



# **International Symposium on Drug - Related Studies 2022**

## **PROCEEDINGS**

**1<sup>st</sup> & 2<sup>nd</sup> December 2022**

**The National Dangerous Drugs Control Board  
in co-partnership with  
The Colombo Plan & Japan International  
Cooperation Agency (JICA)**

**INTERNATIONAL SYMPOSIUM ON DRUG-RELATED  
STUDIES 2022**



*“Joint commitment for creating a drug-free society through best evidence-based practices  
and innovative approaches”*

**PROCEEDINGS**

**NATIONAL DANGEROUS DRUGS CONTROL BOARD**

**MINISTRY OF PUBLIC SECURITY**

**International Symposium on Drug-Related Studies 2022**

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## MESSAGE FROM CHAIRMAN OF NDDCB



I extend my heartiest gratitude to the International Research Division of the National Dangerous Drugs Control Board (NDDCB) for organising such a prominent scholarly project that impeccably renovates the history of the National Dangerous Drugs Control Board.

International Symposium on Drug-Related Studies 2022 offers an excellent opportunity for researchers and experts in the field of drug control and prevention. The comprehensive objective of the conference is to facilitate an active exchange of information among scientists and other national and international level stakeholders, on the research of drug abuse and innovative concepts aimed at providing effective drug control strategies.

The theme of the International Symposium depicts a broad range of issues particularly on scientific knowledge of drugs and effective evidence-based interventions, at each level of the mechanism of coordinating illicit drug-related activities.

The International Symposium on Drug-Related Studies 2022 facilitates learning through a dynamic and interactive environment where opportunities will be created to share research findings as well as discussions, sharing of experiences, and drawing of proposals and recommendations addressing emerging trends and challenges in the field of drug control. This is the first International Symposium in the history of the National Dangerous Drugs Control Board which is conducted on digital platforms as well as in person for the convenience of all the participants partaking locally and internationally.

This International Symposium creates the platform to disseminate research findings on drug-related epidemiological and scientific research studies. It ensures partnerships with other international and national agencies. Creates a discourse that eradicates the drug menace with knowledge sharing and further, Strengthens policymakers on prevention and treatment activities. Moreover, it shares knowledge on drug abuse and makes awareness of drug abuse among the general public.

I aspire, that this scholarly effort shall be an eminent milestone in the history of the National Dangerous Drugs Control Board.

Shakya Nanayakkara  
Chairman

**MESSAGE FROM THE SYMPOSIUM COMMITTEE OF NDDCB**

We aspire our heartfelt regards to the International Symposium on Drug-Related Studies 2022. As the Research Division, we are honored and privileged to conduct the 1<sup>st</sup> ever International Symposium on the history of the National Dangerous Drugs Control Board (NDDCB). This International Research Symposium provides an excellent opportunity for researchers and experts in the field of drug control and prevention. The overall goal of the conference is to facilitate an active exchange of information among scientists and other national and international level stakeholders, on the research of drug abuse and innovative concepts aimed at providing effective drug control strategies. The theme of the Conference depicts a broad range of issues particularly on scientific knowledge of drugs and effective evidence-based interventions, at each level of the mechanism for coordinating illicit drug-related activities.

As a fruitful result of the dedication and efforts of the Research Team, we received abstracts locally and internationally from scholars of diverse fields and scholarly backgrounds, though this scholarly project is achieved in a very short period of time. We selected abstracts, especially under the guidance and revisions made by scholars in the relevant fields. We extend our sincere thankfulness for the valuable contribution of the Symposium Committee to the prolific accomplishment of the International Symposium on Drug-Related Studies 2022.

We extend our heartiest regards to our treasured collaborative partners- The Colombo Plan and Japan International Cooperation Agency (JICA) for their valuable contribution. And distinguished panelists for their scholarly contribution and presenters and Co-Authors in this academic effort.

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## SESSION I

# “ENVISIONING THE NEW COUNTENANCE OF DRUG ADDICTION RECOVERY.”

### Session Chair:

*Mr. Shakya Nanayakkara*  
*Chairman*  
*National Dangerous Drugs Control Board*

### Panelists:

*Rev. U.Dhammajeewa, Founder of the Sathipasala Foundation*  
*Dr. Dhammika Ariyananda, Medical Officer, National Institute of*  
*Mental Health / Trainer, Sati Pasala Foundation*  
*Dr. Sanath Mahavithanage, Senior Lecturer, University of Sri*  
*Jayawardhanapura*  
*Mr.Shakya Nanayakkara, Chairman – NDDCB*

**THE EFFECT OF MINDFULNESS ON SMOKING AND ALCOHOL  
DEPENDENCE IN THE JOB STRESS  
(A CROSS-SECTIONAL STUDY)**

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Job-related stress embodies a significant problem globally. It has been identified that finance companies as the most stressful sector. 69% of those working in finance reported suffering from significant levels of work-related stress – more than any other industry (Jones, R., 21 March 2018). When employees are experiencing pressure or stress, they will use support that will give them some relief from the present situations of stress and help them cope and feel better about themselves. But it may make the things that cause the stress go away. In specially, research indicates that stress can prompt some harmful behaviours such as smoking and excessive alcohol use ([www.stress.org](http://www.stress.org)). Mindfulness training has been created to display benefits for several mental disorders, including depression, anxiety, and more recently, addictions (J.A. Brewer et al, 2011 Jul 1). However, the effectiveness of practicing mindfulness techniques instead of smoking or taking alcohol has not been evaluated for financial employee stress in Sri Lankan setting through an active-controlled randomized trial.

The research problem was formulated as; Can employees manage job stress by practicing mindfulness substitutes for smoking or taking alcohol? Therefore, the objective of the research is to apply mindfulness to cope with job stress. Data interpretation was done using both qualitative and quantitative measures. Before the 3 sessions of the Mindfulness program, data discovered that many employees experienced high levels of stress, either smoking to relieve it or few getting together to drink alcohol after work. At this point, they tend to smoke cigarettes as they think it will help to release their stress and make them in the mood to concentrate on the task and target. Data showed that smoking cigarettes are an individual reaction to the stress level. After the 3 sessions, Data revealed that when increasing the mindfulness level lead to decreased alcohol consumption and cigarette use during the treatment. During follow-up, it was identified that many employees maintained their cigarette use but were unbaled to alcohol consumption because of others' influences. Mindfulness training is very effective for giving up or reducing negative practices in job stress.

**Keywords:** *Mindfulness, Job/workplace stress, smoking & taking alcohol*

## SESSION II

# “DRUG PREVENTION TO ENSURE THE FUTURE OF CHILDREN, YOUTH, FAMILIES AND COMMUNITIES”

### Session Chair:

*Dr. Manoj Fernando*  
*Senior Lecturer in Health Promotion*  
*Rajarata University of Sri Lanka*  
*National Dangerous Drugs Control Board*

### Panelists:

*Dr. Manoj Fernando, Senior Lecturer in Health Promotion, Rajarata  
University of Sri Lanka*

*Dr. Samadhi Rajapakshe, Chairman, National Authority on Tobacco  
and Alcohol*

*Mr. Pubudu Sumanasekera, Executive Director, ADIC*

## EXPOSURE TO VULNERABLE FACTORS FOR DRUG USE DURING CHILDHOOD AND ADOLESCENCE: A CROSS-SECTIONAL STUDY IN SRI LANKA

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Exposure to vulnerable factors during childhood and adolescence is identified as a common risk factor for any behavioral problem including substance abuse. This study aimed to assess possible vulnerable factors for illicit drug use among male illicit drug users who were admitted for rehabilitation at five selected rehabilitation centers in Sri Lanka. As a part of a cross-sectional study, the history of exposure to vulnerable factors was assessed among 431 male illicit drug users in five selected rehabilitation centers in Sri Lanka. Psychoactive substance use within the living setup, being in a family with inadequate protection during childhood/adolescence and an unsatisfactory parenting status was considered under vulnerable factors for drug use based on existing literature. Data were collected using an interviewer-administered questionnaire. Chi square test was used to assess associated factors at the significance level of 0.05. Exposure to any of the above vulnerable factors was reported by 91.6% of the sample. Drug use among family members was reported by 13.0%; siblings (65.0%) and father (3.3%) of the index drug users. Drug use among relatives was reported by 27.1%. Nearly half of drug addicts had lived with a person with alcohol abuse while 30.9% had lived with a drug addict. Nearly 1/3rd of the drug users were exposed to family violence while a majority (64.3%) were exposed to some form of abuse; emotional (64.3%), physical (7.4%), and sexual (2.3%). Nearly half of the drug users had experienced unsatisfactory parenting (52.9%); mother being abroad (40.8%), death of father (35.1%), and parental separation (21.0%). Drug addicts with a history of exposure to vulnerable factors were more likely to live in the western province ( $p < 0.001$ ) and to have a longer duration of drug use ( $p = 0.005$ ), polydrug use ( $p = 0.021$ ) and higher problematic level of drug use ( $p < 0.001$ ). Exposure to vulnerable factors during childhood and adolescence is identified as an important factor to consider in the prevention of drug addiction. Appropriate interventions should be taken at the policy level to ensure a protective and supportive environment for children and adolescents.

**Keywords:** *exposure, vulnerable factors for drug use, childhood and adolescence*

Abstract ID - 12

**AWARENESS AND OPINION OF SCHOOL TEACHERS TOWARDS  
SUBSTANCE USE AMONG ADOLESCENTS IN SRI LANKA**

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Substance use among adolescents has become a major concern and public health problem throughout the world. Early initiation of substance use is associated with severe substance use disorder and lifelong consequences which negatively affect individuals, families, and the community. The teachers spend a substantial duration of time with adolescents during school and, they have a moral responsibility to guide the adolescents to refrain from these risky behaviors. Therefore, this study aimed to assess the awareness and opinion of schoolteachers toward substance use among adolescents in Sri Lanka. A descriptive cross-sectional study was conducted among conveniently selected 152 school teachers in Sri Lanka. Ethical approval was obtained from the Ethics Review Committee of KIU, Sri Lanka. Pretested interviewer-administered questionnaire was circulated through online platforms among the participants. Descriptive statistics were used for data analysis. Of the participants' the majority (n=108, 71.1%) were females. Nearly half of the participants (n=72, 47.4%) belonged to the 20-30 years age group, and 54.6% (n=83) were married. Of the participants, 43.4% (n=66) had less than 5 years of teaching experience. A significant proportion of teachers were unaware of the types of substances which can be used by adolescents ( n=49, 32.2%), clinical features of substance use (n=56, 36.5%), and complications of substance use (n=45, 29.6%). Above half of the participants (n=81, 53.2%) stated the need for punishments for adolescents who use substances. The majority of the participants (n=130, 85.5%) emphasize the necessity of establishing drug prevention programs at school, and 53.9% (n=82) believed substance use negatively influences on academic performance of adolescents. A considerable proportion of participants (n=126, 82.8%) believed that the staff members of the school need to be responsible regarding substance use by adolescents. Awareness programmes should be implemented for school teachers regarding substance use and prevention.

**Keywords:** *Awareness, Opinion, School teachers, Substance use, Adolescents*

Abstract ID - 16

## PREVENTING THE MENACE OF SUBSTANCE ABUSE: SUGGESTIONS BY THE YOUTH OF SRI LANKA

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The rapid increase in substance abuse among young people is troubling and creates a high risk of associated social and health harm. Studies regarding the attitudes and importance of the youth community in solving the problem of substance abuse have been explored in a less manner in the literature. To fill this gap, this study mainly aims to build up a strategy to substance abuse prevention among youth to understand the suggestions being made to prevent the menace of substance by the youth of Sri Lanka. Primary qualitative data was collected via a Google form questionnaire under the survey method and the data was analyzed under thematic analysis. Google form questionnaire was distributed among the undergraduates who are following Sociology Honours Degrees in five state universities as the purposive study sample and the sample size was (n = 250). According to the results, three major themes were identified Suggestions for the Prevention of Substances delivery, Prevention of Substance Using, and Prevention of the continuous use of Substances. Results suggest proactive interventions aimed at preventing substance abuse. A more integrated youth-centered approach is needed to address the multifaceted and multifaceted issues related to youth substance abuse. It is also important to conduct counseling and ongoing group counseling sessions to prevent developing substance abuse among peer groups. Monitoring through teachers and parents as resource persons are more important here than direct security intervention. It is also necessary to build an anonymous messaging service to prevent approaches to drug use and to obtain information related to drug distribution. Thus it can be concluded that using technology and the media as a secondary party to avoid substance spread among youth and counseling and guidance have been identified as key solutions among Sri Lankan youth regarding preventing the menace of substances.

