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NIDA INTERNATIONAL FORUM

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Technological Innovations

To Build International Research Capacity

Abstract Book

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2007 NIDA International Forum Abstracts

A

A Chilean Validation of the AUDIT for Adolescents

Epidemiology

Chile

Acuna, Gonzalo, Universidad Católica, Chile; **Santis, Rodrigo**, Universidad Católica, Chile; **Arteaga, Oscar**, Universidad de Chile, Chile; **Alvarado, Elena**, Universidad de Chile, Chile; **Garmendia, Luisa**, Universidad de Chile, Chile

AUDIT represents a useful tool aimed at identifying hazardous, harmful, and dependent alcohol users, allowing for early interventions. To our knowledge, AUDIT has not been validated in an adolescent Spanish-speaking population.

The objective of this study was to validate the AUDIT in an adolescent Spanish-speaking population.

The Ethical Committee of the University of Chile approved the study protocol and informed consent.

The original English version of AUDIT was translated into Spanish, following the way it is commonly spoken in Chile. An expert committee examined the text and decided on a final Chilean version utilizing the Delphi method. Then, the text was back-translated and sent to one of the original authors (T. Babor), who approved the translation.

A standard drink was defined as equivalent to the volume contained in an average of 13 g. of ethanol. AUDIT was self-administered to a group of 95 students attending a public school in Santiago, Chile. At the same time, they provided answers on the CIDI Substance Abuse Module (as a gold standard). The interview was administered by a training psychiatrist who had no knowledge of the AUDIT score. Between 1 and 4 weeks after providing answers for CIDI, subjects answered a second AUDIT.

The sample consisted of 42 women and 53 men. They had a mean age of 15.9 years (SD=1.2). The mean AUDIT score was 4.3. Reliability was satisfactory, according to Cronbach's alpha of 0.82. Test-retest correlation was also satisfactory (Intraclass correlation 0.79, 95 percent, CI 0.62-0.97). An analysis of CIDI SAM results is still pending. Then, to examine criterion validity, sensibility and specificity of AUDIT will be calculated. Also, an ROC analysis will determine a cutoff point that represents a combination of both best sensibility and specificity.

It is concluded that the Chilean version of AUDIT represents a reliable tool in identifying adolescents with hazardous, harmful, and dependent alcohol use.

This project was funded by FONIS number SA05I20078.

Smoking Patterns and Problems Among Male and Female Youth in Palestine

Epidemiology

Palestine

Al Affi, Mohamed, Kariri, M., and **El Susis, S.**, Substance Abuse Research Center, Palestine

An Early Warning System for Drug Abuse among youth in Palestine was developed as a joint work to study the smoking patterns and related problem behaviors among high school age youth (ages 12–18 years).

The study was conducted in Gaza Strip (GS), (N=1034), and West Bank (WB), (N=1173). The data collection instrument used for this study was developed from the U.S. National Institute on Drug Abuse (NIDA), Monitoring the Future Adolescent Drug Use Survey (Johnston, et al., 2001); the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), National Household Survey on Drug Abuse (2001, 2003). A number of determinants related to tobacco use were included in the study, including: access and availability, peers, smoking parents, socioeconomic situation, environmental tobacco smoke (ETS) exposure, cessation, media and advertising, and school curriculum.

A comparison of smoking between 1997, 2001, and 2004 shows an increase of ever lifetime behavior from 12 percent to 18 percent, to 23.5 percent.

Presently, 26 percent of boys and 2.5 percent of girls in GS, and 35 percent boys and 5.2 percent girls in the WB report ever lifetime smoking. The average age of first time smoking is 13 years. About 19 percent of students reported any tobacco product use in the past 30 days (males, 22.1 percent significantly more likely than females, 14.5 percent). Male students who smoke tend to be more likely than non-smokers to use other drugs (e.g., alcohol, psycho-active tablets, inhalants, marijuana, and heroin) and have problem behaviors such as hanging around in the streets in the evening (49 percent versus 30.3 percent) and the number of days absent from school (2.4 days versus 0.92 days). Unlike current United States and European studies that show little, if any, difference in

smoking patterns based on gender status, tobacco use is significantly more prevalent among males than females in Gaza Strip and the West Bank.

Based on these results, a joint project is being developed to address adolescent smoking cessation among high school age youth. Project EX, a SAMHSA national model for smoking cessation, will be adopted and evaluated for use among Gaza and West Bank youth.

Sexual Risk Behavior and Use of Crack Cocaine in Baltimore City, Maryland

Epidemiology

Bangladesh

Alamgir, Md.; Johns Hopkins University, United States; Singh, Mehboob; Severtson, Geoffrey; and Latimer, Bill, Johns Hopkins University, United States

The purpose of the current study is to investigate/ understand the correlates of risky sexual behavior among individuals reporting regular use of “crack” cocaine in Baltimore, Maryland.

Baseline data from the Baltimore site of the NEURO-Study, an epidemiological examination of neuropsychological, social, and behavioral risk factors of HIV and Hepatitis A, B, and C in the United States, South Africa, and Russia was used. The total Baltimore sample consisted of 632 injection and non-injection drug users between 15 and 50 years of age, in the Baltimore region. The current study was limited to 202 participants that reported smoking “crack” cocaine daily, or nearly everyday, for 3 months or more in their lifetime. Participants were administered a questionnaire and interviewed by well-trained interviewers. The current study investigated sociodemographic and initiation of substance use as correlates of sexual risk behaviors. Risk behaviors included multiple casual sex partners, not using a condom when having sex with casual sex partners, and participating in sexual exchange. Participants were placed into one of three mutually exclusive sexual risk categories; 0, 1, or 2 or more risk factors.

Of the 202 participants, 50 percent were male and (N=100), 37 percent were Caucasian (N=75), and 63 percent were African American or other ethnic group (N=127). A multinomial logistic regression analysis was conducted to see if there was an association in the lifetime use of injection drug use of crack and risky sexual behavior. Risky sexual behavior and crack drug use by lifetime drug users did not show any significant difference with respect to age, age of first crack use, education, or ethnicity. Gender was found to be associated with

risk behaviors, with men being 4.65 (95 percent CI: 2.02-10.71) times more likely to report two or more risk factors than no risk factors compared to women after adjusting for other variables.

The results show that male crack users are more likely to report engaging in risky sexual behavior, a finding inconsistent with previous literature. Further exploration of these differences is needed on non-IDU lifetime crack users to understand these differences.

Prevalence of Alcohol Use Disorders (AUD) and Other Substance Use Disorders (SUD) in Hispanics and Non-Hispanic Whites in 1991–1992 and 2001–2002

Epidemiology

United States

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The purpose of this study was to compare the prevalence of alcohol use disorders (AUD) and other substance use disorders (SUD) in Hispanics and non-Hispanic Whites in 1991–1992 and 2001–2002.

The study examined the 12-month prevalence of AUD and SUD in the 1991–1992 National Longitudinal Alcohol Epidemiologic Survey (NLAES), n=42,862 and the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), n = 43,093).

Results of the study showed that in 1991–1992, there were no significant differences in the prevalence of AUD in Hispanics (8.3 percent) and non-Hispanics (7.7 percent), (p=0.39), a comparison that was also non-significant in 2001–2002 (7.9 percent versus 8.9 percent, p=0.12). In contrast, the prevalence of SUD, which was significantly lower in Hispanics than non-Hispanic Whites in 1991–1992 (1.0 percent versus 1.7 percent, p=0.005), was no longer significantly different between both groups in 2001–2002 (1.7 percent versus 1.9 percent, p=0.40). Among those meeting diagnostic criteria, treatment rates for AUD were low and similar in Hispanics and non-Hispanic Whites, both in 1991–1992 (8.0 percent versus 9.6 percent, p=0.48) and 2001–2002 (8.6 percent versus 6.7 percent, p=0.29).

In conclusion, over the study period there was a convergence in the prevalence rates of SUD of Hispanics and non-Hispanic Whites. The prevalence of AUD was similar between groups in both time

periods. These results suggest that the previously documented protective effect of Hispanic ethnicity may be more circumscribed than previously thought (by not including AUD), and may be less evident or even have disappeared in more recent times. Identifying sociodemographic and cultural variables that may account for these changes will be important for future prevention and service-planning efforts.

An Analysis of Oral Communications Accepted by the College on Problems of Drug Dependence and for Subsequent Publication in Peer-Reviewed Journals

Epidemiology

Spain

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Abstracts that are presented at the scientific meeting of the College on Problems of Drug Dependence (CPDD) often provide the first evidence of research activities in United States research groups or international groups.

The aim of this study was to analyze publications from peer-reviewed journals indexed in the Medline database, derived from oral communications at the 1999 CPDD meeting.

To determine the publication rate, between July 1999 and November 2005, of the 190 abstracts presented at the 1999 CPDD meeting, all oral communications presented were identified and included in an Access database. Publication rates in Medline-indexed journals were identified by scanning the PubMed database (<http://www.ncbi.nlm.nih.gov/PubMed/>) from December 20, 2005, to January 20, 2006, to determine whether or not the abstracts had been published as full articles in the 1999–2005 period. The Medline search was performed using the first author's surname and initial(s), and if necessary, those of the other authors or appropriate keywords from the title. The concordance between information contained in the summary of the published paper and information that was cited in the abstract was verified. With this method, we set out to estimate the proportion of abstracts submitted to this meeting that were eventually published as full reports. Main outcome measures included: average time between abstract presentation and publication; collaboration between authors of abstracts that were subsequently published in full form; specialty of the journals; institutional affiliation of the

authors of oral communication, and country of journal publisher. A p-value < 0.05 was considered to be statistically significant.

From the 190 oral communications at the 1999 CPDD meeting (<http://biopsych.com:81/consultants/ConsultDataSearch.html>), 102 (53.7 percent) were published as full articles in journals covered by the Medline database. Moreover, two oral communications each became two papers, so the number of papers retrieved from Medline was 104. The time period from the presentation to the publication was 1.82 years (ds=0.15 years). The mean of the number of authors per publication was 4.27 (CI 95 percent, 3.98 and 4.55). One hundred and seventy-six communications were created by American institutions, and seven of those were created in collaboration with institutions from other countries. Austria, with four communications, was the country with the second most presentations. Fifty-four point five percent of the American oral communications were published later, while in oral communications where other countries intervened, the percentage was lower, at 35.7 percent. Statistically significant differences were observed between the mean of authors per communication and the mean of authors per article (p>0.018). Journals where more articles were published were those from the following fields: Pharmacology, Biochemistry, Psychiatry, Psychopharmacology, and Drug Dependence. Percentages of publication rates after the CPDD Congress are high, and can be equated to those found in other important scientific congresses from other fields of medicine. This can be an indicator of the intrinsic quality of the presentations at the congress.

This study was supported by Plan Municipal de Drogodependencias, Concejalía de Sanidad y Consumo, Ayuntamiento de Valencia, Spain.

Who Starts Then Stops Cocaine Use? United States, 2003

Epidemiology

Peru

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Population prevalence of cocaine use is sustained not only by who starts to use each year, but also by users who fail to stop consuming cocaine due to reasons such as cocaine dependence. This research contributes new evidence on who has started to use cocaine, but hasn't stopped, with a focus on male-female differences.

Participants of this study were recruited during a nationally representative sampling for the 2003 National Survey on Drug Use and Health. The

6,882 cocaine users in this study's sample were self-identified via confidential interviews. We sorted these users into three mutually exclusive categories: (1) used cocaine within the past 30 days (~10 percent of users); (2) used within past 12 months, but not in the past 30 days (~10 percent); and (3) used before that (all others), prior to multinomial logistic regressions.

Results of this study showed that males were over represented among persisting cocaine users (estimated relative risk, RR=1.5; $p<0.05$); among users, being female was associated with cessation of cocaine use. Independently, crack-cocaine smoking was associated with greater persistence of cocaine use, once it starts (RR~1.6-2.5; $p<0.05$). A past history of using multiple drugs before onset of cocaine use also was associated, independently, with persistence of cocaine use (RR~2.5; $p<0.05$).

Epidemiologists typically have focused attention on the risk of starting to use cocaine and becoming cocaine dependent, but here we shift focus to persistence/cessation of use. What we find is that excess prevalence of cocaine use among males is influenced by males' greater likelihood to remain engaged in cocaine use, as compared to female cocaine users. The male excess risk of starting to use cocaine, observed elsewhere, is a separate determinant of male-female differences in prevalence and risk of cocaine use. Crack smoking and past use of multiple drugs are not as strong in their influence on persistent use as we had expected.

This study is supported by NIDA/NIH/FIC awards: D43TW05819 and K05DA015799.

Adolescent Cannabinoid Pre-Exposure Effects on Cocaine Self-Administration and D1 Dopaminergic Receptors in Adult Rats

Basic Science

Spain

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The use of cannabinoids in humans during adolescence is common, however the long-term behavioral effects of adolescent cannabinoid exposure are poorly understood. Therefore, the aim of this work has been to examine the effects of a chronic treatment with the cannabinoid receptor agonist CP 55,940 (CP) during the early adolescent period on the acquisition and maintenance of injection cocaine self-administration behavior, and binding levels to D1 dopaminergic receptors in adult male and female Wistar rats.

CP 55,940 (0.4 mg/kg) or its corresponding vehicle was injected into male and female Wistar rats for 11 days during early adolescence (from P28 to P38). When the animals reached their 100th postnatal day, they were trained for cocaine self-administration (1 mg./Kg./injection) under a fixed ratio 1 (FR1) schedule of reinforcement for 7 days in daily sessions of 30 minutes (acquisition phase), and for 15 days in daily sessions of 2 hours (maintenance phase), (N= 6–8 in each group).

The results showed that female rats that had received the CP treatment reached a statistically significant higher number of injections when compared to the other groups in the acquisition phase. No differences were found during the maintenance phase. Animal brains were removed immediately after the last cocaine self-administration session of maintenance phase to measure binding levels to D1 dopaminergic receptors by using quantitative receptor autoradiography. Another group of male and female rats that underwent CP or vehicle treatment, but were not submitted to cocaine self-administration (basal groups), were also analyzed. Males of basal CP-treated group showed a statistically significant increase in binding to D1 receptors compared to vehicle-treated and female groups in nuclei accumbens shell and caudate putamen. However, this increment was not maintained after cocaine self-administration. No differences were found in other brain areas analyzed such as nucleus accumbens core, olfactory tubercle and substantia nigra.

In general, this study shows that chronic exposure to a cannabinoid agonist in adolescence has sex-dependent long-lasting effects on cocaine self-administration and brain dopaminergic receptors that last at least until adulthood.

This study was supported by Plan I+D+I (SAF2004-08148); Comunidad Autónoma de Madrid (GR/SAL/0260/2004); Fondo de Investigaciones Sanitarias (FIS,G03/05); and Plan Nacional Sobre Drogas 2004-2007.

Patterns of Non-Prescription Sedative and Hypnotic Drug Use in Thailand: Findings from a National Household Survey

Epidemiology

Thailand

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The non-medical use of prescription drugs, such as tranquilizers and hypnotics has become a growing public health problem in Thailand. The abuse of these drugs in Thailand is not a new problem, although confirming data has only just been made available. The objective of this study was to examine

the patterns of non-medical use of these drugs using data from a nationally representative sample of Thais interviewed in 2003.

Data were analysed from the 2003 National Household Survey on Substance Abuse, using a multi-stage probability sample of 41,447 Thais aged 12–65 years. Data on demographics, health status and substance use were compared between people who had used prescription drugs for non-medical purposes in the 12-month period preceding the survey and people who had never used such drugs.

In 2003, 3.5 percent and 3.0 percent of Thais aged 12–65 years, reported the non-medical use of tranquilizers or hypnotics, respectively, in the past 12 months. About half of the past-year users (54 percent and 53 percent) had used them in the 30 days prior to the interview. However, the percentages of those who reported using tranquilizers and hypnotics regularly, (i.e., for more than 20 of the previous 30 days) of all Thais aged 12–65 years, were only 0.3 percent and 0.2 percent, giving a total estimated number of 142,600 and 88,000 users in Thailand, respectively. There were few differences in demographic characteristics between users and non-users, however women, those in older age-groups, those who did non-shift work, and those who mostly did daytime work were significantly more likely to use these drugs, compared to men, people in the 12–24 year age group, and those who did not work. The odds ratios (95 percent confidence interval) associated with tranquilizer and hypnotic use were 2.4 (2.1-2.7) and 2.0 (1.8-2.3) for gender, 4.3 (3.4-5.5) and 3.0 (2.4-3.8) for the age group of 25–44 years, 7.9 (6.2-10.0) and 6.7 (5.3-8.5) for the age group of 45–65 years, 1.3 (1.1-1.4) and 1.2 (1.1-1.4) for non-shift work and 1.2 (1.1-1.4) and 1.2 (1.0-1.3) for daytime work. People who reported currently having any kind of physical illness were 4.4 (4.0-4.9) and 4.7 (4.2-5.2) times as likely to use tranquilizers or hypnotics as those who did not have any illness. There were no significant differences between past-year users and non-users in terms of other illicit substance and tobacco use; however, the past-year users were slightly more likely to drink alcohol than were non-users.

From this study, we concluded that the prevalence of non-medical tranquilizer and hypnotic use in Thailand is not very high, although a number of people may still be abusing these drugs if they use them every day without any medical indication. To prevent any serious problems from developing in the future, attention should be paid now to these prescription drug abuse problems at the same level as for other illicit substances, and intervention programs should be developed to assist these potential abusers in reducing their use.

Assessment of Abuse Liability of Pheniramine Among Human Subjects

B

Prevention

India

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Antihistaminics as a class of drugs have achieved well-established central nervous system effects which may subject the antihistaminics to potential abuse and dependent patterns of use. This calls for the need to study their abuse liability. Antihistaminics like tripeleminamine, chlorpheniramine, and dimenhydrinate have been found to possess abuse potential. There is evidence that pheniramine is being used in a harmful/ dependent fashion especially in combination with injectable benzodiazepines and opiates. There is currently no study available that has assessed the abuse liability of pheniramine.

The present study is an attempt at assessment of the abuse liability of pheniramine, an antihistaminic, in human subjects using a double blind crossover study design and a positive and negative control. Fifteen male patients, between 20 and 40 years of age, with a history of current opioid dependence and non-prescription injection drug use of any antihistaminic during their lifetime, were included in the study.

The assessments were carried out using physiological measurements, the Modified Single Dose Opiate Questionnaire (MSDQ), Addiction Research Centre Inventory (ARCI), Visual Analog Scale (VAS), Profile of Mood States (POMS), Psychomotor/ Cognitive Performance Measures (using Digit Symbol Test, Balance Task, Reaction Time, Picture Recall/Recognition), self reports of comparative liking of the three drugs/compounds used, and the ability to identify these compounds if exposed to them in the future.

The observation of comparable findings with pheniramine (test drug) and lorazepam (positive control) in MSDQ, VAS, liking of the drug shows that the two compounds might have a comparable potential to produce euphoria, which might be associated with the likelihood of abuse of the two compounds. Moreover, these findings were corroborated by the findings on the direct questions of liking of the drugs and ability to identify the compounds on future administration. These findings with the clinical observation of pheniramine abuse in combination with buprenorphine and diazepam, warrant the need for use of caution while prescribing the compound to the individuals.

The results of this study suggest that one must be vigilant about the possible use of pheniramine by injection drug users. It is also important to explore for the use of pheniramine by such patients because of the potential additive sedative effect of

pheniramine on the effects of the other compounds along with which it is used.

Adolescent Substance Abuse Risk Evaluation: Development and Application of a Novel Measurement Tool

Epidemiology

Israel

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A tool was designed to identify in the age group of 12–13, groups of adolescents who are at high risk for substance abuse. The tool measures the tendency (potential) for substance abuse in the future.

Based on a projective pictures test, the study attempts to resolve two methodological problems in the identification of adolescents who are at high risk: (1) self-reporting on the use of drugs is biased by social desirability, and, (2) Difficulty in assessing substance-abuse behavior patterns when the frequency of substance-abuse is very low.

The study included several phases, including: creating the measurement tool in adolescent focus groups; adapting known validation tools; conducting the preliminary study in a group of students; fine-tuning the tool and further adjusting validation tools; pilot study in adolescent groups; validation of the measurement tool in selected adolescent groups; and applying the measurement tool in a population of 7th grade students.

The Picture Test (PT) consists of 20 pictures depicting situations of pressure or temptation to use drugs, smoke cigarettes, or drink alcohol. The final score is determined by the cumulative PT score built on a closed scale and based on four ordinal categories. Validation was done in adolescents older than the target population, and included substance abusers. Lacking alternative objective ways to assess the potential for substance abuse, a construct-dependent validation was used. It was done by comparing groups of adolescents differentiated by their risk for substance abuse (criterion validity). The tool succeeded with identifying abusers and in discriminating them from non-abusers. Assuming this tool is as sensitive as self-reporting in the discrimination of abusers from non abusers, it would seem that its reduced bias of social desirability gives it an advantage over self-reporting in the identification of adolescents at high risk.

Application of the tool was based on 7th grade students in Israeli schools where 12.7 percent of the students scored for high potential of substance abuse and therefore are defined as high risk. The close rate of self reporting on substance abuse among older

age groups in Israeli high schools implies further validation. In a multiple logistic regression model, a significant relation was found between seven known risk factors and high potential. This tool is a contribution to the methodological evaluation of substance abuse risk among young adolescents. It could assist in the early screening of adolescents and help focus prevention efforts more efficiently on better defined target groups.

From First Cannabis Use to Cannabis Use Disorder: Patterns of Age of Onset and the Risk and Speed of Transition in Adolescence

Epidemiology

Germany

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Early initiation of substance use (SU) is known to be associated with an elevated risk of developing substance use disorders (SUD). Yet, little is known about the effect of early initiation of use on the speed of transition from first cannabis use (CU) to cannabis use disorders (CUD), taking into account other substance use.

The objectives of this study were: (1) to describe time periods of high incidence of CU and CUD in adolescents in Germany; (2) to describe the duration of the transition from first CU to DSM-IV cannabis abuse and dependence; (3) to analyze the effect of age of onset on the risk and speed of this transition; and (4) to investigate the effect of prior other SU (alcohol, nicotine, other illicit drugs) on this transition.

For this study, community subjects (N=3.021), aged 14–24 at baseline, were followed up prospectively over 10 years. SU and SUD were assessed using the DSM-IV/M-CIDI.

This study found that the high incidence period for CU and CUD was between ages 14 and 20. Although the majority of cannabis lifetime users did not fulfill DSM-IV abuse or dependence criteria, transitions from CU to CUD occurred more rapidly than transitions from other SU to other SUD. The incidence of CU before age 20 elevates the risk of developing cannabis abuse, and incidence of CU before age 17 elevates the risk of developing cannabis dependence. In comparison to earlier CU incidence, CU incidence after age 18 was associated with an elevated risk for a more rapid transition to cannabis abuse and CU incidence after age 16 was associated with a higher risk for a more rapid transition to cannabis dependence. In subjects with CU incidence

after age 16, prior other SU contributed to the risk of a more rapid transition to cannabis dependence. Interestingly, prior other SU did not affect the risk of transition to CUD.

From this study, we can conclude that: (1) preventive efforts should target any regular CU and take into account that transitions from CU to CUD can occur rapidly, and (2) in future research, factors contributing to the speed of transitions to CUD have to be identified.

Assessing Organizational Functioning Among Drug Treatment Service Staff in Criminal Justice and Community Services

Treatment United Kingdom

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Assessing organizational functioning has emerged as a critical area in measuring treatment effectiveness (Simpson, 2004). This approach has been based on a programmatic assessment of organizational functioning linked to core measures of treatment effectiveness. The current study assesses levels of organizational climate and functioning in criminal justice and community drug treatment provision in Birmingham, England, with the initial focus on staff reporting of organizational factors.

An instrument assessing drug worker perceptions of the workplace, the Organizational Readiness for Change measure (ORC), was amended for a UK context. It was distributed to clinical staff across Birmingham. All 23 treatment providers (both CJ and non-CJ) participated in the study, with voluntary completion of the instrument for both staff and service users.

Two hundred and thirty-seven workers with client contact completed the form, with results for the overall cohort compared against the norms established for TCU and for Italy (Rampazzo et al., 2006). All the scale ratings were near or above the mid-point (neutral) score of 30 of ORC scales—so there were no major systems problems. However, overall resource scores were comparatively low with the highest scores in staff attributes. Treatment staff in Birmingham reported lower levels of perceived resources around staffing, office accommodation and training, yet higher resources around computer equipment and Internet access. Birmingham clinicians reported lower levels of perceived autonomy and higher levels of stress than staff in Italy and the United States.

A second comparison of 184 members of clinical staff completed the ORC assessment, 64 based in community drug services providing interventions

through the criminal justice system and 120 providing drug treatment in standard community services. Keyworkers employed by criminal justice drug treatment agencies had significantly smaller average caseloads. Those working with offenders reported higher levels of motivation to change (including greater training and program needs) but lower levels of satisfaction with the training received and the equipment available.

Engagement with the organizational change measures were embraced across the city with a response rate of over 90 percent of drug workers in the city completing the ORC form. Compared with United States and Italian workers, those in Birmingham reported inconsistent resourcing levels (higher for technical resources and lower for staffing support) but poorer autonomy and more stress.

The Effect of Migration to the United States on Substance Use Disorders Among Return Migrants and Mexican Families of Migrants

Epidemiology Mexico

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The objective of this study was to examine the association between substance use disorders and United States migration in a nationally representative sample of the Mexican population.

Fully structured, computer-assisted, face-to-face interviews using the World Mental Health version of the Composite International Diagnostic Interview (WMH-CIDI) were conducted with a cross-sectional sample of household residents aged 18 to 65, who live in Mexico in areas with a population of at least 2,500 people (2001–2002). The response rate was 76.6 percent with 5,826 respondents interviewed.

Respondents who had themselves migrated to the United States and respondents who had family members in the United States were more likely to have used alcohol, marijuana, or cocaine at least once in their lifetime, more likely to develop a substance use disorder, and more likely to have a current (12-month) substance use disorder, compared with other Mexicans.

This study is the first to show that international migration appears to play a large role in transforming substance use norms and pathology in Mexico. Future studies should examine how networks

extending over international boundaries function with respect to substance use.

Intrauterine Exposure to Drugs: Alterations in the Quantitative EEG and the Parameters of Mismatch Negativity

Basic Science

Mexico

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It has been well documented that biological and cognitive development could be compromised when newborn children are exposed to drugs. However, the exact neural substrates explaining this developmental disorder remain unclear. In this context, we recorded and analyzed the EEG activity during the slow sleep in a group of six prematurely born children who were exposed to cocaine, tobacco, and alcohol during pregnancy. Another group of six children matched by age, weight, corporal size, and pregnancy duration participated as controls. EEG analyses showed significantly higher activity in the slower bands (delta and theta) in the experimental group, who also showed a decreased inter-hemispheric coherence with respect to the control group. N1 and Mismatch negativity (MMN) components were also evaluated in the two groups during the passive hearing of auditory tones of two different frequencies (1000 and 1300 Hz), showing a decreased amplitude in children previously exposed to drugs. Results are discussed in the Framework of Drug Effects on Child Development.

The Features of Formation of Narcotic Dependence in the System of Penitentiary Establishments (Prisons) of the Republic of Kazakhstan

Treatment

Kazakhstan

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Penitentiary establishments are places of extremely high risk for abusing drugs and HIV transmission. However, features of formation of narcotic dependence and risky behavior with reference to HIV infection in prisons is investigated insufficiently. There is also insufficient development of programs of diagnostics, preventive maintenance, treatment, and rehabilitation for persons that are dependent on drugs.

Based on the findings of complex research of the clinical psychopathological and clinical psychological features of persons with opioid dependence, a study of the components of a quota of penitentiary establishments (not less than 400) is planned. The received results will be analyzed and compared to the data on laws of formation of narcotic dependence and risky behavior with reference to HIV infection in a general population (the database of Republican Narcology Center with reference to 1,750 drug addicted patients will be used).

In this research study, we plan to utilize the following methods:

- Clinical psychopathological method;
- Experimental psychological method; and
- Statistical method.

The received data will allow us to develop the effective approaches and technologies of preventive measures, diagnostics, treatment and rehabilitation of the persons dependent on psychoactive substances in penitentiary establishments. The data received will also allow us to increase the efficiency of preventive measures with reference to the distribution of HIV/AIDs in prisons.

Peer-Driven Interventions (PDIs) in Russia To Combat HIV Among IDUs: Final Impact Results of a Three-Site Field Experiment

Prevention

United States

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Final results are presented from a 3-year HIV prevention field experiment for IDUs in Bragino, Rybinsk; and Tutaev, Russia; funded by the NIDA (RO1 DA14691). We compared three PDIs having different reward structures. A PDI is an outreach model that relies on IDUs to educate one another and recruit their peers, for which they are paid nominal rewards for specific tasks completed.

A Standard-PDI operating in Bragino was compared to a Simplified-PDI in Rybinsk and a Food-Voucher-PDI in Tutaev. In the Standard-PDI, IDU recruiters were offered rewards for educating each peer they recruited to the project's storefront (a graduated reward of up to 30 rubles depending on how each recruit scored on a knowledge test that measured the recruiter's educational effectiveness), and for each peer successfully recruited (a flat reward of 30 rubles/recruit). In the Simplified-PDI,

IDU recruiters were offered only the graduated reward for educating each peer; recruiters had to recruit their peers to the storefront in order to be paid. In the Voucher-PDI, recruiters were offered food vouchers in value equal to the rewards offered by the Standard-PDI, and the vouchers could only be redeemed at a local grocery store for food items.

This study found that:

- Virtually all recruits in the PDIs elected to become educators and recruiters, and approximately half succeeded in educating and recruiting at least one peer.
- During the Voucher-PDI's first 6 months of operation, baseline recruitment (n=88) was approximately half that of the Standard- and Simplified-PDI's first 6 months (n=145), so we converted the Voucher-PDI into a Standard-PDI in its 7th month of operations.
- After conversion to a Standard-PDI, baseline recruitment in the Voucher PDI's second 6 months of operation (n=368) was 4 times larger than during its first 6 months (n=88).
- In 30 months of baseline recruitment (120 weeks), the Standard-PDI averaged 9.5 recruits/week (n=1,144), which was nearly twice as robust as the Simplified-PDI, which averaged 5.6/week (n=667).
- In 24 months of 6-month followup recruitment (96 weeks), the Standard-PDI averaged 7.6 recruits/week (n=727), which, again, was nearly twice as robust as the Simplified-PDI, which averaged 4.1 recruits/week (n=395).
- The average knowledge test scores at baseline and followup of recruits in the Standard-PDI were 4.7 and 5.4, respectively (out of 8 points per test), compared to 6.1 and 7.3, respectively, in the Simplified-PDI.

By offering separate rewards for recruiting peers versus educating them in the community, the study demonstrated that PDIs get what they pay for. The more respondents are rewarded for recruiting over educating their peers, the more they emphasize recruitment. The more they are rewarded for educating their peers over recruiting, the more they invest themselves in education efforts.

Is Spending Time With Gang Members as Friends Associated With Drug Use Among School-Attending Youth?

Epidemiology

Peru

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There is evidence for peer influence in drug initiation and use, and also for the association of antisocial problem behavior and drug use in the United States. However, is this true elsewhere (e.g., Peru, a developing country in Latin America)?

The purpose of this study was to describe whether adolescents who spend time with gang members as friends are more likely to use drugs than adolescents who do not affiliate with gang members.

A survey was administered to school-attending youth in Callao, Peru, using adapted translations of standardized multi-item scales devised by T. Dishion. Participants included 210 school-attending youth (median age=14 years). Key variables included lifetime prevalence of tobacco, alcohol, and marijuana use, and spending time with gang members as friends. This latter variable was measured by the question: In the past month how many times have you spent time with gang members as friends? Other co-variables were sex and levels of parental monitoring.

The results of this study showed that 69 (32.8 percent) school-attending youth—20 females (25 percent) and 49 males (37.7 percent)—spent time with gang members as friends. Spending time with gang members as friends is associated with lifetime tobacco smoking (OR = 5.2, CI: 2.74–10.01), alcohol use (OR = 2.44, CI: 1.09–5.44), and marijuana lifetime use (OR = 17.36, CI: 2.1–142.91), even when adjusted for sex. The association between spending time with gang members and tobacco smoking remained significant after adjusting for levels of parental monitoring, but does not hold for alcohol and it is not possible to compute the adjusted estimate for marijuana use because of the small sample size of marijuana users (n=9).

