that MI is efficacious in improving substance use in adolescents. There are several reasons why MI is a promising approach for young people with substance use problems. First, MI is most appropriate for individuals who have not yet reached the severe end of the spectrum of a particular health risk behavior. In general, young people, because of their relative youth, have not experienced the extent of physical and psychosocial consequences of drinking that many adults have experienced. Secondly, adolescents rarely admit to or recognize alcohol use problems, and seldom seek treatment on their own, indicating the likelihood of low baseline motivation for change. MI's use of motivational enhancement strategies in a nonjudgmental and nonconfrontational style may be particularly useful for engaging young people who have little motivation to change. Last, MI's underlying assumption that self-change is the predominant pathway to making positive changes to drinking behaviors is concurrent with one of the primary developmental tasks during adolescence—self-development. Adolescents will be more convinced by arguments directing them toward change that they have thought of themselves.



## Adapting MI for use in a busy pediatrician's clinic

Pediatricians are often the first point of contact for an adolescent with a substance use problem and are therefore critically positioned to draw a teenager into the health care system and prevent the downward spiral into severe substance dependence. As it is not usually possible to conduct in depth therapy in a busy clinic, the remainder of this article focuses on how to engage a reluctant adolescent during a brief clinical encounter which will facilitate referral and continued care in specialized substance use clinics.

### Initial Engagement

It is assumed that the one-on-one interview with the teenager occurs after the clinician has some background regarding the adolescent and has a sense of what the problem areas are.

The opening moments are extremely important to form a connection with the adolescent and paves the way for the interventions to follow. The so called 'spirit' of MI characterized by a collaborative stance with the adolescent, evocation of ideas and 'change talk' from the teenager (instead of being prescriptive) resulting in the youngster feeling that he has some autonomy in decision making lies at the heart of MI and should permeate the session from beginning to end.

The session can be introduced as an opportunity for the young person to understand their own pattern of substance use and to spend some time, if they are interested, talking about ways to avoid problems related to use of substance. Practitioners should emphasize that they will not tell the young person what to do; rather, it is up to the young person to make choices about using substances. In the case where a recent event (such as medical treatment for intoxication or an alcohol-related injury) led to the referral, circumstances of this event, including how much

the young person consumed, who he or she was with, and what type of problem resulted can be reviewed as an initial step.

The initial phase of the interview also provides an opportunity to minimize defensiveness. The practitioner should present as empathic, concerned, nonauthoritarian, and non-judgmental, a style that is central to MI. Open-ended questions, reflective listening, affirmations, and summaries (can be remembered by the mnemonic 'OARS') are key MI strategies used to build rapport early in a visit. Open-ended questions help the practitioner develop an understanding of the young person's recent patterns of substance use and problems that developed. An example of an open-ended question might be 'Can you tell me about the impact of smoking on your life?' as opposed to 'You do agree that smoking has a detrimental impact on health, right?' which is a closed ended question. It is also important to discuss parents' and friends' attitudes toward substance and how those attitudes might affect their own substance use behaviours. It is important that you be respectful of the young person's experiences, and not make disapproving statements about the young person's behaviour. Affirmations express appreciation eg: I really appreciate your being so honest with me! Affirmations should be genuine and used sparingly; overuse sounds inauthentic. Reflective listening calls for a warm, non-judgmental restatement, enhancement, or expansion of what your patient has said. Younger adolescents may respond better to reflections of emotion which essentially means to point out the emotions that the patient may be expressing implicitly. For example, in the case of an adolescent seeking to cut down on drinking and expressing concerns about missing classes due to his problem drinking, a reflection of emotion might be: "You're disappointed and upset when you miss out on things like participating in sports or classes because of your drinking." Summaries can be used during the process of exploration to gather together the patient's statements regarding his thoughts and feelings.

## Exploration and enhancement of Motivation

Once the assessment of the extent and pattern of substance use is complete and rapport is established, a strategy called 'decisional balance' can constitute the latter half of the session. In this, you ask the young person what he or she likes and does not like about quitting substance. Open-ended questions and reflective listening statements are used to encourage the young person to generate as many likes and dislikes as possible (i.e., pros and cons) and to talk about the effects of substance, positive and negative, that matter to them most.

For patients who are not at all interested in change (precontemplation stage), one could ask about the pros and cons of maintaining the status quo. For patients in precontemplation stage, summarize the 2 sides, presenting the patient's argument for change second, then ask an open-ended question prompting talk about a possible change in behaviour. The dialogue below might be useful for a patient who is not interested in quitting smoking: "I would like to better understand what you see as the "good things" about smoking cigarettes. What do you enjoy or like about it? What else? (Ask until no further "good things" arise, then continue.) What is the other side of that? What are the "not-so-good things" about smoking cigarettes? What else? (Again, ask until no further "not-so-good things" arise.) Then reflect both sides by summarizing - So the good things about smoking are... and the not-so-good things are... Finally, ask your patient to assess: What do you make of this? How does this fit with how you see your smoking and how does it fit in with your future goals? Discrepancy is uncomfortable for anyone. People do not like feeling internally discrepant and will usually work to resolve inconsistencies by changing their behaviour to fit their goals, values, perceived identity, or beliefs. Thus, by this point, the clinician hopes to elicit 'change talk' from the client eg: 'Continuing to smoke will

be incompatible with my dream of representing my school in athletics hence I must quit'.

It is considered acceptable to contribute information towards the decisional balance regarding the harmful effects of continuing substance use if the client is unable to generate any points on his own however in keeping with the collaborative spirit of MI, one should always ask permission before providing any information. For example, "Would you like to know more about \_\_\_\_\_? or Would it be okay if I told you what I thought about this?"

## The Behavior Change Plan

Once convincing 'change talk' (eg: 'I am convinced I should quit alcohol') is forthcoming from the client, it would be appropriate to draft a plan for behavioral change to consolidate the discussion and create a road map for the way forward. A behavior change plan is especially appropriate when the patient is close to readiness for immediate change. Some patients can develop a behavior change plan on their own once they are sufficiently motivated; others will need guidance. A typical behavior change plan includes the following components:

- The changes I want to make are:
- The most important reasons to make these changes are:
- The specific steps I plan to take in making the change are:
- Some people who can support me are:
- They can help me by:
- I will know my plan is working when:
- Things that could interfere with my plan (barriers) and possible solutions include:

Once the individual is armed with a plan for behavioral change one should not expect a smooth road ahead. The path to changing problem behaviors is riddled with many obstacles and

relapses. Clients who appear motivated and start to make changes may find themselves feeling demotivated once again if changes do not occur as quickly as they anticipated. They may find themselves moving backwards hence the clinician must go over the entire process with them once again for as many times as is necessary.