**Keywords:** *substance, youth, prevention, technology, counseling*

Abstract ID - 20

## PREVENTION AND REDUCTION OF ALCOHOL CONSUMPTION AND PROBLEMS THROUGH CHANGING POSITIVE ALCOHOL EXPECTANCIES

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Foundation for Innovative Social Development (FISD) is a Non-Governmental Organization working for the prevention of alcohol use and reduction of alcohol-related problems, protection and promotion of children's rights and Gender and Development in an integrated manner in the districts of Anuradhapura, Moneragala, Kandy and Hambantota. FISD uses changing alcohol expectancies as a methodology. The abstract aims to ascertain the effect of negative alcohol expectancies on alcohol use and alcohol problems at the FISD target locations based on data collected between 2019 and 2021. A random sample of 1,260 (10%) persons 18 years or more, an equal number of males and females, in the FISD target locations were surveyed in 2019 and 2021.

The number of persons with negative alcohol expectancies increase to 773 in 2021 from 149 in 2019. The corresponding number for males increased to 381 in 2021 from 71 in 2019. The numbers for females were 392 and 78, respectively. The number of persons who have reduced alcohol use increased to 273 in 2021 from 16 in 2019. The number had improved happiness and well-being due to reduced alcohol problems was 181 and 9, respectively.

Positive alcohol expectancies were present among the males and females even though alcohol users were predominantly male. "Forget Problems", "Enjoyment" and "Relaxation" were the 3 most common positive expectancies of alcohol use among the target populations. The positive expectation of "Forgetting problems" was comparatively easy to change while the positive expectation of "Relaxation" was much more difficult to change.

Increasing the number of persons with negative alcohol expectancies could reduce alcohol consumption and alcohol problems in the target communities. Working to increase the number of persons with negative alcohol expectancies "Forget Problems", "Relaxation" and "Enjoyment" could improve the effectiveness of prevention of and reduction of alcohol use and improving happiness and well-being through the reduction of alcohol-related problems.

**Keywords:** *Expectancies, enjoyment, relaxation, forgetting problems*

Abstract ID - 26

## DRUG USE AMONG UNIVERSITY STUDENTS AND STUDENTS' ATTITUDES TOWARDS DRUG USE

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To study the prevalence and behavioral patterns of drug use among students in the Sri Lankan university system, a sample of 1,431 students selected through random sampling from among the 88,527 students admitted to the Sri Lankan university system in 2017 was studied. The research problem of the study was “what the trend of drug use and students’ attitudes towards drug use are?” Qualitative data were collected through questionnaires and in-depth interviews and collected data were analyzed by using SPSS software. According to this study, 1275 (89%) of the students in the sample were males and 156 (11%) were females. 350 (24.5%) of them were over 22 years old. In studying university student's drug history, 478 (33.4%) had ever used any drug, of which 443 (92.7%) were legal alcohol, 291 (60.9%) tobacco products, 120 (25.1%) had used cannabis and 18(3.8%) had used psychoactive drugs. In studying the current drug use of the students included in the sample, 303 (63.4%) of the 478 students who had used drugs stated that they were currently using drugs, and 175 were not using any drugs. When examining students' attitudes towards drug use, 143 (10%) students stated that they endorse drug use as university students. A study of students' attitudes toward drugs revealed positive attitudes toward drug taking; causes physical and mental disorders, affects the development of the country, drugs should be banned in Sri Lanka, wastes time and youth, destroys youth, money should be adjusted for cultural restrictions, a benefit caused by sinful friends, studentship should be destroyed, is a non-intellectual decision. Attitudes put forward by scientists in favor of drug use; there is no problem, it is okay to use the control, it is the will of the concerned person, for fun, it is what the human body needs, it is okay to use it, it is not a problem if it is done intelligently, to get rid of problems and so on. It is believed that the use of drugs is good for gaining experience. It can be concluded that cannabis is being used by the majority of university students and there are myths related to drug use among them.

**Keywords:** *Drug Abuse, Drug Addiction, Attitudes of University Students*

Abstract ID - 27

## NEWLY EMERGING TRENDS AND PATTERNS OF HEROIN USE AMONG FEMALES: WITH SPECIAL REFERENCE TO COLOMBO DISTRICT

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According to the World Drug Report, 2019 the growth of illicit drug use has spread not only among the male population but also among the female population. This study was conducted to find out new emerging trends and patterns of female heroin users (FHUs). The problem of the study was what the new emerging trends and patterns of heroin use among females are. This study was based on the survey method and case study method. Primary data was collected through structured questionnaires, in-depth interviews, and observations. By using the snowball sampling method, 151 FHUs were selected for the sample and they all are street-level heroin users. 69% of FHUs were found to have a very low level of education and 47% of the FHUs were found to be married. Of the total sample, 134 (89%) were smokers. In addition, 64% FHUs use beer, and 48% use cannabis, 51% FHUs use alcohol. 136 (90%) were daily heroin users and 15 (10%) FHUs use heroin two or three times a week. Chasing heroin (Chuseess the Dragan) is the method of the prevalence among HUs. Also, the average number of heroin packets used by the majority of FHUs per day is 3. The study found that FHUs spend between 3000 and 6000 rupees on average per day. 74 (49%) of FHUs have been engaged in commercial sex work to fulfill their daily consumption. It was revealed that 47 (32%) of them had resorted to heroin use due to problematic situations. 16 (11%) of FHUs were addicted to heroin due to peer pressure and 8 (5%) of FHUs were addicted to heroin due to their curiosity about heroin use. It can be concluded that peer pressure was the main reason to initiate drug use by FHUs. And also it can be concluded that engaging in commercial sex work is the main income-generating way of money to obtain heroin. Further it can be concluded that the vast majority of female heroin users use heroin on daily basis.

**Keywords:** Cannabis, heroin, peer pressure, sex work, smokers

Abstract ID - 34

## A STUDY ON NEWLY EMERGING DRUG USE PATTERNS AND BEHAVIORS AMONG HOMOSEXUAL MEN (REFERENCE TO COLOMBO AND SUBURBS)

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People who identify as LGBTQ often face social stigma, discrimination, and other challenges not encountered by people who identify as heterosexual. Surveys thus far have found that sexual minorities have higher rates of substance misuse and substance use disorders (SUDs) than people who identify as heterosexual. Especially, Homosexual men have been described as at high risk for drug abuse, due to psychosocial variables. The main objective of this study is to identify high-risk behaviors associated with drug use in homosexual men and The problem with this study is, what are the emerging drug use patterns and behaviors among Homosexual men? This study was conducted as a cross-sectional study under the qualitative research method. The total sample was 10 individuals and snowball sampling was used as the sampling method. To collect data, collecting techniques such as Questionnaires, in-depth interviews, case studies, and observation were used. This Research reveals that all of the Homosexual men studied were identified as being at increased risk of drug use and addiction because of their sexual orientation. When considering the current drug use of the sample, 07 individuals (88.9%) use cigarettes , 05 (55.6%) individuals use methamphetamine and 08 individuals (77.8%) use alcohol. Also, 04 (44.4%) heroin users and 07 (77.8%) cannabis users are represented in the sample. Methamphetamine (ice), alcohol, cigarettes, and cannabis are the main drugs used among this group and all of them are polydrug users. Individuals within this Homosexual men group have a higher tendency to engage in sexual behavior after using methamphetamine (Ice) as a distinct behavioral pattern. These Homosexual persons have a belief that especially when using ice, sexual feelings are aroused and they can stay with their sexual partner for a long time. Especially these Homosexual men engage in sexual activities due to the desire to use drugs. Dating Apps are used to contact casual partners for that. Accordingly, these Homosexual men use drugs before engaging in group sex. Especially, They are Chemsex. The research showed a tendency among homosexual individuals to take part in parties organized by social media, beach parties, and gay parties and they are motivated to engage in sexual behavior after the parties. Alcohol, cigarette, ice and Mandy, ecstasy was revealed to be the drugs that were mostly used in those parties. The study revealed that individuals within this homosexual men group are at high risk for Substance Use disorders and having unprotected sex with different people increases the risk of contracting HIV-AIDS or other sexually transmitted diseases. Thus, according to the findings of the study, it can be concluded that homosexual men in Sri Lanka are also at high risk of drug abuse and addiction due to their sexual orientation.

**Keywords:** Gender identity, Homosexual Men, Sexual orientation, Substance use disorders (SUDs), Methamphetamine (ice), LGBTQ

### SESSION III

## **“A DISCERNING APPROACH TO DRUG LAW ENFORCEMENT AND STRIKING THE BALANCE BETWEEN MEDICAL USE AND DIVERSION”**

#### **Session Chair:**

*Mr. Priyantha Nawana  
President's Counsel,  
Senior Additional Solicitor General,  
AGs Department*

#### **Panelists:**

*Mr. Priyantha Nawana, President's Counsel, Senior Additional  
Solicitor General, AGs Department  
Commander, Lasith Wickramasinghe, Sri Lanka Coast Guard  
DIG Mr. Waruna Jayasundara, Commandant of STF  
Mr. Azad Navavi, Deputy Solicitor General, Attorney General's  
Department*

Abstract ID -2

**ASSESSING THE CHALLENGES OF JUDICIAL OFFICERS  
EXERCISING DISCRETION IN THE PROCESS OF IMPOSING  
COMPULSORY ADMISSIONS TO TREATMENT CENTRES  
UNDER DRUG DEPENDANT PERSONS (TREATMENT AND  
REHABILITATION) ACT, NO. 54 OF 2007**

Mathini V\*

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The Drug Dependent Persons (Treatment and Rehabilitation) Act, No.54 of 2007 (DDPA) has been enacted to make provisions for the activities of the treatment and rehabilitation centers for persons addicted to drugs. Two types of admissions of drug-dependent persons are categorized in the DDPA: voluntary admission and compulsory admission to a treatment center. Magistrates and Officer in Charge of Police Stations seem to face numerous challenges in imposing compulsory admissions, which arise not only due to procedural issues but also issues related to the substantial aspects of the law.

Making compulsory admission orders is not mandatory since the judges have discretion in sentencing; however, the discretion of Judges may cause disproportionate sentencing. In sentencing, "proportionality" shall be ensured, while considering other factors such as the rights of victims and the fundamental rights of the offenders. Considering all these aspects of sentencing and rehabilitation, this research aims to provide an analysis of compulsory admission under DDPA and thus contribute to the existing legal literature.

This research adopts a mixed method of analyzing existing literature and a field study which comprises interviews with Judicial Officers and Officers in Charge of Police. One of the objectives of this exercise is to explore the merits of applying DPPA in Sri Lanka by sharing the body of knowledge compiled for this research with principal stakeholders such as Judicial Officers, Police Officers, Government Medical Officers, and Prison Authorities. Further, this research aims to encourage judicial officers to send convicted drug-dependent persons to treatment centers rather than imposing custodial sentences.

The findings show that major barriers can be divided into substantial barriers and procedural barriers. Ultimately this research reveals the fact that due to the barriers, the judicial officers are constrained to exercise 'discretion' even though they may personally wish to follow the principle of proportionality in sentencing.