In conclusion, consistent with theory and evidence from other countries, data from Peru, a developing country, confirms sturdy associations between spending time with gang members as friends and smoking. Drug prevention programs in Peruvian schools should also address antisocial behaviors such as spending time with gang members as friends.

This study was supported by the Belga Cooperation, DEVIDA, and NIH/NIDA/FIC training award D43TW005819.

Smoking Cessation Clinic at the University and Hospital Civil de Guadalajara, Mexico

Treatment

Mexico

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Although tobacco smoking is a health problem in Mexico, and there are national plans to reduce tobacco smoking, there are still few professional tobacco clinics, like those of CIJ, that provide smoking cessation programs (SCP) to the community.

We are presenting a bi-institutional SCP project to attend the University community and the general public in Guadalajara, Mexico.

The University of Guadalajara (U de G) is one of the three largest public universities in Mexico. It includes both a high school system (SEMS) (112,063 students) and college system (71,286 students). On the other hand, the Hospital Civil de Guadalajara (HCG) is a 900+-bed specialty public hospital attending patients from West Central Mexico (mainly Jalisco, Michoacan, Colima, and Zacatecas states). Both institutions are combining resources to develop an SCP to be offered (initially) at both the HCG and the Health Sciences Center campus of the University.

The main aim of the SCP is to provide assistance and professional attention for university students and faculty and general public wishing to stop smoking. Secondary aims include the development of research projects and providing clinical teaching for medical and psychology students.

Organization of the study consisted of a team of two medical doctors (internist and epidemiologist) and one nurse with the support of a psychiatrist, psychologist, nutritionist, and neumologist from the HCG.

A course for smoking cessation clinic counselors was held for volunteer students (medicine, psychology, and premedical interns) wishing to participate as counselors. The SCP has two clinical sites: the Modelo Clinical Unit and the Antiguo Hospital Civil de Guadalajara. The former attends both the general public and students from the University.

For the SCP, we follow the Combined Medical-Psychological program model adapted by Centros de Integración Juvenil from the INER (Mexican National Institute of Respiratory Diseases) with 10 90-minute sessions. Patients pay subsidized fees, and the program is free of charge to students. Promotion of the program is made through the Healthy-Lifestyles University program, the Social

Assistance Program of the HCG, the Student Union (FEU) and the Media Direction of the U de G (Radio Universidad, Gaceta Universitaria). So far, attendance is growing, and it has been very well accepted by the targeted communities.

Chile-United States Comparisons: Student Drug Use Trends, 1995–2005

Epidemiology

Chile

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Our research group conducted national sample school surveys of drug use in Chile from 1995 to 2005, in parallel with United States Monitoring the Future studies. These trend data were compared and contrasted to shed light on the public health significance of student drug use.

A comparable research approach was used, with nationwide probability sample surveys of school-attending youths, and standardized self-report questionnaires.

Markedly greater tobacco smoking prevalence is seen in Chile as compared to the United States at all grade levels under study, with sharply increased prevalence between 1999 and 2003. Before 2001, striking prevalence differences emerged after grade 8, but since 2001, the situation changed, and in 2005, smoking affected 54.9 percent of 8th graders in Chile versus 25.9 percent in the United States. Underage drinking also is more common in Chile, even in the 12th grade. As for cannabis and cocaine, the situation generally is reversed, with comparable drug use for cocaine and larger prevalence values for cannabis for United States students as compared to Chile, except perhaps for 12th graders in 2003.

In conclusion, Chile is the only country in Latin America that has a school survey similar to Monitoring the Future. Though Chile is nearer to coca-producing areas, and cocaine use may become a more prominent issue in the future, the central public health priority for Chile must be to reverse increased occurrence of tobacco smoking, with preventive interventions put into place well before Grade 8.

This study was supported by the Government of Chile, NIDA-funded grants R01DA09897 and K05DA015799; and NIH Fogarty Center grant TW005692.

Study of Profile of Substance Abusers Using Emergency Services in a Tertiary Care Hospital in Sikkim

Epidemiology

India

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Sikkim, a province in northeast India with an approximate population of 500,000 and inhabited by an indigenous population of Lepchas, Bhutias, and Nepalais, lies in the foothills of the Himalayas, sharing borders with Tibet, Nepal, and Bhutan. Northeast India is a major source of injection drug use (IDU) and associated HIV/AIDS. Alcohol use is traditionally prevalent in Sikkim, and recently, IDU behavior has also been reported, although systematic information on epidemiology and treatment availability of substance abuse in Sikkim is not available.

The objective of this study was to quantify drug use, demographic, socio-economic, medical, and treatment history of substance abusers utilizing emergency services in a tertiary care hospital.

The design of the study was one of retrospective data analysis. The population of the study were patients with a history of current drug use seeking emergency services for any medical or surgical consequence incident to substance abuse from July 2000 to June 2005 (60 months). Epidemiologic data were generated from emergency case registers, hospital records, and case sheets. SPSS 10.0 was used for data analysis.

Results of the study showed that out of 54 patients seeking emergency services for substance abuse (incidence 1.16 percent of all psychiatric consultations), alcohol abusers were 77.8 percent and other opioid abusers 14.8 percent. Prevalence of IDU was 16.66 percent. Common opioids abused were dextrorpropoxyphene and pentazocine, both analgesics. A significant number of patients (46.3 percent) had a history of more than 20 days/month frequency of abuse. Median of duration of abuse with all drugs was 12 years, while that with the IDU population was 3 years. Alcohol withdrawal was the commonest cause (57.4 percent) of reporting the emergency (n=30). Psychiatric co-morbidity was found among 7.4 percent. Commonest medications used were chlorthalidone and clonidine for withdrawal, and naltrexone for substitution. No standardized treatment protocol for substitution treatment was available.

This was an initial attempt to address the epidemiology of substance abuse in Sikkim. Demographic and socioeconomic characteristics of substance abusers seeking emergency services are not significantly

different from treatment seeking substance abusers in other parts of India. IDU behavior has been detected, and low median duration of use suggests an emerging problem and need for urgent harm reduction. Alcohol withdrawal had been the commonest cause of seeking emergency services, which is related to high prevalence of alcohol abuse in Sikkim. No standardized substitution treatment is available for substance abusers, which may lead to higher rates of relapse.

This study was supported by a Short-Term Research Studentship (STS) 2006 to AB, funded by the Indian Council of Medical Research (ICMR), New Delhi.

Psychopathology and Personality Among Young Polysubstance Users: Specific Correlates of Regular Tobacco Use

Prevention

France

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Numerous investigations have demonstrated that polysubstance users are at greater risk for psychiatric comorbidity and differ from nonusers in the intensity of certain personality traits. The aim of this study was to examine the extent to which regular tobacco use accounted for a portion of these clinical correlates.

This study evaluated 1,517 young adult university students in France for recent use of psychoactive substances as well as concerning diverse psychological and personality traits. Lifetime mental disorders were also assessed through structured clinical interviews.

The final sample, after screening, was composed of 204 participants (mean age=19.5 years, SD=1.16; 63 percent female). These individuals composed three groups: 76 non-substance users, 31 non-tobacco polysubstance users, and 97 polysubstance users, with regular tobacco use. The non-substance users and polysubstance users without tobacco use did not differ in rates of mental disorders, but polysubstance users had greater sensation seeking ($p=0.001$), were less harm avoidant ($p=0.018$) and had lower general self-esteem ($p=0.039$). The polysubstance group with regular tobacco use had lower self-esteem than other polysubstance users ($p=0.007$), and when compared to non-substance users, they had greater sensation seeking ($p<0.001$), lower harm avoidance ($p=0.015$), persistence ($p=0.008$), school and family self-esteem ($p=0.011$, $p=0.003$), and significantly greater lifetime history of mania ($p<0.05$), hypomania ($p<0.05$), and marginally greater depression ($p=0.059$).

Smoking among polysubstance users is often viewed as relatively harmless compared to the use of more illicit substances. However, the present study found important correlates of this substance that underscore its potential contribution to the high rates of comorbidity or psychological distress in this population.

Study on Drug Use, Sex Behaviors, Use of Condoms and HIV Risk Among IDUs in Teku

Epidemiology

Nepal

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Prevalence of HIV in Nepal is increasing. Some studies have reported elevated rates of HIV infection among IDUs in Teku, Kathmandu. The objectives of this study were: (1) To assess the scope and characteristics of drug abuse among the residents of the study area; (2) To explore the gender differences in HIV status; and (3) To see, if elevated rates of needle sharing were associated with HIV-positive status among a cohort of IDUs.

IDUs (n=240), aged 15 - 25 in the Teku area, were administered a structured survey questionnaire from July 15, 2006 to October 15, 2006. Baseline surveys collected data on HIV infection rate, types of drug and alcohol use, demographic, sexual behavior, condom use, depression and readiness to quit drug use. The participants completed a questionnaire which was carried out using the Street Intercept method. Chi-square tests and logistic regression were used to determine associations between the above factors and needle sharing within the last one year.

Among the 240 participants, 95 percent were male, 5 percent female, and the median age was 20 years. Most were heroin injectors (60 percent). Among the heroin injectors 40 percent shared needles. Prior to baseline of 2 months, 20 percent had >2 sex partners, 10 percent had casual sex partners, while only 18 percent used condoms. The study showed high prevalence of unsafe sex, injection, and taking drugs before sex. Ten percent reported being HIV-positive (20 male and 4 female). Also, 65 percent of the survey participants used alcohol, 60 percent have used marijuana and 17 percent reported that they used heroin in their lifetime.

Persons struggling with drug abuse and HIV infection in Teku have been unnoticed or underserved in HIV treatment. Such findings may be important to carrying out preventive interventions for this vulnerable population. Harm reduction is imperative. Further study of depression screening among the HIV-infected is necessary.

Development of Novel 5-Hydroxytryptamine 2C (5-HT_{2C}) Receptor Agonist for Medication of Cocaine Abuse and Addiction

Basic Science

South Korea

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Cocaine abuse and addiction is a serious societal and health problem worldwide. Though our understanding of the basic mechanisms of addiction and relapse has increased, the success rate of treatments for these cannot be satisfied. Thus novel therapeutic approaches including drug development are required. In this respect, recent studies suggested that the 5-Hydroxytryptamine 2C (5-HT_{2C}) receptor may be an interesting target for drug development overcoming the stimulant and reinforcing effects of cocaine. From the screening, the MAO inhibitor tranlycypromine has been identified as a lead candidate. We will focus on the development of new analogues of the compound using rational drug design principles combined with pharmacophore and homology-based modeling methods.

Experiments described that are planned are: (1) To design and synthesize novel 5-HT_{2C} agonists based on the concept of introduction of diverse substituents into key positions, (2) To evaluate the *in vitro* pharmacological properties of the new analogues, (3) To evaluate the *in vivo* activity of the analogues in behavioral studies using rats.

These studies are expected to provide candidates having superior selectivity for 5-HT_{2C}, lacking any significant ionotropic activity, while possessing suitable ADMET parameters for further development in the therapy of cocaine addiction.

Factors Influencing Social Functioning of Patients with Dual Disorders

Epidemiology

Ukraine

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Existing data support the high prevalence of dual-diagnosis patients in psychiatric settings (between 29-85 percent). Few studies have systematically examined the social functioning of patients with dual disorders. The object of this study is to reveal medical, social and vocational factors influencing disability of patients with comorbid psychotic disorder and substance use disorders.

We studied 160 in-patients with paranoid schizophrenia, which were divided into two groups: with (N=100) and without (N=60) and alcohol use

disorders (all men). Clinical diagnoses were based on ICD-10 criteria. Both groups were matched for sociodemographic data and psychiatric symptoms (Positive and Negative Syndrome Scale). For evaluation of social functioning, we used the WHO Disability Assessment Schedule, and Addiction Severity Index, for impact of contextual factors. Z-codes of ICD-10 were also used. Statistical procedures included rank-order coefficients, Wilcoxon test, calculation of representativeness bias, and the Chi-square test.

Results of this study showed the substance abuse profile of the dual diagnosis group with alcohol dependence (73 percent) and alcohol abuse (27 percent). Measurements of social functioning for both studied groups have shown more pronounced general behavioral dysfunction (which resulted in particular limitations of independent lifestyle) in patients with dual disorders in comparison with the schizophrenia only group ($p < .05$). Aggravated by alcohol abuse, psychopathological symptoms correlated with deterioration of family relations, worsening of housing conditions, dysfunction in the occupational and social contacts spheres, as well as in the self-care sphere ($p < .01$). Use of high doses of alcohol (and spending more money thereon) correlated with increased rate of socially dangerous behaviors and decreased level of occupational proficiency and education level ($p < .01$). Mainly related to substance abuse, predisposing factors of social dysfunction were: early beginning of alcohol use with altered inebriation state, atypical dependence syndrome, use of elevated doses of alcohol, and late detection of alcohol problems (specialized substance abuse services in past 12 months got only 21 percent of patients with dual disorders).

In conclusion, patients with comorbid disorders displayed a meaningful decrease in social functioning in comparison with the schizophrenia-only group. Taking into consideration deterioration of social skills and a more narrow social support network, the medico-social prognosis of patients with dual diagnosis is less favorable. Disability level clinical diagnosis is not as important as the assessment of family relationships, social contacts, and working capacity, which reflect the quality of social functioning. The social functioning evaluation model is proposed for both groups.

Factors Hindering Drug Abusers' Entry to Methadone Maintenance Treatments

Prevention

China

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Systematic reviews show that methadone maintenance treatment (MMT) is the most effective treatment in suppressing heroin use and decreasing or stopping injecting behaviors. MMT programs were widely adopted to solve the drug problems in many countries. In 2004, the Chinese National Task Force was established in accordance with new national guidelines for MMT programs. By the end of 2006, more than 300 methadone clinics had been opened, and 15,678 drug abusers have received methadone treatment since 2004. However, a sizeable gap exists between the need for drug abuse treatment and the number of individuals who enter treatment in China. By 2004, a cumulative 1.14 million drug abusers were registered, and heroin users accounted for above 80 percent of the total population of drug users. Therefore, only a few opium drug abusers were enrolled in MMT. Thus, it is important to understand hindering factors associated with entry into MMT. This study attempts to identify the role of demographical characteristics, HIV-risk behaviors, social pressure, and other factors that might be associated with entering MMT.

The findings from this study may have important implications with respect to identifying individuals who may be more or less likely to enter treatment, and, furthermore, to attempts to eliminate or reduce the barriers of entry into MMT and to cover and attract more opium users into treatment.

Multisite cross-sectional surveys were conducted in two drug treatment centers and communities. Different sampling methods were carried out on drug treatment centers and communities. The cluster sampling method was used in drug treatment centers. Samples from communities were recruited using peer snowball-sampling methods. Participants completed the standard questionnaire based on confidential, anonymous, and ethical principles. Univariate and multivariate logistic regression were implemented.

The analyses indicated that predicted treatment entry and unwilling entry subjects differ in predisposing factors (age, resident status in Beijing, education), general knowledge about HIV/AIDS, worrying about being arrested by police, worrying about the adverse-effect of methadone, and high-entry threshold of MMT. A logistic regression analysis indicated that high-entry threshold, worrying about adverse effects of methadone, and worrying about being arrested by police were significantly associated with unwillingness of drug abusers to enter into MMT (odds ratios were above 2.7). Subjects with lower awareness to general HIV/AIDS knowledge or non-Beijing residents were more likely to be unwilling to enter treatment. However, the age group between 25 and 39 was an effective factor promoting treatment entry.

In conclusion, greater efforts should be made to clear away the factors hindering drug abusers' entry into MMT. Moreover, health education targeted to drug abusers should continue to be enforced, and currently, it is also necessary to extend MMT to more drug abusers.

Universal Prevention: Data from Four Latin American Countries

Prevention

Puerto Rico

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The importance of early substance abuse prevention is gaining recognition in educational, governmental, and scientific communities. Social-emotional development represents one key aspect in substance-abuse prevention efforts for young children. Specifically, the ability to manage frustration, effectively solve social problems, negotiate compromise, and respond to rejection are critical to successful academic, behavioral, and mental health outcomes, including living drug-free lives (Scheier, Botvin, Diaz & Griffin, 1999), reducing aggression (McMahon, Washburn, Felix, Yakin & Childrey, 2000), and achieving school success (O'Donnell, Hawkins, Catalano & Abbott, 1995).

Research in the area of universal prevention programs for young children is particularly limited in Latin America, where substance abuse represents an area of critical concern for policymakers, educators, and families. Despite this need, few culturally relevant programs with an evidencebase have been developed and piloted in the region. This study presents outcome data from Puerto Rico, El Salvador, Guatemala, and Venezuela for the universal prevention program, Second Step, that teaches skills fundamental to drug resistance, including problem solving, empathy, and social skills. Implications of similarities and differences in response to universal programming across the region by country, socioeconomic status, and age are discussed.

Neurocognitive Deficits and Retention to Treatment in Cocaine-Dependent Patients: A 6-Month Followup Study

Treatment

Brazil

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Neuropsychological studies have shown that cocaine abusers perform abnormally on cognitive tests of memory and learning abilities. However, few studies have examined the impact of cognitive functioning on treatment retention.

The aim of the present study was to investigate if cognitive performance at treatment entry could influence retention after 6 months.

Ten cocaine-dependent inpatients, abstinent for 2 weeks, were submitted to a neuropsychological battery at treatment entry that included: Logical Memory I and II (LM, WMS-R), Visual Reproduction I and II (VR, WMS-R), Rey Osterrieth Complex Figure Test (ROCFT), and Buschke Selective Reminding Test (BSRT). All patients were located at a therapeutic community based on 12-step (APOT—Campinas, SP, Brazil). After a period of 6 months, between-group differences on initial cognitive status were analyzed using t-tests.

Results of this study indicated that there were no statistically significant differences between completers (50 percent, n=5) and dropouts in age, ethnicity, socioeconomic background, intellectual level, and education ($p > .05$). Neuropsychological performance in the ROCFT, LM (I and II) and VR (I and II) did not show any differences when comparing the groups (completers versus dropouts). On the other hand, dropouts performed much more poorly than completers in the BSRT ($p < .05$) at the beginning of treatment.

In conclusion, cocaine abusers who completed the treatment showed better memory performance since the beginning of the rehabilitation program. These data support the idea that cognitive abilities are crucial for comprehension of the interventions, learning, and successful treatment outcomes. Further studies should investigate how psychotherapeutic techniques could be modified to address cognitive impairments at the treatment setting.

Early Age of Onset of Substance Use in Clients Admitted to a General Hospital in Kingston, Jamaica

Epidemiology

Jamaica

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Early initiation of alcohol, tobacco, and illicit drug use among adolescents is a strong predictor of subsequent drug dependence.

Data from clients with voluntary admission to the Detoxification Unit of the University Hospital



of the West Indies, admitted between January and December 2005, were disaggregated using retrospective chart extractions. Data analysis was done using the Statistical Package for the Social Sciences, Version 13.0 (SPSS 13.0).

A total of 158 clients were admitted, with 144 (91.1 percent) males and 14 (8.9 percent) females. The mean age was 33.3 ± 12.85 years, range 14–77 years ($p = 0.000$). The majority (115, 72.8 percent) were single and from Kingston and St. Andrew (86, 54.4 percent). Completed primary-level education was reported by 69 (43.7 percent) clients and secondary level education by 62 (39.2 percent) clients ($p=0.000$). The mean length of stay was 12.4 ± 6.5 days ($p=0.000$). A combination of nicotine, alcohol, cannabis and crack cocaine misuse (38, 24.1 percent) was the most common diagnosis, followed by a combination of nicotine, alcohol, and cannabis misuse ($p=0.000$). There was no reported heroin use. The main drugs of onset were cannabis (68, 43 percent) and nicotine (68, 43 percent) ($p=0.000$), with the main drug of impact being crack cocaine (84, 53.2 percent) ($p=0.000$). The mean age of onset for cannabis use was 16.0 ± 4.5 years, nicotine use 18.3 ± 6.8 years, alcohol use 20.6 ± 8.7 years, and crack cocaine use 26.2 ± 8.3 years. The majority initiated cannabis (88, 80 percent), nicotine (58, 69 percent), and alcohol (33, 55.9 percent) use before the end of their adolescent years, and cocaine use (60, 73.2 percent) in their post adolescent years.

Findings of this study indicated that there is an early age of onset in this sample of substance abusers and that there are implications for adolescent substance abusers in Jamaica.

Substance Use Has Increased Among Women in Mexico

Epidemiology Mexico

de la Torre, Martha; Gutiérrez Padilla, Alfonso; Campos Sierra, Alberto; Avalos Huizar, Luis, UCINEX, HCG-UDG, Mexico

There is no reliable data about substance use and abuse during pregnancy, which comprises a very high interest group of patients (mother and child).

As a first approach, we looked at the hospital records of the largest general hospital in the state and region (Hospital Civil de Guadalajara) and reviewed the statistics for 15,789 pregnant women who gave birth during the year 2004. Only 432 out of 15,789 pregnant women reported having used any kind of substance of abuse. Sixty-three percent smoked tobacco, 26 percent used alcohol, and 16.9 percent used illegal drugs. Mean age was 25 years, and the majority who were using some kind of substance were from low educational and economic status.

Among the latter, highest frequency was seen among single mothers. Alcohol use was highest among housewives with low or no education. Based on this data, we can assume there is much underregistered information about substance use in our records.

We hypothesize that mothers with low educational levels do not worry as much about the use of substances and appear to ignore the harm those substances produce, particularly in the fetus. Our second hypothesis is that pregnant women who continue using a substance during pregnancy may have a strong dependence limiting their ability for abstinence. There should be prevention campaigns aiming to target the group depicted here.

We plan to conduct a prospective survey with cohorts of non-pregnant women with substance use who also have high chances of conceiving and becoming pregnant.

The Temporal Dynamics of Relationships Between Cannabis, Psychosis, and Depression Among Young Adults With Psychotic Disorders: Findings From a 10-Month Prospective Study

Epidemiology Australia

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The objective of this study was to examine the temporal relationships over 10 months between cannabis use and symptoms of psychosis and depression in people with schizophrenia.

A prospective study was conducted of 101 patients with schizophrenia who were assessed monthly over 10 months on medication compliance, cannabis and other drug use, symptoms of depression, and symptoms of psychosis.

Linear regression methods were used to assess relationships between cannabis use and symptoms of psychosis and depression while adjusting for serial dependence, medication compliance, and other demographic and clinical variables.

Results of this study indicate that Cannabis use predicts a small but statistically significant increase in symptoms of psychosis, but not depression, after controlling for other differences between cannabis users and non-users. Symptoms of depression and psychosis did not predict cannabis use.

In conclusion, continued cannabis use by persons with schizophrenia predicts a small increase in psychotic symptom severity but not vice versa.

Our Lessons Learned in a Study of Aboriginal Women's Healing From Problematic Drug Use

Treatment

Canada

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Our poster begins by outlining the guiding principles we used to design our study—Aboriginal Women Drug Users in Conflict With the Law: A Study of the Role of Self-Identity in the Healing Journey. We then review some of the main methodological “lessons learned” as we began the initial phase of our project. This phase concentrated on the establishment of an equitable research partnership among all members of our diverse research team. This foundational work is essential for an accountable research process, yet it is often overlooked. For our team, establishing a research partnership has ranged from building trusting relationships among Aboriginal and non-Aboriginal organizations and researchers to engaging criminalized Aboriginal women drug users and treatment providers in the research process. Establishing a solid, collaborative, and inclusive foundation for our research has been a challenging process. Our poster will describe how we faced and overcame these challenges.

Characteristics of Male Drug Users in a Prison Population in Sri Lanka

Epidemiology

Australia

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This study examined drug-use profiles of 310 male drug-dependent users (fulfilling DSM-IV criteria) imprisoned due to drug-related charges. Eighty-five percent received partial secondary or primary education with 36.4 percent and 22.3 percent being manual laborers and street vendors, respectively. The age of initiation of drug use was 18.5 ± 4.9 years, and we found that 61.3 percent used cannabis as the first drug, while 37.4 percent used heroin. Heroin (78.7 percent) was the most preferred drug of choice for subsequent regular use, while 5.8 percent preferred cannabis, and 15.5 percent preferred both. Eighty-five point four percent became regular users within 1 year of initiation of drug use, with 41.7 percent becoming regular users from the first day. Prevalence of family history of drug use was 38.5 percent. Eighty point seven percent were introduced to drugs by their friends. The two most common reasons for first-drug use were curiosity (32.3 percent) and to seek pleasure (46.2 percent). The average daily

intake of heroin was 395 mg. and 3.7 joints for cannabis. Seventy-five point four percent reported use of a combination of cannabis and heroin. The age of initiation of polydrug use was 20.8 ± 5.9 years, which is about 2 years after first drug use. The prevalence of lifetime use of alcohol was 88.6 percent; 30 percent were regular users. Prevalence of smoking was 100 percent; all were daily smokers. Mean ages of initiation for alcohol and smoking were 18.2 ± 4.2 and 16.5 ± 3.4 years, respectively. The prevalence of lifetime use of injection drug use was 28.7 percent; ‘chasing the dragon’ is a common route of administration for heroin, and 69.2 percent reported participating in drug-associated high-risk sexual behavior, with 72.7 percent using condoms (53.8 percent occasionally and 18.9 percent always). Fifty point three percent reported traits suggestive of childhood conduct disorder.

This is the first extensive study examining the drug-use profiles of the drug-related prison population in Sri Lanka. The prevalence of heroin use and the current lack of treatment programs for heroin addiction is a major cause for concern.

Tobacco, Alcohol, and Other Drug Use Among Undergraduate Student Population of University of Nis

Epidemiology

Republic of Serbia

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The Republic of Serbia has about 8,000,000 inhabitants and is situated in Southeastern Europe on one of the major drug routes for Central and Western Europe. The country has been exposed to severe economic and political crisis in the past 2 decades and has been facing serious problems regarding drug availability and use.

Tobacco, alcohol, and other drug use among youth represents a significant problem. Especially vulnerable are the high school and college populations.

The purpose of this work was to provide an insight on substance abuse among the undergraduate student population at the University of Nis, the largest university in South Serbia. We interviewed 180 students in their 1st and 3rd years at the University.

According to the results of these interviews, two-thirds of the total number of subjects tried smoking tobacco (68.38 percent), female students in somewhat higher percentage (female 70.40 percent,

male 66.37 percent). They tried their first cigarette at average age of 14.6 (15.1 girls, 13.8 boys). However, reasons for smoking are not convincing. The percentage of affirmative answers to questions related to motivation for smoking (Do you smoke when you find yourself in an unpleasant situation? Do you smoke to overcome stress? etc.) is mostly low. This provides hope that adequate work with young people, individually, or in small groups, could lead to a significant decrease in the number of smokers.

When it comes to alcohol consumption, 92 percent had lifetime use (almost equal sex distribution) and an average age of 14.9 (male 13.7, female 15.4). Depending on the kind of drink, 6–12 percent of students consume alcohol 2 or 3 times per week, and 0.5–5 percent every day. One-third of students were never drunk (35.29 percent), and 16.3 percent were drunk once in a lifetime (19.2 percent female and 11.5 percent male students). Students who were drunk at least twice in a lifetime were 47.76 percent. Eighteen percent of the students were drunk more than 10 times in a lifetime (35.73 percent male and 7.38 percent female students).

It is encouraging that only 3.5 percent of the students are unable to stop consuming alcohol after their second glass, while this is not a problem for 92.27 percent.

Regarding other drugs, our survey showed that 21.64 percent of the Nis University students questioned have tried marijuana. Five point sixty-five percent have tried hashish, 0.81 percent have tried Ecstasy, 0.54 percent have tried cocaine, 1.21 percent have tried heroin, and some other drug (most often LSD), 2.96 percent. Regarding sex distribution, male students outnumber females both according to distribution and age.

We can conclude that every third Nis University student is a smoker. Regarding alcohol use, a very low percentage of students consume alcohol daily. Every fifth student was drunk more than 10 times in a lifetime. Thirty percent have tried marijuana, of which half have continued to use it.

Taking into account that the periods of adolescence and youth are the ones that provide an opportunity to communicate with youth, it is imperative that we help this population to acquire and adopt the knowledge and skills of healthy lifestyles and resist psychoactive substances.

Patterns of Opiate Use and Relation to HIV/ HCV in Central Ukraine

Epidemiology

Ukraine

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Slobodyanyuk, Pavlo, Vinnitsya Regional

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Despite being situated on a major drug trafficking route, the drug use epidemic in Ukraine developed differently from surrounding countries due to specific cultural and economic aspects.

In 2005, a cross-sectional study was conducted to document HIV/HCV prevalence, investigate risky behaviors, drug use patterns, and their associations.

Three hundred fifteen IDUs were recruited in Vinnitsya, using the snowball sampling approach. The interviewer-administered assessment included the Risk Assessment Battery (RAB) and Form 90. Additional information on various aspects of drug use obtained during the interview was recorded.

All 315 recruited IDUs had a history of injecting in the past year. The main drug of abuse came from poppy, which is widely grown in Ukraine for culinary purposes. The study was conducted during summer months, which enabled smoking of opium (8.6 percent of sample in the past month) and snorting of dried juice as powder (5.4 percent). Harvested poppy straw can be chewed or brewed and then ingested (10.5 percent) or can be put through a complex process of opium extraction using solvents and acetanhydride. The resulting solution is known as ‘hanka’ or ‘shirka’ and can be injected intravenously (97.4 percent) or intramuscularly (1.2 percent). Different substances are added to the solution before injecting to boost or prolong the effect, minimize the side effects, and to make it “clearer”. These substances included dimedrol (antihistamine medication, 77.2 percent), tranquilizers (15.4 percent), and hypnotics (2.5 percent). In the multivariate model, the frequency of adding tranquilizers or dimedrol to hanka, significantly increased the RAB score ($p=0.001$ and 0.04 , respectively), although their effect on the odds of having HIV and HCV did not reach the significance threshold. Opiates were used concurrently with marijuana (68 percent), tramadol (7 percent), amphetamines (4.2 percent), and alcohol (0.7 percent). In the multivariate model, use of marijuana significantly decreased the odds of having HCV ($p=0.006$), while the RAB score was significantly higher due to increased sex risk. Hanka can be prepared either by users themselves or by dealers who then back- or front-load solution into buyers’ syringes. Back/frontloading was very common (72 percent of the sample did that in the past month) and significantly increased the risk of HCV ($p=0.007$).

The data suggests that HIV risk and drug-use patterns are strongly influenced by the cultural

aspects in Ukraine, which should be considered in the areas of treatment and prevention.

Opioid Substitution Therapy With Buprenorphine in Ukraine—Program Description and Policy Implications

Treatment Ukraine

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IDU accounts for 70 percent of HIV cases in the Ukraine. In 2005, Ukraine was home to the fastest growing HIV epidemic in Europe. There has arisen a need for the expansion of ARV therapy among HIV-infected IDUs. ARV access for IDUs is low. Although not formalized in policy, there was a tendency in practice to refuse ARVs to active IDUs. Opioid substitution therapy (OST) was unavailable in Ukraine until 2004, when the WHO, UNAIDS and others recommended OST as a way to address the growing HIV incidence rate among IDUs. Due to Ukrainian regulations, buprenorphine is the only medication available for OST.

The National BMT project began in October 2005 and this report details lessons learned over the first 12 months. There are 350 patients on BMT. Approximately 55 percent are HIV-infected with approximately 25 percent of the HIV-infected individuals on ARVs. The cohort is disproportionately male (21 percent women). Average age is 39.27, and length of IDU is 16.8 years. Inclusion criteria include being age > 18, opioid dependence, two or more drug-free treatment attempts, and interest in BMT. Buprenorphine was used and was produced by the Pharma-Rusan Company with the trade name Addnok. The only exclusion criterion was an inability to adhere to the required directly observed method of daily administration.

The primary outcome of this project is to improve retention in drug treatment and linkage to health care to improve overall health outcomes. First, after 6 months, retention is approximately 75 percent. Second, the average dose of Addnok was approximately 9.3 mg., which is lower than the average dose of Subutex in the United States (16 mg./day). The differences in pharmacological requirements probably connected with a level of bioavailability of Addnok comparatively with Subutex. The average score of drug use by ASI at baseline was 0.3238 ± 0.1208 , and in 6 months, 0.0944 ± 0.0866 . Additionally, clients have experienced other personal successes: weight gain,

improvements in interpersonal relationships, and obtaining and keeping employment.

There exist many difficulties in the implementation and expansion of BMT: (1) methadone is still unavailable due to resistance in Ukrainian society; (2) extensive measures of control required to supervise buprenorphine's administration; (3) only narcologists can prescribe buprenorphine; and, (4) buprenorphine is administered daily by direct observation.