## Conclusion

MI is a useful tool for counselling adolescents in the clinic. The collaborative nature of MI can engender interactions that are mutually rewarding and fun. It is amazing how resourceful adolescents can be when their opinions are elicited and lecturing is eliminated from the office encounter. Thus, MI enables the paediatrician to support the adolescent's autonomy, facilitate development of important life skills like problem solving and decision making and promote healthy choices. Most importantly, problem behaviours like substance use can be effectively addressed as MI promotes a strong alliance between clinician and client which will enhance retention within the health care system and thus nip the problem in the bud before downstream complications ensue.

## References

Miller WR & Rollnick S. (2002). *Motivational Interviewing: Preparing People for Change*. 2nd ed. New York, NY: Guilford Press.

Naar-King S. Motivational interviewing in adolescent treatment. *Can J Psychiatry*. 2011 Nov;56(11):651-7.

Naar-King, S., & Suarez, M. (2011). *Motivational interviewing with adolescents and young adults*. New York: Guilford Press.

## Prevention of Substance Use

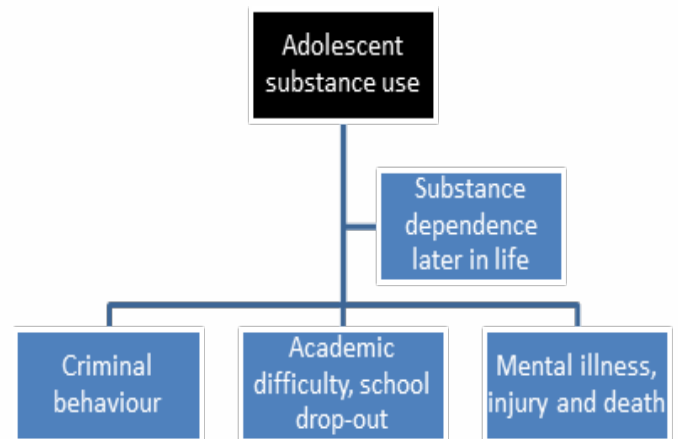


**DR SUNITA MANCHANDA**  
**DR SHYAM SUNDAR**



Teenage substance use prevention is of paramount importance for several reasons. Adolescent brain is still developing and they are in phase of finding their identity, likes, dislikes and are learning life skills from their day to day life. If teens experiment with drugs at an early age due to any reason specially peer pressure, they can unknowingly set themselves up for a potentially life-threatening habit. Adolescents who initiate substance use early tend to develop negative consequences such as higher level of substance use in adulthood, violent behaviour, poor physical health and psychiatric illnesses (Newcomb MD, 2005).

Early use can also be a risk factor for future delinquency. Numerous studies have documented the strong link between alcohol and drug consumption and crime. International data show that prevalence of alcohol, tobacco, and other drug use substantially increases from early to late adolescence. So prevention is an important aspect in this population. Providing a firm foundation and clear message about adverse consequences of substance abuse is critical to teenage substance use prevention (Krystina Murray, 2019).