**Keywords:** *Challenges, Compulsory Admission, Drug Dependent, Discretion, Proportionality*

Abstract ID - 17

**THE ROLE OF COMMUNITY CORRECTION LAW IN  
CORRECTING SUBSTANCE ABUSERS: A SOCIOLOGICAL  
STUDY FOCUSING ON CORRECTIONAL ACTIVITIES OF  
BATTICALOA REGIONAL COMMUNITY-BASED CORRECTION  
OFFICE IN 2022**

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Law is the most important of social control agents. Governments make various laws from time to time to control people and to maintain justice. Accordingly, Act. No 46 of 1999 was enacted as the Community Correction Act in Sri Lanka. This act also allows courts to issue community corrections orders instead of imprisonment and to appoint a community correction commissioner. As persistent offenders and crime addicts in society go to prison, they are released from prison not free from their crime but committing more serious crimes. Therefore, this community correction act was created with the aim of freeing them from such conditions and making them good citizens for the country and society. The act has many Provisions in practice to help drug addicts recover from it. Through this research, it is seen that various suggestions are made regarding this act and to make society aware of the benefits that drug addicts can get through this act and to correct the offenders in the future. In this research both primary data and secondary data have been used. Primary data was collected from 28 individuals who were issued community correction orders in the Batticaloa Magistrate's court from January to October 2022 as Purposive Samples by Focus Group discussion and unstructured interviews. Secondary data was collected from annual reports of the Department of Community-Based Corrections, Social reports of Community Correctional Development Officers and Previous Researches. In particular, the activities carried out by the Batticaloa community correction office to correct the community correction offenders have been considered. The Collected Data were analyzed through the Interpretative method. The main findings of this research are Community Correction Law plays a major role in correcting substance abusers. Among them, three main contributions were identified. They are Personal contribution, Family contribution and Social contribution. Individual contribution includes psychological change, Behavioral change, professional help and spiritual change. Family contribution includes family support, family security and family economy. Social contribution includes social security and social prestige. so if the Community Correction Law is used in the best way it can make substance abusers good citizens of society and the country.

**keywords:** *community correction, substance abusers, Law.*

## DRUG-RELATED PRISON ADMISSIONS AND NEW TRENDS IN SRI LANKA

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This is expected to reveal the new trends in prison admissions for drug offenses in Sri Lanka from 2016 to 2020 and based on prison statistics. In 2016, there were about 24,060 individuals arrested for drug offenses. As of 2018 and 2019, it is 24,852 and 29,164 individuals arrested for drug offenses. In 2020, it is 19,856 but compared to 2019, the number of prison admissions has decreased by 32%. According to gender, the highest number of females (895) were arrested in 2016 and the lowest number (395) was recorded in 2020. In 2016, there were 23,165 arrests of males for drug-related offenses and in 2020, there were 19,461. Compared to 2016, it has decreased by 16% in 2020. According to age group, the highest number of prison admissions in 2017 (3141) and 2018 (4021) was recorded in the age group between 31 – 40 years. The years 2019 (4480) and 2020 (3413) have recorded the highest number in the age group 23 – 30 years. Prison admissions by drug type, there were 7783 reported for Heroin in 2016 and 7974 in 2020. It has increased by 2% in 2020 compared to 2016. In 2016, 26% were prison admitted for Cannabis and there was a 12% decrease in 2020. Once convicted for drug offenses were 3203 in 2017 the lowest in these years, in 2019, there were 6137 and in 2020, there were 4250. The highest percentage of admissions once and over for drug offenses (42%) was reported in 2017 and the lowest was in 2019 (33%). But drug-related multiple prison admissions were 28% in 2016 and a low of 20% in 2018 and in 2020. Accordingly, it can be concluded that from 2016 to 2020, a 17% reduction can be seen in the number of individuals imprisoned in 2020 compared to 2016. It can be also concluded that there is a decrease in arrests by gender, age group, and drug type data. Further it can be concluded that the COVID-19 pandemic in 2020 has had an impact on the reduction of imprisonment compared to other years.

**Keywords:** *Drugs abuse, prison admissions, drug offenses*

Abstract ID 29

## REHABILITATION OF CHILD DRUG ADDICT: STATE RESPONSIBLY UNDER THE CONVENTION ON THE RIGHTS OF THE CHILD 1989

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The Convention on the Rights of the Child (CRC) is the core international instrument adopted by the United Nations to safeguard the universal human rights of children without any kind of discrimination. The State parties to the said convention are obliged to take all legal and other measures to protect the children within their territories. Further, the oldest principle of international principle *pacta sunt servanda* requires the State to respect the treaty obligation with good faith. Against this backdrop, the objective of the paper is to outline and analyze the core provisions that impose obligations on the State's parties concerning the rehabilitation of child drug addicts. The researcher has analyzed articles 3, 4, and 33 of the CRC. In addition to these provisions, general comments of the child rights committee were also examined. The paper adopts a doctrinal methodology. The research reveals that although the CRC does not contain detailed provisions relating to drug control, selected provisions of the convention necessitate the States to uphold the concept of the best interest of the child in all matters on children.

**Keywords:** *Convention on the Rights of the Child, child drug addict, Child rights, State party obligations, Rehabilitation* Introduction

Abstract ID - 33

## DRUG TREATMENT OR ARBITRARY DETENTION? A STUDY ON THE COMMUNITY-BASED REHABILITATION MECHANISMS FOR DRUG OFFENDERS IN SRI LANKA

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Most countries consider the Rehabilitation of drug abusers as a more sustainable solution for handling such offenders than sentences for incarceration, as it provides them an alternate route to recovery while taking the burden away from overburdened prison systems. In Sri Lanka, the Community Based Corrections (CBC) Act of 1999 provides alternatives to incarceration, whereby a non-custodial sanction can be imposed by Section 5 of the Act, on prisoners for whom imprisonment is not mandatory, and for offenses with a penalty of fewer than two years imprisonment. Furthermore, the judge may require those individuals to undergo mandatory drug treatment as a part of the CBC order when they have a history of drug use or prior offenses. Some critics observe these CBC orders, and the drug treatment procedure adopted, as violations of the fundamental rights assured by Articles 11 and 13 of the Sri Lankan constitution. For instance, Section 7 of the CBC Act requires the offender's written consent when entering into a CBC order. Despite that, this consent cannot be deemed free, as refusal to comply with such orders may lead to a prison sentence, thereby conflicting with their right to be free from arbitrary detention. It is contended that the militarization of the drug treatment processes and torture-based mechanisms employed to handle such offenders have aggravated this situation. Despite such allegations, legal sociologists argue that the rights of drug offenders might have to be curtailed for the common economic and social good of the larger society, and the betterment of the offenders themselves. Thus, this study engages with this legal dilemma by reviewing the CBC Act of 1999 and other related literature to understand such alleged human rights violations and to suggest possible amendments to the Act to protect offender rights and introduce robust CBC mechanisms. The study will also discuss the possible improvements to the drug treatment methods and the systems of offender grievances monitoring and complaining systems while drawing from India and South Africa to identify innovative and alternative punishment methods that could be incorporated into the existing CBC methods in Sri Lanka.

**Keywords:** *Community-based corrections, drug abusers, human rights, sociological jurisprudence, CBC Act*

Abstract ID - 38

**COMPULSORY DRUG TREATMENTS AND REHABILITATION;  
HUMAN RIGHTS IN SRI LANKA**

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Protection of human rights is a universally accepted principle (United Nations, 2021) and it has highlighted the significance of the formulation of strong public policies to provide adequate protection for the basic rights of humans. Drug treatments and rehabilitation have remarkably identified as the mechanisms of violation of basic human rights of the victims in Sri Lanka. This study is focused on the central question “What are the human rights violation of drug addicts in the rehabilitation process in Sri Lanka?”. To determine human security the essential recommendations and proposals has been created based on the primary and secondary findings in order to fill the gaps between existing human rights mechanisms and the effects of humanitarian law in the rehabilitation of drug addicts in Sri Lanka. It has been identified that, harm reduction focus responses and community-based drug treatment programs are needed to be funded and monitored by the government. Furthermore, there should be a national policy to protect the human rights of drug addicts and the person who has been a victim of any drug crimes has been highlighted throughout the study.

**Key Words:** *drug addicts, rehabilitations, drug war, human rights, violation of rights*

## DIVERSION OF PHARMACEUTICAL SUBSTANCES FOR NON-MEDICAL USE: SYSTEMATIC ANALYSIS

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Prescription drug abuse generally describes as the use of medications without prescription or misuse of prescription, prescribed by the medical officer/ physician. According to the statistics of the World Drug Report 2022, an estimated 284 million people worldwide aged 15 – 64 had used a drug in 2020 and it corresponds to 5.6% and it represents a 26% increase in 2010. The non-medical use and abuse of prescription pharmaceutical drugs, cause serious public health problems. Prescription drugs/psycho-pharmaceutical diversion involves the unlawful channeling of legitimated and regulated pharmaceuticals from legal sources to the illicit marketplace. Diversion of these pharmaceutical substances can occur at any point of original manufacturing premises, storage, distribution, import/export, sale, consumption and destruction. This study was conducted by the National Narcotics Laboratory (NNL) of the National Dangerous Drugs Control Board by analyzing the Suspected Drug Samples received for routine analysis during the period of 2019 to 2022. These samples were referred to the NNL from different institutions across Sri Lanka such as Magistrate's courts, Government/Private Schools, workplaces and Individuals. Thin Layer Chromatography (TLC) is used for the preliminary identification of drug substances and GCMS and FTIR techniques are used for the confirmatory analysis. Of the total number of samples received in 2019, 45% of the incidences were related to pharmaceutical substances and in 2022, 59% of the incidences were reported related to pharmaceutical substances. As of these results, most of the incidences were reported related to pregabalin. Moreover, Tramadol, gabapentin and diazepam were also identified. In the year 2020, a higher number of pregabalin samples were received at the NNL for analysis purposes and most of these incidences were reported during the COVID-19 period. According to the seizure data captured from other relevant authorities in Sri Lanka during this period, new trends in pharmaceutical drug abuse such as etizolam, xylazine, and zopiclone were identified among drug dependents. In 2019, there were no seizure incidences reported related to zopiclone and in 2021, there were 542 incidences were reported related to zopiclone. Corresponding to these analytical data, pharmaceutical drug diversion relatively increase in Sri Lanka from 2019 to October 2022. Therefore, the requirement of a relevant monitoring mechanism is highly recommended to address this issue and it is important to make relevant changes in legal provisions to effectively address the problem of the diversion of these psycho-pharmaceuticals.

**Key Words:** *Narcotic Drugs, Psychotropic Substances, Psycho-pharmaceuticals, Diversion*

Abstract ID - 46

## NEED FOR NEW LAWS TO COMBAT AGAINST HIGH POTENCY CANNABIS VARIETIES AVAILABLE IN SRI LANKA

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M.W.N.M. Abeynayake<sup>1</sup>, Muthumala K.M.<sup>1\*</sup>

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Cannabis is the most widely used drug worldwide and as well as in Sri Lanka. Illicit cultivation, manufacture and trafficking of cannabis have become a severe threat in combating the world drug problem. In many countries including Sri Lanka the cultivation of the cannabis plant and the production of cannabis are restricted by the legislation. Diversified cannabis products with varying levels of (-)-trans- $\Delta^9$ -tetrahydrocannabinol (THC); which is the psychoactive active ingredient of cannabis, is being emerged in the illicit drug market and smuggling of high potency cannabis varieties into Sri Lanka have also been reported and increasingly been detected by drug law enforcement agencies when compared to the local cannabis species. It has been identified that the psychoactive chemical; (-)-trans- $\Delta^9$ -tetrahydrocannabinol (THC) is higher among a variety of species than the locally identified varieties. Hence regulations and legislative changes must be implemented to control the inflow of the plant for abuse purposes and higher penalties should be introduced depending on the content. The main objective of the study was to generate scientific evidence through drug characterization studies of selected samples where the analytical findings are beneficial to the law enforcement authorities and law and policymakers in order to be tactful with evidence generation and to strengthen legal measures against high potency cannabis varieties.