Although barriers exist, the reality that 350 individuals have entered into BMT in the Ukraine, with high levels of retention in treatment, remains promising. Understanding the demand for OST, deregulation is necessary, including allowing for expansion of OST to allow GPs to be allowed to prescribe buprenorphine. Additionally, the availability of methadone must be addressed. Both are desperately needed if OST is to expand from 350 to 6,000 by 2008, and most importantly, the estimated goal of 60,000 necessary to impact the HIV epidemic in Ukraine.

Who Is Starting To Smoke Cannabis in the Early 21st Century? An International Perspective



Epidemiology United States

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The World Mental Health Survey (WMHS) initiative is using comparable community survey methods within multiple countries as part of an effort to update epidemiological evidence on the global burden of psychiatric disturbances, related conditions, and behaviors. For this sub project, we seek evidence on individual-level conditions and processes, such as alcohol dependence, that might be influencing the onset of cannabis smoking, not of shared features of local area environments (e.g., cannabis availability).

Standardized community interview survey methods are used in each country ($n > 2,000$ persons/country), and the resulting epidemiological survey data are organized by county or other local area division. From each county's dataset, we remove persons whose interview data show a past history of cannabis smoking; we base our estimates of relative risk (RR) on the new incident cannabis users (i.e., those starting within 24 months of assessment) and area-matched controls (i.e., never users who remain at risk for future cannabis use). The conditional form of multiple logistic regression provides the RR estimates.

To date, we have completed analyses for three countries (United States, Mexico, and Colombia), finding a total of 66 new incident cannabis users, each with area-matched controls who had never tried cannabis. In these countries, the risk of starting to smoke cannabis is lower for males (RR=0.6; p<0.05) and among older persons (RR=0.8; p<0.05). People with a history of alcohol dependence are more likely to start smoking cannabis, as compared to persons without this history (RR~2.7; p<0.05).

As this WMHS sub project proceeds between now and June 2007, we will strengthen these new RR estimates with data from an additional 14 participating countries, building a more complete and global epidemiological picture of 21st century cannabis use.

This project is supported by NIDA awards D43TW05819, T32DA07292, R01DA016558, and K05DA015799.

A Child's Intentions To Smoke Tobacco and Later Onset of Smoking: A Longitudinal Study of Male-Female Differences

Epidemiology

Peru

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This study estimates a predictive and possibly explanatory role of early behavioral intentions, expressed in childhood, with respect to later onset of tobacco smoking by young adulthood, with attention to male-female differences.

In ongoing longitudinal research, 2,311 first graders (50 percent male; 33 percent non-Hispanic White) were assessed periodically during primary and middle school (1985–1994), and then followed up in young adulthood (2000–2002). In 1989–94, during private confidential interviews, they were asked to indicate on a four-point scale whether they would smoke a tobacco cigarette if it were offered to them by someone they knew and trusted. We coded responses as “Definitely Not” = 0; Else = 1. During young adult followups, roughly 8–10 years after the prior assessments, 75 percent were re-assessed via standardized diagnostic interviews, including questions about smoking history.

The findings of this study indicate that multiple logistic regression slope estimates support a strong predictive and possibly an explanatory link from a child's intentions to smoke to later onset of tobacco smoking (estimated relative risk, RR=11; p<0.05). The RR estimate was attenuated but remained statistically robust after covariate adjustment for common antecedents, age, sex, minority group

status, and SES (RR=3; p<0.05). Probing male-female differences, we found a substantially stronger prediction or explanation linking earlier intentions with later smoking for females (RR~7; p<0.05); the link was weak for males (RR~1.2; p>0.05).

In this study, the assessment of behavioral intentions was not part of a preventative “commitment pledge” approach, but the study's evidence may help promote an understanding of any observed effect of commitment pledges (not to smoke) with potentially stronger intervention effects for females.

This project was supported by NIDA/NIH/FIC awards: D43TW05819; T32DA07292; and K05DA015799.

High Risk Behavior and Self-Reported Attitudes of Risk Behavior in Adolescent Females in the Caribbean

Prevention

United States

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The highest incidence rates of HIV/AIDS globally, as well as in the Caribbean, are recorded in the heterosexual and youth populations. Further, females are at significant risk due to anatomical/physiological risk and social roles. Thus, there is a pressing need to address HIV/AIDS risk behaviors among female youth in the Caribbean.

This study examined theory-based constructs of individual youth attitudes toward risk behaviors such as alcohol, drugs and sexual activity. Further, these attitudes were related to the individual's intent to, as well as actual engagement in HIV/AIDS risk behaviors. This model was also utilized to further investigate differences in these relationships by risk behavior experience (non-experienced versus experienced) and parental relationship and communication.

The data was collected, with university IRB and St. Maarten government approval, from 1,206 youth (age range 14–18, mean 15.6 [s.d. 1.7]), representing all major secondary schools. However, for the purpose of this study, only females aged 12–16 were included (mean 14.7 [s.d. 1.1]). The survey

instrument included demographic information and health risk behavior prevalence, including tobacco, alcohol, and drug use, and sexual activity derived from the Center for Disease Control's (CDC) Youth Risk Behavior Survey (YRBS). The Theory of Reasoned Action (TRA) was used as a theoretical framework for development of questions examining attitudes and intentions related to HIV/AIDS risk and behavior.

Female adolescents reported high levels of engagement in smoking, alcohol, and drug use, as well as sexual activity. Attitudes were significantly correlated with both intention and behaviors. Those who reported discrepancies between attitudes and behaviors were more likely to report having a poor relationship with their mother. Further, those females who indicated more conservative attitudes, yet engaged in risk behaviors, reported the highest frequency of a poor relationship with their mother. In contrast, females who reported no discrepancies reported the highest levels of having a great relationship with their mother. In terms of communicating with others, participants reported preferences in speaking with their mothers. However, those who reported discrepancies between their attitudes and behaviors were more likely to report the preference to communicate to no one in comparison to those with no discrepancies.

In conclusion, attitudes were highly related to risk behaviors in these youth. The data also suggest the strengths of the attitude-behavior relationship appears to change as a function of the young woman's relationship with her mother. Understanding the role of these influences is critical to the design and implementation of effective risk prevention and interventions among Caribbean female youth.

Higher Levels of Gamma Glutamyl Transpeptidase as Indicator of Alcohol Use in Patients Diagnosed With Liver Disease

Epidemiology

Brazil

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The aim of this study was to verify the use of GGT (gamma glutamyl transpeptidase) as a biochemical marker for alcohol use in patients with liver disease.

The study sample included 126 liver disease patients (94 male, 32 female) from the Gastroenterology and Hepatitis Out-Patient Clinic of the University Hospital of the School of Medicine of Ribeirao Preto at the University of Sao Paulo. Criteria for inclusion was: (a) age between 18 and 70; (b) at least two recent GGT serum measures; (c) Child-Pugh

severity level classification, and (d) at the time of the interview, in good condition for giving information.

Clinical and laboratorial data have been obtained from patient files for review. Patterns of alcohol use and alcohol problems have been assessed by using a structured anamnesis and screening with the questionnaire AUDIT. Socio-demographic data was collected directly during the anamnesis. Cut off point of AUDIT was equal to or more than eight. GGT values higher than 60U/L were rated as positive. Statistics from the statistical software package MINITAB 14 have been used. Univariate analysis and chi-square and Fisher Exact Test have been performed.

AUDIT positive scores have been found in 22 patients (17.4 percent), and 86 patients (68.2 percent) were classified as severity level A according to the Pughs Child-Liver Disease Severity Index. Average value of GGT was found to be three times higher among patients whose AUDIT screening was rated as positive ($p<0.001$). The average value of GGT was significantly higher in chronic alcoholics ($p<0.001$). Total scores of AUDIT have been found higher in male patients than in females ($p<0.001$). Hepatitis was related to lower AUDIT scores ($p:0.001$) and female gender ($p<0.04$).

A prevalence rate of 17.4 percent of the patients have been found to be positive cases for actual alcohol problems and alcohol use, despite carrying a severe liver disease diagnoses. An association between an AUDIT positive score and higher levels of serum gamma glutamyl transpeptidase has been found. No significant differences have been found for GGT levels regarding liver disease severity. This finding is suggestive for an independent influence of alcohol use and high GGT levels in hepatic patients. These results could provide some support for the combined use of GGT and AUDIT in liver disease patients in order to facilitate the identification of high risk patients that are actually consuming alcohol.

Research on Psychoactive Substance Use in Latin America and the Caribbean: Priorities, Capacities and Impact

Epidemiology

Peru

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Psychoactive substance use (PSU) is a health challenge due to its complex presentation depending on sex, age, and countries' economic development. The World Health Organization (WHO) estimates that tobacco, alcohol, and illegal drugs contributed to 12.4 percent of all deaths worldwide in year 2000, representing 8.9 percent of the global burden of disease.

This work aims to evaluate priority setting, capacity and impact of PSU research in Latin American and Caribbean (LAC) countries; as part of a larger initiative of the Global Forum for Health Research, designed to map mental health providers and their research agendas in low- and middle-income countries, traditionally unable to efficiently respond to health challenges with local research based-policies and interventions.

A questionnaire was sent to 2,664 researchers and stakeholders identified by a mapping process through publication databases (1993-2003), Internet searches of institutions, and snowball sampling. We received responses from 463 researchers and 119 stakeholders, from 19 of 30 countries in the region.

Findings indicate that 15 percent of the 2,653 indexed mental health publications were related to PSU. Twenty-four percent of 1,123 research projects conducted in the past 5 years had a PSU approach. About 40 percent of either publications or research projects were on illegal drugs, 40 percent on alcohol, and 15 percent on tobacco issues.

The research project setting was mainly in the community (46 percent). Most research projects were studies on epidemiology or public health (56 percent) and social sciences or psychology (18 percent). The majority (57 percent) had only local collaborators. Funding came from ministries (21 percent) and research councils (18 percent); 19 percent of projects were not funded. The main motivations for research were personal interest (28 percent) and burden of disease (21 percent). Research in PSU was considered a priority by 50 percent of both researchers and stakeholders.

Even when PSU is considered a research priority by an important number of mental health providers in the region, in order to effectively address reducing the incidence and prevalence of PSU and provide the best available evidence on management of substance related problems, LAC countries should: (1) be capable of capturing more financial resources, primarily from external sources; (2) increase research awareness on tobacco issues; and, (3) turn attention to primary care and general hospital settings, as well as clinical and basic sciences aspects of PSU research.

Alcohol Abuse and Dependence Among College Students in Lebanon: Exploring the Role of Religiosity in Different Religious Faiths

Epidemiology

United States

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Despite the growing body of research on the protective role of religiosity on alcohol use in youth, data outside the United States remains scarce. This study examines the link between religiosity and alcohol involvement in university students in Lebanon, a country uniquely positioned to study differences between Christians who have a western-like attitude towards drinking and Muslims, whose faith prohibits alcohol consumption.

University students (N=1837) were randomly selected using a multi stage cluster technique from two prominent large universities in Beirut, one in a predominantly Christian and the other in a predominantly Muslim community. A self-report anonymous questionnaire assessed demographics, religious affiliation, belief in God, practice of faith, and alcohol involvement. Abuse and dependence questions were based on the Diagnostic Interview Schedule IV.

Results indicated that lifetime alcohol use, abuse, and dependence were all significantly higher in Christians (87.5 percent, 11.0 percent, 5.8 percent, respectively) than in Muslims (43.8 percent, 6.1 percent, 3.2 percent, respectively, $p < 0.05$), but interestingly, these differences disappeared once the student had tried alcohol. The majority (90 percent) believed in God, and both Christian and Muslim believers had a significantly lower prevalence of abuse and dependence compared to those who changed their beliefs frequently or were non believers ($p < 0.01$). Still, the prevalence of abuse and dependence was higher in Christian believers (9.9 percent and 5.1 percent, respectively) than Muslim believers (5.2 percent and 2.3 percent, respectively). Belief in God continued to be protective in both religious faiths once alcohol had been tried, but the observed differences between Christian and Muslim believers were no longer evident. Higher practice of faith among the believers in both religious groups was linked to a significantly lower prevalence of abuse and dependence, but the prevalence of alcohol abuse

and dependence was higher in Christians who were regular practitioners (9.5 percent and 0.8 percent, respectively) than their Muslim counterparts (2.3 percent and 0 percent, respectively). Yet, once more, these differences disappeared among lifetime drinkers. Alcohol involvement and the drinking patterns of Christians and Muslims did not significantly vary by university context.

In conclusion, Christian students are more likely to try alcohol, to start drinking at an earlier age, and to become an alcohol abuser or dependent, compared to Muslim students whose faith prohibits the use of alcohol. Interestingly, however, the odds of becoming an alcohol abuser or dependent are comparable once they have both tried alcohol. Belief in God and practice of faith protects against alcohol involvement in both Christian and Muslim students. This study corroborates international findings on the protective role of religiosity and highlights important potential differences across students of different religious faiths.

The Relationship Between Psychopathology and Family Functioning Among Drug Addicts and its Implication to the Treatment Modality

Treatment

Malaysia

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The aim of this research was to examine the prevalence of psychopathology and family functioning among drug addicts and its implication to drug treatment modality. The subjects of this study were comprised of 202 addicts from the One Stop Drug Rehabilitation Centre at Dengkel Selangor, Malaysia. They were selected to answer the Symptom Checklist-90-Revised (scl-90-R), Family Adaptability and Cohesion Scale II (FACES II), and Client Satisfaction Questionnaire by Atkinson et al. (1988). Data were analyzed using descriptive statistics and Pearson correlation to study the relationship among variables.

The results of the SCL-90-R revealed elevated scores on all primary symptom dimensions when compared to the norm scores of male psychiatric inpatients and male psychiatric outpatients. The results of FACES II showed that 57.2 percent of the addicts come from extreme types of family functioning. The correlation between most primary symptoms of psychopathology and family cohesion and adaptability revealed a negative significant correlation. There was also a negative significant correlation between most primary symptom dimensions of psychopathology and the satisfaction with counseling services. The presence of psychopathology and dysfunctional family functioning among drug dependent individuals may

warrant revision to current treatment modalities that place little emphasis on comorbid psychological problems and that are associated with family functioning problems that may be contributing to and maintaining drug dependence.

Impact of Drug Abuse in Bharatpur

Epidemiology

Nepal

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Available data show that the Bharatpur area of Nepal is highly affected by drug abuse, particularly among adolescents. Most of the abusers are school-age (13 to 18 years) boys and girls. The abuse of drugs has guided them to be unproductive and aggressive. Alcohol and other drug abuse have led the population of the Bharatpur area toward the spread of HIV/AIDS and other sexually transmitted diseases.

Due to the illicit production, sale, and abuse of drugs (particularly the production of marijuana and homemade alcohol), the society and families of Bharatpur have been highly affected and are endangered. The situation is worsening and needs to be addressed in due time.

Abusers (n=210) of marijuana, heroin, hashish, and other pharmaceutical drugs from among the age group of 13–24 were interviewed with the help of questionnaires between June and August 2006.

Findings indicate that there are more males (n=190) likely to be IDUs than females (n=20). Thus, the prevalence of drug abuse was high among males and abusers were younger. The median age was 20 and 30 percent had a lifetime history of drug abuse. The IDUs used injection at the median age of 16.

In conclusion, low education and ignorance toward the negative impact of drugs has led the youngsters of Bharatpur, Nepal, toward the abuse of drugs. Hence, there are also public health implications for the communities. High levels of sexual risk were revealed among the IDUs. It is apparent that the people of this area need to have more knowledge about the various aspects of drug abuse, which will help to reduce the abuse of drugs, including alcohol and tobacco. Therefore, awareness, education, training, interaction, and publicity are highly desirable in this area.

Possible Mechanisms of Pyrotherapy Efficiency in Reducing Drug Craving and Therapeutic Resistance in Heroin Addicts

Treatment

Russia

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Pyrotherapy is the method employing bacterial lipopolysaccharide (Pyrogenal®). The aim of this work was to study the effect of pyrotherapy on craving of drugs in heroin addicts and to elucidate possible mechanisms of this effect by studying the immunity and binding of catecholamines (CA) and opioid receptor ligand naloxone (Nal) to lymphocytes.

Ten heroin addicts with drug craving, resistant to psychotropic drug therapy, were treated with Pyrogenal® (course dose 250-300 µg, 3-4 injections i.m.) to achieve the body temperature 38°C. The control group was comprised of 10 healthy subjects. Blood samples were analyzed before pyrotherapy and after 7 days of treatment. Lymphocyte subsets were detected using flow cytometry. Spontaneous and mitogen-induced proliferation of PBL and activity of NK-cells were measured radiometrically. Phagocytic activity was assessed by the yeast cells intake. Binding of PBL to CA and Nal was studied by an original ELISA using horseradish peroxidase (HP) conjugates of dopamine (DA), norepinephrine (NE), and Nal. The postreceptor signal transduction was assessed by changes in the activity of 5'-ectonucleotidase (5'-NT) in response to PBL stimulation with morphine, Nal, CA, haloperidol, or propranolol. The 5'-NT activity was determined histochemically by the modified method of Wachstein and Meisel. Statistical analysis was performed using Microsoft Excel 2000 software. Means and SEM were calculated. Students' t- and paired t-tests were used.

Findings indicate that pyrotherapy reduced drug craving completely. Decreased immune parameters (count and activity of lymphocytes, T-helpers, T-cytotoxic, NK-cells, and phagocytes) significantly increased. Before pyrotherapy, binding of NE-HP to PBL of heroin addicts was slightly decreased (0.16±0.03 arb. Units) compared to controls (0.21±0.01). After pyrotherapy, it normalized (0.23±0.02, Δ percent 82±42). Before pyrotherapy, binding of DA-HP to PBL was reduced (0.33±0.09); after pyrotherapy, it increased significantly until 0.81±0.16 (Δ percent 293±141), compared to 0.72±0.13 in controls. Nal-HP binding did not differ significantly between addicts and controls and was not influenced by pyrotherapy. Pyrotherapy did not change the 5'-NT activity of PBL significantly, spontaneous or stimulated by the receptor ligands.

Contrary to controls, the 5'-NT activity in PBL of addicts was not inhibited by haloperidol or Nal added before the agonists, which indicated changes in receptor reactivity.

In conclusion, our data show that pyrotherapy has an evident favorable effect on the craving of drugs and the psychophysical state in heroin addicts. This effect is accompanied by normalization or improvement of disturbed immune parameters and by an increase in CA binding to PBL. If similar changes in receptor activity actually occur on brain neurons, they can be responsible for decreasing craving of drugs and resistance to psychotropic drug therapy in heroin addicts.

Drug Use, Hepatitis, and HIV in the Homeless of Guadalajara

Epidemiology

Mexico

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In Mexico there is no specific information about drug use in the homeless population. According to the number of services rendered, there are 1,692 homeless people in the City of Guadalajara welfare registry, although there could be over 4,000. The aim of this study was to investigate drug use and HIV, HCV, and HBV status in a sample of the homeless population in the City of Guadalajara (GDL).

We contacted a religious group in GDL that works permanently with homeless people in downtown GDL for a scheduled onsite visit to the weekly meeting point. We visited the group on three occasions (preparation visit, clinical work-up, and test results) and studied all subjects who volunteered for a medical checkup. We brought the Mobile Medical Clinic (mobile home type) of the Social Assistance Program of the Hospital Civil de Guadalajara for the clinical work-up visit. The work-up included a short medical and drug use history; blood samples for blood chemistries and antibodies for viral infections (HIV, HCV and HBV), and anthropometry.

We studied 39 homeless subjects (24 men, 15 women) with a mean age of 30.3 years. There were nine teenagers. Based on a body mass index, 66 percent had some nutritional problem; two women were pregnant, and eight (20.5 percent) subjects had a medical condition unrelated to drug use. A history of substance use was found in 24 (61.5 percent) subjects, while 17 (43.5 percent) used some

illegal substance. Of those with a positive history of substance use, 79 percent referred to having an addiction. Types of substances used were: alcohol (56 percent), tobacco (49 percent), marijuana (33 percent), cocaine (33 percent), and inhalants (23 percent). In the whole sample, 41 percent used more than one substance except tobacco. Injection drug use (cocaine or heroine) was found in 10 percent of the subjects. Blood tests showed that two (5 percent) subjects were HIV-positive, five (12.8 percent) were hepatitis C-positive, and one (2.5 percent) was hepatitis B-positive.

Illegal drug use in this sample was as high as it was for the prevalence of antibodies to hepatitis. These results suggest that, similar to other countries, the homeless population in Guadalajara (Mexico) is a high-risk group for drug use and hepatitis. Medical, welfare, and social programs should take this information into consideration.

A Computational Framework for Nicotine Addiction

Basic Science

France

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In this study, we present a hypothetical neuro-computational model that combines a set of neural circuits at the molecular, cellular, and system levels and accounts for several neurobiological and behavioral processes leading to nicotine addiction.

We propose that combining changes in the nicotinic receptor response, expressed by mesolimbic dopaminergic neurons, with dopamine-gated learning in action-selection circuits, suffices to capture the acquisition of nicotine addiction. We show that an opponent process enhanced by persistent nicotine action renders self-administration rigid and habitual by inhibiting the learning process, and resulting in long-term impairments in the absence of the drug. The model implies distinct thresholds on the dosage and duration for the acquisition and persistence of nicotine addiction. Our hypothesis unites a number of prevalent ideas on nicotine action into a coherent formal network for further understanding of compulsive drug addiction.

Depression-like Characteristics of 5HTTLPR Polymorphism and Temperament in Excessive Internet Users

Basic Science

South Korea

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Excessive Internet use (EIU) has been reported to be comorbid with depression and the manifestation of its symptoms. This study examines genetic and temperamental characteristics of depression in EIU adolescents.

Ninety-one male adolescents with EIU and 75-healthy comparisons were recruited. Between group comparisons were made with respect to harm avoidance (HA) in Cloninger's Temperament Character Inventory and genetic polymorphisms of the serotonin and norepinephrine transport genes.

The homozygous short allelic variant of the serotonin transporter gene (SS-5HTTLPR) is more frequent in the EIU group ($\chi^2=4.38$, $df=1$, $p<0.05$). The HA and Beck Depression Inventory (BDI) scores were significantly higher in the EIU group than in the healthy comparison group ($t=2.12$, $df=164$, $p=0.04$; $t=3.20$, $df=164$, $p<0.01$). EIU subjects expressing SS-5HTTLPR also showed higher HA (HA1, HA2, HA4, and total HA) and Young's Internet Addiction Scale scores than EIU subjects expressing the over variants ($t=2.47$, $df=89$, $p=0.01$; $t=2.33$, $df=89$, $p=0.02$; $t=2.17$, $df=89$, $p=0.03$; $t=2.25$, $df=89$, $p=0.03$; $t=2.93$, $df=89$, $p<0.01$, respectively).

In conclusion, the EIU group had higher SS-5HTTLPR frequencies, harm avoidance, and BDI scores. SS-5HTTLPR expression was closely related to harm avoidance in EIU. The results of this study suggest EIU subjects may have genetic and personality traits similar to depressed patients.

Profile of Schizophrenic Patients With and Without History of Methamphetamine Use Among Patients of the Department of Psychiatry, WVSUMC, Philippines From 1995 to 2005

Epidemiology

Philippines

Hembra, Mariano; and Castaneda, Theresa, West Visayas State University Medical Center, Department of Psychiatry, Iloilo City, Philippines

Methamphetamine is one of the most commonly abused substances in the Philippines, and psychotic symptoms are frequently encountered among patients using this drug. There are no local data



comparing the characteristics of schizophrenics with a history of methamphetamine use and without history of methamphetamine use.

This study aims to describe the characteristics of patients with schizophrenia with and without a history of methamphetamine use. This study was carried out by reviewing the charts of all outpatients and inpatients of the West Visayas State University Medical Center, Iloilo City, Philippines from January 1995 to December 2005 who were diagnosed with schizophrenia with and without a history of methamphetamine use. Data was generated describing the following variables: age, sex, gender, marital status, educational attainment, occupation, religion, and medications prescribed during treatment.

The study found among a total of 269 subjects, that 56 (20.82 percent) were methamphetamine users, and 213 (79.19 percent) were non-users. Among those with a history of methamphetamine use, 31 (55 percent) belonged to the 20–30 age group, 43 (77 percent) were single, 53 (95 percent) were males, 24 (43 percent) were college level, 51 (91 percent) were Catholics, 38 (68 percent) were unemployed, and 45 (80 percent) were prescribed typical antipsychotics. Among those without a history of methamphetamine use, 84 (39 percent) belonged to the 20–30 age group, 139 (60 percent) were single, 127 (60 percent) were males, 78 (37 percent) were college level, 166 (78 percent) were Catholics, 129 (61 percent) were unemployed, and 162 (76 percent) were prescribed typical antipsychotics.

There were no significant differences in terms of age, sex, marital status, educational attainment, occupation, religion, and medications prescribed among patients diagnosed with schizophrenia and that also had a history of using methamphetamines than those patients who do not have a history of taking methamphetamines.

Correlation Between Substance Use and Index Crime Among Children in Conflict With the Law in Selected Rehabilitation Centers in Iloilo City and Guimaras, Philippines

Epidemiology

Philippines

Hembra, Mariano; Villareal, Victoria; Villareal, Val Michael; Ticao, Frances; Catoto, James; Abarquez, Pepito; Train, Christine; Kitchie, Sian; Alben, Abad; Sorongon, Joan; and Toscano, Annabelle, West Visayas State University College of Medicine, Iloilo City, Philippines

In the Philippines, an average of 10,575 children are arrested and detained every year. There are no published local data on the profile of children in

conflict with the law (CICL) and their relationship with substance use.

The study aimed to determine a correlation between substance use and index crime among CICLs using an analytical cross sectional study. The study was done from November 2005 to February 2006 at the Iloilo Rehabilitation Center, Dalayunan Home for Boys in Bo Obrero, Iloilo City, and the Regional Rehabilitation Center for Youth in Guimaras, Philippines. The participants in this study included all detainees below 18 years old who had used any form of alcoholic beverages, marijuana, rugby, shabu, and other illegal substances. The researchers conducted interviews with the detainees using a questionnaire.

The prevalence of substance use among CICLs was 81 percent. All were male, single, and less than 18 years old at the time the index crime occurred. Among the subjects, 50 percent reached at least high school level. Half of the subjects were detained for the first time. Alcohol use was the most prevalent, had the youngest age of initiation of use and was associated with violent crimes. Crimes against property and drug-related crimes were common among multiple-substance users. There was a strong correlation between the type of index crime and the type of substance used when the crime was committed.

Among the children in conflict with the law, there is a strong correlation between the type of substance used and the type of crime committed.

Neural Mechanisms Underlying Drug-Related Attentional Bias in Active Cocaine Users

Basic Science

Australia

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Human drug addiction routinely features a difficulty with disengaging attention from drug-related stimuli, a symptom previously shown to be predictive of relapse during treatment for drug dependence. We examined the neural mechanisms underlying this attentional bias in cocaine users, varying working memory (WM) load to reflect the demands imposed by ruminative craving thoughts.

Sixteen active users of cocaine were administered a WM task that manipulated the requirement for selective attention by varying the background contents, cocaine-related or neutral, upon which a recall probe item was shown. Behavioral and fMRI data were collected.

Cocaine users had significantly poorer attentional control under high WM demands, suffering both increased response times and reduced recall accuracy, with this effect more pronounced for cocaine stimuli (when compared to neutral stimuli). Ignoring cocaine-related stimuli was associated with increases in occipital cortex activity, consistent with both increased visual processing of the irrelevant stimuli for these trials, and right prefrontal activity. Participants with higher levels of right prefrontal activity had the lowest levels of attentional bias for cocaine-related stimuli.

Cocaine users under high cognitive demands had difficulty modulating the neural mechanisms underlying cognitive control, which appears necessary for restricting the visual processing of task-irrelevant, but salient drug-related stimuli, a finding that may be relevant to identifying those at most risk for relapse.

The Effectiveness of an Integrated CBT Intervention for Co-Occurring Depression and Substance Misuse in Young People: A Pilot Study

Treatment

Australia

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Adolescents with a substance use disorder are at two to three times the risk of experiencing concurrent anxiety or mood disorders. While there is a well-established evidence base for the use of CBT in the treatment of depression in young people, the majority of these studies exclude adolescents with drug and alcohol problems, despite increasing evidence for the efficacy of CBT for such problems among young people. More recently, there has been an emphasis on the need for more integrated approaches to the treatment of young people with co-existing depression and substance use problems, and preliminary evidence from two studies has reported positive outcomes for integrated CBT interventions for depression and alcohol dependence in adolescents. The aim of this study was to determine the effectiveness of an integrated cognitive behavior therapy (CBT) intervention for co-occurring depression and substance misuse in young people.

Participants consisted of 60 young people aged 15 to 26, with a major depressive disorder and concurrent substance misuse. Participants were provided with 10 sessions of CBT for co-occurring depression

and substance misuse and case management over a maximum of 20 weeks. Partial or non responders were provided with a randomized 10-week double-blind, placebo-controlled trial of sertraline.

Pre- and post-treatment and 6-month data on depressive and substance use symptoms will be presented. Preliminary results indicated positive outcomes on functioning and depression/anxiety symptoms, but not substance use outcomes post-treatment. Predictors of treatment response to the integrated CBT intervention at mid- and post-treatment will also be reported.

Preliminary evidence from recently published pilot studies have demonstrated the efficacy of integrated CBT interventions in alcohol dependent adolescents with co-existing depression. The current paper reports preliminary support for the effectiveness of integrated treatment for depression and substance misuse among young people.

Symptoms of Anxiety and Depression in Childhood Precede Ecstasy Use

Epidemiology

The Netherlands

Huizink, Anja; Ferdinand, Robert, F.; van der Ende, Jan; Verhulst, Frank, C.; Erasmus, M.C., Department of Child and Adolescent Psychiatry, Rotterdam, The Netherlands

Considerable interest has been paid to the adverse effects of Ecstasy use, including its neurotoxic effects. Several studies have suggested that the use of Ecstasy is associated with mental health problems, such as depression, psychotic symptoms, and anxiety disorders.

The aim of the present study was to investigate whether Ecstasy use is preceded by symptoms of behavioral and emotional problems in childhood and early adolescence.

A sample of 1,580 individuals, followed up across a 14-year period, from childhood into adulthood, participated in the present prospective longitudinal population-cohort study. The first assessment took place in 1983 before Ecstasy was introduced in the Netherlands and included the Child Behavior Checklist (CBCL) to obtain standardized parent reports of their children's behavioral and emotional problems. Ecstasy use was assessed with the Composite International Diagnostic Interview 14 years later.

Scores within the deviant range for the scales designated as anxious-depressed and delinquent behavior in childhood were significantly related to Ecstasy use in adolescent and adult males, resulting in an increased risk (HR= 2.81, 95 percent, CI: 1.20

– 6.56, $p < .05$; HR = 3.78, 95 percent, CI: 1.84 – 7.76, $p < .001$, respectively).

Our findings suggest that individuals with childhood symptoms of anxiety and depression or delinquent behavior have an increased tendency to use Ecstasy in adolescence or young adulthood. Effects of Ecstasy are supposed to include enhanced feelings of bonding with other people, or to yield euphoria or relaxation. Individuals with symptoms of anxiety or depression may be especially susceptible to these positive effects of Ecstasy.

A Study of Substance Abuse in the Asian Indian Community in Ontario, Canada

Epidemiology

Canada

Hussain, Maher; Rajmohan, Gill, William Osler Health Centre, Brampton, Ontario, Canada

This study was conducted in areas covered by the Greater Toronto Area in Ontario, Canada, where a majority of the immigrant population including Asian Indian and South Asian population traditionally come in, settle down, and live. This project was conducted to study the psychosocio-demographic particulars about the substance abusers in the Asian Indian population of the community, like age, sex, occupation, religion, marital status, data regarding drug use, the types of drugs abused, quantity used, frequency used, reasons for initiation and perpetuation, psychological, physical, or social problems due to substance abuse, etc.

Thirty cases of substance abuse were studied. The cases were primarily obtained from the community by the snowballing method. A specially designed proforma was used to obtain the psychosocio-demographic particulars and the data regarding drug use and the effects of their use. ASI (Addiction Severity Index) was used to assess the severity of the substance abuse and to study the patterns of substance abuse. Psychiatric examination was done for all patients. DSM-IV Diagnostic Criteria were used for diagnosis of substance abuse and for psychiatric diagnosis. The data was analysed for descriptive statistics using SPSS.