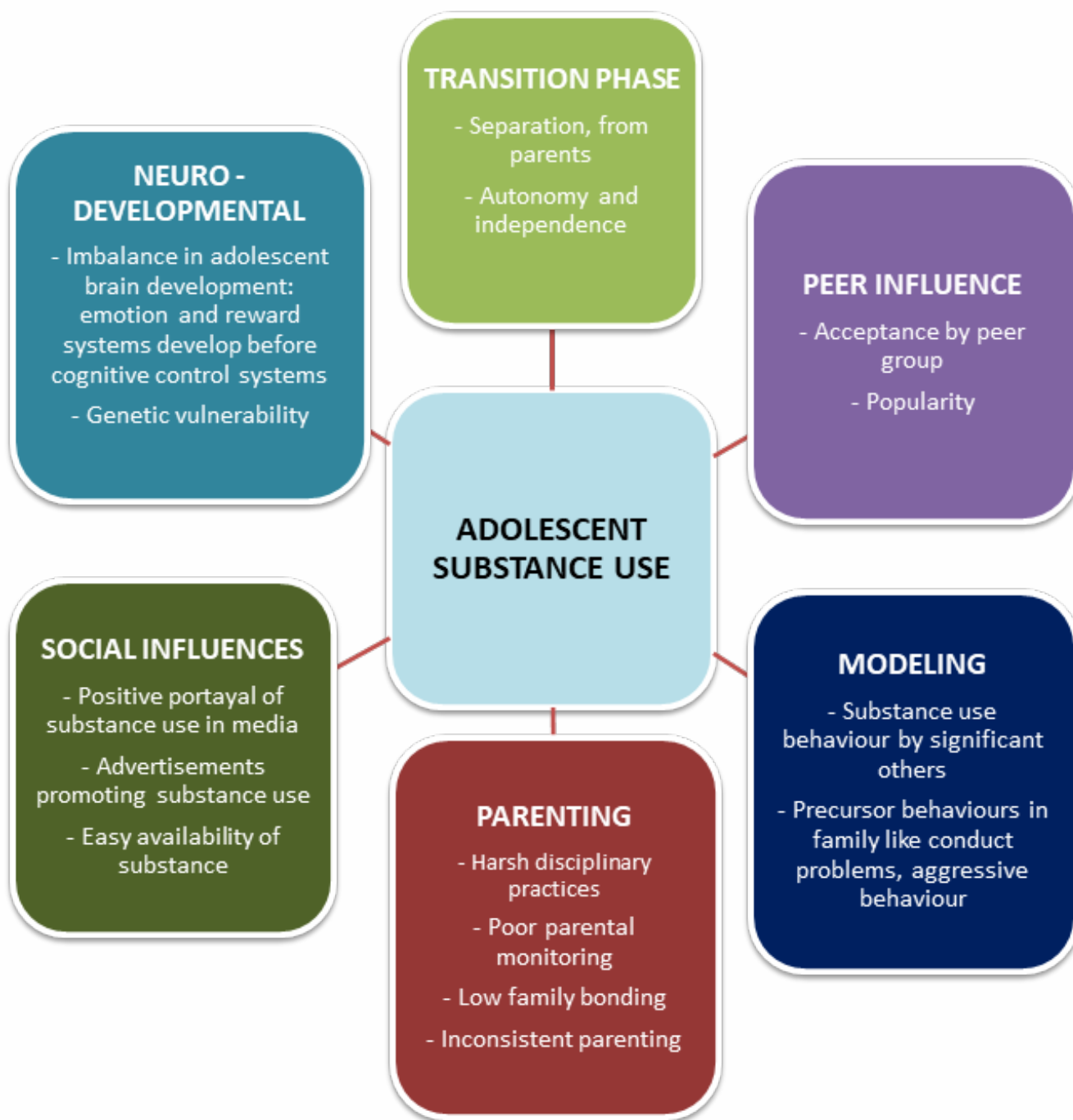


**Fig.1 Flowchart showing consequences of adolescent substance use**

### ETIOLOGICAL MODEL OF ADOLESCENT SUBSTANCE USE

The first step towards prevention of substance use in adolescents is to understand the factors leading on to adolescent substance use. It is often the multitude of these factors that contribute to vulnerability of adolescents to substance use (Gray, 2018).

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**Fig.2 – Flowchart showing etiological model of adolescent substance use (Botvin, 2019; Squeglia, 2017)**

## INTERVENTIONS FOR PREVENTION OF SUBSTANCE USE:

Actually prevention can be considered as a health promotion effort. We know that addiction can act as progressive, chronic, and fatal disease. Hence prevention need to focus on creating population level changes in context with their culture and tradition so

that our youth can live a meaningful and productive life.

Only Information dissemination programs involving pamphlets describing side effects of drugs, fear creating programs, moral teaching programs does not seem to be effective with today's generation. It needs a comprehensive and multi-

sectorial approach involving national and state health agencies, community organizations, schools and more important citizen participation in community activity to prevent alcohol and other drug problems.

There are many effective substance abuse prevention interventions which can be implemented in a variety of settings. Following are various levels of prevention-

1. Primary prevention: This aims at preventing the initiation of substance abuse or delaying the age of initiation . Primary prevention targets young people before they start using or experimenting with substances.

2. Secondary prevention : These programs target those individuals who have already started using substances.

3. Tertiary prevention: It involves the treatment of people who have already been affected by a drug abuse, eg. Rehabilitation and relapse prevention program.

Prevention can also be conceptualized as universal, selective and indicated interventions based on target audience.

1. Universal interventions cater to the general population to deter or delay substance use;

2. Selective interventions focus on children at high risk of substance use, eg: children of adults with substance use disorder;

3. Indicated interventions target individuals already engaging in substance use and are at high risk of complications (Botvin, 2019).

Interventions can be delivered at family, school, individual, community and policy level. The National Institute on Drug Abuse (NIDA) has identified 16 key principles for prevention programs based on risk and protective factors, the type of program, and the delivery of the program (NIDA, 2011). The prevention

approaches address salient risk factors and protective factors towards substance use at various levels individual, family, and community levels. These are based on psychological theories about aetiology of substance use.

## FAMILY INTERVENTIONS

Most of the family interventions focus on the parent-child dyad and involves aspects like parental monitoring, supervision, improving communication patterns, skill development in parenting, self-regulation and social competence. Parents or influential adults can play a very important role in preventing substance abuse (Jiloha, 2017). Parents can talk to their children and explain the consequences of drug and alcohol abuse. Talking to children while they are young can create a strong foundation for awareness of drug use. They can help them to understand not only side effects of drugs but also help them to learn life skills to resist peer pressure. It will keep the communication channel open and can promote a bonding and trusting relationship which will help them to make wise decisions about interests, friends, influences and habits. More recent studies have shown that parents, guardians and adults influential in a youth's life who speak to their children about the issues and have dinner with them on a regular basis, have children with a lower rate of use and abuse. For families with significant familial conflict, single parenting, drug use, violence, crime, structured family therapies like multisystemic therapy, multi-dimensional family therapy, functional family therapy, brief strategic family therapy can be considered (Viviana E. Horigian, 2016).

## SCHOOL-BASED INTERVENTIONS

Youth spend much of their time in a school environment. Schools are important places to provide knowledge and skills to prevent substance abuse. School-based drug prevention programs that are targeted, evidence-based, interactive, youth-focused, and engaging, have been shown to have

success in reducing drug abuse. Intervening early at school level is critical to prevent drug abuse as most of experimentation starts at school under peer pressure.

Research has shown that programs need to be delivered at certain critical stages of transition (i.e. when moving from elementary to junior high school) when youth might be more receptive to the message.

In India, 'Promotion of Mental Health and Psychological Well-Being of Adolescents in Schools'

project was initiated in Kolar, Karnataka using a model developed by experts from National Mental Health and Neurosciences (NIMHANS). This program, which uses teachers as facilitators, has substance use prevention as one among the various modules of this program (Vranda, 2015). A manual on 'Life Skills Education for Prevention of Substance Use among Adolescents' was created by Post Graduate Institute of Medical Education and Research in association with the joint venture of National Institute of Social Défense (NISD) under the Ministry of Social