**Keywords:** *High-potency cannabis, Psychoactive effect, THC, GCMS, Legislative changes*

## SESSION IV

# “DRUG TREATMENT, REHABILITATION AND SOCIAL REINTEGRATION”

### Session Chair:

*Dr. Jayamal De Silva,  
Consultant Psychiatrist*

### Panelists:

*Mr. Chandana Ekanayake, Additional Commissioner General of  
Prisons, Department of Prisons in Sri Lanka.*

*Mr. OTSUKA Takeaki, Professor, United Nations Asia and Far  
East Institute for the Prevention of Crime and the Treatment of  
Offenders (UNAFEI)*

Abstract ID - 5

## CAUSE AND VICTIM OF DRUG ADDICTION AND WAY FORWARD FOR ESTABLISHMENT OF ADEQUATE TREATMENT AND REHABILITATION FACILITIES IN THE PRIVATE SECTOR IN BANGLADESH

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The Department of Narcotics Control (DNC), Bangladesh surveyed the recent past. The principal objective of the study was to figure out actual drug victims and underlying causes of drug addiction. It was also triggered to find the availability and potentiality of treatment services for Substance Use Disorders (SUD) in the nongovernment treatment and rehabilitation centers in the country. The methodology adopted approaches for exploring both quantitative and qualitative information. For collecting quantitative data, a field survey was conducted on 2500 drug dependents countrywide. The qualitative study focused on unearthing the reasons behind drug addiction, understanding the demand and supply aspects, and identifying routes. Focus Group Discussion (FGD) and in-depth categorical interviews were conducted to portray the impacts of drug addiction and mitigation approach, etc. Cannabis and Amphetamine Type Stimulants (ATS) / Yaba are mostly consumed. Phensedyl, Heroin, and opioid analgesic are abused moderately. Two in three (71.9%) respondents took two or more drugs simultaneously. People of age groups from up to 30 years comprise 58-87% of drug abusers whereas the average age is 30.4 years. Rajshahi division witnessed the oldest and Mymensingh the youngest age group. Data reveals that the highest percentage of SUDs is illiterate (82.76%). The average cost of consuming drugs per person was from BDT 324.0 to BDT 619.76 per day. Family Problems, (neglectful parenting 28.4%), socioeconomic conditions, peer pressure (80%), depression (60%.5%), and relationship breakdown (3.6%) are found as root causes of drug addiction. A huge amount of public expenditure will be saved and more productivity will be generated. Moreover, it will pave the Demographic Window of Opportunity to achieve a Demographic Dividend for further social and economic development by ensuring the availability of treatment and rehabilitation. Furthermore, this will lead to establishing good governance, a stable economy, public health, and sustainable development as a whole. To take more programmes in capacity building for the caregivers. To ensure adequate funds for privately owned treatment centers. To strengthen the religious, community-based, and educational institution-based campaigns. Providing treatment and rehabilitation facilities with multipronged initiatives would mitigate drug-induced suffering immensely and it would uncover a new horizon in the treatment system.

**Keywords:** *Substance Used Disorders (SUD), Focused Group Discussion (FGD), Amphetamine Type Stimulants (ATS), Opioid Analgesic, Age Group.*

Abstract ID - 9

**EFFECTS OF ILLICIT DRUG USE BEHAVIOR ON FAMILY AND SOCIAL NETWORKS AMONG MALE ILLICIT DRUG USERS IN FIVE SELECTED REHABILITATION CENTERS IN SRI LANKA**Darshana ILAN<sup>1\*</sup>, Wijesinghe CJ<sup>1</sup>, De Silva PV<sup>1</sup><sup>1</sup>Department of Community Medicine, Faculty of Medicine, University of Ruhuna, Sri Lanka\* [ilandare@gmail.com](mailto:ilandare@gmail.com)

Strong family and social networks are identified as important factors for the effective treatment and rehabilitation of drug users. This study was conducted to assess the effects of illicit drug use behavior on family and social networks among male illicit drug users admitted to rehabilitation centers in Sri Lanka. A cross-sectional study was conducted in a consecutive sample of 431 male illicit drug users in five selected rehabilitation centers in Sri Lanka. Effects on family and social networks (family and social relationships and employment) were assessed using an interviewer-administered questionnaire. The Chi square test was used to assess factors associated with effects on family and social networks at the significance level of 0.05. Approximately 48% of the drug users did not have mutually supportive relationships with family members and 37.1% were neglected by their families. Of the drug users who were married (45.7% of the total sample), 21.8% had marital disruption. Nearly 1/3rd of the sample (32.9%) did not have mutually supportive social relationships while 62.9% reported being neglected by the society in which they lived. Nearly 57% of the drug users have had conflicts at workplace, 50.1% had lost a job and 22% changed occupations frequently due to their drug use behavior. Drug users of minor ethnic groups ( $p < 0.001$ ) and those with a higher problematic level of drug use ( $p < 0.05$ ) were more likely to experience consequences on family and social relationships. Interestingly, drug users with consequences on family and social networks were more likely to have higher motivation levels for rehabilitation ( $p < 0.01$ ). Adverse consequences of illicit drug use on family and social networks are common among the male drug users in Sri Lanka. Social interventions are required to ensure family/social support for the drug users to ensure successful rehabilitation.

**Keywords:** *Effects on family and social networks, illicit drug use, male drug addicts*

Abstract ID - 11

## HEALTH CHALLENGES FACED BY SUBSTANCE USERS IN MALDIVES: CLIENT'S PERSPECTIVE

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Psychoactive substances can alter a person's thoughts, feelings, and behaviour. They have the potential to be misused with negative effects and develop substance use disorder. Regular substance users are more likely to get poor health conditions. Additionally, they are more likely to overdose and pass away before their time, develop infectious diseases like HIV and hepatitis C, and contract overdoses. Maldives has not created a dedicated plan to prevent harmful drinking and substance use, it has included pertinent parts of the global strategy into its local plans and strategies for managing non communicable diseases, drugs, and mental health. The National Drug Agency (NDA) is in charge of organizing the narcotic drug misuse treatment program. Hence, exploring health challenges among clients who are seeking treatment can show the importance of medical care during recovery. To explore health challenges among recovering substance users in Male' Maldives. A qualitative study design, Face-to-Face interviews was conducted for data collection. The sample population was selected among current recovering clients who are seeking treatment in the community service center of National Drug Agency, Maldives. Sample was selected by purposive sampling technique. The findings indicate that clients in recovery experience difficult health issues throughout their recovery process, necessitating both advanced medical care and community-based care. The findings may highlight the value of enhancing the existing level of medical care provided by the Maldives' National Drug Agency. The disease of substance use results in co-occurring disorders and diseases. Health issues may vary depending on where in the world a person lives, but if they are properly investigated, an advanced intervention can be introduced that will have a better chance of preventing relapse and achieving abstinence for longer periods of time, leading to successful recovery from drug use.

Abstract ID - 18

## DESCRIPTIVE ANALYSIS OF COMMUNITY OUTREACH CLINIC FOR PEOPLE WHO INJECT DRUGS (PWID)

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PWID have a high susceptibility to blood-borne viruses including HIV due to their risk behaviours such as injecting and needle sharing which makes them vulnerable to these infections. The National STD AIDS Control program has taken the initiative to carry out an outreach program for PWIDs and PWUDs to fulfill the gap shown through the statistics of the IBBS surveys carried out in 2014, and 2018. Marginalized PWID face barriers to accessing services due to stigma, lack of trust, poverty, mental health issues, and incarceration.

This study describes the hepatitis C (HCV) treatment profile of PWIDs, who was screened and received care from a multidisciplinary HCV community clinic. Measures the HCV prevention effectiveness of treating PWID and their injecting partners

A multidisciplinary outreach clinic functioned from 2019 to date and hepatitis C treatment was initiated in 2022 June, with a group of six healthcare staff which included a Program Coordinator, a testing assistant, a counselor, a medical officer, a consultant community physician, and a gastroenterologist. The gastroenterologist was consulted through a telemedicine approach and specialized referrals were done for scans and special investigations when required. The PCR testing was conducted through the guidance of a microbiologist. The PWIDs are provided with testing services, health education, counseling, harm reduction services with needle syringe exchange and HCV treatment. A retrospective chart review was carried out on the patients treated in the community center.

PWID (N=538) was screened over the past three years and 50.2% (n=270) has shown Hepatitis C reactive through the rapid test. The Confirmatory test was done on 30.3% (n=82), and Hepatitis C was confirmed on 87% (n=72) of patients who undergo the confirmatory testing. There are n= 41 (56.9%) patients initiated on direct-acting antiviral drugs and n=12 patients have completed 6 weeks of treatment and 7 completed 12 weeks of treatment with 12.1% (n=5) treatment defaulters.

The outreach community clinics facilitate rapport and trust building through regular contact and consistent field presence. The model is important for treatment retention and measuring follow-up outcome. The peer outreach workers play a major contribution to client adherence and follow-up of outreach clinics. Despite many obstacles to the delivery of HCV treatment to this

Abstract ID - 24

## FAMILY INFLUENCE TOWARDS THE RECOVERY FROM SUBSTANCE USE DISORDER

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The main objective of the study was to identify the influence of the family on the recovery from substance use disorder. The research problem of the study was how family influences the recovery from substance use disorder are? This study was based on the Mix method. Under the Stratified Sampling Technique, 170 clients were selected for the sample who obtained treatment services from the 4 treatment centers of the National Dangerous Drugs Control Board during 2017-2018. When inquired on the nature of the relationship between family members and clients prior to and after rehabilitation, five indicators were utilized. Prior to the rehabilitation, when inquired on the attitudes and trust regarding the usage of drugs of the clients by their family members, 52 (30.6%) of them mentioned “moderate”, 45 (26.5%) of them mentioned “strongly dissatisfied”, 39 (22.9%) of them mentioned, “satisfied”. After the rehabilitation, 63 (37.1%) of them mentioned “strongly satisfied”, and 62 (36.5%) of them mentioned, “satisfied”. Prior to the rehabilitation, when inquired about the attention given to the clients by their family members, 60 (35.3%) of the clients mentioned “satisfied”, 26 (15.37%) of them mentioned “strongly satisfied” and 25 (14.5%) of them mentioned “strongly dissatisfied”. After the rehabilitation, 77 (45.3%) of them mentioned “strongly satisfied”, and 65 (38.2%) of them mentioned, “satisfied”. When inquired about the acceptance by the family members to the clients prior to being rehabilitated, 51 (30%) of them mentioned: “dissatisfied”. After the rehabilitation, 70 (41.2%) of them mentioned “strongly satisfied”, and 56 (32.9%) of them mentioned, “satisfied”. When considering the relationship between clients and their family members, 50 (29.4%) of the clients mentioned “moderate”, 48 (27.1%) of them mentioned “satisfied”, 33 (19.4%) of them mentioned “dissatisfied”, 27 (15.9%) of them mentioned “strongly dissatisfied”. After the rehabilitation, 75 (44.1%) of them mentioned “strongly satisfied”, and 52 (30.6%) of them mentioned, “satisfied”. When identifying the support given to the client to reintegrate into society by the family members after the rehabilitation process, 66 (38.8%) of them mentioned “strongly satisfied”, 64 (37.6%) of them mentioned “satisfied”, 26 (15.3%) of them mentioned “moderate”. It can be concluded that more interference from family members was received by the clients after they were being treated and rehabilitated than prior to the treatment and rehabilitation.