The results regarding the psychosociodemographic particulars about the substance abusers in the Asian Indian population in the community, (age, sex, occupation, religion, marital status, data regarding drug use, the types, quantity and the frequency of use, reasons for initiation and perpetuation, psychological, physical, and social problems due to substance abuse) have been discussed.

Reading To Recover: Exploring Bibliotherapy as a Motivational Tool for Recovering Addicts

Treatment

Malaysia

Hussin, Adb., Halim Mohd, Faculty of Leadership and Management, Islamic Science University of Malaysia, Malaysia; Hayati Abdullah, Mardziah, Univerisiti Putra Malaysia, Malaysia

By definition, bibliotherapy is a technique for structuring interaction between the client and the therapist based on mutual sharing of literature in fulfilling the client's therapeutic needs. It is also a form of supportive psychotherapy in which carefully selected reading materials are used. A study was conducted to explore the use of bibliotherapy, with addicts undergoing treatment and rehabilitation in a government-aided rehabilitation center in Malaysia. The center employs psychosocial modality in its approach to treatment and rehabilitation, in which counseling is one of the components. The respondents in the study consisted of 10 inmates from the center, who were selected based on their readiness to change using the URICA Stage of Change instrument screening process, which placed them at the stage of Contemplation before the study began.

A series of 6 group counseling sessions were conducted with these 10 respondents. At the first session, each inmate was assigned one narrative for reading. The narratives were selected from a collection of stories on the real-life experiences of successfully rehabilitated Malaysian addicts, compiled earlier by a group of counselors. Over the next five sessions, the respondents were encouraged to discuss their feelings and thoughts about the rehabilitated addicts in the stories and to reflect on their own recovery process. After the last session, the URICA was used again to determine the respondents' stage of change. The findings show that reading the narratives had a positive motivational impact on the respondents' beliefs about their potential to change and helped them move from the Contemplation stage to the Action stage. The sessions also reshaped their beliefs about the recovery process and helped them feel less alone. The results suggest that bibliotherapy is worth exploring further as a tool for motivating recovering addicts. However, careful planning and the selection of suitable materials is an issue to be considered, as are exposure and training in the application of the technique.

Korean Female Child Soldiers, Sexual Violence, and No. 606 Injections During the Pacific War (World War II)

Treatment

United States

Hwahng, Sel, National Development and Research Institutes, Inc., United States

A child soldier is defined as anyone younger than 18 years who has willingly or unwillingly participated in armed forces or groups, either directly or in a supporting function. This includes fighting, guarding, cooking, or serving as a porter, messenger, spy, or sex slave. During the Pacific War (1937–45), Japan maintained a system of militarized sexual slavery on a massive scale. Approximately 200,000 Korean girls (mostly 13–16 years old, but some as young as 10 years) were abducted through deceit or force, and raped by 10–60 soldiers on a daily basis. Their enslavements ranged from a few months to several years. It has been unclear, however, how sexual slavery was supported by drug use.

This study included a qualitative analysis of 67 interviews of former girl soldiers and 40 hours of participant observation in South Korea.

Korean female child soldiers were forcibly injected on a regular basis (usually weekly) with a chemical called “No. 606,” which was an Arsphenamine/Salvarsan compound. Because pregnancy was seen as a venereal disease and hampered the provision of sexual services to the military, the Japanese empire established two hygienic techniques—vaccination and quarantine. No. 606 injections as vaccination were given at mandatory, regularly scheduled medical examinations to prevent and treat venereal disease, and as quarantine that deterred pregnancy, induced abortions, and ultimately irrevocably sterilized the Korean female child soldiers. These injections were also correlated with loss of appetite, topical pain, and the vaginal discharge of blood.

The implications of this study reveal the importance of understanding how drug use supports sexual violence of female child soldiers. It is estimated that at any given time there are over 300,000 child soldiers in the world, and 40 percent of these soldiers are female. Girl soldiers are often coerced to provide sexual services, often accompanied by the forced administration of contraceptive shots, drugs, and alcohol in contemporary conflicts in Africa, Asia, and Latin America. Understanding what happened to Korean female child soldiers may provide guidance for developing more effective interventions and treatment for drug use among girl soldiers from more recent conflicts.

Substance Use, Sexual Abuse, and Other Treatment Factors Among Female Native-Born and Russian-Speaking Heroin Users in Israel

Epidemiology

Israel

Isralowitz, Richard, and Reznik, Alexander, Regional Alcohol and Drug Abuse Resources Center, Ben Gurion University, Israel

There are an estimated 25,000 heroin addicts in Israel, and nearly 1 out of every 5 is a woman. Also, about one-fourth of the injection drug-use population immigrated to Israel from the former Soviet Union, mostly Russia and the Ukraine, since 1989. This presentation will be based on a cohort of native-born and immigrant female heroin users interviewed with the Addiction Severity Index (ASI). Findings will be presented on the background characteristics, patterns of alcohol and drug use, physical and sexual abuse, and drug use related attitudes based on group status of native born and immigrant.

Results show that the two groups of women are similar in many respects; however, differences do exist in terms of how drugs are used and around attitudes toward personal health and child custody. Discussion will be given to the study findings as well as issues relevant to the formation of policy and prevention/treatment services to female drug users.

Illicit Drug Markets in South Africa: A Review

Epidemiology

United States

Johnson, Bruce, D., and Mohlala, G., South Africa
K. Peltzer HSRC, South Africa

South Africa is by far the largest market for illicit drugs entering the Southern African region. Little is known about how the retail markets function and are priced for cannabis, heroin, cocaine powder, methamphetamine, and Mandrax (methaqualone).

A review of several data sources published by agencies (police, treatment, public health), isolated research projects, and United Nations/United States documents provide important hints about the general aspects of illegal drug markets in South Africa.

Drug trafficking and abuse have escalated since the end of Apartheid (1992). The extreme income inequalities between the different broad ethnic segments affect drug affordability and thus consumer choice. South Africa is one of the world’s largest producers of cannabis and the largest international consumer of Mandrax. Heroin, cocaine powder, crack, and methamphetamine (called tik) is less common, but growing. The Apartheid legacy

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resulted in the illicit drug market being highly segmented along racial and cultural lines.

The distribution mechanisms include street, quasi-public, residential, and delivery. Illegal drug prices have remained relatively stable or possibly declined in local currency. Depreciation of the South African rand means that price of both heroin and cocaine effectively fell by more than 75 percent between 1992 and 2001. The lowest level retail unit of cannabis (zol) contains less than a gram of marijuana, like a United States joint. The zol is inexpensive, and is cheaper than a (taxed) tobacco cigarette in South Africa. Drug distributors also attempt to expand the market for other drugs by mixing cannabis with heroin, cocaine, crack, Mandrax, methamphetamine, and other drugs.

Illegal drug markets are becoming well formed in the post-Apartheid era and further complicate all other social problems (poverty, homelessness, HIV/AIDS, etc.). Greatly improved information about how illegal drug markets operate in South Africa is badly needed to provide a basis for containing their spread.

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Drug Use Behaviors Among Trafficking Inmates

Epidemiology

Thailand

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During a period of “Drug War Policy”, the population was scared of being killed and blacklisted, resulting in denial of their behaviors regarding drug use. Research should be done in subgroup populations that have been minimally impacted by the policies.

The objective of this study was to explore drug use behaviors among trafficker inmates. One thousand seven hundred fifty-five inmates were recruited for in-depth interviews in 2005 from various prisons in different regions of Thailand.

The average age of the inmates was 31.8 years old, ranging from 18 to 63. Of these, 70.8 percent were male. Twenty-two point two percent were incarcerated before this offense, and of these, 85.6 percent involved drugs. More than 90 percent of the traffickers have ever used drugs. The highest proportion is in the youth group (97.9 percent among males and 94.9 percent among females). The proportion decreased in the higher age groups of both sexes. YABA (methamphetamine), marijuana, inhalants, and heroin are the main substances used among traffickers. Eighty point six percent of

inmates have ever used YABA, the proportion is higher in the north, northeast, and central region. While 12.6 percent of inmates have ever used marijuana, the proportion is higher in Bangkok and the south than other regions. In contrast with the general population, age first used among inmates seems to have increased in the last 5 years, ranging from 7 to 49 years old. The major causes of first use are curiosity, peer influence, and functional use. Three-quarters of inmates were drug users before moving to prisons. Moreover, quite a few used multiple drugs.

It is evident that drug use behaviors have spread to all subpopulations including traffickers. The higher involvement of youth and females may be a signal to the government of the need for designing appropriate strategies for effective drug surveillance and control.

Malaysia’s Evolving Response to Heroin Dependence, Injection Drug Use, and HIV/AIDS—Initial Experience with Buprenorphine Maintenance Treatment

Treatment

Malaysia

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Faced with the failure to control a rising heroin epidemic (and attendant risk of an explosive AIDS epidemic) through criminal sanctions and mandatory detention, Malaysia introduced opioid agonist maintenance treatment with the buprenorphine mono tablet (Subutex) in 2001.

The initial success of a small pilot study of buprenorphine, provided under direct observation in a structured program with drug counseling and urine toxicology monitoring, was followed by expanded Subutex dispensing by general physicians and clinics, often without counseling or monitoring medication adherence or ongoing illicit drug use. Treating physicians received little or no training, were not certified, and dispensed buprenorphine in their offices, creating additional financial incentives to dispense large supplies. The high cost of medications may also have contributed to creation of secondary markets.

Within a short period, demand for Subutex exceeded the 12kg/year import permit. Although many patients benefited from treatment, an emerging epidemic of Subutex injection gained public attention and led to a backlash and calls for prohibiting buprenorphine or permitting only supervised medication

administration in specialty clinics, as adopted in Singapore when faced with similar problems. Instead, Malaysia registered the buprenorphine/naloxone combination tablet (Suboxone) and began replacing Subutex with Suboxone beginning in December 2006. Initial reports suggest that Subutex availability and problems with Subutex injection have been dramatically curtailed, but there are reports of substantial attrition from treatment of buprenorphine maintained patients, who now pay higher fees for Suboxone than for Subutex. Uptake of Suboxone treatment among new patients has also slowed. Malaysia is planning to introduce guidelines and policies for opioid agonist maintenance treatment and expanding training for physicians.

This study was supported by NIDA R01 DA14718 and K24 DA00445.

Intervening in Lives of Hard-To-Reach Youth Involved in Survival, Sex and Drugs in the Slums of Kampala City, Uganda

Prevention Uganda

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This study examined whether youth who are reclaimed from the streets and city slums of Kampala and integrated into the Uganda Youth Development Link (UYDEL), a youth NGO serving such young people, change behavior and improve their livelihood status.

This study was specifically interested in establishing whether such behavioral intervention was efficacious and reduced drug abuse and sexual risk behaviors of youth living in the Kampala slums [YLS] in Uganda.

Impulsivity and Injecting in Groups Predicts High-Risk Drug Use

Epidemiology Tanzania

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Limited information about neurobehavioral risk factors for sharing injection equipment and drugs is available. The relationship between impulsivity and sharing of injection equipment and drugs among people injecting in groups was investigated.

A total of 253 injection drug users (IDUs) were recruited from Baltimore City. Structured interviews that included demographic characteristics, current drug use and injection behavior in the last 6 months and a neuro-psychological test of impulsivity (the Test of Variables of Attention, TOVA) were administered. Multiple logistic regression analysis was performed to study the interaction between impulsivity and injecting in groups to predict sharing of drugs and injecting equipment.

People who inject in groups of two or more are 3.46 (CI =2.00-6.01) times more likely to share injection equipment and drugs than people who inject alone or with one other person. In addition, there is a significant interaction between injecting with others and impulsivity such as that among highly impulsive people, those who inject with two or more other people are 10 (CI=4.23-24.02) times more likely to share injection equipment and drugs than people who inject alone or with one other person.

The study provides an understanding of the importance of impulsivity as a risk factor for sharing drugs and injecting equipment that could provide a focus for programs designed to prevent the spread of HIV among injection drug users.

A Double Blind, Placebo-Controlled Trial of Naltrexone and Fluoxetine for Heroin Addiction Treatment: Analysis of Medication Responders

Treatment Russia

Krupitsky, Evgeny; Zvartau, Edwin; Masalov, Dmitry; Tsoi, Marina; Egorova, Valentina; Burakov, Andrey; Didenko, Tatyana; Romanova, Tatyana; Verbitskaya, Elena; Bepalov, Anton; Neznanov, Nikolai; Slavina, Tatayana; Grinenko, Alexandr, St. Petersburg State Pavlov Medical University, Russia; O'Brian, Charles, and Woody, George, University of Pennsylvania, Department of Psychiatry, United States

A double-blind, placebo-controlled, randomized trial showed that naltrexone was more effective than a placebo or fluoxetine for treatment retention and relapse prevention in recently detoxified heroin addicts. The combination of naltrexone and fluoxetine was more effective than naltrexone alone in women.

The aim of this study was to perform a secondary analysis to identify baseline factors associated with treatment completion and favorable outcomes in each of the four treatment conditions.

Two hundred eighty heroin addicts who completed detoxification at addiction treatment units in St. Petersburg, Russia, were randomized to a 6-month

course of biweekly drug counseling and one of four groups of 70 subjects/group: naltrexone 50 mg./day (N) + fluoxetine 20 mg./day (F); N + F placebo (FP); N placebo (NP) + F; or NP + FP. Urine drug testing and brief psychiatric evaluations were done during biweekly visits with more extensive evaluations at 3 and 6 months. Baseline factors associated with treatment completion and favorable outcomes were examined.

Baseline factors associated with treatment completion and non-relapse in each of the four medication groups were as follows: (1) for N+F subjects, completion and non-relapse was associated with lower levels of psychiatric symptoms, higher craving for heroin, and a longer period of abstinence from heroin prior to entering the study; (2) for N+FP subjects, completion and non-relapse was associated with fewer legal problems, less psychopathology, less heroin use, and a longer period of abstinence prior to entering the study; (3) for NP+F subjects, completion and non-relapse was associated with fewer legal problems, more employment, higher levels of anger, less heroin use, and a longer period of abstinence prior to entering the study; (4) for NP+FP subjects, completion and non-relapse was associated with fewer employment problems, more medical problems, and fewer psychiatric symptoms.

Among heroin-dependent subjects randomized to these four abstinence-oriented treatment conditions, those with better employment and legal status, fewer psychiatric symptoms, lower daily doses of heroin, and a longer period of abstinence from heroin following detoxification had the best prognosis.

Recovery Promoting Factors and Predictors of Life Satisfaction Among Former Polysubstance Users in the United States and in Australia

Epidemiology

United States

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Substance use disorders (SUD) affect the lives of countless individuals and their communities worldwide. Millions have successfully remitted and live productive lives, yet they have been largely neglected by researchers. Examining the experiences of recovering persons can contribute to the resolution of SUD globally by elucidating why and how recovery is attained and factors that enhance quality of life in recovery. SUD and recovery unfold within the local socio-cultural context; thus findings obtained in one country may not apply in countries where different sociopolitical views of addiction

prevail. There is a need to identify “universal” and culture-specific recovery processes.

Using data from parallel studies in the United States and Australia (AU), we compare findings on factors associated with entering and maintaining recovery, and test a comprehensive psychosocial model to identify predictors of overall life satisfaction (LS), a neglected domain that has been found to predict sustained recovery. Community-based individuals in SUD remission for a year or longer per DSMIV-R, were media recruited in NYC, United States (NY, N=157) and in Melbourne (AU, N=108). Hypothesized predictors of LS, identified from our previous studies, were remission duration, social support, work status, physical and mental health rating, stress level, 12-step attendance and involvement, religiosity, spiritual well-being and life meaning/purpose.

The New York sample averaged 4 years in remission, Australia 7 years; lifetime addiction severity was higher in AU, as was lifetime injection history. Both samples were predominantly polysubstance users (heroin as primary in AU, crack/cocaine in NY). For both AU and NY, being tired of the drug life, fear of future consequences of use, and the desire for a better life were among the top five factors implicated in deciding to make significant changes in substance use. Enjoying life without drugs, striving to be honest with self/others, and “taking it 1 day at a time” were among the top five rated sources of recovery support in both samples. LS was high in both samples, with NY reporting significantly higher levels (mean = 8.2 versus 7.8 in AU on a 0-to-10 scale, $p < .05$). In linear regressions, the model accounted for 11.7 percent of the variance in LS in NY and 30.7 percent in AU.

In spite of dependence on different primary substances and of living in societies that differ in their response to SUD, United States and Australian individuals who have overcome severe SUD seek recovery for similar reasons and find support in similar experiences. Stable recovery is associated with a fairly high level of life satisfaction. These results can guide clinical practice to maximize the likelihood of recovery including enhancing life satisfaction.

This project was supported by National Institute on Drug Abuse Grant R01 DA014409-03S1.

Research on Perception of Illness and Health in Persons Dependent on Opioids

Treatment

Kazakhstan

Lavrent'ev, Oleg, Republic Center for Applied Research on Drug Addiction, Kazakhstan

According to the results of preliminary research, opioid-dependent patients' perceptions of health and disease are a major factor ensuring the therapeutic dynamics that contribute to long and stable remission. As a whole, research findings indicate that this question is investigated insufficiently, thus, indicating a need to further study perceptions of illness and health in persons addicted to opioids and to identify opportunities for their therapeutic correction.

The results of this study will provide the basic components of the cognitive behavioral psychotherapy that is needed in the programs of medical and social rehabilitation for persons dependent on opioids.

The general methodology of our research was built upon proven medical principles. Our study sample included 68 male patients suffering from opioid dependence, who received correctional methods to improve their perceptions of illness and health. The control group included 75 male patients suffering from dependence on opioids who did not receive the correctional methods.

Our research put into practice the following methodology :

- clinical psychopathological method
- experimental psychological method and
- statistical method.

This study will develop techniques to identify perceptions of illness and health for drug-addicted patients. The methods of correction to be included in the programs of medical and social rehabilitation of patients abusing drugs also will be developed.

The scaled introduction of diagnostic methods and correction of perceptions of illness and health in the programs of medical and social rehabilitation will promote improvements in quality of life, social, and psychological characteristics and increase the duration of remission in the patients abusing drugs.

Development of an Electronic Platform for Routinely Monitoring Outcomes of Opioid Substitution Treatment

Treatment

Australia

Lawrinson, Peter, Roche, Ann, National Centre for Education and Training on Addiction, Flinders University, Australia

Opioid Substitution Treatment (OST) is the most common and effective treatment for heroin and other opioid dependence. Virtually all OST efficacy and effectiveness studies, however, have been conducted with clients receiving treatment through specialist clinics where counseling, health, and other support services are often available.

Increasingly, however, clients have their treatment program overseen by private general practitioner (GP) prescribers. Despite this, there is very little research or other information regarding this mode of treatment delivery, nor have there been any investigations into how different methods of office-based OST (OBOT) delivery-impact treatment outcomes.

We have developed and piloted an electronic treatment outcome monitoring system (OMS) for ongoing, routine use with clients receiving OBOT. The OMS is based upon the Brief Treatment Outcome Measure (BTOM), a validated, brief, multi-dimensional tool designed for routine assessment of OST. It will assist health professionals and policymakers in determining treatment program effectiveness; examining the relationships between client and program-related factors and outcomes; informing policy and planning of service delivery; and in providing a mechanism for monitoring an individual client's progress in treatment.

The electronic BTOM exists as a stand alone program that runs on Windows XP and can be used on benchtop, laptop, or handheld devices. It is intended that it be offered free of charge to all Australian GP prescribers.

A detailed description of the electronic BTOM will be presented along with examples of client data and comments from GPs participating in the pilot study.

Methamphetamine Withdrawal: Natural History and Options for Intervention

Treatment

Australia

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Use of methamphetamines is widespread in Australia, with 9 percent of the population that ever used in their lifetimes and 4 percent that are regular users. There is a particularly high proportion of heavy users, who primarily inject. Contact with treatment services is increasing, yet services are relatively unprepared for the specific needs of methamphetamine users. Adding to the difficulty is the lack of understanding about the natural history of withdrawal from methamphetamines with most information being extrapolated from cocaine users, who are clearly a distinct group.

This comprehensive study has proceeded in three phases:

Literature review: a comprehensive literature review was undertaken on methamphetamine withdrawal and withdrawal management. The literature is inconsistent and management of methamphetamine withdrawal is largely based on clinical opinion.

Natural History: interviews were undertaken with 150 dependent methamphetamine users. The aims were to understand the natural history of methamphetamine use, dependence, and withdrawal. Results showed that up to 70 percent of the sample had attempted withdrawal, but only 13 percent of those had sought assistance from a drug treatment service. During withdrawal, users experience a range of moderate to severe symptoms including dysphoria, anxiety, and craving. Barriers to treatment were identified, including not believing that there were treatment options available.

Modafinil Pilot Trial: A (N=10) double-blinded placebo-controlled trial was undertaken to examine the effects of modafinil on withdrawal. Participants were admitted to an inpatient withdrawal unit for 10 days and given modafinil (or placebo) for 7 days (200 mg. mane tapering to 100 mg, on day 6). At the time of abstract submission, blinding had not been broken. Full results will be completed in March 2007.

Donepezil Hydrochloride Efficacy in Alcohol and Cocaine Abusers With Brain Damage

Treatment

Peru

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Donepezil hydrochloride is a drug used as a treatment for Alzheimer's Disease patients, for perfusion that is decreased due to plaque and tangles in the brain tissue. In drug abusers, perfusion is decreased by vascular changes without primary injuries. Treatment with Donepezil improves the symptoms because the drug restores circulation.

Donepezil is a reversible inhibitor of the enzyme acetylcholinesterase, and its parasympathetic action dilates vessels to improve brain perfusion in drug-abusing patients. The increased concentration of acetylcholine improves the cognitive behavior that is evidenced in a better quality of life.

One of the most important effects of alcohol and cocaine in the brain is decreased perfusion, evidenced at the Brain Cerebral Spect, showing low, moderate, and severe brain damage.

Since 2004, we used Donepezil at 5 mg. per day. The purpose of this research was to gain knowledge from the results obtained during 1 year of treatment in 20 patients. This was a transversal prospective and self-controlled study that included 20 patients (alcohol and cocaine abusers) with slow evolution, and several relapses. The patients were men and women, between 25 and 65 years old. All patients had brain damage.

The Donepezil was administered for 1 year, in a dose of 5 mg per day. Data from the previous year were obtained from patients' charts and clinical interviews. The study was conducted at the Substance Abuse Department at Guillermo Almenara Hospital in Lima, Peru.

The first objective of the study was to demonstrate that Donepezil action improves the brain perfusion in alcohol or cocaine abusers with brain damage. The second objective was to demonstrate that Donepezil improves the quality of life according to a comparison of responses from the Seville Questionnaire (basal average score versus the outcomes at the ending year).

We applied the Wilcoxon Test and found significant improvements ($p=0.000$) in the quality of life with the treatment (Seville Questionnaire scale favorable). The same happened with application of the unfavorable scale of the Seville Questionnaire ($p=0.000$) after the treatment. A comparison of

the decrease of brain perfusion before and after the treatment was conducted by a nonparametric of marginal homogeneity test showing a significant decrease in the severe perfusion ($p=0.001$) and cerebral atrophy ($p=0.000$).

It is concluded that the use of Donepezil in alcohol and cocaine abusers restores brain circulation, demonstrated in the comparative baseline brain Spect and endpoint brain Spect. We also found that Donepezil improves the cognitive behavior that is evidenced in a better quality of life.

Exposure Techniques Versus Topiramate Treatment on Cocaine Addiction

Treatment

Spain

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The purpose of this investigation is to obtain information on the effectiveness of exposure techniques compared to Topiramate treatment in the recovery process among cocaine abusers or dependent subjects. This information will be used to determine which treatment will be more appropriate among cocaine addicts or abusers.

The present study used an experimental, longitudinal design with different evaluation periods, from the start and every 3 months. A total of 43 subjects were diagnosed as cocaine abusers or dependents (sniffed) and were randomly assigned to the three different treatment conditions: (1) Topiramate, (2) Exposure, and (3) Topiramate-Exposure. The evaluation instruments used were: Weiss Craving Scale, Cocaine Self-regulation Questionnaire, and Barrat Impulsiveness Scale. Relapses were controlled, and abstinence was confirmed by urine tests. The SPSS 13.0 and Stata 9.0 programs were used for statistical data analysis.

Findings indicate that the Topiramate group made better plans to avoid consumption and to search drug abuse information in order to help themselves with their addiction ($p<0.001$). Subjects included in the Exposure condition improved the search of alternatives to avoid cocaine consumption and applied strategies in their personal lives learned during the treatment process (<0.001). Craving was reduced among participants of the 3 groups during the treatment process and was also maintained at low levels during the following 3 months. The

Exposure condition and Topiramate condition did not improve the impulsiveness after 3 months of treatment, but the Topiramate-exposure condition did improve impulsiveness ($p<0.001$) and all conditions of cocaine self-regulation.

In conclusion, combined treatment Topiramate and Exposure is more effective in reducing craving, the number of relapses, and impulsiveness.

Personality Profile and Psychiatric Comorbidity Discriminates Pathological Gamblers Among Same-Sex Sibling Pairs

Epidemiology

Canada

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Personality and co-morbidity studies in pathological gambling have focused on differences between pathological gamblers (PG) and controls. These studies have provided important information regarding personality and co-morbidity factors that can act as vulnerability factors for PG, compared to psychiatrically healthy controls. However, there are no studies comparing PG to their non-pathological gambler relatives. A better characterization of the phenotype of PG in relation to NPG relatives could help identify family vulnerability factors.

Pathological gamblers with full siblings were invited to participate. Siblings (NPG) were excluded if they met any of the DSM-IV criteria for PG. Lifetime history of psychosis and neurological diseases (assessed through SCAN) were considered as exclusion criteria for both groups. All subjects completed the Temperament and Character Inventory (TCI) and the Barrat Impulsiveness Scale (BIS). Personality and psychiatric co-morbidity data from same-sex sibling pairs (37 male and 37 female pairs) were analyzed. Variables with $p>0.1$ in the univariate analysis entered the discriminant analysis.

Variables that entered discriminant analysis were:

1. Male sibling-pairs: (lifetime and present-state nicotine and alcohol dependence, anxiety disorders, SCAN anxiety/depression scores, impulsive-ness,

disorderliness, shyness, fatigability, attachment, dependence, persistence, responsibility, purposeful, resourcefulness, self acceptance, congruent second nature, social acceptance, empathy, helpfulness, revengefulness, serving self, total BIS.

2. Female sibling pairs: (lifetime and present-state nicotine dependence, lifetime depression, SCAN anxiety/depression scores, impulsiveness, extravagance, disorderliness, harm avoidance, attachment, dependence, self-directedness, cooperativeness, self-forgetfulness, total BIS.

Discriminant analysis correctly classified 90.5 percent of male PG through present-state nicotine dependence and higher SCAN depression scores; higher scores on impulsiveness and extravagance; and lower responsibility scores. Ninety-eight point six percent of female PG were correctly classified through present-state nicotine dependence; higher SCAN depression scores; higher scores on extravagance and persistence; lower attachment and self-directedness scores.

In conclusion, psychiatric co-morbidity and personality scores correctly classified the majority of PG. Male and female PG presented a higher rate of nicotine dependence compared to NPG siblings. Previous studies have reported higher co-morbidity rates and a common genetic vulnerability between nicotine dependence and pathological gambling. Depression scores discriminated both male and female PG in our sample, thus we hypothesize that the common genetic vulnerability for depression and PG previously reported on males could be true for females. Personality profiles of PG suggests traits of impulsive personality disorders.

Deficit of Information as a Possible Cause of Low Popularity of Self-Help Groups Among Russian Substance Abusers

Treatment

Russia

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The effectiveness of substance abuse treatment remains low in Russia. One of the possible causes is the fact that both patients and official medicine are oriented on short-term, aggressive treatment and ignore long-term rehabilitation, including involvement in Self-Help Groups (SHGs) despite their worldwide proven efficiency. Moreover, there is widespread belief that SHGs are incompatible with Russian mentality and culture.

The goal of our research was to find out if this low popularity of SHGs is caused by cultural issues or by the lack of information about the subject.

Treatment-seeking patients (187 alcohol abusers ([AAs] and 49 injection drug users [IDUs]), participated in a semistructured anonymous interview. Among other questions, respondents were asked if they wanted to attend SHGs and to provide reasons why not in case of negative answer, and assess their level of information about SHGs as “sufficient” or “insufficient.” People chosen for the next step met four criteria: they did not want to join SHGs, gave reasons for not wanting to attend other than “I am satisfied with my current treatment,” marked their level of information as “insufficient,” and agreed to spend some time learning about SHGs. After reviewing materials explaining how SHGs operate, patients were asked to answer the questions again. With this new information, we now had 57 AAs and 17 IDUs who agreed to participate in step 2.

One hundred fifty-five AAs and 27 IDUs marked their level of information as “insufficient.” In this group, only 23 (14.8 percent) AAs and 9 (33.3 percent) IDUs wanted to join SHGs. Almost all (19 AAs and 7 IDUs) of these people were desperately seeking effective treatment after numerous relapses and were ready to accept help.

Among those who marked their level of information about SHGs as “sufficient” (32 AAs and 22 IDUs), the number of respondents willing to join SHGs was 17 (53.12 percent) and 9 (40.9 percent), respectively.

At the second step, by now 15 (26.3 percent) AAs and 6 (35.3 percent) IDUs changed their answers to positive after learning some signal information about SHGs.

In conclusion, the data received allow us to hypothesize that negative attitudes of Russian abusers toward SHGs are caused rather by the lack of information than cultural issues. In our opinion, this deficit of information is caused by the fact that addictions treatment providers very seldom discuss with patients the possibility of long-term rehabilitation in SHGs. We are in the process of evaluating the attitudes toward SHGs among health care professionals, as well as their level of information about the subject.

Drug Abuse in a War-Affected Area

Epidemiology

Liberia

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The most striking feature of the 2000s is the level of trafficking in the countries of West Africa, such as Liberia, Ivory Coast, and Sierra Leone. While this area accounted for just 0.68 percent of regional

seizures, prevalence estimates, based on general population surveys, show that consumption of opium and cocaine is particularly high in West Africa. Liberia experienced a massive spread of opium and cocaine use in the 90s due to the civil war, which lasted for 14 years. In Liberia, the number of university students and high school students (17 to 28 years old) who had experimented with opium increased by 60.2 percent in 1990 and fell by 2006 when the new government took over. The number of officially registered drug abusers (mostly cocaine and opium) in Liberia and Sierra Leone reached 96,000 people in 1999, when 0.2 percent of the population was age 15 and above and, at the time, included active combatants.

A survey undertaken in 2003 in the northern part of Liberia by the Communities Ministries Network in cooperation with the United Methodist Student Movement revealed that more than 80,000 people were consuming opium (equivalent to 3.1 percent of the total population age 15 and above). This suggests that Liberia in relative terms has the second highest rate of opium abuse in West Africa. Though countries in West Africa are still on some cocaine trafficking routes, the overall level of opium use is very low (far less than 0.2 percent of the population in most countries). Only a few countries in Western Africa that are currently in crises and those emerging from civil wars reported slightly higher figures. However, cocaine can be found in many African countries, and the actual situation can be worse. There is, however, a general perception that abuse is rising, notably in countries where civil war is going on in West Africa, which could reflect their growing role as transit areas for trafficking.

The cocaine and opium markets in Western Africa developed primarily due to spill over of cocaine trafficking and civil crisis. The situation is more complex in Liberia, Ivory Coast, and Sierra Leone. Authorities are also working on this problem in Guinea, which already has the highest prevalence rate in the region due to current events in that country.

Gender Differences in the Earliest Stages of Drug Involvement in Bogotá, Colombia

Epidemiology

Colombia

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There is evidence that gender differences in the prevalence of reported drug use can be attributed, at least in part, to differences in the likelihood of having experienced an exposure-opportunity to

use drugs (E-O). Little is known about early stages of drug involvement in young men and women in Colombia, one of the world's leading drug-producing countries.

The objective of this study was to examine gender differences in E-O prevalence and in the likelihood of transitioning from E-O to use, among a representative sample of school-attending adolescents.

Data was collected via a standardized questionnaire administered to 1,230 school students in Bogotá, Colombia, selected in a stratified multistage probability cluster sample.