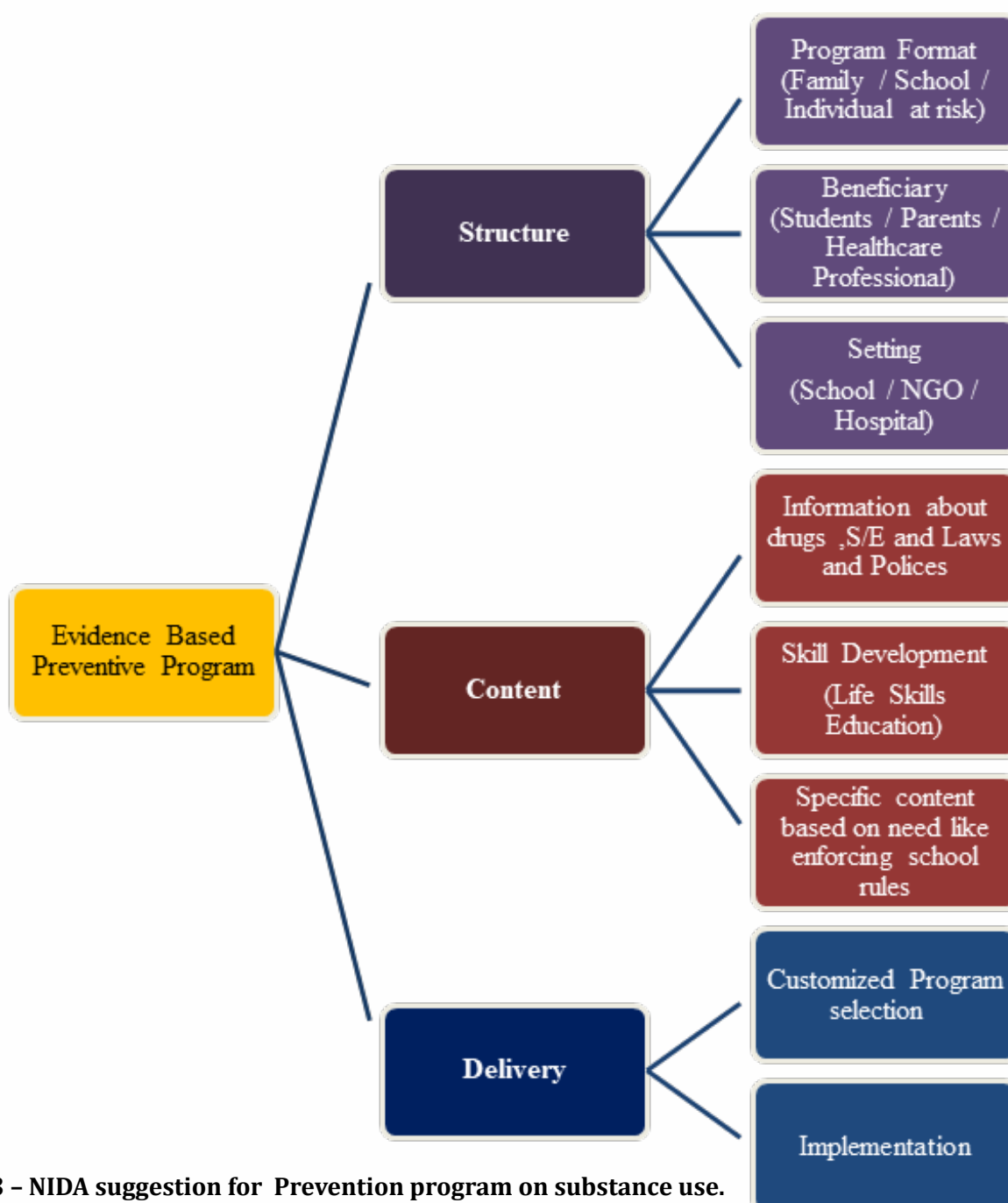


Fig. 3 – NIDA suggestion for Prevention program on substance use.

Justice and Empowerment, Government of India and Institute of Mental Health And Neurosciences, Kozhikode. This manual released in 2020 includes activities for enhancing skills like decision making, problem solving, critical thinking, creative thinking, empathy, self-awareness, effective communication, coping (Seema P. Uthaman, 2020).

It is important to customize any program as per needs of the target population. Following is an outline of program as per principles of NIDA (National Institute of Drug Abuse) (NIDA, 2011). NIDA suggestions can be considered when determining what kind of prevention program is best for individuals and the community (Fig.3).

### INTERVENTIONS AT INDIVIDUAL LEVEL:

These interventions address substance use in adolescents who are already using substances to facilitate abstinence from substance use, or harm reduction. It includes – motivational interviewing, Cognitive Behaviour Therapy (CBT), Tobacco cessation counselling, self-help interventions through written materials or peers, referral to psychiatrist for pharmacotherapy if required (Botvin, 2019; Jiloha, 2017).

### COMMUNITY BASED INTERVENTIONS:

We can encourage and empower the community to provide prevention and treatment services to alcohol, tobacco, and other drug use disorders more effectively. Planning Community Talks involving Senior and famous community leaders to educate youth, families, and communities about substance use, the potentially harmful consequences of underage drinking, drug abuse, refusal skills, assertiveness and coping skills in structured way.

Such programs should include city councils, social workers, renowned business owners, welfare organizations, sports organizations, health care providers, non-governmental organizations (NGOs),

media, schools, government officials, law personnel, police officers which would improve the source credibility and community participation. (Jiloha, 2017)

Activities include organizing, planning, enhancing efficiency and effectiveness of services implementation, interagency collaboration, coalition building, and networking. Well co-ordinated community interventions, mass media campaigns of reasonable intensity with sound theoretical basis over consistent duration were found to be effective in prevention of smoking and alcohol use. Building healthy communities will encourage healthy lifestyle choices among our youth.

### POLICY LEVEL INTERVENTIONS:

At a national level, legal frameworks provide a scope for preventing adolescent substance use at various levels such as access, sale, use of substances. Such Indian laws include: Cigarette and Other Tobacco Products Act (COTPA), Narcotic Drugs and Psychotropic Substances Act (NDPS), and preventive efforts include:

1. Prohibition of use of controlled substances,
2. Availability and sale restrictions,
3. Minimum legal age for smoking and drinking,
4. Taxation and maximum pricing,
5. Restricting / banning advertisements (Jiloha, 2017).

### CONCLUSION:

Adolescent substance use is a phenomenon with multiple etiological factors and offers scope for prevention at various levels through different strategies. To achieve the goal of prevention, a multipronged approach utilizing family based, school based, individual and policy level changes is essential. Such prevention programs should have strong theoretical basis, flexible to needs of the population and involve multisectoral participation.