**Keywords:** *Drugs, peer pressure, psychological, self-impact, treatments*

## PSYCHOSOCIAL FACTORS ASSOCIATED WITH RELAPSE AFTER THE REHABILITATION PROCESS

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It was proved via the studies being conducted by social researchers that after being treated for the usage of drugs within a certain period, there is a propensity to become a drug addict afresh. The problem of this study which was conducted with the main objective of identifying the psychosocial factors associated with relapse after the rehabilitation process was “what the psychosocial factors which can have an impact on the re-usage of drugs after being taken treatments and rehabilitation by the drug users are? This study was based on the Mix method and the quantitative and qualitative data was collected through structured questionnaires, in-depth interviews and observation. Under the Stratified Sampling Technique, 170 clients were selected for the sample who obtained treatment services from the 4 treatment centers of the National Dangerous Drugs Control Board during 2017-2018. Among 170 clients who were included in the sample, it was proved as specified by the study that was being carried out that 123 clients had used different types of drugs. When inquired on the psychosocial factors, among 123 clients, 69 (56%) of them were affected by “self-impact”, 15 (12%) of them were affected by “isolation”, 8 (7%) of were them affected by “negative thoughts and mental confusion” and 9 (7%) of them affected by “re-labeling. Among 123 clients, 50 (41%) of them affected by “peer pressure”, 40 (33%) of them affected by “abundance/availability of drugs in the respective area”. 38 (31%) responded that they had to go to the same environment where they lived earlier after the treatment and rehabilitation. It can be concluded that psychosocial factors such as self-impact, isolation, negative thoughts and mental confusion, re-labeling, peer pressure and abundance/availability of drugs in the respective area are associated with relapse after the treatment and rehabilitation process and among them self-impact and peer pressure are more affected.

**Keywords:** *Drugs, peer pressure, psychological, self-impact, treatments*

## TREATMENT METHODS AND APPROACHES PRACTICED IN DRUG TREATMENT AND REHABILITATION CENTRES IN SRI LANKA

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In Sri Lanka, government and private residential treatment centers are being function for those who suffer from drug use disorders. This study was conducted to identify the treatment methods and the approaches practiced in drug treatment and rehabilitation centres. 29 government and private treatment centers were studied using the survey method under mixed research methodology. In addition, guidelines were used in terms of Act No.54, 2007 on drug addicts (treatment and rehabilitation), and the standards prescribed by the World Health Organization (WHO) and United Nations Office on Drugs and Crime (UNODC). As per the research findings, treatment services are provided for males in all treatment centers and only 03 (10%) are provided treatments for females. 27 (93%) by self-will and 15 (52%) under court orders, and 15 (52%) clients from institutes referred by the Police are admitted for treatment. In 12 (41%) treatment centers, clients are subjected to a “Screening Test”. 15 (52%) treatment centers consider the drug addiction level and 14 (48%) treatment centers focus on the type of drugs used by clients in admission. In 21 (72%) treatment centers have the capacity to treat special groups. In most of the treatment centers 13 (45%), the treatment process is carried out for 1 – 3 months’ time period. As per the treatment method carried out in centers, in 26 (90%) treatment centers, one standard treatment method, and in 03 (10%) treatment centers multiple treatment methods are practiced. It was revealed that 06 (21%) treatment centers practiced the psychological treatment model, 11 (38%) centers practiced the religious faiths/myths-based treatment model, 05 (17%) centers practiced the community treatment model and 04 (14%) centers practiced multiple models. 27 (93%) centers conducted spiritual development programmes and 26 (90%) centers conducted education and information programmes. It can be concluded that the duration of most treatment centers, that have conducted religious faith-based treatment models differs from one another, and clients are able to admit as per their self-will. Further, it can be concluded that multiple treatment models are practiced in most treatment centers.

**Keywords:** *addiction, treatment methods, multiple models, community models, drugs*

## Abstract ID - 41

**A STUDY ON DRUG USE PATTERNS AMONG INDIVIDUALS IN RESIDENTIAL TREATMENT AND REHABILITATION: WITH SPECIAL REFERENCE TO NAWADIGANTHAYA TREATMENT AND REHABILITATION CENTRE.**

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Drug abuse is a major problem faced by the world including Sri Lanka and according to the World Drug Report, the world population between the ages of 15 and 64 consumes 271 million illicit drugs. The trend and pattern of drug use can be different by time or country. The problem of this study which was conducted with the main objective of identifying the existing pattern of drug use among individuals was “what the pattern of drug use among individuals are? To identify the socio-demographic profile of the individuals and how drugs effected for them were the specific objective of the study. “Mixed research method” was used and 55 individuals who are in residential treatment process for substance use disorders in Nawadiganthaya treatment centre were selected by using simple random sampling method. Quantitative and qualitative data was collected through structured questionnaires, in-depth interviews and observations. Qualitative data analysed by using the thematic content analysis method and quantitative data analysed by using SPSS software. The medium age of the using drug is 16 years and upper age consists of 27 years. The study reveals as follow The study indicates Cigarette is the first attempted drug and it refers to 41 (75of the total sample population. The study identified that ‘Heroin’ is the most common used drug among young adults. 45(82%) individuals had used Heroin and 14(25%) Methampitamine. Cigarettes has been used 40(73%) and Cannabis has been used 18(33%). In addition, Alcohol and LSD have been used 35(63%), 1(1.8%) respectively. Heroin is the most commonly used drugs among the respondents (n=45,82%). The study reveals that highest usage of drug in future will be the ‘Methampitamine’; indicates 25(45%) by total sample population. When considering of the effect of drugs 7(13%) individuals responded that not harm to the well-being, 48(87%) indicate it is harmful for mental and physical wellbeing. 46(83%) responded that use of drugs was occurred problems to the close relations and 7(13%) responded that was not. It can be concluded that Heroin was the most commonly used drug among the individuals who are being treated before admission. And also it can be concluded that drug use leads mental and physical problems and problems to the close relations of individuals.

**Keywords:** *Cannabis, drugs , Drug abuse , Heroin, Methampitamine*

Abstract ID - 45

## GENDER DIFFERENCE IN SUBSTANCE ABUSE, TREATMENT AVAILABILITY AND DIFFICULTIES TO ACCESS TREATMENT IN WOMEN: REVIEW

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Use of illicit substances by women, mostly related to the opportunities for women to use drugs, culturally defined role and some other social factors. (*World Drug Report 2022*). Findings on ‘Substance abuse treatment and care for women: case studies and lessons learned’ published by United Nations Office on Drugs and Crime, full picture of women’s substance use, prevalence of substance use and associated problems do not address the gender issue of international, national and local level. ‘The hidden epidemic’: Situation assessment of Drug Use in Asia in the context of HIV/AIDS’, reported the increase in substance use among Asian women and increased involvement of women in injecting drug users in sex work in Asian countries. There is an increased risk of HIV among women particularly in Asia due to the increased involvement of women injecting drug users in sex work and unsafe sexual practices. In addition to that, the use of illicit substances during pregnancy becomes major challenge. It directly affects the health of the mother fetus. Women generally have more severe problems at treatment entry and potentially greater obstacles to accessing treatment than men. Women in different regions of the world experience same barriers to accessing and remaining in treatment setting. Women face systemic, structural, sociocultural and personal barriers. Systemic barriers are lack of decision-making power, limited awareness of gender differences in factors that determine health status and outcome, lack of knowledge of women with substance use problems and their treatment needs relevant to different sociocultural and political circumstances and lack of appropriate gender-responsive and low cost, evidence-based treatment methods have been identified. Structural barriers, service or program level difficulties for women such as childcare, lack of services for pregnant women, location and cost of treatment programmes, rigid program schedule, waiting list, denial of admission to women using psychoactive medications, physical safety, lack of service coordination and identification, referral and intervention in primary care and lack of information on treatment option identified. Social, cultural and personal barriers are disadvantaged life circumstances such as poverty, lack of basic health care, reproductive care, low literacy rates, domestic violence and as other barriers stigma, shame and guilt, fear of losing custody of children, lack of support from family, substance use as a solution rather than a problem and lack of confidence in the effectiveness of treatment has been identified. Therefore, it is important to make a high priority to this group by allocating adequate resources and support at the ground level and family level for them to access the treatment facility. Therefore, raising community awareness, training primary care and other helping professionals, identification of women at risk at ground level, enhancing community volunteer and increase of treatment services for women can recommend.

**Key Words:** *gender difference, women’s substance abuse, treatment, treatment barriers*

Abstract ID – 51

## ACUPUNCTURE AS A SUPPORTIVE INTERVENTION FOR OPIOID USE DISORDER TREATMENT IN RESIDENTIAL REHABILITATION: A REVIEW

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Opioid use disorder (OUD) is one of the most prominent types of substance use disorder (SUD) with a high global prevalence that causes detrimental physical and psychological effects for individuals, thereby society. Treating individuals with OUD and OUD-associated complex health and psychosocial problems is a global challenge. In order to face this challenge, implementing regular rehabilitation programs in conjunction with integrative therapies like acupuncture is much needed.

A scoping review was conducted to understand the background and evidence of the use of acupuncture concerning drug rehabilitation focusing on OUD. Three electronic databases; (Google Scholar, PubMed & Hinari) were searched with keywords, and synonyms using Boolean operators and phrase search to acquire literature which was peer-reviewed articles published in the English language between the years 1970–2022. More literature was located via screening the citations by 02 independent reviewers. Data extraction was performed by one reviewer and verified by another. The literature search yielded 72 articles. According to the literature, acupuncture is a well-established treatment with a long history that uses manipulation of specific body points to alleviate a wide range of health issues and is thought to be a successful add-on therapy to long-term residential rehabilitation that can be successfully applied in all stages of residential treatment; detoxification, rehabilitation, and relapse prevention. Several studies indicated that acupuncture has a background of opiate detoxification benefits, including fewer adverse side effects, higher reliability, safety, and optimal effectiveness in reducing long-term withdrawal symptoms and recurrence, providing the required tranquil mindset to rehabilitees while reducing the physical discomforts during rehabilitation. Ear-Shenmen, Sympathetic, Kidney, Liver, Lung, Hegu (LI4), Neiguan (P6), Shenmen (H7), Taichong (LIV3), Zusanli (ST36), Sanyinjiao (SP6), Shenshu (UB-23), Dazhui (DU14), and Baihui (DU20) were observed to be the common acupuncture points used in OUD treatments. However, there is relatively limited empirical evidence on the use of acupuncture as an add-on therapy for OUD. Due to the lack of knowledge on the nature and scope of acupuncture, the unavailable consistent data, insufficient reporting of adverse events and the inadequate well-designed, high-quality randomized controlled studies have resulted in the use of incorrect treatment procedures.

**Keywords:** *Acupuncture, Opioid use disorder, Substance use disorder, Residential rehabilitation, Add-on therapy*

Abstract – 52

## THE IMPACT OF COVID-19 ON RESIDENTIAL REHABILITATION PROGRAMS FOR INDIVIDUALS WITH SUBSTANCE USE DISORDER

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According to UNODC and WHO global estimates, only one in six individuals with substance use disorder (SUD) has access to treatment programmes. This proportion further declined due to the COVID-19 pandemic, causing devastating problems to individuals with SUD with their higher risk of being infected with the COVID-19 virus and developing post-COVID complications due to their unstable psychological state, weakened immunity, malnutrition and other health-related complications that have arisen with the prolonged use of substances. Since there is a timely need to provide a substantial emphasis on the state of individuals with SUD during the COVID-19 pandemic, a scoping review was conducted to critically appraise the available empirical evidence which is instrumental prior to the laying out and providing residential rehabilitation during COVID 19. Three electronic databases (Google Scholar, PubMed, Hinari) were searched with keywords, synonyms, Boolean operators and phrases related to SUD, the impact of COVID-19 on individuals with SUD, functioning of residential treatment programs during COVID-19. Peer-reviewed articles written in English between 1995 – 2022 years were acquired. More literature was retrieved via screening the citations by 02 independent reviewers. Data were extracted and analyzed based on common aspects of the residential rehabilitation impacted by COVID-19 by one reviewer and verified by another. The findings revealed that there is a high demand for treatment and residential rehabilitation for SUD either as a result of using more substances during COVID-19 or suffering from withdrawal symptoms due to limitations in accessing substances with the lockdown, economical downfall and increased cost of substances. But the provision of residential treatment during COVID-19 was complicated and treatment was interrupted in the aspects of the rehabilitation program, recruitment and service provision for rehabilitees or clients, staff and the infrastructural facilities which posed questions regarding the effectiveness of current residential rehabilitation programs during a pandemic situation. There is a strong need for the introduction of innovative programs for SUD with sufficient empirical evidence which is effective even amidst a pandemic. More empirical research is needed regarding the impact of the COVID 19 pandemic on residential treatment facilities in low- and middle-income countries for future reference in facing similar situations.