Results of the study indicate that males were significantly more likely than females to report an E-O for tobacco (Odds Ratio=1.3, 95 percent, CI=1.1,1.6), marijuana (OR=1.6, 95 percent, CI=1.3, 2.0), inhalants (OR=1.5, 95 percent, CI=1.2,1.9), or any illegal drug (e.g. marijuana, cocaine/coca paste, Ecstasy, or opiates) (OR=1.4, 95 percent, CI=1.2,1.7). Given an opportunity, young men were more likely to report transition to use for alcohol (OR=3.9, 95 percent, CI=1.9,8.0), inhalants (OR=2.4, 95 percent, CI=1.6,3.7), and cocaine/coca paste (OR=3.1, 95 percent, CI=1.6,7.5). Females were more likely to report intention to use any illegal drug within the next 12 months (OR=2.1, 95 percent, CI=1.7,2.6). This association was attenuated somewhat among students with low parental control (OR=1.5, 95 percent, CI=1.0,2.2).

Consistent with results observed in other studies, young men are more likely than their female peers to experience an E-O to use a variety of drugs, while gender differences in transition from E-O to actual use are more complex. Given an opportunity, young women are equally likely to use tobacco, marijuana, Ecstasy, and any illegal drug, and less likely to transition to the use of alcohol, inhalants, and cocaine/coca paste. Identifying and understanding gender differences in the earliest stages of the drug-use involvement continuum will help guide development of gender-specific prevention activities.

Drug-Conditioned Reward Enhances Subsequent Spatial Learning and Memory in Rats

Basic Science

China

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Chronic exposure to drugs of abuse alters neural processes that normally promote learning and memory. A context that is repeatedly paired with reinforcing drugs will acquire secondary reinforcing properties (conditioned reward). However, the

effects of conditioned reward on spatial learning are unknown.

Using the conditioned place-preference procedure and Morris water maze task, we examined the role of conditioned reward or aversion in spatial learning.

Groups of rats acquired morphine- (10 mg./kg.), cocaine- (10 mg./kg.), or oral sucrose- (15 percent) conditioned place preference (CPP). Another group of morphine-dependent rats acquired conditioned place aversion (CPA) to a context paired with precipitated opiate withdrawal induced by naloxone injections (1 mg./kg.). To examine the role of conditioned reward or aversion in spatial learning, rats were then exposed to the previously morphine-, cocaine-, sucrose- or naloxone-paired context for 10 minutes prior to training of spatial learning in the Morris water maze.

Exposure to the morphine- or cocaine-paired, but not the sucrose- or the naloxone-paired context decreased the latency to find the platform in the Morris water maze test.

Our results provide the first evidence that drug-conditioned reward promotes spatial learning. We speculate that this enhancement of spatial learning by the drug-paired context may promote contextual-cue-induced relapse to drug taking by facilitating exploratory drug-seeking behaviors.

M

The Importance of Auto Declaration and Meconium Biomarkers To Determine Licit and Illicit Drug Consumption During Pregnancy

Epidemiology

Uruguay

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The prevalence surveys are somehow relative when they are solely based upon an auto-declaratory consumption statement. There is a decrease in the consumption declarations once the surveyed individual perceives that acknowledging their consumption implies irresponsible behavior. For this reason, it was decided to validate results with biological determinations, and the best solution was to study the newborn's meconium, since it concentrates all received substances from the mother during gestation.

Novel biomarkers for prenatal alcohol exposure are fatty acid ethyl esters (FAEEs) in meconium. They have been shown to be elevated in infants born to heavy-drinking mothers and are found in the general population. Thus, a positive cut off of 2-nmol/gram

in meconium is used with 100 percent sensitivity and 98.4 percent specificity.

Samples were purpurae over 15, interned in the two main public hospitals in Uruguay (50 percent of all births in Montevideo) and a coincidental sample of 900 cases (births produced during May 2005).

The sample population was mothers from low and middle-to-low socioeconomic levels that took part in face-to-face surveys performed within 48 hours after birth and 900 meconium samples to be tested for alcohol, tobacco, cocaine, amphetamines, marijuana, opiates, and benzodiazepines. FAEEs were extracted from meconium using solid-phase extraction and analyzed using gas chromatography with a flame ionization detector (GC-FID). A sample was considered positive if the cumulative concentration of seven FAEEs was 2 nmol/g. All positive samples were confirmed by GC-MS. ELISA tests were used to study cotinine and other drugs. Results included:

Maternal: average age (25.35), married (18 percent), employed (11.1 percent), housewives (59.7 percent), no prenatal care (9 percent), <4 consultations (30 percent), completed secondary education (94.6 percent), and incomplete primary education (10.8 percent).

Consumption in pregnancy by autodeclaration: consumed alcohol (any amount) (37.5 percent), tobacco (41.7 percent), tranquilizers (16.5 percent), marijuana (1.5 percent), cocaine (0.0), base paste (0.4), stimulants/methamphetamine (1.0 percent), opium/morphine/heroine (0.0), and Ecstasy (0.9 percent).

By meconium determination: alcohol (47 percent over 2 nanomoles/gr.), cotinine (51.8 percent), marijuana (2 percent), cocaine/base paste (2.5 percent), methamphetamine (0.0), amphetamine (8.3 percent), barbiturates (2.5 percent), and opiates (0.5 percent).

Fetal characteristics (total newborn population): some health problem (15 percent), low birth weight (<2500 g), (11 percent), FAEEs 15 nmol/gr. or higher lbw (15.4 percent), less than 15 nmol/gr. lbw (9.5 percent).

In conclusion, our findings indicate that meconium biomarkers for drug determination are a valid and useful tool to validate prevalence of drug consumption and to identify risk factors, where valid data is most important to determine newborns affected with FASD and other pathologies.

Newborns born in these hospitals between April and June 2005 are at risk for secondhand heavy prenatal alcohol and tobacco exposure, and it should lead to effective health prevention strategies.

HIV Incidence and Risk Factors Associated With HIV Acquisition Among Injection Drug Users in Uzbekistan, Central Asia

Prevention

Uzbekistan

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Injection drug use is driving the scaling-up of HIV prevalence in Central Asia.

The objective of this study was to determine HIV-1 incidence and identify sociodemographic and risky behavioral correlates of infection to facilitate the development of longitudinal HIV prevention programs.

In 2003, a cohort of 620 injection drug users (IDUs) in Tashkent, Uzbekistan, were investigated and participated on a voluntary basis in testing and counseling for HIV-1. HIV-seronegative IDUs were enrolled and reevaluated at 6 and 12 months. HIV testing was performed and sociodemographic and risky behavioral data were collected during each study visit. The relationship of sociodemographic and behavioral factors to HIV-1 incidence was assessed.

Most enrolled subjects were young, male, unemployed, living at home, uneducated heroin users and frequently shared syringes, needles, and other injection equipment. The retention rate at the 12-month followup was 80 percent. The HIV-1 incidence rate was 5.5/100 person-years. In univariate analysis, psychostimulant use, especially frequent use, three or more sex partners in the past 6 months, and females selling sex were associated with HIV seroconversion. In the multivariate analysis, psychostimulant use three or more times per week was the only factor still associated with HIV seroconversion.

The high incidence of HIV infection places Tashkent among the worst IDU-concentrated epidemics in Central Asia. Interventions targeting psychoactive substance and heroin users and their accompanying risky behaviors, such as frequently sharing injection equipment and increased sexual activity, are needed immediately.

10 Years of Universal Access to HIV Treatment: Learning From the Brazilian Experience

Treatment

Brazil

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Brazil was the first developing country to provide free access to highly active antiretroviral therapy (HAART) and is currently providing treatment to 180,000 people living with HIV/AIDS (PLWHAs). Brazil's AIDS program is the most comprehensive initiative implemented so far in a middle-income country. Brazil provides free HAART and clinical followup to people under HAART, performing CD4+ counts, viral load, and, in the case of clinical and virological failure, genotyping, at no cost. The country also provides treatment and care to the largest number of HIV-positive drug users outside high-income countries. By the end of 2004, there were 34,000 IDUs receiving HAART in developing countries, and of these, 30,000 of the IDUs were in Brazil.

Latin America produces 95 percent of all globally available cocaine, and stimulant use has often been associated with unsafe injection, heightened sexual risk behaviors associated with nonparenteral use, and increased risks for HIV/AIDS. The management of HIV-positive cocaine users remains a challenge in the region, mainly due to the dynamic and changing nature of cocaine dependence and HIV infection, and the limitations of most drug treatment centers and HIV-treatment units, which lack well-trained and motivated staff to manage and care for those patients. Another major deterrent to proper management and care of HIV-positive cocaine users is the stigma and the strong overlap between drug consumption, trafficking, and overt violence in the region.

Brazilian health professionals and researchers are engaged in a thorough effort to improve the access of HIV-positive drug users to HAART in the region. A task force led by the Pan-American Health Organization and the Brazilian Ministry of Health was created, in order to develop and implement skill building meetings, workshops, and onsite trainings in the region. A set of guidelines targeting the management of HIV-positive cocaine users was developed in Portuguese and Spanish, and will be distributed in public health facilities. Several trainings and meetings have been implemented in the region, targeting mainly health professionals, political leaders, affected communities, and local NGOs.

In order to improve the access of HIV-positive cocaine users to treatment, it is pivotal to provide better training to health professionals in providing counseling and treatment for this population. Culturally sensitive interventions, together with low-threshold approaches (NEPs, NGOs, CBOs, peer education, etc.), are also important strategies to reach and maintain this population under treatment. HIV-positive cocaine users are frequently involved in high-risk social networks. Therefore,

by improving their health status and significantly reducing their HIV viral load, through effective antiretroviral treatment, and fostering/maintaining safer behaviors over time, we can reduce HIV transmission and improve their quality of life. The challenges faced by other developing countries, with fewer resources and much larger epidemics compared to Brazil, are incredible. But the successful Brazilian experience can and should be disseminated, particularly through collaborations between governments, researchers, and approaches such as this one. Improved access to antiretrovirals constitutes an essential step of any valid attempt to effectively curb the AIDS epidemic, and needs to be faced as a human rights priority.

Evaluation of the First Module of a Relapse Prevention Program for Alcoholic Patients According to Four Psychological Variables

Treatment

France

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The purpose of the relapse prevention program is to create an incentive for the patient to deeply change behavior and adopt a healthier lifestyle in order to maximize the abstinence period. The efficiency of the therapy has been proven on several occasions, particularly in the long term.

Monti adapted this theory in three therapeutic modules. The first one is entitled “How To Avoid the Risks of Relapse.” Patients concentrate on self-observation, preventive awareness of risky situations, changing their cognitions, and adopting new coping skills that are effective and appropriate.

Fifteen patients (2 women and 13 men, aged 46 years on average) who were volunteers, or who were hospitalized in rehab centers, followed the first module. They filled in four questionnaires related to self-assertion, quality of life, the kind of coping skills used (either focused on the problem, emotion, or social support), and a feeling of self-efficiency, on their admission and when discharged, 1 month later.

Globally, the results showed a significant increase in self-assertion ($p < 0.001$) and quality of life ($p < 0.001$). The problem-centered coping skill score had the greatest increase compared to the other two coping skills ($p < 0.001$). Cognitive escapism into alcohol or nonconstructive emotional distress comes second ($p < 0.05$). Finally, the coping focused on emotion significantly decreased ($p < 0.05$).

The results are promising. We measured the changes in behavior and cognition at the end of the first

module. In addition, we pinpointed which variables changed most in the group to explain its efficiency and understand it. Within the next 6 months, that efficiency will be reassessed, as well as the percentage of people who relapse, and the measure of the four variables.

Sensation-Seeking as a Predictor of Substance-Use Transitions in the National Survey of Parents and Youth

Epidemiology

United States

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High levels of sensation seeking have been associated in cross-sectional studies with drug use, polydrug use, and early onset of drug use in adolescence.

The objective of this study was to test whether high levels of sensation seeking (SS) predict future transition from non-drug use to legally available (tobacco and alcohol) and illegal (marijuana, inhalants and Ecstasy) substance use in a longitudinal nationally representative sample of U.S. children and adolescents.

Secondary analysis was conducted from Rounds 1 to 4 of the National Survey of Parents and Youth restricted use files, and data analysis was restricted to children and adolescents who were non-substance users in Round 1 ($n = 4,413$ children and adolescents aged 9–18 years in Round 1). Data were analyzed using weighted proportions and weighted logistic regression models. The four-item version of the Brief Sensation-Seeking Scale (BSSS) was used to measure SS in Round 1. Substance use transitions from Rounds 2 to 4 were categorized in: (1) no substance use; (2) transition from non-substance use to legally available substance use (tobacco and alcohol); (3) transition from non-substance use to illegal substance use (marijuana, inhalants, and Ecstasy), and, (4) transition from legally available substance use to illegal substance use.

Respondents who were older (aged 14–18 years) at baseline were more likely to transition from no substance use to legally available ($OR = 2.26$) and illegal ($OR = 2.28$) substance use, and from legally available to illegal substance ($OR = 14.62$) use from Rounds 2 to 4, as compared to those who were younger at baseline. There were no racial/ethnic gender or regional differences in substance use transitions. Respondents who had high levels of SS at baseline were more likely to transition from no substance use to legally available ($OR = 1.62$)

and illegal (OR=2.10) substance use, and from legally available substance use to illegal (OR=4.26) substance use in Rounds 2 to 4, as compared to those with low SS levels at baseline. Results remained the same even when adjusted for baseline deviant behaviors, parental monitoring, and close friends' substance use.

High SS in late childhood and adolescence is an important longitudinal predictor of the transition from non-substance use to both legally available and illegal substance use and progression from legally available substances (tobacco and alcohol) to illegal substance use (marijuana, inhalants and Ecstasy). Children and young adolescents with high SS should be targeted by prevention programs that prevent substance use initiation in late-childhood and adolescence.

This study was supported by NIDA DA020923.

Injecting Buprenorphine in Malaysia: Demographic and Drug Use Characteristics of Buprenorphine Injectors

Epidemiology

Malaysia

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Reports of injection drug use (IDU) of Subutex (buprenorphine mono tablets), following its introduction for maintenance treatment in Malaysia in 2002 led to replacement of Subutex by the buprenorphine/naloxone combination tablet, Suboxone, beginning in December 2006.

The aim of this study was to evaluate the demographic characteristics, patterns of drug use, and reported effects of Subutex IDU in three cities in Malaysia. A wave-2 followup survey will assess changes in buprenorphine IDU after the introduction of Suboxone.

The study included a convenience sample of buprenorphine IDUs identified in neighborhoods with known "shooting galleries" and informal "needle exchange" programs in Kuala Lumpur (n=99), Johor Bahru (n=76), and Penang (n=99). The sample (N=274) reported lifetime injection of buprenorphine and included 252 (92.0 percent) males with mean (SD) age 39.0 (9.4) years; 79.2 percent were Malay; 68/245 (27.8 percent) with known HIV status (tested and obtained results) were HIV-positive. Lifetime heroin IDU was reported by 96.3 percent; current heroin IDU by 61.0 percent; current buprenorphine IDU by 97.4 percent;

and 65.8 percent with daily buprenorphine IDU. Lifetime benzodiazepine IDU was reported by 71.9 percent; 66 percent reported current benzodiazepine IDU; 53.8 percent reported daily benzodiazepine IDU; 67.2 percent reported using buprenorphine in combination with benzodiazepines; 79.3 percent of those with combined use injected both together. Lifetime needle or injection-equipment sharing was reported by 71.5 percent; 36.9 percent reported sharing in the past 30 days. One hundred nine (41 percent) reported using buprenorphine for the high; 74.1 percent reported obtaining it from private clinics. Drug use was perceived as a problem by 94.9 percent of the sample; 82.9 percent reported interest in entering drug treatment. In this sample, respondents were at high risk for overdose (from combining buprenorphine, benzodiazepine, and heroin IDU) and HIV transmission, due to continued sharing of needles and injection equipment.

HIV Risk Tanzanian IDUs' Evolving Strategies in Response to the Rapidly Changing Heroin Market

Prevention

United States

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The Tanzanian AIDS Prevention Project, with injection drug users (IDUs) in Dar es Salaam, has provided us with the opportunity to examine the ways that drug practices are changing in response to new governmental policies developed during 2006 to crack down on illicit drug use.

Semistructured, face-to-face interviews (n=94) conducted in Swahili, with 38 female and 56 male IDUs between February 2003 and December 2006, elicited thick descriptions of Tanzanian IDUs, attitudes, and beliefs about HIV and its relationships to other topics, most particularly intentions to safer needle and sexual practices. Media reports concerning drug trafficking, drug seizures, arrests of drug users and drug barons have also been tracked since 2005 to provide further textual documentation of changing policies and how they relate to drug use and sexual risk practices. Verbatim transcribed interviews and media reports were analyzed in ATLAS.ti using the constant comparative method. At the beginning of 2006, the government crackdown on the movement of heroin through the national airport and media reports of increased seizures of drugs and the individuals carrying them were followed by IDUs' concerns that heroin had become increasingly difficult to purchase. Reportedly, heroin had become increasingly

adulterated and prices had increased. By December, as IDUs noted the government's successful efforts to minimize drug trafficking through airports, they also reported shifting movements of heroin from air to land routes. As the police stepped up their efforts to arrest sellers and IDUs in shooting galleries, IDUs shifted out of shooting galleries and back into open spaces, abandoned buildings, and new construction to inject. During the legislative session in November, members of parliament began discussing the problem of drug trafficking, and accusations about knowledge of drug barons by some MPs headlined newspapers for weeks, along with reports of a government list of suspected drug traffickers that were being watched. As arrests of suspected traffickers, users, and sellers escalated during December 2006, patterns of heroin sales and consumption changed. Sellers and IDUs moved out of protected spaces and onto the streets to buy and sell heroin. Since August 2006, many IDUs no longer inject in shooting galleries and instead are injecting in precarious unprotected spaces, although some manage to inject in their homes.

HIV prevention and safer needle use interventions in urban Tanzania must take into account that in this environment, where there is no free opioid treatment center, heroin users quickly adapt to changing government policy and practices in their efforts to sustain their drug use and avoid experiencing withdrawal symptoms.

Determination of Ketamine From Urine Samples After Single Oral Dose by Using UV-Spectrophotometer HPLC

Basic Science

Egypt

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Ketamine is an analgesic and anesthetic drug. It has become more and more popular for drug abuse in recent years. Teenagers have abused it as a recreational and "club drug" because of its hallucinogenic and stimulant effects. It is also misused as a "date-rape" drug to facilitate sexual assaults.

The aim of this study was to determine ketamine and its metabolites in urine by visible UV-spectrophotometer and HPLC.

The study sample included 10 volunteers who had received ketamine hydrochloride (100 mg) orally. Individual urine samples were collected at different periods (2, 6, 12, 18, 24, 36, and 48 hours, and 3, 4, 7, 10, and 15 days). Urine samples were

hydrolyzed with concentrated HCl and extracted with chloroform at pH 9.2. The organic phase was treated with bromocresol green in the presence of acetate buffer (pH 2.8). The colored product is measured at 417 nm by UV-spectrophotometer and confirmation by HPLC.

Using the visible UV-spectrophotometric method based on the formation of colored ion-pair complexes with bromocresol green, the total ketamine (and its metabolites) was detected up to 10 days after drug administration, ranging in mean concentrations of 1.48–30.54 µg/ml. It is concluded that this proposed method can be used for identification and determination of ketamine in the biological samples.

Substance Abuse Disorders: Client Profiles in Two Egyptian Hospitals

Treatment

Egypt

Mohamed, Nael Hasan and **El-Dosouky, Ahmaed**; Egypt

This study conducted a comparison between two psychiatric hospitals offering treatment services for clients with substance abuse disorders in Cairo, Egypt. One of the hospitals is private, and the other is a governmental hospital.

We used the "Egyptian Brief Addiction Severity Scale (BASS)," which was originally developed by the Behman Hospital research team in Cairo, Egypt. It was adapted culturally from the original "Addiction Severity Index."

The aim of this study was to assess the clients presented for treatment in the private hospital: the Behman Hospital in Cairo, Egypt, and the airport governmental hospital in Cairo, Egypt. The main points of assessment and comparison were the demographic profile of clients presented to both hospitals between June 2006 and March 2007 and the main abused drugs. In addition, we looked at other characteristics such as psychiatric co-morbidity, legal, social/family, medical, and employment domains of the substance abuse disorders.

Preliminary data showed male predominance of clients presented for treatment in both treatment facilities, and the main drugs of abuse were heroin and cannabis.

Some potential research areas could include the evaluation of the access of female clients with substance abuse disorders to treatment in our community, and what the current obstacles are for the female clients accessing treatment in our community in view of the predominantly male access to treatment found in our study.

Observational Cohort Study of Methadone Maintained Patients in Iran

Treatment

Iran

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Facing an extreme epidemic of opium and heroin dependence and risk of an explosive HIV epidemic linked to IDU, Iran introduced methadone maintenance treatment in 2002.

The aim of this study was to examine the characteristics of patients enrolling in the first methadone programs in Iran and their response to treatment and to evaluate potential differences in treatment response between opium versus heroin users and injectors versus smokers.

As part of a multicenter WHO collaborative study, we conducted a prospective observational study of consecutive admissions to three methadone programs in Tehran: a general methadone clinic that was part of a university-based drug treatment program (N=80), an infectious disease clinic for HIV, hepatitis, and STD (N=19), and a drop-in/outreach center, affiliated with an NGO, offering primarily drug counseling (N=27).

Assessments included the Opiate Treatment Index (OTI), ASI-Lite, Blood Born Virus Transmission Assessment Questionnaire (BBV-Traq), and urine toxicology at baseline and at 3 and 6 months following treatment entry.

Patients (N=126) included 119 men and 7 women; with a mean age of 37 years (± 10.8); 32 percent had less than 8 years schooling; 29 percent were full-time and 15 percent part-time employed; 73 percent reported primary heroin and 26 percent primary opium use. Induction methadone dose averaged 47.2 mg./day and increased to 72.4 mg. and 77.5 mg. at 3 and 6 months, respectively. There were substantial differences in the characteristics of patients treated, services offered, and treatment outcomes among the three clinics. The proportion of IDUs ranged from 48–79 percent; primarily heroin use ranged from 60–100 percent; and 12/14 patients with known HIV status were HIV+ at the infectious disease clinic. Overall retention was 76 percent at 3 months and 69 percent at 6 months, and at 6 months ranged from 39 percent in the clinic with the highest proportion of heroin users and least services, to 75–84 percent in the other two clinics. Self-reported days in past 30 using heroin decreased from 20.6 (± 13.1) at baseline to 1.3 (± 3.8) at 3 months, and days using opium decreased from 11.7 (± 13.6) to 1.5 (± 5.4). High-risk injection practices assessed by

BBV-Traq decreased from 9.5 (range 0-90) ± 17.4 SD at baseline, to 0.45 (0-27) ± 2.9 and 0.34 (0-22) ± 2.4 at 3 and 6 months, respectively.

High treatment retention and reported reductions in illicit drug use and high-risk injection were observed in association with methadone maintenance treatment, supporting dissemination of methadone treatment in Iran on a large scale. Differences among treatment clinics in patient needs, services provided, and retention support the importance of routine monitoring as part of continuous quality improvement efforts.

Impact of Regular Marijuana Use on Work and School Performance: An Ethnographic Inquiry

Epidemiology

United States

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This poster will analyze reports of cannabis users on how they feel their consumption affects their work and school performance.

In-depth interviews with 92 blunt/marijuana smokers were collected during a major ethnographic study in New York City. A qualitative content analysis of interviews was juxtaposed with available analyses of mass media content (music, movies, TV shows, news stories, and PSAs) about the effects of marijuana use.

Users discussed both positive and negative effects of marijuana on their work and/or school performance. The drug was sometimes praised for its positive effect in reducing work-related stress, energizing the mind, or enhancing creativity. Among negative effects, users referred to difficulty concentrating, memory damage, loss of motivation or “laziness,” but rarely mentioned dependence. The relation between the psychological effects of cannabis and resultant losses in work performance were understood, by some, as a function of a user’s activity in terms of avoiding smoking before work or “controlling the high” while on the job, or, by others, as an unavoidable consequence. Persons who were unemployed and not in school were among the heaviest users, but also reported that their consumption did not affect their work/school performance.

In their accounts, blunt/marijuana smokers embraced some cultural stories about pathological consequences of marijuana use, as well as the helplessness of drug addiction. They also reproduced subversive collective stories glamorizing

marijuana as having positive effects, or no apparent consequences, or depicting drug use as controllable. More ethnographic research and media content analysis is necessary to understand the constructions of marijuana-related pros and cons.

The Evaluation of Impacts of Substance Use Among Muslims in Three Southern Bordered Provinces of Thailand

Epidemiology

Thailand

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The substance use situation in three bordered provinces of Southern Thailand has increased at a severe degree, despite the fact that the Thai Government has continually declared protection and defended substance policy. This situation impacts the socioeconomic and human development and the country's security.

The purpose of this project was to evaluate the situation of substance use in Muslims and the outcome of protection policy.

The subjects were 668 substance users of the province who received treatment at out-patient substance treatment clinics through district hospitals and their relatives. Data was collected through structured interviews performed by a nurse. The sample was 447 males (67 percent) and 215 females (32 percent). About 26 percent attained only primary education, and 29 percent had income less than 5,000 Baht per month. Regarding the substance use situation, 30 percent of the subjects perceived that substance use was decreasing, 36 percent and 46 percent said it was difficult to get and more expensive, respectively, compared to last year. Fifty-two percent were drug users who used for a long time, and 38 percent were less than 25 years old. Of all, 41–42 percent reported that the substance prevention and control policy resulted in the decreased numbers of substance dealers and users and also other related problems (e.g., fighting and stealing in their community). The reasons given by the subjects for the substance-related problems still maintained in their community included the inconsistent implementation of the policy (53 percent) and the unrest situation in Southern Thailand. Cannabis, anti-cough medication, and metamphetamines were the three most widely used substances they have used and seen used in the community.

In addition, those three drugs were reported to be the most commonly used drugs by people in this area.

In conclusion, it appears that the substance use situation is decreasing. The number of drug users and other problems related to substance use (e.g. fighting, stealing) were decreased. The cost of drugs has become more expensive and makes them more difficult to obtain. Cannabis, anti-cough medication, and metamphetamines are the three most widely used substances in the three bordered provinces of Southern Thailand.

Serious focus must be given to continuing to carry out the Thai Government's protection and defense of substance policies.

Effectiveness of Topiramate in the Treatment of Cocaine Dependence

Treatment

Spain

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The purpose of this study was to analyze the effectiveness of topiramate in the treatment of cocaine dependence associated with alcohol consumption and its influence on psychological distress, cocaine and alcohol craving, impulsivity, and self-regulation.

A sample of patients with a DSM-IV diagnosis of cocaine dependence, who sought treatment in three Units for Addictive Behaviors in the Comunidad Valenciana, received a 3-month treatment with topiramate. Patients were evaluated before and after treatment using the following measures: Barrat Scale (to assess impulsivity); Weiss Cocaine Craving Questionnaire; Multidimensional Alcohol Craving Scale; Derogatis' SCL-90 (to assess psychopathological symptoms) and Brown and Tejero's Self-Regulation Questionnaire (to assess patients' self-control).

A preliminary comparison between pre- and post-treatment measures found statistically significant differences in cocaine and alcohol craving ($p=0.020$ and 0.001 , respectively) and in the following psychopathological dimensions measured by SCL-90: Obsessivity ($p=0.015$), Depression ($p=0.014$), Anxiety ($p=0.005$), Hostility ($p=0.002$), Paranoid Ideation ($p=0.028$), Psychoticism ($p=0.031$), Global Severity Index ($p=0.016$), and Positive Symptom's

Severity ($p=0.020$). Increases in the capacity for self-regulation and decreases in impulsivity did not reach statistical significance.

It is concluded that treatment with topiramate in cocaine-dependent patients seems effective for decreasing cocaine and alcohol craving as well as psychopathological symptoms.

Youthful Drug Involvement in Bogotá, Colombia

N

Epidemiology

Israel

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As one of the world's leading cocaine-producing countries, most of the attention to the drug problem in Colombia has focused on international trafficking and much less on the epidemiology of use and misuse within the country.

The present study determines the prevalence and factors associated with drug use and exposure-opportunity (E-O) to use drugs among a representative sample of school-attending adolescents.

Data was collected via a standardized questionnaire administered to 1,230 students in private and public schools in Bogotá, Colombia, selected in a stratified multistage probability cluster sample.

Results showed that E-O rates were: 94.3 percent for alcohol, 77.8 percent for tobacco, 18.9 percent for inhalants, 28.3 percent for marijuana, and 16.9 percent for other illegal drugs (e.g., cocaine, coca paste, Ecstasy, or opiates). Estimates of use were: 92.4 percent, 67.5 percent, 6.9 percent, 13.7 percent, and 10.3 percent for these drugs, respectively. Overall, 40 percent of the students had been offered marijuana and/or other illegal drugs, 43.5 percent of whom reported having that E-O on or around school premises; 12.9 percent had used marijuana or other illegal drugs in school. Nearly one-third reported curiosity about using marijuana or other illegal drugs and one-fifth intended to use within the next 12 months. Transition from E-O to use of other illegal drugs was more common among boys (Odds Ratio=1.93, 95 percent C.I.=1.2,3.0), those who reported poor parental control (OR=2.03, 95 percent, C.I.=1.3,4.2), low academic performance (OR=2.31, 95 percent, C.I.=1.1,5.2), and deviant peer behavior (OR=4.13, 95 percent, C.I.=1.7,7.5).

Prevalence of E-O to use legal and illegal drugs, and prevalence of actual use of all the substances is higher than reported in the PACARDO study of Central America and Caribbean countries, but

lower than the rates observed in the United States for marijuana and other illegal drugs.

This first study of the epidemiology of the earliest stages of drug involvement in Colombia provides useful information for developing targeted strategies for drug-use prevention among the youth in this drug-producing country.

Cognitive Performance of Cocaine-Dependent Subjects: Effects of Psychiatric Symptoms on Frontal Assessment Battery (FAB)

Treatment

Brazil

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There is accumulating evidence that cocaine-dependent subjects have deficits in cognitive functioning. Psychiatric co-morbidity is common among substance-abusing populations and may be an important compounding factor in neuropsychological evaluation. We have previously presented data on the correlation between psychiatric symptoms and frontal lobe tasks, suggesting that deficits in cognitive functioning of cocaine-dependent subjects may be at least in part mediated by psychiatric symptoms.

The aim of the present work is to compare the performance of cocaine-dependent subjects and normal controls in a new neuropsychological test sensitive to frontal lobe functions, considering the possible influence of psychiatric symptoms.

The Frontal Assessment Battery (FAB) consists of six subtests that explore abstraction, cognitive flexibility, motor programming, sensitivity to interference, inhibitory control, and environmental autonomy. Its administration takes about 10 minutes. The Self-Reported Questionnaire (SRQ) was used to evaluate psychiatric symptoms. This instrument was designed to study mental illness in primary care settings in developing countries and consists of 20 "yes or no" questions covering anxiety and depressive disorders; 4 further questions investigate psychosis. Twenty-eight men meeting DSM-IV criteria for cocaine dependence and 31 normal controls (all male, no history of substance dependence) participated in the study. The cocaine dependent subjects were recruited from an inpatient substance abuse program, after at least 1 week of abstinence.

The performance of cocaine-dependent subjects on FAB was significantly lower than controls ($t=4.536$;

$p < .05$). FAB scores were negatively correlated with SRQ scores ($r = -.437$; $p < .05$), suggesting that higher levels of psychiatric symptoms are associated with poorer performance on executive function tests. However, the comparison between cocaine-dependent subjects and controls was still significant, even when an analysis of variance was performed, taking SRQ scores and intelligence level (IQ scores) as covariates ($F = 4.728$; $p < .05$).

These results suggest that deficits in cognitive functioning of cocaine-dependent subjects are not completely mediated by psychiatric symptoms. Further investigation is needed in order to elucidate this association.

Benzodiazepine Use and Self-Reported Opioid Toxicity in Opioid Substitution Treatment

Treatment

Australia

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Benzodiazepines are frequently used by patients in opioid substitution treatment despite concerns that exist with concomitant opioid and benzodiazepine use. Benzodiazepine use in buprenorphine treatment has not previously been documented. Further, few studies have made direct comparisons between the central nervous system depression induced by methadone and buprenorphine, especially where poly-drug use is involved. This study aims to examine concurrent buprenorphine and benzodiazepine consumption and to compare opioid toxicity symptoms related to methadone and buprenorphine treatment, examining factors associated with the reporting of these symptoms.

A self-report cross-sectional survey was conducted in five needle syringe programs and five opioid substitution treatment services in Melbourne, Australia.

Two hundred fifty persons that had experience with methadone or buprenorphine participated. Eligibility criteria were current or previous methadone or buprenorphine use.

The survey was a structured questionnaire and collected data covering: demographic characteristics, current treatment, and drug use; concurrent use of buprenorphine and benzodiazepines, including route of administration and source of medications; and opioid toxicity symptoms reported in association with methadone and buprenorphine consumption.