## REFERENCES:

1. Retrieved August 10, 2022, from <https://www.addictioncenter.com/teenage-drug-abuse/teenage-substance-abuse-prevention/>
2. Botvin, K. W. (2019). Preventing Substance Use Among Children and Adolescents. In D. A. Shannon C. Miller, *The ASAM Principles of Addiction Medicine* (Sixth Edition ed., pp. 3730-3743). Philadelphia: Wolters Kluwer.
3. Gray, K. M. (2018). Research Review: What have we learned about adolescent substance use? *Journal of child psychology and psychiatry, and allied disciplines*, 59(6), 618-627. doi:<https://doi.org/10.1111/jcpp.12783>
4. Jiloha, R. (2017, Jan-Mar). Prevention, early intervention, and harm reduction of substance use in adolescents. *Indian Journal of Psychiatry*, 111-118. doi:10.4103/0019-5545.204444.
5. Krystina Murray, D. H. (2019, June 24). Teenage Substance Abuse Prevention. Retrieved from Addiction Center: <https://www.addictioncenter.com/teenage-drug-abuse/teenage-substance-abuse-prevention/>
6. Newcomb MD, L. T. (2005). Health, social, and psychological consequences of drug use and abuse. *Epidemiology of Drug Abuse*, 45-59.
7. NIDA. (2011, June). Preventing Drug Use Among Children And Adolescents. Retrieved from National Institute of Drug Abuse: <https://nida.nih.gov/publications/preventing-drug-use-among-children-adolescents/prevention-principles>
8. Seema P. Uthaman, R. R. (2020). *Life Skills Education for Prevention of Substance Use among Adolescents*. New Delhi: National Institute of Social Defence.
9. Squeglia, L. M. (2017). Adolescence and Drug Use Vulnerability: Findings from Neuroimaging. *Current opinion in behavioral sciences*, 164-170. doi:doi:10.1016/j.cobeha.2016.12.005
10. Viviana E. Horigian, A. R. (2016). Family-based treatments for adolescent substance use. *Child and adolescent Psychiatric clinics of North America*.
11. Vranda, M. (2015). Promotion of Mental Health and Well-Being of Adolescents in Schools - A NIMHANS Model. *Journal of Psychiatry*.

## IAP Navi Mumbai



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*Each one can save a life*

Organized by  
**Navi Mumbai Association of Pediatrics**

**Indian Academy of Pediatrics**  
 National CPR Day  
 21<sup>st</sup> July 2022

Organized by  
**Navi Mumbai Association of Pediatrics**

**PED ALLERCON 2022**  
 19<sup>th</sup> July 2022

**WORKSHOP ON IN VIVO DIAGNOSIS OF ALLERGY (SPT & PATCH TEST)**

Time	Topic	Speaker
09:00 AM TO 09:30 AM	REGISTRATION & CHECK-IN	
09:30 AM TO 10:00 AM	WELCOME FROM THE ALLERGY TESTS	DR. ANURAG K. SHARMA
10:00 AM TO 10:30 AM	DEEP PATCH TEST	DR. ANURAG K. SHARMA
10:30 AM TO 11:00 AM	SKIN TEST	DR. ANURAG K. SHARMA
11:00 AM TO 11:30 AM	DISCUSSIONS BY THE WORKSHOP ON	DR. ANURAG K. SHARMA
11:30 AM TO 12:00 PM	POSTER PRESENTATION AND DISPLAY OF SPT	DR. ANURAG K. SHARMA

Call for Registration: 9822000000



## IAP Navi Mumbai



**Inauguration Invitation!!**

It gives us great pleasure to announce that **Muskan Foundation for People with Multiple Disabilities** is opening its 5th center at **MGM Medical College Hospital, Panvel**

We cordially invite you to grace this occasion with your esteemed presence

Date : 14th July, Thursday 2022 Time : 12:00pm onwards

Address: MGM Medical College Hospital, Sector-1, Kamothe, Navi Mumbai - 410209

Contact: 9930386610, 9930386115

*Together we shall bring that Muskan*



## IAP Navi Mumbai



## IAP Navi Mumbai



ORS WEEK CELEBRATIONS

ORS WEEK SKIT COMPETITION

ORS WEEK CELEBRATIONS  
MGM MEDICAL COLLEGE, NAVI MUMBA



## IAP Navi Mumbai



Department of Pediatrics  
MGM Institute of Health Sciences, Navi Mumbai  
In association with  
Navi Mumbai Association of Pediatrics

### ORS Week Celebration

25- 31 July 2022

#### Jodi number 1: ORS & Zinc

Poster Competition for UG students (29/7/2022)  
Skit Competition (29/7/2022)  
Essay Competition for PGs (28/7/2022)

### ORS Week Celebration

25th - 31st July 2022

Advertisement for ORS and Zinc products, including Jodi No. 1 and other brands, with images of the products and their packaging.

**PLEDGE TO PROTECT**

This WORLD HEPATITIS DAY, take a PLEDGE TO PROTECT yourself and your family against viral Hepatitis

Tune in to **Radio City 93.1 FM** to learn about viral hepatitis & its prevention from the expert doctor of your city

Thursday, 28th July 22  
7:00 pm to 8:00 pm

Dr. Jaetendra Gavhase  
RJ Sud & Palak

HAPIBEV BEVAC

## आधाच तापाचा साथ त्यात पुरळचा त्रास !

### 'हॅड-फूट-माऊथ डिसीज'ने मुले बनली किरकिरी

आजार अल्पावधीत बरा  
घटनाची नोंद नाही  
तर मुलांना शाळेत पाठवू नका

डॉ. किरकिरी शेंकरे, डॉ. सुधीर शेंकरे, डॉ. अशोक शेंकरे

## IAP Navi Mumbai



**BASICS OF CPR FOR CHILDREN**



### CPR से बच सकती है जान

लोगों को जागरूक कर रही है इंडियन अकेडमी ऑफ पेडियाट्रिशियन

एन. सिन्हा, मुंबई: जिन से एक बच्चा मरता है, 1.2 करोड़ बच्चे मरते हैं। दुनिया भर में, 100,000 से अधिक बच्चे हर साल मर जाते हैं। इनमें से 90% बच्चे 5 साल से कम उम्र के हैं। इनमें से अधिकांश बच्चे मरते हैं क्योंकि उनके माता-पिता या अन्य देखभाल करने वाले व्यक्ति CPR (कार्डियोपल्मोनरी बयोरिस्क्यूशन) नहीं जानते।



इंडियन अकेडमी ऑफ पेडियाट्रिशियन (IAP) ने 'बेसिक्स ऑफ सीपीआर फॉर चिल्ड्रन' नामक एक पुस्तिका लॉन्च की है। यह पुस्तिका बच्चों के माता-पिता और अन्य देखभाल करने वाले व्यक्तियों को CPR के बुनियादी सिद्धांतों और तकनीकों के बारे में शिक्षित करने के लिए है।