**Keywords:** *Substance Use Disorder, COVID-19, Rehabilitation*

**SESSION V****“THE ALLIANCE OF SCIENCE,  
TECHNOLOGY, AND INNOVATION  
TOWARD COMBATTING THE DRUG  
MENACE”****Session Chair:**

*Ms.Sandya Rakapaksha,*

*Deputy Government Analyst*

**Panelists:**

*Lim Jong Lee Wendy, Division Director - Illicit Drugs Laboratory,  
Illicit Drugs Division, Applied Sciences Group, Singapore*

Abstract ID - 13

## EFFICACY OF TECHNOLOGY BASED INTERVENTIONS FOR SUBSTANCE USE PREVENTION IN INDIA

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Substance use disorders from licit and illicit drugs are a global problem with far-reaching consequences, including health consequences, lost productivity, injuries, overdose deaths, suicides and violence. The last two decades have witnessed the proliferation and expansion of computer and mobile technologies, available to the general public, both in terms of accessibility as well as cost. With the burgeoning of technology-based health interventions (TBI), digital tools have been leveraged within substance use prevention and treatment programming. Technology (computer, web and mobile services) offers the potential to play a critical role in assessing the need for intervention delivery and delivering evidence-based interventions such that their fidelity, cost-effectiveness and reach of efforts can be maximized. The present article intends to assess mobile technology-based prevention interventions for substance use disorders in India and determine the efficacy of such interventions. Intervention delivered through mobile technology and outcome measurement of cessation/reduction of use is sought to be evaluated by following the Cochrane Collaboration guidelines on systematic review methodology. This is a study in progress. We have come across a couple of studies analyzing the effectiveness of m-health applications in substance use prevention. Considering that the content of the mobile health applications under review is mainly focused on providing information regarding the various kinds of drugs, their effects, enhancing motivation and social support, there is not much information on whether the apps were effective in reducing addictive behaviours. Another key issue has been compliance with ethical guidelines regarding data protection, user privacy etc. which appears to present a major challenge. Web-based interventions are promising yet a greater standardization of assessment-related materials and information will enhance the ability to study and understand the differences in effectiveness that exist between intervention components.

**Keywords:** *Technology-based interventions (TBI), Substance-use, web-based, Text messages, prevention.*

Abstract ID - 21

## **DRUG ADDICTION RECOVERY AND THE AUTHENTICITY BEHIND NEUROADAPTATIONS AS A RESULT OF ADDICTION TO DRUGS**

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Addiction to drugs concerning recent medical discoveries has identified that it could be interpreted as a chronic disease rather than a state of mind. Research denotes that addiction is a complex biobehavioral disorder and hinders functionality in every different domain. However, there are various criticisms of conceptualizing drug addiction as a disease. Accordingly, it is interpreted that addiction is an individual's inability to cooperate with their weakness of character which thus has made grounds for individuals with substance abuse problems to hesitate in accessing evidence-based treatments. The purpose of the research is intended to discuss the impact of drugs on the brain, thus resulting in addiction and whether recovery influences the physical and psychological aspects of an individual. While the objectives can be denoted as to elaborate on the psychological influences impacting drug addiction recovery, research questions can be identified as whether addiction is a disease and whether addiction recovery solely depends on the matter of mind. Qualitative research was conducted by using secondary data and employing a mixed method to analyze the gathered information. The gained results can be elaborated as that drug addiction is a chronic disease and that the environment is a contributing factor in deciding the probability of relapsing in rehabilitation as well. Further, the authenticity behind the critical attitudes is elaborated on and analyzed while proving the impact of drug addiction on individuals both physically and psychologically. The study concluded by providing an account of the authenticity of drug addiction, whether it's a disease or a state of mind while referencing contributing factors. The research denoted recommending public awareness regarding the biological aspect of drug addiction as well as further research regarding the subject should be encouraged. Youth-focused programs can be started to give them access to knowledge on drugs and the repercussions that most people are unaware of. To seek guidance and information in the fields, partnerships with treatment centers and experts can be formed.

**Keywords:** *disease, drug addiction, recovery, rehabilitation, the psychological impact*

Abstract ID - 22

## DETERMINATION OF IMPURITIES AND ADULTERANTS OF COCAINE BY GAS CHROMATOGRAPHIC-MASS SPECTROMETRIC METHOD TO IDENTIFY ANY CORRELATION

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Cocaine is the second most problematic abused drug produced from the leaves of *Erythroxylum Coca*. In this respect, it is very important to find out the origin of the seized cocaine and also the route of trafficking. The impurities present in samples give an idea about the method of manufacture. The aim of this study was to select a suitable Gas Chromatographic Mass Spectrometric (GC-MS) method for qualitative analysis of impurities and adulterants in samples of cocaine to identify any correlation. In this study, fifty (50) cocaine samples were collected from the Government Analyst's Department of Sri Lanka. The analytical results revealed that all samples analyzed were cocaine hydrochloride salts. A GC-MS method involving one step derivatization procedure was developed for qualitative and quantitative analysis of impurities & adulterants in cocaine samples. Agilent model 7890 A GC coupled with Agilent 5795C inert XL MSD with Triple-Axis Detector was used in this study with an HP 5 MS 5% phenyl methyl Silox 325C column. The derivatizing agent used in this study was N, O-bis, (trimethylsilyl) acetamide. Fifteen compounds were identified as impurities in this study and showed well-separated peaks in the chromatogram. According to the comparison of results, eighteen (18) different profiles were identified. Further, concerning identified impurities, it was concluded that twenty-three (23) samples were manufactured from illicit synthetic procedures while the other twenty-seven (27) samples were manufactured using illicit natural synthesis procedures. Further, Lidocaine, Caffeine, Levamisole, Phenacetin and Acetaminophen were identified as adulterants. Among the identified adulterants levamisole was the most abundant (65% of the total samples) Acetaminophen, Phenacetin, Caffeine, and Lidocaine were found in 30 %, 20%, 33%, and 42% of samples respectively. The same GC-MS method was applied to quantify ecgonine methyl ester and benzoylecgonine in the samples and the percentages were in the range of 0.2- 4% and 2-11% respectively while the percentage of adulterants Acetaminophen, Caffeine, and Lidocaine and levamisole were 5- 10%, 5-8%, 4-6% and 2-3% respectively.

**Keywords:** Cocaine, Impurities, Adulterants, Derivatization, Qualitative analysis

Abstract ID - 31

## SCIENTIFIC EVIDENCE BASED PRACTICES TO ADDRESS THE CHALLENGE OF ROAD TRAFFIC ACCIDENTS AND INJURIES DUE TO DRIVING UNDER INFLUENCE OF DRUGS

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The intensification of the road traffic crashed, injuries and related deaths due to driving under the influence of drugs has become a serious global challenge and it is a growing concern in Sri Lanka in the recent past. Evidence and research studies shows drug abuse cause neurological deficits which severely cause impairment in motor coordination, anxiety, a sensation of slowed time, impaired judgment and reaction time, hallucination or auditory, visual, or tactile illusions, disturbance in attention and awareness, disturbance in cognition which may leads to increase of accidents and fatalities of serious concern with respect to drugged driving. The objective of the study is screening of biological specimens to investigate the extent of the problem of multiple substance abuse among bus drivers and identify emerging drug abuse trends. Biological samples (urine) were collected from 75 bus drivers attached to Sri Lanka Transport Board with filled questionnaires in a specially arranged programme and the samples were screened using the Enzyme immunoassay (EIA) technique at the programme site. EIA analysis revealed the presence of morphine in one sample (1.3%), cannabinoids in three samples (4.0%) and tricyclic antidepressants in two samples (2.7%). Results revealed that the prevalence of substance abuse was 6.7% and the positive rate of multiple drugs abuse was 1.3%.

**Keywords:** *Drug screening, EIA technique, Neurological deficits, Road safety, Substance abuse*

## GENETIC APPROACHES TO OPIOID USE DISORDER: A REVIEW

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Opioid use disorder (OUD) is defined by physical and psychological symptoms that drive opioid-seeking behaviour, as well as chronic use, relapse, tolerance, and addiction to opioids. An opioid is one of the most prevalent medications and pharmaceuticals that lead to addiction and dependence. OUD is caused by both genetics and environmental factors. Genetics plays a large impact in the development of addiction and is known to contribute 40 to 60% towards developing a drug addiction.

Therefore, a scoping review was conducted to document the association between the genes and variants associated with OUD. Three electronic databases: (Google Scholar, PubMed & Hinari) were reviewed with the keywords of opioid use disorder, opioid addiction genetics, and opioids. The scoping review of the literature included a total of 70 publications.

According to the literature, classical addiction genetics research has concentrated on three key opioid receptor subtypes: mu ( $\mu$ ), kappa ( $\kappa$ ), and delta ( $\delta$ ), which are encoded by the OPRM1, OPRD1, and OPRK1 genes, respectively. This OPRM1, OPRD1, and OPRK1 gene family regulate opioid addiction via a reward system route that includes the dopaminergic system. Furthermore, when opioid ligands bind to these receptors, euphoric and rewarding responses are produced. Endogenous opioids, opiate, and opioid analgesics, and exogenous opioids such as methadone, heroin, and morphine all function through the OPRM1 (G protein-coupled) receptor.  $\beta$ -endorphin binding to the  $\mu$ -opioid receptor causes dopaminergic neurons to disinhibit, which has been related to reward and reinforcement and is thought to contribute to the development of drug dependency. Numerous studies have found that the Opioidergic system genes OPRM1, OPRD1, OPRK1, PDYN, OPRL1, and POMC are linked to OUD symptoms in many ethnic groups. Single nucleotide variants (SNVs) in these genes have been researched extensively among numerous populations of African Americans, Caucasians, Hispanics, Native North Americans, South Asians, and other ethnicities.

Despite a strong genetic propensity to opioid dependence, environmental factors, like many other multifactorial disorders, i.e., cancer and diabetes, play a key role in this opioid use disorder. To learn more about opioid use disorders, investigations should focus on connections between genes and the environment, often known as epigenetics.

**Keywords:** *Opioid use disorder, gene, OPRM1, OPRK1, opioid addiction*

Abstract ID - 43

## SCIENTIFIC EVIDENCE BASED STRATEGIC INTERVENTIONS TO COMBAT THE CHALLENGE OF SUBSTANCE USE DURING PREGNANCY AND TO PREVENT ITS IMPLICATIONS ON NEONATES

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Increase of substance use population, especially women and youth is a major Global challenge and according to the World Drug Report 2021, it is estimated 11% rise in the global number of people who use drugs in 2030 when compared to the increase of global population. According to the Sri Lankan statistics, similar trends have been observed. Dependence of illicit drugs, pharmaceutical drugs with high abuse potential and psychoactive substances such as Amphetamine type stimulant, mainly di-acetyl morphine (heroin) which belongs to the group of Opioids, during pregnancy, is a major emerging challenge and main public health concern associated with adverse maternal, fatal and neonatal consequences. Based on the global situation, the National Narcotics Laboratory (NNL) of National Dangerous Drugs Control Board (NDDCB) Sri Lanka, conducted this study to understand the current status in Sri Lanka by analysing the Biological Specimen Samples (urine) received by the NNL for routine analysis during the period from 2019 to October 2022. Four (04) biological specimen (urine) in 2019, Seven (07) biological specimen (urine) on 2021 and nine (09) biological specimen (urine) on 2022 were obtained from neonates with withdrawal syndromes. Samples were received from different Government Hospitals located in Colombo and Kalutara Districts and were tested for the presence of di-acetyl morphine (Heroin), Amphetamine, Cannabis and Benzodiazepines using Enzyme Immuno Assay (EIA) Technique where the detection limit is 300 ng/mL, 500 ng/mL, 50 ng/mL and 300 ng/mL respectively. Of the total number of samples received for the 2021 neonates represented 2.76% whereas of total samples received for the year 2019 it accounted for 0.46%. Total of seven (07) biological specimen reported on neonatal related cases, five (05) samples were positive for di-acetyl morphine (Heroin) which accounted for 23.12% increase of cases when compared to 2019 and of the total number of samples received from January 2022 to October 2022 neonates represented 14.06% the total number of samples received. Total of nine (09) samples, seven(07) samples were given positive results for narcotic drugs and psychotropic substances such as di-acetyl morphine (Heroin), cannabinoids, amphetamines and benzodiazepines. Mostly according to the cultural barrier, women including pregnant mothers with substance use problems experience significant barriers to accessing treatment and they are underrepresented in treatment setting also due to absence of a mechanism for the assessment of drug abuse problem among pregnant mothers at the clinics conducted at Medical Officer of Health (MOH). Therefore, it is highly significant to establishment of a scientific mechanism with drug screening facilities to identify substance use women, pregnant women and their partners at the preliminary level in order to assess the extent of existing drug abuse problem and to implement mechanism to effectively address drug abuse problem among women in Sri Lanka.