Of those reporting buprenorphine use, two-thirds reported concurrent benzodiazepine use, with a median dose reported of 30 mg diazepam equivalents. Participants were more likely to report

opioid toxicity in relation to methadone, being 10 times more likely to report overdose (OR = 10.00, 95 percent, CI = 1.67–218.90), and 2.7 times more likely to report extreme drowsiness (OR = 2.71, 95 percent, CI = 1.55–4.72), in association with methadone consumption. Those reporting opioid toxicity with buprenorphine were more likely to report injection drug use compared with those reporting opioid toxicity with methadone.

The risk of opioid toxicity appeared greater with methadone compared with buprenorphine despite high levels of benzodiazepine consumption and injection being reported in relation to buprenorphine use. The prevalence of buprenorphine injection and the normalization of methadone-induced sedation are two findings that merit further investigation. Establishing recommendations as to the safest and most effective way to manage benzodiazepine-using persons in opioid substitution treatment is necessary for the optimization of treatment for opioid dependence in polydrug using individuals.

Chronic Cannabis Users: Does Abstinence Change Neuropsychological Performance?

Basic Science

Brazil

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The aim of this study was to investigate whether time of abstinence improves neuropsychological status in chronic users.

The sample included 132 heavy marijuana abusers/dependents (MJ) who were assessed with neuropsychological tests and compared to 44 control (C) nonusers, matched for age, education, and IQ. We compared the following: (a) 1 week abstinent (Abs): 30 MJ abstinent more than 7 days; (b) Recent Use (RU): 102 MJ who had used in the last 7 days; and (c) Controls: All subjects completed CIDI-10 and had THC urine detection. They were evaluated with the following: Trail A-B, Stroop Test, Buschke Selective Reminding Test (BSRT), Wisconsin Card Sorting Test 64 (WCST), TAVIS-3, and WAIS-R Vocabulary/Block Design (Estimated IQ). Two-way ANCOVA was used ($\alpha < .05$).

The RU group had significant lower performance than C on: Trail B, BSRT, WCST categories achieved, WCST perseverative errors, and TAVIS 3 time reaction. No differences were found when Abs group was compared to C. There were no differences between RU and Abs groups in age of first use and numbers of joints during life.

Chronic MJ showed deficits on time reaction, memory, and executive functioning if they had smoked cannabis in the last week, while patients abstinent more than 7 days did not when compared to C. There was no difference of joints smoked during life between groups, consequently cognitive deficits could be explained by residual THC signals in the brain and withdrawal syndrome. Problems on executive functioning could make an individual more prone to addictive behavior and resistant to achieving longer abstinence.

Cannabis seems to impair memory and reasoning formation besides feedback, but it remains unclear whether cognitive deficits are reversible. Followup studies could elucidate the impact of cannabis on long-term cognitive functioning.

An AIDS Epidemic Associated With Buprenorphine Diversion and Injection Drug Use in an African Country

Treatment

Australia

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Mauritius is a small island with a population of 1.3 million. The estimated number of injection drug users (IDUs) is 20,000–22,000, and the AIDS numbers are currently estimated at less than 1 percent of the population.

PILS, an NGO, in its November 2006 report, estimated that the total number of confirmed AIDS cases had increased 400 percent in the last 3 years. An estimated 92 percent of the new cases were considered to be from infections spread by injection drug use. Officers from four separate organizations estimated that the most common drug being injected was buprenorphine. Each officer stated that the estimated percentage of buprenorphine compared to other opiates was 90 percent or greater.

Although buprenorphine diversion has usually been estimated at 20–30 percent of patients, this appears to be the first time a country not prescribing buprenorphine is able to link directly its AIDS epidemic with diversion from another country contributing a significant part to its AIDS epidemic. Further data must be collected from this and other countries affected by buprenorphine diversion. Strategies to eliminate this problem are urgently required.

Results of this study indicate that: (1) The data above requires a full review and formal research; (2) Diversion may have affected other countries not prescribing buprenorphine; (3) Buprenorphine

epidemics may be more difficult to recover from than heroin epidemics; (4) Traditional treatments with naltrexone appear to be difficult to implement with buprenorphine epidemics (one hundred fifty mg/day may prove to be effective but this is still to be validated); and (5) The politics of asking one country to stop its buprenorphine program so that its neighbor can recover from an AIDS epidemic has not yet been tested.

Substance Abuse, HIV/AIDS, and Substance Abuse Treatment in Kenya

Epidemiology

Kenya

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Kenya, population 34 million, reduced its HIV prevalence rate from 10 percent to 6.7 percent in the last 8 years through behavior change strategies targeting risky sexual behaviors. It is estimated that sexual risks are responsible for 70–80 percent of HIV/AIDS transmissions in Kenya, IDU and Mother-to-Child transmission each account for 5–10 percent, and healthcare-related injuries for <0.01 percent. While the relationship between substance abuse and transmission of HIV is complex, research findings and epidemiological models clearly demonstrate that both injection and non-injection drug use significantly contribute to the spread of HIV. Substance abuse in Kenya is on the rise, particularly among the youth, although detailed data on the extent of the drug problem is scant. Commonly abused substances are alcohol, marijuana, heroin, and cocaine. Despite a rapidly growing population of individuals with substance-abuse problems and co-occurring conditions, who are either at risk of becoming infected with HIV or transmitting HIV to others, prevention and treatment programs are underdeveloped. Medication maintenance treatments (either agonist or antagonist) are not available in Kenya. The country has only one public substance abuse rehabilitation center, four private ones (fees for private treatment are unaffordable to most of the population), and only a few medical practitioners trained in addiction medicine. There is a critical need for research to uncover the scope and unique characteristics of substance-abuse problems, as well as an immediate need to increase available resources for prevention, treatment, and rehabilitation of substance-abusing individuals in Kenya.

Harm Reduction Policies for Inmates of the Canadian Correctional System

Treatment

Canada

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There is a high prevalence of illicit drug use among Canadian prisoners. The Correctional Service of Canada (CRC, 2003) suggests that 67 percent of the inmates under Federal responsibility would be drug addicts and 20 percent among them would present big problems and would need intensive care. Even though injection drug use and ownership of injecting equipment are forbidden in Canadian prisons, 11 percent of inmates have stated they had injected some kind of drug in prison. Of this group, 41 percent affirm that their injection equipment was not clean or that they were not sure if their injection equipment was really clean at the moment of the injection (Thomas, 2005). Besides that, the sharing of needles and syringes among the inmates is one of the main causes for rising prevalence of blood-borne viral infections (especially HIV and HCV viruses) in the correctional system (CRC, 2003).

Our goal is to discuss the actual implementation of programs for promoting the reduction of harm associated with injection drug use in the Canadian correctional system. To do that, we will present a literature review from the past 10 years, focusing on harm-reduction programs in North American and European prisons.

With the goal of reducing blood-borne infections in prisons, the Canadian correctional system provides some kinds of harm-reduction programs, such as methadone maintenance therapy and bleach for sterilizing injection equipment. Both of these programs have shown their efficacy in terms of scientific research results, but they also have serious limitations. Methadone maintenance treatment is not available for all drug-injecting prisoners. They must fulfill the eligibility criterion, and they cannot exceed the maximum number of participants allowed by the prison. Furthermore, the bleach is not always available or accessible to the inmates. In addition, Contoreggi et al. (2000) found that this was not a safe method of preventing HIV transmission, while Dolan et al. (1999) question bleach's efficacy in preventing hepatitis B and C transmission.

The syringe exchange programs do not have a date to be tested in Canadian prisons. We still found many resistance factors for their implementation, for instance, the fear that inmates could misuse contaminated syringes as weapons against the prison's staff and that issuing syringes to drug addicts in prison might encourage drug use (Dolan, 1998).

Syringe exchange programs have been shown to reduce needle sharing among injection drug users and thus to lower the risk of HIV and HCV transmission (Normand et al. 1995). Moreover, the response in regard to feasibility of syringe distribution in prisons is positive in a general way. Fears turned out to be unjustified (Dolan et al., 1998). Thus, we conclude that a study targeting the feasibility of prison-based syringe exchange programs should be supported by Canadian correctional authorities as soon as possible.

First Republic of Georgia Randomized Controlled Trial (RCT) for Drug Abuse Treatment: The Process and Initial Results of Developing a Couple's Treatment for Drug Abuse

Treatment

Georgia

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Two distinguishing features of Georgian life are the tightly woven family and the reluctance to share personal problems with professionals. Thus, the importance of examining men's drug use in the context of their most important confidantes and relationships, their female sexual partners, is vital.

This U.S./Georgia collaboration provides the female partner with tools to appropriately support the male's drug abstinence and may help him more easily address his addiction. This culturally tailored therapy incorporates four aspects: Motivational Enhancement Therapy, contingency-based voucher incentives, couples MI/MET with HIV/AIDS education, and research-supported treatment.

Couples were randomized to one of two, time and attention similar groups, intensive intervention (n=7) versus a typical care control treatment (n=9). Sessions were scheduled weekly for 22 weeks. Recruitment issues and solutions were reviewed. As the first addiction RCT in Georgia, the process for presenting the randomization concept will be presented.

The sample included male and female participants who were 37.5 and 34 years old, with 13.9 and 14.6 years of education, respectively. Male partners averaged 18.9 years of drug use. No females reported drug use. All males reported opioid use with six (37.5 percent) reporting Subutex, five (31.2 percent) reporting heroin, and five (31.2 percent) reporting use of both drugs. Intervention group males completed more scheduled visits (75.9 percent versus 63.4 percent) and had higher rates of

opioid negative urine samples (54 percent versus 16 percent) than control males. Information regarding the processes of treating the males and perceptions of female partners in therapy will be presented.

Results suggest that conducting randomized controlled trials for drug abuse treatment is feasible and acceptable to participants in the Republic of Georgia. Preliminary results suggest that the intervention focusing on engaging non-treatment-seeking opioid abusers in treatment is possible and this novel couples intervention can help reduce drug use compared to a control condition.

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P

Private Economic Cost of Alcohol Abuse: A Study in Khonkaen, Thailand

Epidemiology

Thailand

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Alcohol abuse increases the risk of physical and mental health problems and social consequences such as accidents, violence, and lower productivity, resulting in reduced economic effectiveness for the individual, government, and the rest of society. The risk behavior survey in 2005 revealed that, in the Khonkaen province, the prevalence of drinking alcohol in the past 12 months prior to the survey was 45.96 percent and 13.82 percent and had at least one binge drinking session in the last 30 days.

This study aimed to investigate the pattern of alcohol misuse and the private economic costs of alcohol misuse in Khonkaen, Thailand.

This was a pilot study of alcohol drinkers in five villages in Khonkaen. Data was collected by face-to-face interviews using a structured questionnaire. The volume of ethanol intake was measured by graduated quantity frequency method (GQF). The private economic cost comprised: (a) out-of-pocket expense on treatment and rehabilitation, (b) out-of-pocket expense through indirect spending on treatment for illness and injuries such as traveling and lodgings, (c) productivity losses from work absence, illness, and premature death, applying the human capital approach, and (d) other costs such as damaged property, fines, and fees for law suits, including victims reconciliation.

Among 100 respondents aged 14–62 years, most were male and were occasional and inconsistent drinkers. The average age of first drink was 18.3 years. The average number of binge drinking sessions in the last 12 months was 18.4 days. About 43 percent of

respondents were classified as high-risk drinkers; the proportions were similar in consistent and inconsistent drinkers, but that of occasional drinkers was slightly greater than that of frequent drinkers. Among those aged less than 20 years, 11.8 percent were frequent drinkers, 17.7 percent performed binge drinking more than 30 days in the last 12 months, and 64 percent were high-risk drinkers. About 20 percent ever had traffic accidents, 33 percent were ever involved in assaults, and 16.4 percent were ever injured as victims of assaults. The private economic cost of alcohol abuse among users varied greatly. The largest cost was for damaged property, followed by productivity loss, direct expense for treatment and cost for reconciliation. It was found that occasional but high-risk drinkers incurred higher costs, while the frequent but low-risk drinkers incurred very little costs.

The study suggests that policy should aim to promote social recognition of safe-drinking and reduce binge-drinking behavior in this population. The major target group is occasional high-risk drinkers. This study used a limited sample from a small area, and a larger, general population sample should now be studied.

Examining the Effects of Drug Abuse on Urban Youths of Nepal

Epidemiology

Nepal

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The majority of urban and suburban areas of Nepal are susceptible to the sale and abuse of drugs. Therefore, the society, families, and the lives of youths of these areas of Nepal are highly affected and endangered due to the abuse of alcohol, tobacco, marijuana, and other pharmaceutical drugs.

A study was carried out in a small township called Dallu in Kathmandu from June 2006 to August 2006. A comprehensive questionnaire was developed and distributed to the known drug abusers of the study area to find out the level and effect of drug abuse on them, their families, and society. Participants of the study were youngsters (12 to 25 years old) and some household heads (38 to 66 years old). The sample size was 130 persons (95 drug abusers/addicts and 35 household heads).

Thirty-five percent among the interviewed 95 abusers and addicts were injection drug users (IDUs), and most of them were multi-drug abusers. The remaining 65 percent were the abusers of marijuana, hashish, alcohol, and other pharmaceutical drugs. The responders did not reveal the prevalence of HIV, Hepatitis B, and other sexually transmitted

diseases (STDs), as the prevalence of such diseases is considered shameful in Nepalese society. Most of the abusers of the study area were adolescents.

Lack of knowledge about the harmful effects of drugs has been found to be the major cause among the youngsters of the study area. As the situation is worsening, it is important to determine the impact of drug abuse and carry out an effective intervention to improve the health of this vulnerable urban population. There is the need for public awareness-raising programs through NGOs involving local communities.

Suicide and Substance Abuse

Epidemiology

Philippines

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Suicide continues to stimulate keen interest among investigators of human behavior. A suicide attempt is an act with non-fatal outcome that is deliberately initiated and performed by the individual involved, resulting in self harm (WHO). Substance abusers who attempt suicide deserve as much attention. Given the medical, psychiatric, and social complications of substance abuse, substance abusers constitute a population at risk of attempting suicide. With increasing complications of substance abuse, a significant proportion of Filipinos are likely to attempt suicide.

This is the first study describing Filipino suicide attempters with concurrent substance use problems. This was a retrospective-descriptive study of suicide attempters between January 2005 and December 2005 in an Acute and Emergency Department referred to the National Poison Centre and the Department of Psychiatry and Behavioral Medicine in a Philippine tertiary hospital.

Participants included 115 suicide attempters. There were 63 suicide attempters who satisfied the DSM-IV criteria for substance abuse/dependence.

The Filipino substance abusers who attempted suicide were younger, likely to be male and single, with a history of current alcohol and methamphetamine abuse ($p < .01$), family history of suicide ($< .05$), less likely to have previous suicide attempt ($< .05$), ingested poisons as methods to attempt suicide ($< .01$), had interpersonal conflict prior to the attempt ($< .05$), and had affective disorders at the time of suicide ($< .05$).

The preliminary data results indicate that there is an effect of concurrent substance use with suicide

attempts. Possible physiological, biochemical, and psychosocial mechanisms are discussed.

Development of a Full Program for the Treatment of Alcohol-Dependent Patients: Psychiatric Ward, Songklanagarind Hospital

Treatment

Thailand

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Alcohol dependence is a chronic disease that affects not only the drinker's health but also the welfare of the family, employment, and society in general. Those with alcohol dependency are one of the main five groups of psychiatric patients admitted. The relapse rate for this group is also quite high.

The objectives of this study were: (1) to encourage alcohol-dependent patients to stop drinking or to choose safer drinking after attending alcohol-dependent treatment program; and (2) to develop the quality of life in the patients and their families.

The target population included alcohol-dependent patients who were admitted as inpatients to the psychiatric ward at Songklanagarind Hospital since January 2006.

After the end of the program, the subjects who were discharged will be interviewed and a record kept of when they came to followup in the out-patient department.

The evaluation indicators show that more than 80 percent of the patients who attended the relapse prevention program came back to the hospital to be monitored. More than 90 percent stopped drinking for more than 30 days, less than 5 percent of patients returned to heavy drinking more than 3 times within 3 months, and less than 5 percent were readmitted within 3 months.

The process of treatment is detoxification and relapse prevention. Once detoxified, the counseling psychology, Motivational Interviewing (MI), and Brief Interventions (BI) are used. Emphasis is placed on building a relationship between patients and therapists and in investigating patients' problems. The therapists will have to identify the causality of drinking and motivate patients to continue treatment. This step will lead to BI adaptation (i.e., set an appropriate timeframe for each patient and advise to decrease drinking). The patients will be put in the program on how to stop drinking by using advice and menus of alternative change options. Moreover, empathy and self efficacy will be used for promoting abstinence in patients and for encouraging them to take care of themselves and

stop drinking. If there are other social problems, the therapist will also provide treatment.

From January to December 2006, 47 patients attended treatment. Following the indicators, 95 percent came back to the hospital to be monitored; 87 percent stopped drinking for more than 30 days; 8.52 percent (four cases) of patients returned to heavy drinking more than 3 times within 3 months; and three cases, or 6.39 percent, were readmitted within 3 months, even though most relapse patients lack a strong desire to stop drinking.

The 1st year outcomes were not fully successful as the providers were not yet completely ready. They did not have enough time to develop sufficient knowledge and skills to administer the treatment. After the PCT team discussion about the results, they decided to develop their knowledge and skills, provide a treatment handbook, and increase patient participation.

Alcohol Use Among Subjects Who Drink on Premises of Gas Stations of Porto Alegre, Brazil: A Feasibility Study With Preliminary Data

Epidemiology

Brazil

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Alcohol use and binge drinking are strong predictors of traffic accidents with a high correlation between increased blood alcohol concentration (BAC) and the risk for traffic accidents. Drinking on the premises of “gas stations” with co-located convenience stores is common among youngsters and underage youth in the southern Brazilian city of Porto Alegre. These youth purchase alcohol at the store, drink with others on the premises, and then drive away. A Porto Alegre city law was passed in 2006 that prohibited the use of alcoholic beverages on the premises of gas stations, but did not prevent the sales of alcoholic beverages in the co-located stores.

The purpose of this study was to compare risk behaviors for traffic accidents and BAC among youth who drank alcohol on the premises of “gas stations” before and after a city law was enacted to prohibit alcohol use at “gas stations”.

Data were collected by trained interviewers on four weekends at purposely selected gas stations before (Time I) and after (Time II) the implementation of the new law. Time I (n=62) and Time II (n= 50) data were compared. Data were collected during two weekends before the law was passed and 1 month

later during two weekends after the law was passed. Inclusion criteria were: (1) at least 15 years old, (2) drinking an alcoholic beverage at the time of data collection, and (3) car driver or passenger. Demographic, substance use, and traffic risk behavior data were collected using a self-administered questionnaire, which took about 5 minutes to complete. Blood alcohol concentration (BAC) was estimated using a breathalyzer.

At Time I, 73 potential subjects were approached and 11 (13.7 percent) refused to participate. At Time II, 54 potential subjects were approached and 4 refused (9.3 percent). There were no significant differences between Time I and Time II subjects on demographic characteristics or risk behaviors for traffic accidents. For example, mean ages were 22.7 (+/- 5.0) and 22.5 (+/-4.1), and mean years of education were 13.43 (+/- 3.0 years) and 13.1 (+/-2.4 years). BAC over 0.06 percent was found in 36 percent of subjects at Time I and 40 percent of subjects at Time II (p=0.62). Nine point seven percent of the Time I group and 16 percent of the Time II group with BAC > 0.06mg./dL reported they were going to drive in 2 hours (p=0.38). Self-reported current marijuana use was also high at 12.9 percent and 12 percent, respectively.

Over one-third of the subjects had BACs over the legal limit and intended to drive soon, and alcohol use levels did not change after a city law passed. Such a study is feasible with low refusal rates and may help to understand the enforcement of alcohol availability laws, as well as to decrease drinking and driving among youth in developing countries.

Epidemiology of Alcohol and Drug Use in South Africa: A Review

Epidemiology

South Africa

Peltzer, Karl, and Phaswana-Mafuya, Nancy, HSRC, South Africa; Johnson, Bruce, NDRI, United States

Given that middle-income countries such as South Africa are at increasing risk for drug use and abuse, hard data to accurately monitor drug abuse in South Africa is required. This review synthesizes available epidemiological data on current drug use in South Africa, particularly among women and young people.

Several databases were systematically searched for articles published in peer-reviewed journals at any time during the last century to the end of 2006. Data from several large epidemiology data sets were analyzed. The search resulted in the retrieval of 254 articles in which the current use of drugs in South Africa was reported.

Comparisons revealed that the prevalence and intensity (frequency and/or quantity) of most drugs (tobacco, alcohol, cannabis, and other illicit drugs) used was higher among males, those with lower level of education, and those living in urban areas, compared to females, those with higher education, and those living in rural areas. Certain racially classified social groups in South Africa were at increased risk for drug use. Tobacco use significantly decreased over the past 10 years to 31.2 percent among men and 8.4 percent among women in 2003. Alcohol use and risky drinking remained stable for adults (e.g., past month binge drinking among men [14.3 percent] and women [3.2 percent] in 2005); risky drinking increased for youth over the past 10 years. Female current drinkers were proportionally higher risky drinkers than current drinking men. There was a significant increase in current alcohol use among pregnant women from 7 percent in 1998 to 12.6 percent in 2005. The most used illicit drugs included cannabis, inhalants, Mandrax, and club drugs (Ecstasy and methamphetamine). Cocaine and opiate use appeared to be on the increase. The onset of alcohol and illicit drug use seems to have decreased within the younger age groups.

While the prevalence of drug use in South Africa is relatively low compared to the United States and Australia and some other developing countries, prevention and intervention policies should be designed to reduce these levels by targeting the more risky subpopulations identified from this review.

Epidemiology of Drug Abuse Treatment in South Africa

Epidemiology South Africa

Phaswana-Mafuya, Nancy, and Peltzer, Karl, HSRC, South Africa; Johnson, Bruce, NDRI, New York

Given that middle-income countries such as South Africa are at increasing risk for drug use and abuse, hard data to accurately monitor drug abuse in South Africa is needed. This review synthesizes available epidemiological data on substance abuse treatment admissions in South Africa.

Using data sources from SACENDU, SANCA, and a rapid-assessment survey of treatment centers, covering 90 percent of the treatment centers in South Africa over the past 10 years, the following data were analyzed: admission rates, first-time admissions, type of treatment (in/out-patient), referral sources, sociodemographics, primary and secondary substance of abuse, mode of usage of primary drug, and duration and age of first use of drug.

The primary substance of abuse in 2005 from most treatment centers (n=31) in South Africa provided

by SANCA (South African National Council on Alcoholism and Drug Dependence) treatment center (in/out-patients: n=8689) was alcohol (49.7 percent), followed by cannabis (17.6 percent), crack/cocaine (6.8 percent), methamphetamine (Tik) (6.8 percent), dagga and Mandrax (6.1 percent), heroin/opiates (4 percent), Mandrax (1.1 percent), inhalants (0.9 percent), over-the-counter (OTC) (0.4 percent), and other (5 percent). The three major referral sources were (1) self, (2) family/friends, (3) employer/work. Most (81.9) percent were male, 16.7 percent were between 14 and 17 years old, and 1.3 percent were between 7 and 13 years old. Treatment admissions were concentrated in five of the nine provinces in South Africa: Gauteng (29.6 percent), KwaZulu-Natal (27.9 percent), Western Cape (12.5 percent), Eastern Cape (10.7 percent), and Mpumalanga (9.6 percent). The racial composition of clients was: (Black African 39.4 percent, White 34 percent, Colored 19 percent, and Asian 7 percent). Overall, the number of treatment admissions significantly increased over the past 10 years. The percentage of admissions for cannabis, heroin, and methamphetamines increased between 1996 and 2005, while the admission percentages decreased for alcohol. There has been an increase in demand for drug treatment by young persons (especially related to cannabis and methamphetamine use).

There has been an increase in substance abuse treatment admissions, with increases in cannabis, heroin, and methamphetamines among younger age groups and an underrepresentation of Black African clients at treatment facilities. Accessibility and utilization of treatment facilities, especially by young persons, females, and persons from disadvantaged communities should be increased.

Alcohol Use and Abuse During Religious and Community Festivities in Peru

Epidemiology Peru

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The main aim of this study was to estimate alcohol use during religious and community festivities, comparing gender patterns in two cities of Peru (one in the Andean region and the other on the coast). Alcohol consumption patterns in the Andean region have been given limited attention. In this context, religious and community festivities have been celebrated with intense alcohol use, sometimes lasting for several days.

The GENACIS study (Multinational OMS/PAHO Gender, Alcohol, and Culture Study) estimates gender differences in drinking patterns in a

household sample of subjects 18 to 64 years of age, who are Peruvian residents of the cities of the capital of Peru, Lima (n=1,110 persons), and Ayacucho (n=421 persons), a city in the Andean region of the country. The study collected and analyzed data from face-to-face interviews conducted between August and November 2005, during a multiple-stage probability sample, from which the past year's per capita alcohol consumption at religious or community festivities was calculated.

The amount of alcohol consumed during festivities was higher in Ayacucho than in Lima. For example, the mean total per capita alcohol consumption for males during festivities was 160 standard drinks in Ayacucho and 146 in Lima. For females, the mean number of standard drinks of alcohol during festivities was also higher in Ayacucho (86) than in Lima (72). Specifically, for beer, women in Ayacucho drank as much as men. Compared with women in Lima, women in Ayacucho drank twice as much (104) as women in Lima (60). Fermented beverages such as chicha are consumed more in Ayacucho than in Lima. For example, females in Ayacucho drink twice as many fermented drinks in Ayacucho (40) than in Lima (26).

The present study contributes to providing a description of a neglected public health problem in the Andean region. Alcohol use during religious and community festivities requires gender- and culture-appropriate programs and policies.

Methamphetamine Use, Sexual Risk, Aggression, and Mental Health Among School-Going Adolescents in Cape Town, South Africa

Epidemiology

South Africa

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Recent sharp increases in adolescents presenting at drug treatment centers in Cape Town, South Africa, with methamphetamine dependence prompted the need for community-based surveys to investigate the extent of methamphetamine use and associated health concerns.

The present study aimed to determine the prevalence of methamphetamine use in high schools in a large school district in Cape Town and to investigate associated health and behavior problems, including mental health, physical health, aggression, scholastic difficulties, and sexual risk behavior.

Fifteen schools were randomly selected and 1,561 grade 8–10 students completed the self-administered Problem-Oriented Screening Instrument for Teenagers (POSIT). The POSIT consists of 10 subscales for assessing students at risk of which the following were investigated: substance abuse, physical health, mental health, family relationships, aggressive/violent behavior, and educational status. In addition, students completed the Beck Depression Inventory (BDI), questions on substance use, and the POSIT HIV/STD Risk Scale.

Overall, 9 percent of the 1,561 students had used methamphetamines at least once in their life (LT). Of these students, 20 percent had used the drug in the past 7 days. T-tests showed that LT methamphetamine users had significantly higher scores (minimum $p < 0.05$) on the six POSIT risk scales, than those who had used other substances, but not methamphetamines. Comparing these two groups also showed that LT methamphetamine users had higher BDI scores. The proportion of methamphetamine users who had sex at least once was significantly higher (45 percent) compared to users of other substances (23 percent). A T-test showed that LT methamphetamine users also had significantly higher total scores on the POSIT HIV/STD Risk Scale ($p < 0.01$) than users of other illicit drugs.

The findings indicate a number of associations between methamphetamine use and a number of health, social, and behavior problems. This is of particular concern in young adolescents who are still developing in a number of areas, including physically and cognitively. In a high HIV prevalence context, the association between sexual risk behaviors and methamphetamine use is also of concern. Implications for interventions are discussed.

IDU Sexual Networks and the Potential for HIV Transmission in Indonesia

Epidemiology

United States

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Although a relative latecomer to the epidemic, HIV has struck Indonesia hard. Surveillance at the Ministry of Health's drug-dependence hospital showed an escalation from 0 percent IDUs infected in 1997 to almost 50 percent infected by 2001. As more injectors become infected, the potential for sexual transmission of HIV by IDUs increases. Yet, little was known about IDU sexual networks, sexual partnering patterns, the nature of sexual relationships, and sex risk practices. This exploratory investigation, commissioned by Family

Health International, begins to address these gaps in knowledge.

The country's four largest cities (Jakarta, Surabaya, Medan, and Bandung) and Bali were selected for inclusion here because they include various concentrations in racial groups with unknown, potentially different, patterns of sexual networking and risk. A purposive sampling design sought to include subjects representing the range in known IDU characteristics at each locale (i.e., age, gender, SES, race, etc.). Selection criteria included injectors who were sexually active and 18 years of age or older. Following informed consent, 52 willing respondents were interviewed using a semistructured and open-ended interview guide. Interviews were tape-recorded and sent to the data manager for transcription and translation. Interviews were divided into narrative passages and coded as to topical content upon entry in EZText qualitative database software. Inductive analysis revealed common themes and exceptional cases. Matrix analysis helped identify patterns of network partner relations, associated HIV transmission risk, and intervention implications.

Indonesian IDUs were found to commonly have regular, casual, and commercial sex partners. Almost 90 percent were involved in a serious relationship with a spouse or girl/boyfriend. Serious relationships included emotional ties and mutual expectations and obligations. The most common expectation was faithfulness, yet 75 percent of those with a regular sex partner had concurrent relations with casual and/or commercial partners. Female IDUs most often had a male IDU as a regular partner, but male IDUs tended not to have regular female IDU partners and their non-IDU partners typically were not aware that they were IDUs. Most male IDUs actively pursued casual and commercial relations. Male IDUs also reported sex with transgenders (40 percent) and other males (10 percent). Condoms were rarely used irrespective of partner category.

The frequency of unprotected relations with a variety in types of partners suggests a high potential for the bridging of HIV to non-IDU populations in Indonesia. Information learned about types of partnerships and relations suggest different strategies will be needed for different types of partners if a generalized epidemic is to be averted.

Male-Female Differences in Alcohol-Related Attitudes: Data From Purposive Sample Surveys of Adults in Slovenia: 2001–2005

Epidemiology

Slovenia

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In many countries, with respect to the use of alcohol, tobacco, and many other drugs, traditional male-female differences are in flux, and there are concurrent changes in attitudes about alcohol policies and behaviors. In this research, conducted in Slovenia with purposive sample surveys, we sought to estimate male-female differences in selected attitudes toward drinking.

Each year from 2001 to 2005, the Slovenian “WIN OR LOSE—YOU CAN CHOOSE” Foundation conducted surveys of young people onsite at shopping malls, nightclubs, and sporting events. Summed across these years, purposive sampling at these venues yielded a total of 34,643 adult participants (45 percent male; mean age=25 years), each of whom consented to answer six attitude questions and four demographic items. Attitudes were assessed via items about the appropriate age to (a) drink alcohol for the first time, (b) get drunk for the first time, and (c) drink regularly, and about appropriate quantities to drink (a) during the weekend, (b) while on a date; and (c) when going to school or work. The generalized linear model with logistic link and generalized estimating equations (GIM/GEE) were used to estimate male-female differences, with robust estimation of standard errors and statistical control for interdependent covariates.

Despite a background of secular trends in drinking, males held more favorable and liberal attitudes toward drinking as compared to females. For example, with respect to a summary conservative attitude scale, males showed more liberal values (estimated odds ratio 0.85; $p < 0.001$); the same was true for individual items (all $p < 0.001$), even with covariates held constant (age, occupational status, year of survey).

These purposive survey estimates are being used to guide the Foundation's plans for Internet and other mediated information campaigns, with due attention to recent evidence of boomerang effects in these types of campaigns (i.e., media messages yielding results opposite of those intended).

An International Core Addiction Training Curriculum: The Treatnet Training Package

Treatment

United States

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In December 2005, the United Nations Office on Drugs and Crime (UNODC) launched the “International Network of Drug Treatment and Rehabilitation Resource Centres” (Treatnet), a global initiative to address the need for accessible and quality drug treatment and rehabilitation services. The Treatnet system consists of 20 Resource Centres located in sites around the world, whose mission is to develop the capability to serve as addiction training centres in their country and ultimately in their region of the world. UCLA Integrated Substance Abuse Programs (ISAP) was chosen as the lead centre for a consortium of institutions to develop a core training curriculum for use by the trainers in the 20 resource centres of this UNODC effort. The core curriculum is intended to transfer technology and knowledge on substance abuse interventions to service providers in the 20 Treatnet regions. A needs assessment to determine training priorities consisted of questionnaires, site visits, a meeting/conference in Cairo, Egypt, and face-to-face interviews with centres’ Focal Points (a representative from each centre chosen by the UNODC).