यह पुस्तिका बच्चों के माता-पिता और अन्य देखभाल करने वाले व्यक्तियों को CPR के बुनियादी सिद्धांतों और तकनीकों के बारे में शिक्षित करने के लिए है।

1st AUDIO EPAPER

**अब ड-पेपर पढ़ें**

## IAP Navi Mumbai



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**ORS Week Celebration**  
25th - 31st July 2022

**Jodi Number One, Ors & Z**

**ORS + Zinc**

**Benefits of ORS:**

- Prevents dehydration
- Replaces electrolytes
- Prevents electrolyte imbalance
- Prevents metabolic acidosis
- Prevents hypoglycemia
- Prevents hypothermia

**Benefits of Zinc:**

- Prevents diarrhea
- Prevents malnutrition
- Prevents growth retardation
- Prevents anemia
- Prevents immunodeficiency
- Prevents infection



## IAP Odisha

Activity report August 2022 of IAP Odisha State Branch  
**World Breast Feeding Week 2022**

In the coordination, cooperation and support of Past President Dr Prasanna Kumar Sahoo, IAP Odisha Branch celebrated World Breast Feeding Week at Jajpur Road, Odisha from 1<sup>st</sup> – 7<sup>th</sup> August 2022.



### ଇନର୍ସ୍ଟୁଇଲ୍ କ୍ଲବର ବିଶ୍ୱ ସ୍ତନ୍ୟପାନ ଦିବସ



କୈବଳରେ ଯୋଗ ଦେଇଥିବା ଅତିଥିମାନେ ।

ଯାଜପୁର ରୋଡ, ୭୮୮ (ଡି.ଏନ.ଏ.)

ନିର୍ଦ୍ଦେଶନାରେ ଇନର୍ସ୍ଟୁଇଲ୍ କ୍ଲବ୍ ଓ ଭାରତୀୟ ପେଡିଆଟ୍ରିକ୍ ଏକାଡେମୀ ଓଡିଶା ଶାଖା ପକ୍ଷରୁ ଯାଜପୁରରୋଡ୍ ରୋଷ୍ଟା ସ୍ୱାସ୍ଥ୍ୟକେନ୍ଦ୍ର (ସିଏଚସି)ର ସଭା ସ୍ତରରେ ରବିବାର ବିଶ୍ୱସ୍ତନ୍ୟ ପାନ ଦିବସ ପାଳନ ହୋଇଯାଇଛି । କ୍ଲବର ସଭାପତି ଶକୁନ୍ତଳା

ଦାଶଙ୍କ ସଭାପତିତ୍ୱରେ ଅନୁଷ୍ଠିତ ଭବବରେ ଓଡିଶା ଶିଶୁ ବିଭାଗ ତିନିଦିନ ସଂଘ ରାଜ୍ୟ ସଭାପତି ପ୍ରସନ୍ନ କୁମାର ସାହୁ ପୁଖ୍ୟ ଅତିଥି ଓ ଯାଜପୁରରୋଡ୍ ରୋଷ୍ଟା ସ୍ୱାସ୍ଥ୍ୟକେନ୍ଦ୍ର ଅଧିକାରୀ ସତ୍ୟଜିତ କୁମାର ପୁଷ୍ପି ସମ୍ମାନିତ ଅତିଥି ଭାବେ ଯୋଗଦେଇ ସ୍ତନ୍ୟପାନ ଦ୍ୱାରା ମାଂସ ଓ ଶିଶୁ ମଧ୍ୟରେ ଭାବାବେଗ ଦୃଢ଼ ପାଇଥାଏ ଏବଂ ଉଭୟ ପୁରୁ ରହିଥାନ୍ତି ବୋଲି

ମତବ୍ୟକ୍ତ କରିଥିଲେ । କ୍ଲବର ପ୍ରତିଷ୍ଠାତା ସଭାପତି ସଂଯୁକ୍ତା ମହାପାତ୍ର, ପ୍ରଣତି ପ୍ରିତିନନ୍ଦା ନାୟକ, ଆଶାବର୍ମା କୁନି ବେହେରା, ଲଳିତା ସେନାପତି, ବିଷ୍ଣୁପ୍ରିୟା ବିଶ୍ୱାଳ, ହେଷ୍ଟର ପରିଚାଳକ ଆନୁଭାବୁ-୧୦୮ର ଆଶିଷ କୁମାର ବକ, ରେଶ୍ମି ପ୍ରିୟଦର୍ଶିନୀ, ମହଲତା ଦାଶ, କୁବ ସମ୍ପାଦିକା ରୁଚିଲତା ଦାଶ ପ୍ରମୁଖ କାର୍ଯ୍ୟକ୍ରମ ପରିଚାଳନା କରିଥିଲେ ।

## IAP Jalandhar



## IAP Jalandhar



## IAP Maharashtra

**2022 MAHA SUB SPECIALITY CONNECT Pearls in Anaemia**  
Rajendra S. Gade, Hematology & Oncology  
Dr. Nitin Shele, Consulting Pediatric Hematology & Oncology  
MODERATORS

**Approach to Hemocytic Anemia**  
Flowchart showing: Hemocytic Anemia → Iron Deficiency Anemia, Hemolytic Anemia, Vitamin B12/Folate Deficiency Anemia, Bone Marrow Failure. Includes details on Hemoglobin electrophoresis and bone marrow examination.

**शेजार... ये पुरुष...!**  
Overpopulation is a serious environmental problem in Maharashtra. It causes air and water pollution, deforestation, and global warming. We must take steps to control population growth.

**विश्वजन्य दिन**  
World Population Day

**MAHA IAP You Tube**  
Like our page on WhatsApp: <https://t.me/mahaparents>  
Like our page on Facebook: <https://www.facebook.com/MAHAIPARENTS>

**World Population Day**

**World Population Day**

**World Population Day**

**Maharashtra Academy of Pediatrics**  
draws attention towards the problems of overpopulation  
**WORLD POPULATION DAY**  
**11 JULY 2022**  
Theme: "A world of 8 billion: Towards a resilient future for all-Harnessing opportunities & ensuring rights & choices for all!"  
Dr. Hemant Gangolia, President  
Dr. Umil Fayaz, Secretary General

## IAP Maharashtra

## IAP Maharashtra



## IAP Maharashtra

**CPR MAHA IAP CPR WEEK**

In view of National CPR Week Celebrations (17 - 24th July 2022) MAHA IAP stands up for IAP's ONE CAN SAVE A LIFE by organizing learning of hands on CPR and saving the life of someone you love.