**Keywords:** *Narcotic Drugs and Psychotropic Substances, Pregnancy, Abuse, Neonates*

Abstract ID - 47

**“ANALYSIS OF MARINE PEPTIDE”**Loku Umagiliyage E. G.<sup>1</sup> and Dr. RuAngelie Edrada-Ebel<sup>2</sup>

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The natural active co-cultured peptide obtained from a marine source (SBT 3255) which was earlier elucidated by using NMR and MS source fragmentation technique was examined. The structure of these compounds, often isolated as complex mixtures, can be elucidated by high-energy tandem mass spectrometry (MS/MS). The protonated molecules generated by electro spray ionization undergo fragmentations leading to a-, b-, and y-type ion series useful for sequence determination. Spectra obtained using electrospray ionization mass spectrometry (ESI-MS) of the SBT 3255 showed a molecular ion peak at a molecular mass of 1561 Da.

The amino acid sequence of the peptide was examined using collision-induced dissociation (CID) experiments of multiple charged molecular ions and by using previously elucidated structure using NMR structure. SBT 3255 had fifteen amino acids consisting of 3 x OH-proline, 2 x proline, 3x threonine, 3 x aspartic acid and one of each that included alanine, isoleucine, glycine and histidine. Analysis by direct infusion which is no chromatographic separation of components in the sample before it passes into the MS detector and a combination of Liquid Chromatography with Tandem Mass Spectrometry improve the ability to identify unknown peptides or proteins which contained in a complex mixture. Two-stage mass analysis was used for the compound identification, MS/MS analysis monitored how a parent ion was fragmented when exposed to an additional stage of ionization. There are two types of MS/MS analysis, Full scan MS/MS analysis and Selective Reaction Monitoring (SRM). The data from the MS detector is then stored and processed by the Xcalibur data system.

It is observed that there is a high efficiency to fragmentation at the peptide bond with the N-terminal of the proline residue and tandem MS provided the detailed information required to fully characterize the new peptide and it is confirming the previously elucidated NMR structure.

**Keywords:** *Peptides, Amino Acids, MS/MS, Fragments*

## ELECTROCHEMICAL DETECTION OF DIAMORPHINE

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Diamorphine is a semi-synthetic opiate. It is considered one of the most problematic drugs in the world. Due to the increasing demand, a global market has developed around the clandestine manufacture of diamorphine. The increased production of illicit diamorphine has necessitated the investigation of new analytical techniques to analyze diamorphine.

Gas chromatography-mass spectrometry and high-performance liquid chromatography are the most widely applied techniques for the detection of diamorphine. These techniques are highly accurate and sensitive but there are limitations such as high cost, lengthier analysis times and inability to recover the sample after analysis in some techniques. Investigations were carried out for more versatile analytical methods, capable of overcoming the limitations of conventional techniques and facilitating portable detection. Electroanalytical techniques offer the unique capability to address this current gap. Cyclic voltammetry (CV) is one of the most widely applied electroanalytical techniques for the study of electroactive species. The CV technique has an application in the analysis of illicit drugs in the form of seized material and in body fluids. Most of opiates including morphine, codeine, diamorphine and 6-monoacetyl morphine exhibit an electrochemical behaviour that can be used in voltammetry for quantitative purposes. The aim of this research is to develop an effective electrochemical method as a general semi-quantitative screening technique to detect diamorphine in the presence of impurities and additives in street heroin samples and how this will interfere with the electrochemical detection strategy.

In this study, CV was used for the determination of diamorphine, over the range 0.02 mM  $\leq$  [diamorphine]  $\leq$  0.3 mM. The repeatability and reproducibility results showed an acceptable precision for replicate runs, all giving deviations below 6 %. CV could also detect diamorphine in the presence of common alkaloids such as morphine, codeine and noscapine and excipients such as caffeine and paracetamol. The advantages of CV include quick analysis time, easy maintenance and the ability to recover the sample without destruction, highlighting the potential of this approach for portable identification and quantification of diamorphine.

**Keywords:** *Diamorphine, Electrochemistry, Cyclic Voltammetry, semi-quantification, Alkaloids*

## COMPARISON OF CHROMATOGRAPHIC METHODS FOR ESTIMATION OF THE OPIUM ALKALOID CONTENTS OF ILLICIT HEROIN IN SRI LANKA

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Heroin (Diacetylmorphine, DAM) is one of the most commonly encountered illicit drugs and hence must often be identified and quantified in samples involved in illegal drug proceeds. Such samples may contain a wide range of heroin concentrations, a number of related compounds such as morphine, codeine, acetylcholine and monoacetylmorphine (MAM), other drugs, and a number of diluents. The current study was undertaken in view of the importance of accuracy in the determination of the heroin content consequent on the nature of the legislation as given in the third schedule of the "Poisons, Opium and dangerous drugs Ordinance, Act 1984." The Act states that the possession of an amount of heroin greater than 2 g would attract the death penalty or life imprisonment. Therefore, a suitable method of analysis must be able to distinguish heroin from other constituents and allow a simple quantification of the compounds of interest.

In this study the major opium alkaloids (diacetylmorphine, monoacetylmorphine, morphine and acetylcholine) of fifty heroin samples (S<sub>1</sub> to S<sub>50</sub>) received by the Government Analyst's Department were analyzed by Marquis test, Thin Layer Chromatography (TLC) and Gas Chromatography coupled to Mass Spectrometry, (GC/MS) and quantified by both Gas Chromatography (GC) and High-performance Liquid Chromatography (HPLC). According to the results obtained by both GC and HPLC, diacetylmorphine (DAM), monoacetylmorphine (MAM), acetylcodeine and morphine were detected in 44,43,43 and 37 samples respectively. The highest level of DAM observed was 43% by GC and 38% by HPLC. Most of the samples contained DAM percentages of less than 10%. Both methods indicated that the percentage of MAM, and acerylcodeine range from 5-15%. The highest morphine content was 28%, but a majority of the sample contained less than 10%.

High levels of MAM in some sample indicate that the synthesis process has not been fully completed. It may also be due to the degradation of heroin, acetylcodeine is a byproduct of the synthesis process. High levels of morphine in some samples may result in incomplete acetylation.

According to the present study the results obtained by GC and HLC were different in some instances. The statistical analysis indicated the DAM and acetylcodeine concentrations determine by GC and HPLC were significantly different while those of MAM and morphine were not. It is unclear as to why this is so, such the recovery studies conducted using both methods were satisfactory.

**Keywords:** *Diacetylmorphine, Morphine, Monoacetylmorphine, HPLC, GC.*

## LYSERGIC ACID DIETHYLAMIDE - BLOTTER PAPERS ENCOUNTERED IN SRI LANKA

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Lysergic Acid Diethylamide (LSD) is one of the most powerful hallucinogenic drug known and is produced from Ergometrine chemicals derived from the "Ergot Fungus" *Claviceps purpurea*. It was first synthesized in 1938 and it was most popular in the 1960s to 1980s. The LSD encountered today on the illicit market is produced in clandestine laboratories and it is normally produced as tartrate salt, which is colourless, odourless and water soluble. It is most often sold on blotter papers and less common as tablets and as gelatin squares. LSD may be detected in paper doses after extracting the drug into methanol. The route of administration is by mouth keeping under the tongue. LSD decomposes in light and at high temperatures. This drug is listed in Schedule I of the United Nations 1971 Convention on Psychotropic Substances.

This study was based on three blotter paper cases suspected of LSD which were submitted to the narcotic laboratory of the Government Analyst's Department, Sri Lanka, for examination. A comprehensive analytical scheme including examination under UV, Colour tests, Thin Layer Chromatography (TLC) and Gas Chromatography coupled with Mass Spectrometry (GC-MS) was applied for the qualitative analysis.

According to the results from the presumptive tests and GC-MS, it can be concluded that LSD was identified in the blotter papers in all the above three cases.

An active dose of LSD is very minute and its potency is measured in microgram levels, as little as 20 micrograms can produce an effect. Because the measures involved are so small, concealing and transporting of illicit LSD is much easier unlike smuggling heroin, cocaine and other illegal drugs. Therefore, more attention should be paid to by the enforcement officers to raid this type of newly emerging drug in the country.

**Keywords:** LSD, blotter papers, qualitative analysis

## SESSION VI

# “TECHNICAL CHALLENGES ON OVERCOMING DRUG TRAFFICKING AND ABUSE”

### Session Chair:

*Mr. Ajith Rohana,*

*Senior Deputy Inspector General, Southern Province,*

*Sri Lanka Police*

### Panelists:

*Ms. Anudi Nanayakkara – Senior Manager – Legal, Information  
and Technology Agency (ICTA)*

*Mr. Ruwan Gunasekara, Director – Legal, Department of Police*

*Ms. Sashrika Chandrawansa, Assistant Director – Legal,  
Commission to Investigate Allegations of Bribery or Corruption –  
CIABOC*

Abstract ID - 4

## COLLECTIVE MEASUREMENTS TO SECURE THE DRUG-FREE COMMUNITY IN SRI LANKA

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In modern socialistic organizations, drug is a key area of concern. To achieve drug-free society in Sri Lanka, many organizations address joint engagement with human factors and technology factors to obtain better solution to this catastrophe disaster. However, this paper is aimed to find these critical human factors to utilize in the technology centered society in Sri Lanka.

Firstly, the human factors rely upon the control, attitude and awareness insights. Through the physical control, awareness and trainings, the young generation and addicted persons attractions can mitigate from the habit.

Secondly, this paper is focused on the application of guidelines to address the community to know the repercussion of such addiction by internet related social media campaigns. The main objective of this study is to downsize the effecting community by using the evidence based practice and newest approaches.

Furthermore, it is intended to collect the secondary data by using the past literature of the dangerous drug control board and “ifccolombo” web based reputed repository. The study is intended to conduct with mix method and mainly use the empirical data.

The primary data for the research is intended to collect from drug addicted persons and young generation of the public sector organizations as population. The sample and scope are selected due to convenience and as it represents the same characteristics of the society. The research has involved the use of self-administered questionnaire as the study instrument. This study collected data will analyze by statistical methods to validate a set of alternate hypotheses that were created based on an identified collection of indicators of measurements. This influences the determination of human factors of the achievement of drug-free society by joint engagement of best practices and transformation techniques to introduction for the young generation.

The independent variable is “Human Factors” and indicators are “Control of drug usage”, “Social media”, “Awareness” and “Attitudes”. The dependent variable is named “Successful implementation of drug-free society by continuing joint approach of evidence based practices and new transformations”.

The analysis intended to show by displaying the descriptive statistics (Charts) and regression analysis (Symmetric Distribution). The validity and reliability of the data will measure and confidence interval is 95% and error ratio is 5%.

In conclusion, it is intended to identify the most effective human factor for implementation of drug-free society in Sri Lanka and save the young generations’ future dreams. Finally, the guidelines will make the young generation into corrective path to their career success.