The Core Curriculum: The curriculum is designed to address three major treatment domains (Volumes) and within each domain, three specific topic areas (Modules). The domains and topics are: Volume A. Screening, Assessment, and Treatment Planning; Module 1: Screening and Brief Interventions (Emphasis on the ASSIST); Module 2: Client Assessment (Emphasis on the ASI); Module 3: Treatment Planning (Emphasis on the SMART Method); Volume B. Elements of Psychosocial Treatment; Module 1: Basic Counseling Skills; Module 2: Motivational Interviewing; Module 3: Cognitive/Behavioral (Relapse Prevention) Approaches; Volume C. Detoxification, Pharmacotherapies and Special Populations; Module 1: Detoxification Approaches; Module 2: Opiate Pharmacotherapies (Methadone, Buprenorphine, Naltrexone); and Module 3. Special Populations (Co-occurring Disorders, Women, Adolescents).

The needs assessment identified a set of program management and administrative issues as important training needs. Hence, information on a fourth domain (Volume D. Program Management and Service Development) is being developed for

program administrators to access via existing online training resources.

A total of 30 UNODC Trainers have been trained. The UNODC Treatnet Trainers have received a minimum of 120 hours of intensive training using didactic, mock training role plays, and visits to treatment providers to view treatments in application. Trainers have developed a detailed training plan for their centres to be implemented between January and May 2007. The monitoring and evaluation plan includes: knowledge and skill assessments for the trainers and the trainees they teach; measures to determine if the skills are applied in home region and trainee satisfaction questionnaires.

Detection of Latent Tuberculosis in Drug Addicts: A Comparison of a Whole Blood Interferon-Gamma Assay and the Tuberculin Skin Test

Epidemiology

Spain

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Drug users are at high risk for HIV and tuberculosis (TB) infections. A major challenge in TB control is the diagnosis and treatment of latent tuberculosis infection (LTBI). The tuberculin skin test (TST) has been used for more than 100 years to identify LTBI, but it has several limitations: low sensitivity in immunocompromised patients; poor specificity in those vaccinated with BCG or exposed to other mycobacteria; and the requirement for a return visit. Recently, a whole-blood interferon-gamma (IFN-gamma) assay based on the detection of IFN-gamma secretion by peripheral T-cells upon incubation with two Mycobacterium Tuberculosis specific antigens (ESAT-6 and CFP-10) was introduced for the in vitro diagnosis of LTBI. The sensitivity of the assay is 85 percent in patients with active TB and the specificity and 98 percent in populations at low risk of TB. However, very limited information is available on the performance of IFN-gamma tests in HIV-positive and HIV-negative drug addicts.

The goal of this study was to evaluate an ESAT-6- and CFP-10-based whole blood IFN-gamma assay and to compare it with the standard TST.

Patients admitted to substance abuse treatment from February 2005 through September 2006 were screened for LTBI by using ESAT-6/CFP-10-based

whole blood IFN-gamma assay (Quantiferon TB Gold, Cellestis, Carnegie, Australia) and TST (2-TU RT23). Patients with a history of positive TST (n=10) or TB disease (n=6) were excluded from the tuberculin skin test. All patients were evaluated for HIV infection by EIA and Western Blot.

The study population included 72 patients with a median age of 39 years; 59 of them (82 percent) were male. The main drug of abuse was alcohol in 32 patients (44 percent), cocaine in 24 (34 percent) and heroin in 14 (20 percent). Nineteen patients (27 percent) were current injection drug users. Among 15 patients (20.5 percent) that were HIV-positive at entry, the median CD4-cell count was 586 cells and median HIV-viral load was 7.800 cp/ml.

Overall, IFN-gamma assay was positive in 26 patients (36 percent) with no differences between the HIV-positive (33.3 percent) and HIV-negative (36.8 percent) drug addicts ($p=0.8$). TST was positive (≥ 5 mm in HIV+ or ≥ 10 mm in the HIV-seronegative) in 17 (23 percent) patients, negative in 39 (55 percent). The Kappa coefficient agreement between the in vitro and the in vivo test was $k = 0.74$. The sensitivity and specificity of the IFN-gamma assay for diagnosis of LTBI was 76.5 percent and 95 percent, respectively. The positive predictive value (PPV) was 87 percent, and the negative predictive value (NPV) was 90 percent.

In conclusion, IFN-gamma assay based on specific TB antigens for the diagnosis LTBI have a good concordance with the tuberculin skin test. The IFN-gamma in vitro test seems to be highly specific for diagnosis of latent tuberculosis infection in this population

Community Reinforcement Approach Plus Vouchers for Cocaine Dependence in a Community Setting: A Randomized Clinical Trial

Treatment

Spain

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The development and dissemination of effective treatments for cocaine dependence is an important public health priority in Spain. There is extensive clinical evidence that the Community Reinforcement Approach (CRA) plus Vouchers is effective in the treatment of cocaine addiction. It is of great interest, therefore, to analyze the extent to which the efficacy of CRA plus contingent vouchers in the United States is reproduced in a different socio-cultural reality, such as that of Spain. Furthermore,

contingency management interventions that provide incentives have rarely been tested in community-based settings, with the exception of some recent studies that employ vouchers in conjunction with standard care, though not with CRA.

The main objective of the present study was to analyze the effectiveness of the CRA plus Vouchers for treatment in achieving cocaine abstinence and treatment retention in a community setting in Spain. Eighty-three cocaine-dependent patients who enrolled in an outpatient program for cocaine dependence were assigned to one of two treatment groups, CRA plus Vouchers or standard care. The CRA therapy comprises five components: drug avoidance skills, lifestyle change components, relationship counseling, other substance abuse, and other psychiatric problems. The CRA was implemented according to the manual published by Budney and Higgins (1998), with one difference: in the original version all of the modules were applied individually, but in our case, we applied them both individually and in groups. Patients in the CRA plus Vouchers group received vouchers for cocaine-negative urine samples. Patients in standard care participated in self-help therapy groups of 10 to 12 people, in 90-minute sessions, twice a week. Components of the group sessions were as follows: information on health and drugs, raising awareness about the problem of addiction, expression of emotions and personal difficulties, solutions to problems, prevention of relapses, educational and vocational guidance, training and leisure activity workshops, and resolution of family and interpersonal conflicts.

Of the patients who received CRA plus Vouchers, 64.5 percent completed 24 weeks of treatment, versus 36.5 percent of the patients who received standard care. In the CRA plus Vouchers group, 35.5 percent of the patients achieved 24 weeks of continuous cocaine abstinence, versus 21.2 percent in the standard care group.

These results support the effectiveness of CRA plus Vouchers for retaining outpatients in treatment and achieving cocaine abstinence in a community setting in Spain. Moreover, our study suggests the generalizability of CRA plus Vouchers beyond the United States, with similar levels of effectiveness. Even so, these results remain to be confirmed in longer followup studies with larger sample sizes.

Quality of Life of the Citizens of the Republic of Kazakhstan, Included in the Group at Social Risk

Prevention

Kazakhstan

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The purpose of this research is to develop harm reduction programs, rehabilitational, medical, psychological, and social programs for citizens of Kazakhstan who are included in the group at social risk, including: drug abusing persons, persons dependent on drugs, commercial sex workers, persons who are in prison, and persons living with HIV/AIDS.

A working team will be formed to carry out the research and to develop and duplicate a questionnaire for the collection of primary data.

A representative sample (Kahn H.A., Sempos C.T., 1989) of between 80 and 150 research subjects will be recruited in each of the four risk categories for a total of 320-600 experimental subjects. The control group also will consist of 320-600 men, matched in gender, age, and ethnicity to the experimental group. The Questionnaires of Quality of Life, Version WHOQOL-100 will be administered and primary data will be collected and entered into an electronic database. Mathematical and statistical analyses will be conducted, results of the research will be registered, and a research report written.

The research data will be cross-sectional both for the experimental and the external control groups (Kleinbaum D. et al., 1982).

The results of this research will assist in the development of harm reduction programs as well as rehabilitational, medical, psychological, and social programs for persons who are included in the group of social risk, and in the development of methodological recommendations for the persons working in those programs, focused on working with a quota of individuals included in the group at social risk.

“concentrated prevalence country” that is on the cusp of a major AIDS epidemic. In analyzing current trends, the Indonesian National AIDS Commission estimates that 12 to 19 million Indonesians are at risk for becoming infected, should current patterns of transmission continue. Injection drug use (IDU) accounts for most new infections, followed by risky sexual behavior. Concurrently, the number of new IDUs at risk also appears to be rapidly rising. Prevention efforts, however, are hampered by a severe lack of information about the drug injection and sexual risk practices of Indonesian IDUs. This study examines the injection practices of 425 IDUs in Jakarta and also compares the risk practices of older users to their younger counterparts.

Between July and August 2004, Kiosk Atma Jaya conducted an evaluation survey covering IDUs in Jakarta. Needle-sharing and other related risk practices in the preceding 7 days by age and duration of injection were compared by using a univariate and multivariate model. Total IDUs interviewed were 425. Younger (≤ 25 years) and newer (≤ 5 years) IDUs were reported by 166 (39 percent) of participants, whereas older (> 25 years) and longer term (> 5 years) IDUs were reported by 84 (20 percent) of participants.

The univariate analysis revealed younger age (OR: 1.03; 95 percent, CI 0.65-1.64); group injections more than 3 (OR: 1.07; 95 percent, CI 0.59-1.93); higher frequency of injection (OR: 1.98; 95 percent, CI 1.23-3.20); inject heroin (OR: 2.07; 95 percent, CI 0.72-5.95); inject in public settings (OR: 13.36; 95 percent, CI 5.69-31.35); getting needle from drug store (OR: 18.99; 95 percent, CI 10.26-35.16); sharing water (OR: 1.10; 95 percent, CI 0.47-2.55); gave their own used needle to persons socially closer (OR: 1.35; 95 percent, CI 0.85-2.13); and longer duration of injection (OR: 1.30; 95 percent, CI 0.83-2.02) were associated with needle-sharing. After adjusting for injection settings, frequency, and source of getting needle; younger and newer IDUs were more likely to receptively share needles (adjusted odds ratio [AOR], 1.22; 95 percent, CI 0.71-2.10) but less likely to share water [AOR, 0.79; 95 percent, CI, 0.45-1.43) compared to older and longer term IDUs.

Despite that the results were not significant, they show a potential for rapid dissemination of HIV infection. This rapid spread of HIV infection can be curbed by promoting clean needles and drug equipment. Public health interventions are needed to help younger and newer IDUs avoid needle-sharing as well as continuing outreach interventions to the older and longer term IDUs.

S

Injection Risk Practices Among Injection Drug Users in Jakarta, Indonesia

Epidemiology

United States

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Indonesia currently is classified according to the World Health Organization (WHO) typology as a

Association Between Age of First Drink and Alcohol-Related Problems in Adolescents from a Brazilian Countryside City

Epidemiology

Brazil

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Adolescent alcohol use is a multivariate process, with the influence of both neurobiological and environmental factors (EF). Early onset of alcohol consumption (before age 13) is associated with higher levels of alcohol and drug dependence and with their related social and physical impairments. According to a recent Brazilian national survey conducted in State capitals, the mean age of first drink (AFD) was 12.5 (SD=2.1). However, little is known about the association of AFD and EF with alcohol-related problems (ARP) in adolescents from countryside cities of Brazil, which represent 25 percent of the Brazilian population. This is of special interest since there are remarkable cultural differences between adolescents from urban versus country regions in Brazil.

The objectives of this study were to evaluate the association between AFD, EF (age, gender, socioeconomic status, religion, underage work, sport practice, and family history of alcohol use), and ARP in adolescents from a countryside city.

A cross-sectional study was carried out with high school students of the city of Veranópolis (population of 21,064 inhabitants), in the south of Brazil. The inclusion criteria were: high school students, aged between 14 and 18 years old. Alcohol-related information was based on a Self-Administered Questionnaire (SMART) and EF was systematically assessed as usually done by our group. The dependent variable (ARP) was built up using the following questions: frequency of alcoholic use in the last month, binges in the last month, and legal problems related to alcohol use. The independent variables were AFD and EF.

From the 864 eligible subjects, we recruited 778 subjects. Subjects' mean age was 16.12 (SD=1.02), with 52.8 percent of female gender and most of the sample (60 percent) from a social class "A or B" (from A-E). Lifetime and past-year use of alcohol was 96.8 percent and 93.3 percent, respectively. The AFD in the entire sample was 12.26 (SD=2.66, n=478). According to the logistic regression analysis, adjusting results for potential confounders, we found an inverse association between AFD and ARP (OR=0.89, CI 95 percent = 0.83-0.96, p=0.003),

and a direct association between religion (OR=1.80; CI 95 percent=1.09-2.95, p= 0.02), underage work (OR=1.58, CI 95 percent =1.04-2.38, p=0.03), family history (OR= 1.66, CI 95 percent = 1.11-2.49, p=0.01), and male gender (and 1.67, CI 95 percent = 1.11-2.52, p=0.01) and ARP. Adolescents who had AFD less than 13 years had more ARP, and each year of delayed alcohol initiation was associated with 13 percent less ARP.

Our findings on the association of AFD and EF with ARP in a countryside adolescent high school population are similar to reports of larger urban areas. Longitudinal studies with this specific population are recommended.

Substance Use Among High School Students in Southern Thailand

Epidemiology

Thailand

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A national survey of Thai students in 2001 and 2002 displayed behavior that strongly indicated that illicit substance use seemed to be increasing. The current project aims to provide information at a regional level on the magnitude of health risk behavior, substance abuse, and attitudes towards substance use in school-age children. Annual regional surveys of representative students in public and private secondary schools in Southern Thailand have been carried out since 2002. In this paper, we report the prevalence of substance use and health-risk behavior among high school students based on data collected in 2005.

A sample of 11,135 students from 48 high schools and vocational schools in the eight provinces of southern Thailand were surveyed in 2005, using a self-completed questionnaire. The sample was taken from years 7, 9, and 11, and at the vocational schools in year 2.

The prevalence of lifetime use of any illicit substance was 13.8 percent for the boys and 2.2 percent for the girls. Among these students, 61.6 percent of boys and 30.7 percent of girls had used at least one illegal drug within the previous 30 days. The most commonly used substances reported were kratom, a local addictive plant (10.3 percent for boys and 0.1 percent for girls), cannabis (6.3 percent for boys and 0.6 percent for girls), methamphetamine (2.3 percent for boys and 0.2 percent for girls), and inhalants (1.4 percent for boys and 0.6 percent for girls). The average age of starting use was 13.1-14.5 years. Among each of the listed substances used, 15.7 percent, 6.4 percent, 6.0 percent, and

20.5 percent of respondents had started at an age younger than 12 years for kratom, cannabis, methamphetamine, and inhalants, respectively. The majority of students who reported the use of these substances at some stage of their lives (kratom, cannabis, methamphetamine, and inhalants) also reported their use during the preceding 12 months and about half had used them in the preceding 30 days before the survey. Moreover, the prevalence of health-risk behaviors (i.e., drinking and driving, carrying weapons, threatening, fighting, depression, suicide attempt, smoking, drinking, and having sex) among students who have used illicit substances was significantly higher than students who had never used ($p < 0.0001$).

In conclusion, kratom and cannabis were the most commonly used illicit drugs in a lifetime; more than half of surveyed students who reported having used any illicit substances in their lifetime had used them within the previous 30 days, and there was a strong link between using drugs and other high-risk health behaviors.

Forensic Medical Evaluation of Chronic Hepatitis in Drug Addicts

Basic Science

Kazakhstan

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Lesions of the central nervous system and cardiovascular system in chronic drug addicts are well described, and are explained by direct toxic effects of drugs on the respiratory center, circulatory system, and the heart. However, with increasing numbers of drug addicts, more attention should be given to the pathologic conditions with which drug addicts are living, for example, chronic hepatitis. Diagnosis of chronic hepatitis in drug addicts is becoming more topical considering evaluation of the quality of life of the patient.

We conducted a retrospective analysis of autopsy material from CFM in the city of Astana during a 5-month period of 2006. There were 19 cases in total, including 18 men and 1 woman, ranging in age from 20-49.

In 9 cases, we detected traces of injection on the skin. Chemical analysis showed a presence of ephedron, morphine, and phenobarbital. In 10 cases, ephedron was combined with alcohol. During the autopsy, in

18 cases, the size of the liver was normal, the surface was smooth, with thick and elastic consistency. In one case, the size of the liver was decreased with micronodular cirrhosis and thick consistency. During the histological research, in 18 cases, we determined chronic aggressive hepatitis gradually translating to cirrhosis. Chronic long-lasting hepatitis was characterized by lymphoid infiltration in portal tracts, varying from moderate to intensive.

In conclusion, analysis of morphological research has demonstrated a presence of chronic hepatitis in all autopsy cases. Apparently, the presence of chronic hepatitis in drug addicts, even in benign clinical courses, presumes inclusion of medications having hepatoprotective effects in the prescription during counter-recurrent treatment and in acute conditions. Medicinal preparations that have a hepatotoxic effect are not recommended. It is necessary to consider chronic hepatitis in drug addicts as a condition for development of complications connected to the deranged protein metabolism.

KAP and Experience of Drug Use and Sexual Behavior Among High School Students in Jakarta, Indonesia

Epidemiology

Indonesia

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A school-based survey was implemented in Jakarta in 2006 by the Jakarta Provincial Narcotics Board. The survey was designed to collect a description of knowledge, attitudes, perceptions, and experience related to drug use and sexual behavior of high school students. The results are important for policymakers and other stakeholders in the area of substance abuse prevention, especially in developing strategies and programs for young people. There are various factors in influencing adolescents' behavior. Parental factors compete with peer factors. Peers contribute to a lot of adolescents' knowledge and attitudes toward drugs and other risky behaviors.

The survey included 13,544 high school students from grades 7 to 12 from a sampled school. Stratified random sampling was applied to determine which school was included.

The subjects filled out a self-administered questionnaire. With regards to some knowledge, senior high school students (grades 10 to 12) showed

more knowledge than junior high school students (grades 7 to 9). Forty-nine point nine percent of senior high school students (seniors) knew that drug users sometimes may not be able to control their drug-taking behavior, while only 29.7 percent of junior high school students (juniors) were aware of this. Seventy-two point seven percent of seniors knew that injection drug use was a high risk for HIV transmission, compared to 47.9 percent of juniors. In terms of attitudes, seniors are more permissive in drug-taking behavior than juniors. Six point nine percent of seniors agreed that smoking is necessary for socialization, compared to 5.3 percent of juniors. Nine point four percent of seniors agreed that getting drunk at a party is normal, while there were only 5.4 percent of juniors who agreed. Two point four percent of seniors agreed that using drugs is normal in seeking appropriate friends, whereas only 1.5 percent of juniors agreed on that statement. Premarital sexual activity was more common for seniors (3.1 percent) than juniors (0.5 percent). The average age for first having sex was 15 to 16 years old was. Using condoms was uncommon most of the time among those who have had sex. Among all subjects (juniors and seniors), solvent inhalants are the drug used most frequently in lifetime prevalence (5.9 percent), followed by cannabis (5.5 percent), benzodiazepine (2.1 percent), ATS (0.9 percent), and heroin (0.6 percent). However, for the last 30 days, cannabis is the most common drug (3.2 percent), followed by solvent inhalants (2.5 percent), and so on. With regards to family closeness, there were 31.8 percent of the subjects who regularly talked and shared their experiences with their parents; 26 percent had opportunities to share their problems with their parents; 36.1 percent admitted that their parents paid sufficient attention to their needs; and only 8.7 percent indicated they had regular family vacations.

Description, Treatment Characteristics, and Treatment Outcomes of Substance-Abusing Adolescents Treated in Israel

Epidemiology

Israel

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The phenomenon of illegal substance abuse and abuse of inhalants is rapidly growing among Israeli adolescents. Epidemiological studies conducted by the Israeli Anti-Drug Authority on an ongoing basis report steady growth in substance abuse among this population, as well as a decrease in age and an increase in diversity of substances in use. The last study, published in 2006, emphasizes the increase

in the use of inhalants (roughly 16 percent of adolescents surveyed around the country reported inhalant abuse). The main organization providing treatment to adolescents in Israel is Al-Sam.

The aim of this study was to portray the characteristics of adolescents entering treatment to Al-Sam, to study the treatment process, and to evaluate its outcomes.

A special questionnaire was designed and administered to 92 randomly sampled adolescents from Al-Sam's database. The questionnaire contained 51 items (20 items collecting socio-demographic and substance abuse history prior to treatment, 22 items examining the treatment provided to each subject, and 9 items evaluating treatment outcomes), and was completed by a member of the research team with the aid of each subject's therapist. Information gathered was based on each subject's treatment file.

The sample was composed of 78 percent males and 22 percent females. Mean age was 16.6 years, with a range of 12 to 20. Most of the subjects were born in Israel (71 percent). Twenty-five percent of parents were new immigrants from the former Soviet Union, and 25 percent of parents were divorced. The socioeconomic status of the families was similar to that of the overall population. The main substance abused was marijuana (90.2 percent), followed by Ecstasy (23 percent), LSD (14 percent), and inhalants (12 percent). Forty-eight percent reported alcohol abuse. Ninety-two percent entered treatment following external pressure (34 percent were referred by probation officers, 25 percent by schools). Results indicate high rates of success in treatment (73.4 percent stopped using all types of drugs). Also, it seems that substance abuse among adolescents treated in Al-Sam can be attributed more to emotional and developmental personality disorders (32.6 percent suffer from ADD/ADHD) and to problems within the family (27 percent were exposed to violence in the family) than to socioeconomic background, educational level, substance abuse, and criminal activity of other family members. Additional findings will also be presented.

As the treatment in Al-Sam was found to be effective, it is important to encourage more adolescents to enter treatment. It is also important to establish and maintain connections and to raise awareness among authority figures such as parents, teachers, and probation officers. Another priority should be to involve parents in the treatment process as many of the adolescents pointed to family relationships as a main concern. ADD/ADHD was found to be one of the major issues facing adolescent substance abusers. Therefore, training treatment personnel in this area is imperative.

**Buprenorphine versus Naltrexone
Maintenance Treatment for Opium- or Heroin-
Dependent Individuals in Iran: Preliminary
Findings of a Pilot Randomized Clinical Trial**

Treatment **United States**

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Iran recently introduced opioid agonist (methadone, buprenorphine) and antagonist (naltrexone) maintenance treatment. This study is intended to aid in developing the drug abuse treatment and clinical research infrastructures in Iran and to compare the efficacy of naltrexone and buprenorphine and evaluate differences in treatment response between opium and heroin users.

This project included a randomized 12-week clinical trial with 128 opioid-dependent males, 28.6 (5.9) years of age, including 42 (33 percent) reporting primary opium use and 85 (67 percent) reporting primary heroin use. Primary outcome measures included: retention, time to resumption of opioid use (first opioid-positive urine test) in twice weekly testing, and time to relapse (two consecutive positive tests) after detoxification. Secondary outcomes included: proportions of patients with good response (>80 percent opiate-negative tests) or abstinent (100 percent opiate-negative tests) during the last 4 weeks of the study.

Results indicate that retention was significantly higher for the buprenorphine versus naltrexone group (mean 74 versus 61 days; $p=0.003$); 75 percent (49/65) of buprenorphine versus 49 percent (31/63) of naltrexone patients completed the 12-week study ($p=0.002$). Mean time to first opioid use (30 days [CI 23-38] versus 22 days [CI 15-29], relapse (51 days [CI 43-59] versus 44 days [CI 35-52]), and proportions with > 80 percent opiate-negative tests (46 percent versus 33 percent) or 100 percent negative (26 percent versus 24 percent) during the last 4 weeks did not differ significantly. There were no overall differences in treatment response between primarily heroin or opium users, but opium users treated with naltrexone had significantly lower retention ($p=0.005$) and lower proportion with good response in the last 4 weeks of the study (24 percent versus 39-52 percent).

Buprenorphine maintenance is associated with higher retention and opium users responded less favorably to naltrexone treatment.

This project was supported by NIDA: R01 DA14718-02S1, K24 DA00445.

**Drug Abuse and Criminality in Juveniles in
New Delhi: Public Health Issues**

Epidemiology **India**

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Children are often victims of multiple abuses, including drug abuse. Globally, the problem emerges as a significant public health threat to the World's 30 to 100 million street children (WHO, 1998). Delhi, with a population of over 150 million, has between 80,000 to 100,000 street children, and drug abuse is reported as a major health problem in this segment of the population.

The objectives of this project were: (1) to study the current trends of drug abuse in juveniles, and (2) to establish the relationship of drug abuse with criminal behavior.

The study was conducted in the Prayas Observation Home for Boys, which is a short-stay home for juveniles under inquiry. The home is run by Prayas, an NGO, under agreement with the Department of Social Welfare, Government of the National Capital Territory of Delhi. It houses 150 children between the ages of 8 to 18 years at any given point in time, and the maximum period of stay is 3 months. In the present study, 601 juveniles ages 8 to 18 years, sent by the juvenile court, were included. The information was obtained both by a semistructured questionnaire and a face-to-face interview.

The study brings out high prevalence of drug abuse in the juveniles, with tobacco being the commonest (58 percent), followed by cannabis (17 percent), inhalants (20 percent), alcohol use in over 10 percent, and heroin in 5 percent of cases. The nature of the crime was burglary and theft in over 70 percent, murder and attempted murder in over 10 percent, and rape in 12 percent. The study brings out increasing trends of drug abuse in the neglected children, and there is a relationship between drug abuse and criminal behavior. This paper will highlight the policy and public health issues relevant to drug abuse and criminal behavior in neglected children.

PET Imaging of Dopamine Transporter and Drug Craving During Methadone Maintenance Treatment and After Prolonged Abstinence in Heroin Users

Basic Science

China

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It has been documented that methadone maintenance treatment (MMT) is effective in reducing drug craving and relevant risk behaviors in heroin users. Long-term MMT induces cognitive impairment, however, it is not understood whether MMT impairs the dopamine transporter in the striatum.

To establish whether chronic opiate use might impair brain dopamine neurons in humans, we assessed the dopamine transporter (DAT) uptake function in the striatum (caudate and putamen) and analyzed the correlation between DAT in the striatum and heroin craving or subjective anxiety in former heroin users with prolonged abstinence (PA) and in patients receiving MMT.

Binding of [¹¹C] CFT as a brain dopamine transporter ligand was measured with positron emission tomography (PET) in 10 former heroin users with PA, 10 patients receiving MMT, and 10 healthy control subjects. Heroin craving and subjective anxiety in PA and MMT groups were assessed, and the correlations between DAT of striatum and heroin craving or subjective anxiety were determined.

In comparison with healthy control subjects, MMT subjects had lower DAT uptake function in the bilateral caudate and putamen, and PA subjects showed significantly lower DAT uptake function in the bilateral caudate. Moreover, in comparison to the PA subjects, the MMT subjects showed significant decreases of DAT in the bilateral putamen. DAT uptake function in bilateral striatum was not associated with heroin craving in PA or in MMT subjects, however, DAT uptake function in the bilateral caudate was significantly correlated with subjective anxiety in MMT subjects.

We can conclude that chronic opioid use induces long-lasting striatum dopamine neuron impairment, and prolonged withdrawal from opioids can benefit the recovery of impaired dopamine neurons in the brain.

Repeated Administration of Methamphetamine Downregulates Cannabinoid CB1 Receptors in VTA of the Rat Brain

Basic Science

Czech Republic

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Our previous studies showed that a behavioral sensitization is developed in rodents to methamphetamine psychostimulatory and antiaggressive effects upon repeated administration, not only of this drug, but also of the cannabinoid CB1 receptor agonist. On the contrary, the pretreatment with cannabinoid antagonist suppressed the sensitization to methamphetamine (Landa et al., *Neuroendocrinol Lett*, 2006, 27, 63–69; Landa et al., *Neuroendocrinol Lett*, 2006, 27, 703–710). These results confirmed that the endocannabinoid system is involved in the neuronal circuitry underlying the development of sensitization to methamphetamine, which may be a key role to reinstating effects of this drug of abuse. It was reported that region-dependent CB1 receptor downregulation is produced by long-term cannabinoid and also alcohol administration (Sim-Selley, L.J. et al., *Mol Pharmacol* 2006, 70:986–996; Basalingappa L. et al., *Ann NY Acad Sci*, 2004, 1025: 515–527).

The aim of the present study was to investigate if the behavioral sensitization to methamphetamine is associated with a change of CB1 receptor density in the ventral tegmental area (VTA), the brain region involved in modulation of drug rewarding effects.

Rats were trained to self-administer injection of either saline solution (controls) or methamphetamine (in average intake of 25 doses of 0.08 mg./kg. per day; 2 weeks) and then administered intraperitoneally with 2 mg/kg/day or saline solution (controls) for 7 days. Both groups of animals were then euthanized by anesthetic overdosing, perfused transcardially by fixative, the nervous tissue was removed, and cryostat sections were incubated for immunofluorescent detection of CB1 receptors, the intensity of which was assayed by image analysis.

In comparison to the control animals, the significantly decreased density of cannabinoid CB1 receptors on neuronal membranes of the VTA was found in methamphetamine-treated rats.

Methamphetamine is known to increase activity of neurotransmitters at dopaminergic and noradrenergic synapses. CB1 cannabinoid receptors are located in the VTA on presynaptic

glutamatergic and GABAergic neurons, and their activation produces inhibition of release of these neurotransmitters. In the case of downregulation of CB1 receptors after methamphetamine repeated administration, the inhibiting influence of GABA is decreased and thus the dopaminergic pathway activation by methamphetamine might be more intense. This can also be supported by greater release of endocannabinoids from activated dopaminergic neurons, which may act physiologically as retrograde inhibiting modulators of GABAergic and glutamatergic input to VTA dopaminergic neurons (Maldonado, R. et al., Trends Neurosci 2006; 29:225–232). These neuroplastic changes can be expressed as behavioral sensitization to methamphetamine.

This study was supported by MSM0021622404.

Decreased Frontal and Temporal Cortical Thickness in Cocaine Dependence: Preliminary Results

Basic Science

South Korea

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Cocaine-dependent subjects exhibit executive dysfunction and abnormal cue-induced craving, which are, in part, mediated by frontal and temporal lobes. This study tested differences in frontal and temporal cortical thickness between cocaine-dependent and healthy comparison subjects using cortical surface-based analysis.

Brain MR images of 14 cocaine-dependent subjects and 17 healthy comparison subjects, a subset of

larger cohorts of 50 cocaine abusers and 50 healthy volunteers, were analyzed using the Freesurfer software. Brain MR images were acquired using a three-dimensional spoiled gradient echo pulse sequence (1.5-T GE whole-body imaging system, TR=35ms, TE=5ms, 256x192 matrix, FOV=24cm, FA=45, NEX=1). Brain surface reconstruction and measurement of cortical thickness were conducted automatically and group differences in cortical thickness, defined by the distance from gray/white boundary to the pial surface, were assessed from statistical difference maps.

The cocaine-dependent group showed a significant decrease of cortical thickness in the right inferior frontal cortex (Brodmann area, BA 9), right superior and middle temporal gyrus (BA22, 21), and left middle frontal cortex (BA 10) (all $p < 0.01$) relative to the comparison group.

This preliminary study reports that cocaine abusers have cortical thinning in prefrontal and temporal cortex suggesting these deficits may be associated with craving behavior and impaired cognitive function in cocaine abusers.

This study was supported, in part, by grants from NIDA INVEST Fellowship (YHS); the National Institute on Drug Abuse (DA09448 and DA15116 to PFR, DA50038 to DAC); the National Institute on Alcohol Abuse and Alcoholism (K23AA13149 to CCS, AA013727 to DAC); the National Center for Research Resources (M01RR00533); and the Gennaro Acampora Charity Trust to the Division of Psychiatry, Boston Medical Center.

Methylphenidate-SODAS Reduces DAT Binding in Adolescents with Attention-Deficit/Hyperactivity Disorder Plus Substance Use Disorder: A Single Photon Emission-Computed Tomography with [Tc99m] TRODAT-1 Study

Treatment

Brazil

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Epidemiology

Brazil

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Hepatitis C virus (HCV) infection is a major public health problem. Globally, it is estimated that up to 170 million persons are infected with HCV, and millions more are infected each year. HCV subtype characterization and distribution, which is known to vary geographically, is an important factor in the treatment and prognosis of the disease, and may have important implications for HCV vaccine development.