- 01 Basic Ideas for CPR:**  
• Dr. Sonali Shirkebarde
- 02 Guideline changes 2020:**  
• Dr. Narendra Nanavadekar
- 03 Infant CPR:**  
• Dr. Minhaj Sheikh
- 04 Choking: Pediatric & Infant:**  
• Dr. Mandar Dashpande

Moderator: Dr. Sachin Patil

Zoom ID: 719 61 9111  
09.00 pm  
Phone No: 020 9999 9147  
Phone No: 020 9999 9147



3 Adult summing up 1 rescuer BLS 1:27



Adult 12 Choking 2:50



Infant 1 assessment 3:12



Infant 2 Demo 1 rescuer CPR 2:08



Infant 4 2 Rescuer CPR 2:54



Infant 13 Choking 2:31



**Indian Academy of Pediatrics**  
**National CPR Day**  
21<sup>st</sup> July 2022 (Week:17-24 July 2022)  
**Each one can save a life**  
Organized by  
**MAHA IAP 2022**



**Indian Academy of Pediatrics**  
**National CPR Day**  
1<sup>st</sup> July 2022 (Week:17-24 July 2022)  
**Each one can save a life**  
Organized by  
**MAHA IAP 2022**



## IAP Maharashtra

**in preventing litigation how "risk bonds" and "release bonds" act as volanti non fit injuria**

- 2008, 3JJ, Samira Kohli v/s Dr. Prabha Manchanda, 1 (2008) CPJ 56 for real "consent" is valid.
- As per para 33 informed consent not needed.
- legal maxim - knowingly voluntarily risks danger cannot recover for any resulting injury. Signing "risk bonds" wrt complications (Acci.-misha., re-surgery and "release bonds" wrt failed surgery, disability needs to be taken repetitively for each medical procedure and each doctor separately. Real = actually what is written
- 1998-NC specifically - Dr. R. Fadnavis v/s MGP- anesthetist separate. consent for each RMP, each event sp., surg. BT
- 2JJ, SC-Blood transfusion separate consent - PGI v/s Jaspal

DISTRICT	STATE	NATIONAL
1 or More / dist	1 or More /state-UT	At New Delhi
•20 lacs/ 1 Cr Value goods/ services ???? •Place of Oppo/ Compl	•1 Cr / 10 Cr •Place of Oppo/Complainant	•>1 Cr/ >10 Cr •State commission
•Cause Action •Review the decision	•Cause Action arose •From Dist forum •Review the decision	•Review the decision
•State commi •30 days •Deposit 50% or •25000	•National commission •30 days •Deposit 50% or •35000 Circuit Benches	•S. Court •30 days •Deposit 50% or •50000 Regional Benches

### IAP National MLG's West zone Zoom Meeting

**MAHARASHTRA ACADEMY OF PEDIATRICS**  
**29 July ORS DAY**  
**जलसंजीवनी दिवस**

\*\*\* Jodi No 1 ORS and Zinc \*\*\*

**ORAL REHYDRATION SALTS (O. R. S.)**

Empty entire big packet of ORS (25.8 Gms) in 3 Litre of Clean Water in a Clean vessel.

In a Cup (200 ml) of Clean Water dissolve a small packet (4.4 gms) of ORS.

**How to prepare an ORS Solution at Home**

1. Clean Water - 3 litres - 9 Cupful (not less than 2.5 lit)

2. Add Sugar - 8 level teaspoon (15 Teaspoon - 1 gram)

3. Add Salt - 6.25 level level teaspoon

4. Stir the mixture till the sugar & salt dissolves.

2-6 Months 50mg/day for 14 days  
7-9 Months 100 mg/day for 14 days

• Frequently 50-100 ml of ORS solution in infants, while 100 - 200 ml in older children should be given, especially after each loose motion.

• Continue Breast Feeding in <6 months, while in >6 months Breast Feeding along with other dietary supplements.

• In addition to ORS; homemade solutions such as Rice/Dal water, soft Dal Rice, Potatoes, Apple, Banana, Soup, Buttermilk, Green Coconut water, Lemonade can also be given. Avoid sugary drinks (especially marketed fruit juices, Tetrapack ORS drinks)

• Zinc supplement should be taken for 14 days, even if diarrhea stops. ORS and Zinc work better together.

• Monitor closely for any alarming signs like reduced urine, blood in stool, unable to feed, child looking very sick or changes in responsiveness.

• Care of personal and food hygiene.

**25th - 31st JULY 2022 O.R.S WEEK**

**Dr. Hemant Gangolia**  
President

**Dr. Amol Pawar**  
Secretary General

**महाराष्ट्र राज्य बालरोगतज्ञ संघटना**  
**29 जुलै ORS DAY**  
**जलसंजीवनी दिवस**

\*\*\* जोडी नं. १ : ओ. आर. एस. आणि झिंक \*\*\*

**ORS खावणे काय ? ओ.आर.एस./जलसंजीवनी म्हणजे, गोठ - सखटपूर पाणी (सु. पा.) (उत्पन्न व आरोग्यकारी पदार्थ) व ओ.आर.एस.च्या वाटा असलेल्या "जलसंजीवनी" होय.**

ORS (जलसंजीवनी) काय आहे ? (उत्पन्न) जोडी नं. १ (२.५ ग्रॅम) व जोडी नं. २ (५ ग्रॅम) असलेल्या ORS च्या वाटा घेऊन घरेलूतून तयार करावे.

**जलसंजीवनी तयार करण्याची घरगुती पद्धती**

१) ३ लिटर्स पाणी (२.५ लिटर्स + ५ लिटर्स) तयार करावे.

२) १ लिटर्स पाणी + ८ चमूची (१५ चमूची) साखळी व ६.२५ चमूची (१२.५ चमूची) साखळी घ्यावे.

३) सर्व घटक घेऊन एकत्र घालावे.

४) सर्व घटक घेऊन एकत्र घालावे व थोडक्यात ढगळा करावा.