**Keywords:** Human Factor, Technological Factor, Control, Social media, Awareness, Attitude

## THE DETERMINATION OF THE PREVALENCE OF DRUG ABUSE ON PRESCRIPTION- ONLY MEDICATIONS IN COMMUNITY PHARMACIES- BASED ON THE EXPERIENCE OF COMMUNITY PHARMACISTS

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Substance abuse or addiction is one of the world's most serious health, social, and political issues, affecting nearly every country. It has a direct impact on all societies in terms of lost productivity, infectious disease transmission, family and social disorder, crime, and an increase in the rate of health care expenditure. Drug abuse in Sri Lanka has been a critical issue for a long time. Community pharmacies are the most accessible primary healthcare facilities in Sri Lanka. Thus, Sri Lanka has been burning with this situation. Therefore, this study aimed to determine the Pharmacist experience regarding prescription drug abuse in Sri Lankan community pharmacies. A descriptive cross-sectional study was carried out (pre-tested) among Battaramulla, Thalawathugoda, and Malabe area's randomly selected community pharmacy pharmacists through a questionnaire. The data were analyzed through Statistical analysis software, SPSS 25, and results were obtained. The mean experience of the pharmacists in the pharmacy field was  $9.1 \pm 4.28$  years (n=10). All the pharmacies confirmed that they are receiving suspectable prescriptions with abusive drugs. According to pharmacist experience, the prevalence of opioid (narcotic) abuse was 70% (n=7) for Tramadol, 40% (n=4) for Codeine, 30% (n=3) for Morphine, and 10% (n=1) for Butorphanol. The sedative hypnotics abuse frequencies at the pharmacy setting were Pentobarbital= 20% (n=20), Phenobarbital= 10%, (n=1). The most commonly abused stimulants in the pharmacy setting were Methylphenidate 50% (n=5), 20% for Medozalam and Clobazam (n=2), and 10% for Dextroamphetamine (n=1), Following tranquilizers were abused at the pharmacy: Diazepam = 100% (n=10), Alprazolam & Clonazepam = 80% (n=8), Lorazepam = 60% (n=6), Buspirone = 20% (n=2), Chlordiazepoxide, Oxazepam, and Ecitolapam = 10% (n=1). Other commonly abused drugs in the pharmacy setting were Pregabalin = 100% (n=10), Benzhexol (Artane) = 70% (n=7), Gabapentin & Salbutamal = 40% (n=4), Piriton = 20% (n=2), and Corex syrup, Bronchodine, Dexamethofane, and Phenycough syrup = 10% (n=1) respectively. In a conclusion, Tranquilizers (Diazepam = 100%) and Opioids (narcotics) (Tramadol = 70%) showed higher frequencies among the possible abuse. From other drug classes, Pregabalin (100%) and Benzhexol (Artane) (70%) were also found to be abusive or misused drugs. As a result, policymakers will have a better understanding of the current situation and the severity of the problem, allowing them to take the necessary actions.

**Keywords:** *Community pharmacies, Drug abuse, Pharmacists' experience, Prescription only medications, Substance uses*

Abstract ID - 32

## APPLICABILITY OF EVIDENCE-BASED TREATMENT PROGRAM FOR DRUG OFFENDERS UNDER THE COMMUNITY BASED CORRECTIONS

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Many countries around the world have a wide range of alternative sentences according to their legislatures. In 1999, the Sri Lankan legislature introduced the Community Based Corrections Act Number 46, which provided an alternative to imprisonment for minor offences. Substance abuse and its impact on society are being widely discussed by the media and the people in Sri Lanka recently, because of the rapid and significant increase of crimes and social problems. In recent times, the government has a special focus on substance abuse and has been working towards making the Sri Lankan society free of substance abuse. Accordingly, this study focused on recognizing different experiences of treatment of drug addicts under community-based corrections. The research problem was whether the treatment method currently used by the Department of Community Based Corrections effective or, was there a better alternative? This study was a descriptive study using primary and secondary data of the year 2014 and 2015 based on the regional office located at Magistrate's court Panadura under the Department of Community Based Corrections. According to that, the study consisted of 40 offenders as a sample who were related to alcohol and drug abuse, through a systematic random sampling technique. The objectives of the present study were: to identify the social status and the substances abused by the offenders to identify existing services and treatment needed for drug offenders; to introduce an evidence-based treatment programme for drug offenders. According to the findings of this research, a considerable number of offenders were convicted for substance abuse such as illicit liquor, cannabis and heroin and have low levels of social status. The existing treatment intervention was not sufficient to address this issue. In conclusion it proves that the combination of behavioural therapies and pharmacotherapy are effective as an evidence-based treatment approach for the offenders. It has been made clear that the Department should collaborate with the Ministry of Health, Ministry of Social Service, National Dangerous Drugs Control Board to provide these facilities.

**Key Words:** *Offences, Offender, Community Based Corrections, Substance Abuse, Evidence Based Treatment Approach, Pharmacotherapy, Behavioural Therapy*

## COVID 19 PANDEMIC AND TRENDS ASSOCIATED WITH DRUG ABUSE

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This study focused on trends associated with drug use during the Covid-19 pandemic. The field of research was the Colombo district and the study was conducted from March 2020 to March 2021. The data was collected using the snowball sampling method through structured questionnaires, interviews, and observations from 30 respondents and 46 key informants. It was found that during the pandemic 43% (13) individuals and post-pandemic 23% (7) individuals have consumed legal alcohol. During the pandemic, a high percentage of Kerala cannabis (57%) was markedly consumed. 93 (28%) of heroin during the pre-pandemic and 90 (27%) of heroin during the pandemic was consumed. Considering methamphetamine use, 37 (11%) users during the pre-pandemic and 13 (4%) users during the pandemic have reportedly consumed methamphetamine. During the pandemic daily 41% (7) of individuals consumed Kerala cannabis and all heroin users reportedly daily consumed heroin. During the pre-pandemic 18% (2) of persons consumed methamphetamine daily and during the pandemic, 18% (2) of persons reportedly consumed methamphetamine daily. The average amount of money spent on heroin and cannabis during the pre-pandemic was Rs. 2840 and Rs. 811 respectively. During the pandemic average amount of money spent on heroin and cannabis was Rs. 3098 and Rs. 807 correspondingly. According to the key informant's interviews, it was further revealed that even during the pandemic there was a possibility to purchase Kerala cannabis and heroin. During the pre-pandemic, the delivery of drugs to the residents by sending a person to a drug supplier was (53%) and during the post-pandemic, it was reported as (40%) which was comparatively a low value than it was during the pre-pandemic. During the pre-pandemic, the self-consumption of drugs was 50% (15) and during the pandemic, the self-consumption of drugs was 90% (27) which was a higher value compared to the value of self-consumption of drugs during the pre-pandemic. It can be concluded that there was less tendency for the consumption of legal alcohol during the pandemic. Compared to the pre-pandemic, there was a high tendency for the consumption of Kerala cannabis during the pandemic and reportedly heroin was the highly consumed drug during the pre-and post-pandemic. And further, it can be concluded that there was a high tendency for the daily consumption of heroin during the pre-and post-pandemic. During the pandemic, it can be concluded that there was less tendency for the consumption of methamphetamine and both Kerala cannabis and heroin were accessible during the pandemic.

**Keywords:** Covid 19, Kerala cannabis, drug abuse, methamphetamine, heroin

Abstract ID - 42

## STUDY ON PSYCHOLOGICAL STATUS OF NAVAL PERSONAL ADDICTED TO DANGEROUS DRUGS

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Understanding the Psychological status of those who are addicted to drugs is important prior to providing suitable treatment & intervention programs. Sri Lanka navy has started an extended treatment program for sailors who are addicted to different dangerous drugs. 15 participants who underwent a special treatment program were administered a comprehensive assessment battery as a part of the intervention program. The current study was not originally designed for a research study. Secondary data from the above mentioned assessment was used for this study. Self-esteem, resilience, social intelligence & stress, depression & anxiety was assessed & scores were used for the current analysis. A control group (N=15) was used to compare scores of drug addicts with a group consisting of those who are not addicted to drugs or suffering from mental illnesses or other significant issues.

A significant difference between scores for self-esteem between the control group and the drug addiction group was found. The drug addiction group scored significantly low scores than the control group. Further, a comparison of resilience scores between the two groups showed a significant difference where the drug addiction group scored lower scores than the control group. Depression, Anxiety, and Stress Scale (DASS-21) was administered to measure Depression, Anxiety, and Stress, and found that the drug addiction group scored significantly higher scores than the control group. Social intelligence was measured using Tromsø Social Intelligence Scale, (TSIS)& found that social intelligence scores are also low in drug addicts than in the control group when compared to means. Hence, It appears that those who are addicted to drugs are undergoing significant Psychological conditions and need to provide interventions to improve such conditions to conduct a successful treatment program.

**Keywords:** *selfesteem, resilience, drug addiction, social intelligence, depression*

## IMPORTANCE OF NATIONAL LEVEL DRUG DATA MANAGEMENT SYSTEM : NEEDS AND EXSISTING GAPS

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Database management system (DBMS) is the software that interacts with end users, applications, and the database itself to capture and analyze the data. An information-sharing platform is a centralized computer system that allows authenticated users to collect, manage and share structured and unstructured data sets from a variety of sources. Information-sharing platforms are designed to facilitate two way communications between users and often include user blogs and/or forums.

The Drug Abuse Monitoring System (DAMS) is a computerized information system, which collects information on persons arrested for drug offences and persons seeking treatment for drug abuse. Purposes of the DAMS are to determine the incidence, prevalence and characteristics of drug users, monitor the trends and patterns in drug use, determine and describe the at risk groups in the population and evaluate the existing treatment and rehabilitation programmes. Information is collected from drug law enforcement agencies and drug treatment agencies on a monthly basis and produce report quarterly and by annually for policy making.

The main objective of this paper was to analyze importance of national level drug data management system. It is useful to do Trend Analysis, Prevalence of Drug Use, Time series analysis. This analysis illustrated that common advantage of a database which represents all relevant agencies and presenting recommendations for policy making for drug control programmes inter agency collaborations. DBMS is an effective platform for developing cooperation between law enforcement agencies and providing timely and accurate data systematically when needed.

**Key words:** *Database management, Trend analysis, Information system*

Abstract ID - 54

## WORKPLACE DRUG ABUSE MANAGEMENT BASED ON SCIENTIFIC EVIDENCE-BASED PRACTICES

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The drug problem is associated with a wide variety of adverse consequences for both employers and employees which includes sickness, absenteeism, poor performance, accidents, drug-related corruption and increase in health insurance claims. Moreover, the consumption of drugs during working hours associates with health and safety of an individual and others as well as the product which has a direct impact on the economy of the country. Therefore, the workplace is regarded as an appropriate setting for the formulation and implementation of drug-free policies and programs. The focus of the present study is on the cases referred to the National Narcotics Laboratory (NNL) for pre-employment testing and reasonable suspicion testing of employees related to work places from January 2021 to May 2022. The samples were screened using Enzyme immunoassay technique (EIA) at the NNL and EIA analysis revealed the presence of methamphetamine in six samples analyzed (13.63%), and cannabinoids in two samples analyzed (4.54%) among 44 samples received for reasonable suspicion of employees. Further presence of cannabinoids was detected in one sample analyzed (0.64%) among 156 samples received for pre-employment testing. Accordingly, the cases referred to the NNL for pre-employment testing is respectively higher than the cases referred for reasonable suspicion of employees. It revealed that the companies who referred employees for pre-employment testing have implemented drug free workplace policies and programs within their workplace and in accordance to their drug free work place policy, they conduct pre-employment testing for all candidates before the recruitment process. The presence of narcotic drugs, psychotropic substances and/or their metabolites of the referred samples for pre-employment testing was considerably low with compared to reasonable suspicion testing performed.

**Key words:** *Pre-employment testing, Reasonable suspicion, Enzyme Immuno Assay technique (EIA), Drug-free workplace policy*