५ ते ६ महिन्यांच्या बालकांसाठी ५० मिली. (२ चमूची) पाणी + १ चमूची (५ मिली) ORS घ्यावे. ७ ते ९ महिन्यांच्या बालकांसाठी १०० मिली. (२ चमूची) पाणी + २ चमूची (१० मिली) ORS घ्यावे.

जलसंजीवनी घ्यावयाची वेळ: खालीलप्रमाणे: १. उठण्याच्या वेळी, २. खालसावेनंतर, ३. खालसावेनंतर, ४. खालसावेनंतर, ५. खालसावेनंतर, ६. खालसावेनंतर, ७. खालसावेनंतर, ८. खालसावेनंतर, ९. खालसावेनंतर, १०. खालसावेनंतर, ११. खालसावेनंतर, १२. खालसावेनंतर, १३. खालसावेनंतर, १४. खालसावेनंतर, १५. खालसावेनंतर, १६. खालसावेनंतर, १७. खालसावेनंतर, १८. खालसावेनंतर, १९. खालसावेनंतर, २०. खालसावेनंतर, २१. खालसावेनंतर, २२. खालसावेनंतर, २३. खालसावेनंतर, २४. खालसावेनंतर, २५. खालसावेनंतर, २६. खालसावेनंतर, २७. खालसावेनंतर, २८. खालसावेनंतर, २९. खालसावेनंतर, ३०. खालसावेनंतर, ३१. खालसावेनंतर.

**25 ते 31 जुलै 2022 ORS WEEK जल संजीवनी सप्ताह**

**डॉ. हेमंत गंगोलिया**  
अध्यक्ष

**डॉ. अमोल पवार**  
सचिव



## IAP Maharashtra



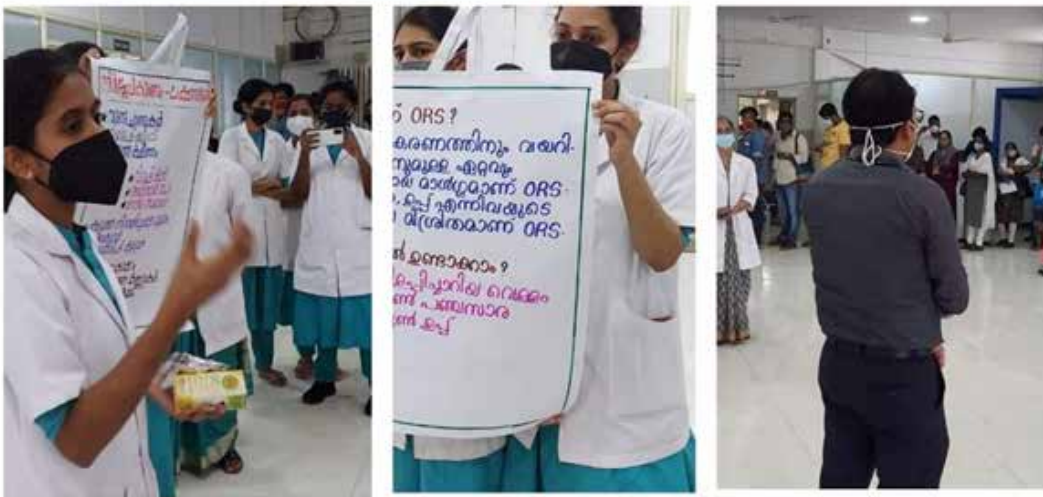
## IAP Maharashtra



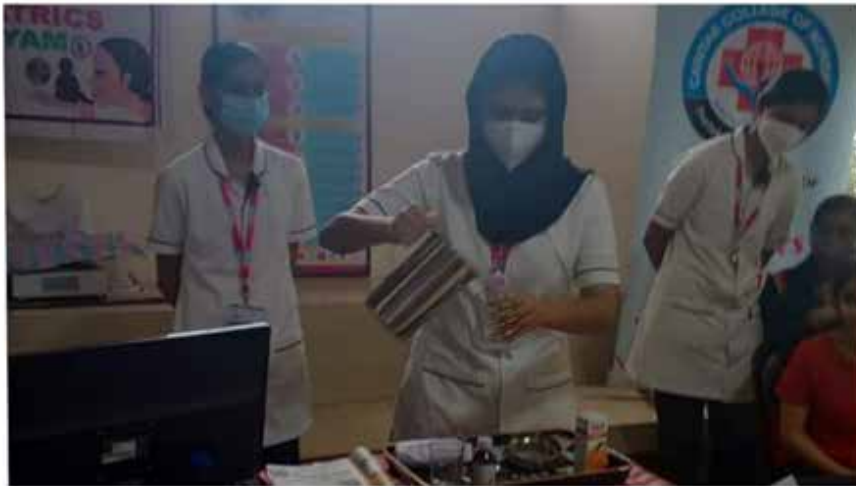
## IAP Maharashtra



## IAP Kerala



## IAP Kerala



## IAP Kerala



## IAP Kerala



## IAP Kerala





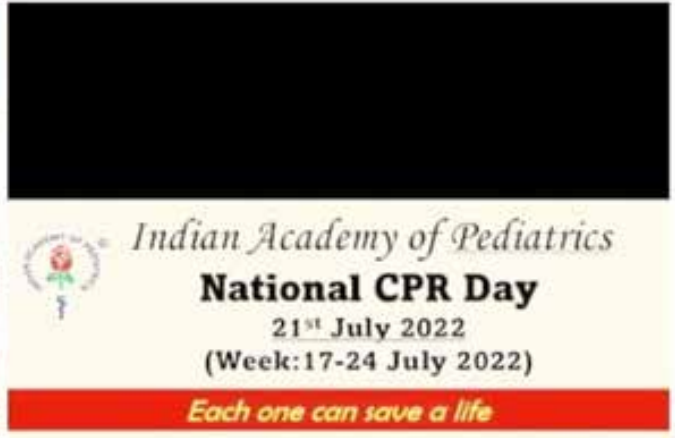
## IAP Kerala



## IAP Kerala



## IAP Kerala



## IAP Kerala



## IAP Kerala



**കുട്ടികളിലെ അലർജി**

Dr Krishna Mohan R  
MBBS, DNB, Dip (Allergy & Asthma) MNAMS