We assessed the epidemiological, serological, and molecular aspects of HCV infection, among two high-risk cohorts in one locale, San Francisco, California: (1) young (<30 years) HIV-negative injection drug users (IDU) with incident HCV infection, and (2) HIV-positive patients with established HCV co-infection.

A total of 221 HCV-infected subjects were studied: ninety-two subjects were identified from a prospective study of HIV-uninfected active injection drug users, all of whom were < 30 years old and all of whom experienced acute HCV infection (the UFO Study). One hundred twenty-nine subjects were identified from a study of chronically HIV-infected subjects (SCOPE), most of whom had long-term established HCV infection. All participants were tested for anti-HCV (Ortho EIA 3.0, and RIBA 3.0, Chiron, Corp) and HCV RNA (dHCV TMA, Genprobe/Chiron Corp, and COBAS Amplicor HCV Monitor Test 2.0, Roche Diagnostics). Genotyping was conducted using Versant HCV Line Probe Assay (Bayer).

The median age of young IDUs was 22.4 years (interquartile range (IQR) 20-26); most were male (68.8 percent) and white (74.7 percent); and none were HIV infected. The median age of the HIV/HCV coinfecting participants in SCOPE was 45 (IQR, 40-51); most were male (85 percent) and white. Significant differences were found in the distribution of HCV subtypes between these two populations (Table 1). Among young HIV negative IDUs with acute HCV, genotype 3a was most prevalent ($p < .01$), compared to HIV/HCV co-infected patients, where genotype 1 (1,1a and 1b) was most prevalent ($p < .01$).

Attention-Deficit/Hyperactivity Disorder (ADHD) is highly prevalent among adolescents with substance use disorders (SUD). The clinical effects of methylphenidate (MPH) on ADHD are attributed to its ability to increase synaptic dopamine concentration by blocking the dopamine transporter (DAT) in the striatum. However, most abused drugs influence the striatal dopamine level, which emphasizes the need to better understand MPH effects in youths with ADHD+SUD.

The objective of this study was to evaluate DAT density on the effect of a long acting presentation of MPH (MPH-SODAS) in 17 stimulant-naïve adolescents with ADHD and SUD using Single Photon Emission-Computed Tomography (SPECT) with [^{99m}Tc]TRODAT-1.

Subjects underwent two SPECT scans with [^{99m}Tc]TRODAT-1 (baseline and after 3 weeks on MPH-SODAS; dosages, in mg./kg./day were 0.3, 0.7 and 1.2 each week). ADHD severity measures were obtained using the SNAP-IV scale. For DAT density semi-quantitative analysis, specific binding using regions of interests in the striatum was calculated. Images were analyzed by two independent investigators unaware of medication status.

The sample comprised 17 adolescents with a mean age of 17.2 years (SD=2.3), all with SUD for cannabis (30 percent also for cocaine) and baseline SNAP-IV of 50.7 (SD=14.1). After 3 weeks on MPH-SODAS, subjects significantly reduced DAT binding from 1.24 (0.18) to 0.57 (0.26) ($p < 0.001$), concomitant to a clinical ADHD improvement (SNAP-IV reduction of 44 percent, $p < 0.001$) and controlling for changes in drug use. However, there was no significant correlation between changes in DAT binding and SNAP-IV from baseline to week 3.

MPH dopaminergic effects might be kept in the presence of SUD diagnosis and under current drug use in adolescents with ADHD. Our results corroborate the background for stimulant trials in adolescents with ADHD and SUD.

Table 1: HCV Genotypes Among HCV-Infected Participants in UFO and SCOPE Studies in San Francisco

HCV subtype	Young IDU (UFO Study)		HIV/HCV Co-Infected Patients (SCOPE Study)	
	N	(%)	N	(%)
1	24	26.1	65	50.4
1a	8	8.7	4	3.1
1b	11	12.0	26	20.2
1a/1b	0	0	4	3.1
2	3	3.3	5	3.9
2b	4	4.3	3	2.3
2a/2c	6	6.5	2	1.6
3a	33	35.9	17	13.2
4	0	0	2	1.5
4c/4d	0	0	1	0.8
Indeterm.	3	3.3	0	0
Total	92	100.0	129	100.0

Results of this study suggest that the epidemiology of HCV infection varies between populations in San Francisco. This variation may be associated with social mixing or due to temporal changes in the dominant circulating virus (with type 3a becoming more dominant over time). Regardless of the mechanism for the cohort-specific differences in HCV, it is clear that unique HCV epidemics exist in San Francisco and perhaps other urban centers. These findings might have significant implications for how this virus is controlled on a population level and how it is treated on an individual level.

Treatnet—International Network of Drug Dependence Treatment and Rehabilitation Resource Centres

Treatment

Austria

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The United Nations Office on Drugs and Crime (UNODC) initiated Treatnet in December 2005 as a tool to improve the quality of drug dependence treatment and rehabilitation through exchange of experience among members and partners. Treatnet aims at improving quality, accessibility, and affordability of drug dependence treatment and rehabilitation services worldwide.

During Treatnet's Phase I (2005-07), an operational network of 20 resource centers from all regions was

initiated. A training package was developed by a consortium led by UCLA, and training was delivered to trainers and service providers at Treatnet centers. Treatnet members prepared good practice documents on Community-Based Treatment, Sustainable Livelihoods for Rehabilitation and Reintegration, Role of Drug Dependence Treatment in HIV/AIDS Prevention and Care, and Drug Dependence Treatment in Closed Settings. The developers of the ASI in collaboration with the network created a Treatnet-ASI.

Fifteen additional treatment providers participate in the network electronically. The network cooperates with UNODC-supported regional and national treatment initiatives and is in close contact with partner organizations and networks such as WHO (Headquarters and Euro), UNAIDS, ILO, EMCDDA, CICAD, SAMHSA/CSAT, NIDA, Robert Wood Johnson Foundation (RWJF), and NIATx.

The Treatnet Web page and electronic forum have been online since June 2006 (www.unodc.org/treatnet).

Phase II is currently being planned for 2007–10, with the following core elements: (1) network sustainability and expansion; (2) dissemination of evidence-based practices to local/regional networks through training; and (3) demonstration of good practices through pilot initiatives.

The poster will present preliminary results of Phase I evaluation, outline key elements of the good practice documents, and introduce plans for Phase II.

Treatnet is funded by the generous contributions of the Governments of Canada, Germany, the Netherlands, Spain, Sweden, and the United States, as well as the Robert Wood Johnson Foundation.

Latino Immigrant Population and Alcohol Use and Abuse in Spain

Epidemiology

Spain

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The purpose of this study was to obtain information on the magnitude and characteristics of alcohol consumption in the Latin American immigrant population in the Autonomous Region of Valencia,

Spain, and to analyze whether the length of immigrants' residence in our country, as well as their perceptions of discrimination, have any influence on such patterns. This information will be used to determine the need to develop targeted prevention programs for this population.

The present study used quantitative methodology to obtain sociodemographic data; perceived discrimination and measure of acculturation data; patterns of alcohol consumption data; opinions and perceptions of alcohol data; and consumption of tobacco data. A total of 610 (314 women and 296 men) Latin American immigrants over 15 years of age, from the most representative nationalities (Ecuador, Colombia, Argentina, Bolivia, Uruguay, and Cuba) were interviewed. The field work was conducted in areas identified as leisure areas. The SPSS 13.0 and Stata 8.1 programs were used for the statistical data analysis.

Of this group, 23.2 percent were classified as nonconsumers of alcohol, 51.7 percent as prudent or low consumers, and 25.1 percent as moderate or "at risk" drinkers. More than 55 percent believe that they have more, or many more, possibilities to drink since arriving in Spain. For alcohol consumption, the explanatory variables were: gender (men were more likely to consume alcohol); smokers, who had a 12 percent greater likelihood of consuming alcohol; and discrimination (those who felt discriminated against were 27 percent more likely to consume alcohol). The length of residence in Spain was also an explanatory variable of alcohol consumption. The longer immigrants resided in Spain, the more likely they were to consume alcohol (9 percent).

In conclusion, there is a high prevalence of "at risk" drinking among Hispanic immigrants; consumption is higher among young people, males, smokers, and those who feel discriminated against. There is a need to develop specific programs focused on this sector of the population.

This study was partly financed by the Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica (I+D+I) and the Instituto de Salud Carlos III-Subdirección General de Evaluación y Fomento de la Investigación (número de referencia: PI052127), and by the 'Centro Superior de Investigaciones en Salud Pública (CSISP), Dirección General de Salud Pública & Dirección General de Drogodependencias, Agencia Valenciana de Salud, Conselleria de Sanitat, Generalitat Valenciana.

Sexual Acquisition and Transmission of HIV in St. Petersburg, Russia

Epidemiology

Russia

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The most recent data from St. Petersburg indicates that injection drug users (IDUs) comprise about 88 percent of new HIV infections. Predictions are that as the percentage of new HIV cases occurring in the general population increases, the percentage of new cases occurring in the IDU population will decrease. This study will attempt to understand the spread of HIV into the general population, so that it will become possible to predict the development of this spread based on scientific data.

This multisite, cooperative agreement program funded by the U.S. National Institute on Drug Abuse is underway in St. Petersburg, Russia, and at three sites in the United States. The research targets drug users (DUs) and men who have sex with men (MSM) and investigates HIV transmission from these groups to the general population. Respondent-driven sampling methodology is used to recruit DUs and MSM, their sex partners, and sex partners of sex partners through chain referral. Of special interest are the non-DU sex partners of DUs and the female sex partners of MSM. After informed consent procedures, study participants complete a computerized behavioral questionnaire, have pretest counseling, and give blood and urine samples to be tested for HIV, syphilis, gonorrhea, chlamydia, HBV, and HCV. They are scheduled for a visit in 2 weeks to receive test results with counseling. Outpatient medical counseling by specialists in infectious diseases and STDs is offered to study participants onsite.

Five hundred and twenty-six people were recruited through respondent-driven sampling and participated in the study during year 1, including 139 females. Among them, there were 374 IDUs, 19 DUs, 79 MSM, and 54 sex partners who do not belong to these risk groups. Behavioral and biological data of this sample will be available and discussed at the NIDA International Forum.

This is the first study in Russia that investigates sexual HIV transmission and will provide direct data for modeling the spread of HIV from high risk groups to the general population. Now, the first year is over and the data will be collected for 2 more years. Around 2,000 people will participate in the study. It is important to use this form of scientific data for further intervention, planning, and combating HIV transmission into the general population.

Review of Research on Cultural Adaptation of Preventive Interventions

Prevention

Russia

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Multi-ethnic societies require specific adaptation of preventive interventions for most vulnerable ethnic minorities and immigrant populations. Research on cultural adaptation of preventive interventions became used in multi-ethnic societies as well as in international studies in developing countries. Understanding social contextual mediators of risk in HIV/AIDS prevention and promoting cultural adaptation of clinical interventions have evolved from new priorities set forth by the National Institutes of Health (NIH) on ecological validity and translational research (NIH, 2001).

The purpose of this paper is to review research devoted to cultural adaptation of preventive interventions to explore impact of environmental factors on the effectiveness of preventive interventions.

Abstracts of 31 research articles for the last 5 years were extracted from the PubMed database using key words “cultural adaptation of intervention.” Analysis was directed at methodology of cultural adaptation of prevention interventions process and influencing factors.

A summary of research-based adaptation steps includes:

- (1) know the target population and community context;
- (2) select the program that best matches the population and context;
- (3) perform forward and backward translation;
- (4) assessment by a cultural linguistic committee;
- (5) hold focus group discussions;
- (6) pre-test;
- (7) perform pilot testing with targeted population;
- (8) retain fidelity to the “core program” and fit the program to the targeted population needs;
- (9) systematically reduce mismatches between the program and the new context;
- and (10) document the adaptation process and evaluate the process and outcomes.

A summary of factors influencing the process of cultural adaptation includes: (1) political-economical situation; (2) ability to fulfil the needs of the targeted population; (3) cultural aspect (folk stories and legends should be incorporated as a metaphorical way of relationship-building, motivating influence, problem solving, and communication); (4) use of community-based stereotypes for recruitment process and intervention strategy to educate people; (5) attention to obstacles such as religious beliefs and social stigma. (people had difficulty in sharing emotional problems with

leader, and traditional family hierarchy rooted in age and gender inequality interfered with help-seeking behaviors and adherence to prescribed regimen and delayed professional intervention); (6) level of social development and literacy of targeted population (The level of intervention should be appropriate for the educational level of participants. The rights of participants must be protected during consenting procedures by instituting policies that recognize the socioeconomic, educational, and systemic pressures to participate in research.) (Devieux, J.G., Malow, R.M., Rosenberg, R., et al, 2005); and (7) quality of delivery.

Evidence Based: Implementation of Methadone Maintenance Treatment in Indonesia

Treatment

Indonesia

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Since 1995, opioid dependence (heroin) has been the main drug abuse problem in Indonesia. In 1999–2002, heroin use was estimated at 1 million to 2 million people and around 60 percent were using heroin by injecting. In 2002, CDC Indonesia reported that some provinces have higher HIV incidence rates among Injection Drug Users such as: Bali (53 percent), Jakarta (48 percent), and East Java (25 percent). Based on this fact, the Government (Ministry of Health) of Indonesia has initiated some interventions to overcome this problem. One of these interventions implemented a pilot project of Methadone Maintenance Treatment (MMT). In 2003, the Ministry of Health of the Republic of Indonesia, with the support of WHO, started MMT programs in two sites: the Drug Dependence Hospital in Jakarta and the Sanglah General Hospital in Bali.

Outcome evaluation of this pilot project showed positive impact of methadone maintenance toward patients who remained in the program.

Data has been collected at baseline and at 3-month and 6-month followup. There were 101 respondents recruited for the study (Jakarta, 71 respondents and Bali, 30 respondents) who were 95 percent male and the highest age range was between 20 and 29 years old (78.5 percent). There was increasing employment status from baseline (34.7 percent) to 6-month followup (42.6 percent). Illicit heroin use in the last 30 days was decreased significantly from baseline (100 percent), and at 6-month followup (24.42 percent). From the point of quality of life



there was significant improvement in physical and psychological conditions from time to time.

The proportion of participants who practiced risky behavior related to HIV and other BBV transmission, particularly injecting behavior, were significantly changed around 85 percent at baseline, were around 27 percent at 3-month followup, and 20 percent at 6-month followup. Biological samples tested showed no new cases of HIV/AIDS. There were 55 HIV positive at baseline and 56 positive at 6-month followup.

Although there were significant changes in risky behaviors, it was too early to determine that the changes were solely affected by MMT itself. Further study is needed to explore the grey area on this program.

V

Profile of Adolescent Cannabis Consumers in the Autonomous Region of Valencia, Spain

Epidemiology

Spain

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Cannabis use is increasing in Spain and in the rest of Europe. The prevalence of cannabis use during the last 12 months among Spanish high school students from 14 to 18 years old was 18.2 percent in 1994, but 36.8 percent in 2004 (Informe 2004, PND). Also, there seems to be a process of “normalization” of cannabis consumption (cannabis use is perceived as a normal behavior); 2 percent of this population uses cannabis every day. The goal of the present study is to understand the prevalence and patterns of cannabis consumption among a population of school children in the Autonomous Region of Valencia, to develop a user profile, and to evaluate school progress/failure related to cannabis consumption.

A self-administered questionnaire was completed by a representative sample of high school students from 14 to 18 years old from the Autonomous Region of Valencia (N = 10,540), Spain. In this sample, 46.3 percent were male and 53.2 percent female. The survey used a clustered, stratified, multistage sampling scheme, geographic areas, educational status, and type of educational institution (public or private high school) were stratified. The anonymity and confidentiality of the participants in the study were guaranteed. The time needed to complete the questionnaire was approximately 30 minutes and was carried out in each of the 100 high schools

selected. Data were analyzed using SPSS 13.0 and Stata 9.0 programs.

The prevalence of cannabis use (at least once in their lives) among high school students is 37.9 percent. Of this group, 46.9 percent were males and 53.1 percent were females. More than 5 percent were regular users (cannabis consumption daily or almost daily), and there was a higher frequency of consumption among males than females ($p < 0.001$). Regular cannabis consumption was more prevalent among those who had repeated a grade ($P < 0.001$), and cannabis users had a higher school absenteeism rate than nonusers. The profile of a regular cannabis user may be defined as a person who considers that they have good relationships at home, who lives with a structured family, who has an amount of money from 11 to 20 euros per week, and who has a high prevalence of alcohol and tobacco consumption. This person also evaluates his/her academic performance as average and often skips classes.

Though the cannabis user’s profile among Valencian high school students is a person who lives in a structured family context, the high proportion of polyconsumption and scholastic failure indicate a need to develop specific public policy to prevent cannabis abuse among this population.

This study was funded by Fundación para el Estudio Prevención y Asistencia a las Drogodependencias and Dirección General de Drogodependencias, Agencia Valenciana de Salud, Conselleria de Sanitat, Generalitat Valenciana.

Prevalence of Substance Use and Substance Use Disorders Among Pregnant Women in the United States

Epidemiology

United States

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The objective of this study was to present, for the first time, national data on the 12-month prevalence of substance use and substance use disorders among pregnant women in the United States.

Statistical analyses were based on data from the 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), on the 12-month alcohol and drug use disorders and nicotine dependence in pregnant (N=1,913) and non-pregnant women of childbearing age, ages 18-50 (N=13,025) in the United States.

Compared with non-pregnant women of child bearing age, pregnant women exhibited significantly lower 12-month prevalence rates of: any alcohol use

(9.8 percent versus 67.5 percent) and any alcohol use disorder (3.2 percent versus 7.6 percent) than their non-pregnant female counterparts (all $p < 0.05$). In contrast, no significant differences were observed in the 12-month prevalence rates of any drug use (5.1 percent versus 6.8 percent), drug use disorder (1.6 percent versus 1.9 percent), tobacco use (21.8 percent versus 26.4 percent), and nicotine dependence (14 percent versus 14.4 percent), between pregnant women and the non-pregnant women population (all $p > 0.05$).

Despite their status, pregnant women often continue to use substances that can increase the health risks of their offspring. Prevention interventions targeting this group are urgently needed.

Polydrug Use Models Among Women in the Autonomous Region of Valencia, Spain

Epidemiology

Spain

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Polydrug use has become the most common pattern among problem drug users, and it entails a greater chance of harm, especially when drugs of unknown content and purity are combined. From a gender perspective, there is a dearth of specific studies about polydrug use among women in the general population.

The aim of this study was to analyze the reality of substance use among women in the Autonomous Region of Valencia, Spain.

A sample of 2,400 women, aged 16 years and older, living in the Autonomous Region of Valencia was selected. A 128-item survey was designed including variables such as demographic data, tobacco and alcohol use, other drug use, substance-use related motivations and problems, risk factors, and couple relationships. A descriptive and factorial analysis was carried out.

We found that among Valencian women, 57.3 percent did not use drugs, 31.8 percent used one substance, and 11 percent used 2 or more drugs at the same time. Cocaine and MDMA users have a higher rate of polydrug use (3.10 and 3.92, respectively). Four basic polydrug use models came up (explained variance: 50.5 percent): marginal substances, psychostimulants, cannabis/legal substances, and tranquilizers/hypnotics, which are related to four different women's profiles.

Our findings indicate that specific preventive and treatment interventions should be addressed from

a gender perspective to specific target populations according to their polydrug use models.

Evaluation of a Community Prevention Program in Tegucigalpa, Honduras

Prevention

Honduras

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There is evidence from epidemiologic studies that relates the use and abuse of alcohol and illegal drugs by poor and violent communities of the major metropolitan areas that are also of recent development. Unfortunately the officials and politicians favor supply reduction versus demand reduction strategies.

The purpose of this study was to determine the effectiveness of a 1-year prevention program in a poor community by 8 different types of nongovernmental organizations, (NGOs, OPDs, and religious) supported by the Vice President through the National Council Against Drugs and USIS-American Embassy in Honduras.

A descriptive transversal research study was designed to evaluate the effectiveness or impact of the prevention program established to help deter and control the violence and abuse of legal and illegal drugs in a high school (Instituto R. Pineda Ponce = 1500 students) of the Colonia Villanueva, population = 35,000.

A questionnaire was applied "before and after" the 1-year prevention program was accepted by a committee of the CNCN. Three hundred and thirty-three high school students were randomly selected for the 2003 preprogram study and 303 for the year postprogram in 2004.

Age frequency was predominantly between 13-18 years (74.8 percent), with a slight female gender predominance (52 percent), and mostly single status (68 percent). Approximately one-quarter of the students worked and studied (26.5 percent) and considered themselves of Protestant denomination, (49.7 percent Evangelical versus 35.6 percent Catholic). A very high association was determined by all students surveyed with respect to alcohol and violence and the most frequent type of drug intake (98 percent and 96 percent). Mention of a possible referral to a treatment or prevention program in the city or community were referrals to the well-established organizations of public, NGOs and religious orientation. Other programs involving prevention only increased in the base year by twice



as many mentions in the postprogram questionnaire (18 percent to 41 percent). Also, an increase of more than twice the knowledge about drugs was reported by the postprogram (34 to 74 percent), and by community meetings. Mass media with television and radio in the household were the main resources of information for these adolescents, but an increase of school talks, conversations among friends, and other sources of information on drugs were also reported in the year after the program ended.

In conclusion, prevention strategies should always consider the time element to offer effective programmed results. Reliable and culturally appropriate information is necessary for effective results.

Adaptation and Construct Validation of the Barratt Impulsiveness Scale (BIS) 11 to Brazilian Portuguese for Use in Adolescents

Prevention

Brazil

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Impulsivity is associated with many psychiatric disorders. The Barratt Impulsiveness Scale version 11 (BIS 11) is one of the scales most often used for its measurement, although it does not have a validated version for Brazilian Portuguese.

The aims of this project are to adapt and conduct the construct validation of the BIS 11 in Brazil.

The scale was translated and adapted to Portuguese and then back-translated into English. The psychometric proprieties, factor analysis, and construct validity were evaluated in two samples: 18 bilingual undergraduate medical students and 454 male adolescents between 15 and 20 years old from a well-delimited geographical area in the city of Canoas, south of Brazil.

Results indicate that intra-class correlation coefficient achieved a value of 0.90, and internal consistency had an $\alpha = 0.62$. The adolescent sample had a mean age of 17.3 ± 1.7 years. Factor analysis did not identify the three factors of the original scale. Impulsivity scores from the BIS11 had a correlation with scores for attention deficit/hyperactivity disorder and oppositional defiant disorder and for a number of symptoms for conduct disorder, suggesting an appropriate construct validity of the scale.

In conclusion, even considering some limitations in the Portuguese version, BIS 11 can be used in male adolescents and should be tested in other populations.

Differences in Alcohol, Methamphetamine, and Cannabis Use Among Out-of-School Adolescent Females in the Western Cape Province of South Africa

Epidemiology

United States

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Currently, South Africa is a primary marketing venue for methamphetamine (MA), cannabis, and other drugs. Drug abuse is particularly problematic in the surrounding communities of the Cape Town area. For example, MA use was the most commonly reported primary illicit substance of abuse in Cape Town in the first half of 2006. Race and gender are important factors in South Africa because they reflect socioeconomic inequalities that increase vulnerability to diseases, including STIs and HIV with women having the burden of disease. Disparities also exist in education and access to jobs with poor women more likely than men in all racial categories to lack adequate education and job skills. Further, high unemployment rates adversely affect equal access to jobs with women getting the short end of the stick. Endemic poverty persists in racially distinct communities and townships in the Western Cape and promotes high levels of sexual assault and victimization, gang-violence and drug-related activities.

Focus groups conducted among adolescent females in the Cape Town area revealed that young females turn to substance abuse because they are stressed and bored and because their boyfriends are drug dealers and/or gang members. NIDA sponsored a survey that started in March 2006 and was completed in August 2006, with a total of 450 (170 Black African and 280 Colored) out-of-school young females living in less affluent Colored communities and Black townships in the Cape Peninsula region of Western Cape Province, South Africa.

The average age was 17 years old. The average age of dropping out of school was 15 years old. Only 13 percent of the Black females reported any MA use, whereas 91 percent of the Colored females had reported use, and of these who have used, 95 percent had used in the last 7 days. Almost all (99 percent) Black females reported alcohol and cannabis use, and 99 percent reported use of both alcohol and cannabis in the last 7 days, whereas only 46 percent of the Colored females reported ever using alcohol and 62 percent reported ever using cannabis. But, of those who had used alcohol, 78 percent had used in the last 7 days and for those who had used cannabis, 85 percent had used in the last 7 days. Both Black and Colored females reported high rates of tobacco use in the past 7 days (Black females—94

percent; Colored females—99 percent) but different and relatively lower rates of methaqualone, cocaine, Ecstasy, and heroin use.

The majority of female school drop-outs recruited for this study reported high levels of substance abuse but different patterns by racial communities, particularly use of methamphetamines, which also leads to other risky behaviors.

Brain Regional Cerebral Metabolic Rates of Glucose (rCMRglc) in Response to Cigarette-Smoking Cues are Reduced in Successfully Treated Compared to Unsuccessfully Treated Heavy Smokers with Bupropion— Preliminary Results

Treatment

Israel

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Craving for cigarettes is often associated with relapse to smoking. Brain imaging studies have used cigarette smoking cues to elicit craving and to determine craving-induced metabolic changes in regions associated with craving in heavy cigarette smokers. It was also shown that Bupropion-treated smokers compared with untreated smokers had attenuated response to smoking cues indicated by smaller increases in craving scores and smaller increases in the ventral Anterior Cingulate (AC) metabolism during presentation of smoking cues.

We used brain imaging with [18F] Fluorodeoxyglucose (FDG) in Positron Emission Tomography (PET) to investigate rCMRglc in response to a videotape showing smoking-related cues (scenes from the movie *Smoke*) and to a control videotape (scenes from the movie *Frida*) in 12 heavy smokers after one month of treatment with open-label Bupropion HCl. Success of treatment was evaluated after 3 months. We compared subjective ratings of craving and rCMRglc in response to the smoking videotape and the control videotape in six successfully treated and six unsuccessfully treated smokers.

Successfully treated smokers showed reduced subjective ratings of craving and reduced mean normalized rCMRglc in the Anterior Cingulate (AC Brodmann area 24, 32), Medial temporal lobe (MTL B.A 21, 22), Orbito-Frontal Cortex (OFC B.A.11) and the Dorsolateral Prefrontal Cortex (DLPFC B.A 46) in response to the cigarette-smoking videotape compared with unsuccessfully-treated smokers.

Subjective ratings of craving and brain metabolic responses to smoking cues can be predictive of outcome of smoking cessation treatment with Bupropion in heavy smokers.

Evaluation of Training Programs—Education and Training Department at the Drug Dependence Hospital-RSKO, Jakarta

Prevention

Indonesia

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The Drug Dependence Hospital (DDH) has been in operation since 1972 as the only government specialist hospital which is providing services for drug users and functions as a teaching hospital.

This paper was aimed at reviewing training programs of the Education and Training Department of DDH and all training programs within the department that are aimed at preparing students and health professionals for dealing with drug dependency in Indonesia.

A review was conducted of the Education and Training Department during two years (2005–06) using questionnaires and hospital records.

Training programs are divided into two types: short training (1–14 days) and training with an internship. The training program consists of several modules that focus on skills, knowledge and competency development in countering drug dependency. These modules deal with issues in addiction, counseling, management of prevention, treatment, and rehabilitation as well as HIV/AIDS and opportunistic infection.

In 2005, the DDH was visited by 986 visitors (55.9 percent are medical and nursing students and lecturers; 29.2 percent doctors, nurses and health officers). In 2006, the DDH was visited by 1,100 visitors (62.9 percent medical and nursing students and lecturers; 22.7 percent doctors, nurses and health officers). Other visitors came from the National Narcotics Board and the Jakarta Police Department. After training, all visitors must fill in the questionnaire form to provide feedback and comments to the Education and Training Department. Areas that need improvement include the duration and content of training programs included in the internship, especially how to increase the skills in emergency situations, and how to develop community-based drug treatment.

A review of the modules was conducted through the evaluation performed, and findings suggest that visitors need longer periods of training with more emphasis on skills and internship, and development of community-based drug treatment. Nevertheless,

an evaluation of the training programs also shows that there are challenges for the Education and Training Department in terms of content and supervision.

Opioid Maintenance Therapy During Pregnancy: Concomitant Consumption and Neonatal Outcome

Treatment **Austria**

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The aim of treating opioid dependent pregnant women includes stabilization, reduction of concomitant consumption, and realization of a new life situation. Over the past years, maintenance therapy with synthetic opioids has been favored throughout pregnancy and continued afterwards.

Data of 171 pregnant opioid dependent women (mean age 26 years, SD=5.40) and their neonates were examined. The mean first contact at our addiction clinic occurred during ega-week 22. At delivery, 39.8 percent of the women received methadone maintenance therapy with a mean daily dose of 62.70 mg. (range: 5-180), 47.4 percent oral slow-release morphine (SROM) treatment (daily mean dosing: 401.87 mg., range: 8-800), 11 percent buprenorphine with a daily mean dose of 7.95 mg. (range: 1-16), and 1.8 percent were medication-free. Daily nicotine consumption and standardized urintoxicology during pregnancy were assessed.

A significant influence of maternal medication with regard to the neonatal abstinence syndrome (NAS) was revealed ($p=0.001$). Neonates born to mothers maintained on methadone or SROM had a significant longer duration of NAS ($p=0.002$; $p<0.001$) compared to buprenorphine.

Forty percent of the urintoxicology was positive for opioids, 23 percent for benzodiazepines and 8 percent for cocaine. Concomitant consumption of opioids was found to have a significant influence ($p=0.002$) on NAS. Neonates born to mothers with high opioid concomitant consumption needed significant higher doses of morphine treatment ($p=0.023$). Furthermore, high consumption of benzodiazepines tended to produce significant consequences on mean duration of NAS ($p=0.083$). No significant differences of weight, height, or head circumferences in relation to concomitant consumption could be calculated. However, heavy smoking during pregnancy was associated with significantly lower birthweight ($p<0.001$), significantly lower weight ($p=0.006$), and significantly smaller head circumference ($p=0.008$).

Opioid maintenance therapy in combination with psychosocial care might keep women in treatment and minimize the consequences for the fetus. Treatment diversification is within the mainstream of improved medical treatment. However, the impact of nicotine seems to be underaddressed.

The Influence of Various Components of Psychological Health on the Quality and Duration of Remission

Prevention **Kazakhstan**

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At the present time, complex research has already been carried out at RSPCVSPDA to define the various components of psychological health that influence dependence on psychoactive substances (PAS).

The available data allowed us to determine the basic components of psychological health and the influence of a general level of psychological health on the parameters of remission in drug addicts. However, it is necessary to determine the role of each of the basic components in the quality, duration, and stability of remission from dependence on PAS.

Thus, the study of the influence of the basic components of psychological health (self-identification, presence of the vital script, responsibility, locus-control, internal resources) on the parameters of remission and stability of remission involving dependence on PAS will allow us to differentiate the diagnostic and correctional approaches in the field of treatment and preventive measures for dependence on PAS.

The purpose of this project was to study the role of various components of psychological health on the quality and stability of remission from dependence on PAS.

The tasks carried out in this study included:

- (1) Conducted psychological diagnostic tests to establish the level of psychological health among drug-dependent persons;
- (2) Formed comparative groups among patients who were receiving treatment, according to low, average, and high levels of psychological health;
- (3) Compared the three groups for quality and duration of remission using statistical methods; and
- (4) Defined the interrelationship of the level of psychological health and consumption of PAS among youth in the age range of 18-25 years.



The results of our research identified the basic components of psychological health that influence the quality and duration of remission and the role of the revealed components in the stability of remission from dependence on PAS.

Z

Methamphetamines in the Czech Republic— History and Current Situation

Epidemiology

Czech Republic

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This presentation summarizes what is known about the history and current situation of methamphetamine (locally called “pervitin”) abuse in the Czech Republic.

According to recent reviews, the use of amphetamine-type drugs is widespread significantly in nine countries: Australia, China, the Czech Republic, Japan, New Zealand, the Philippines, Sweden, Thailand, and the United States. The Czech Republic is a small country (30,100 sq. miles, population 10 million) located in Central Europe, having one of the longest histories of illegal methamphetamine use of all countries listed above. Methamphetamines were abused in the Czech Republic in the 1950s and 1960s, reaching epidemic magnitude in the early 1970s when procedures for how to process methamphetamines from freely available raw products and over-the-counter medicines were discovered at the Prague drug scene. Nowadays, methamphetamines are not the most prevailing illegal drugs in the lifetime prevalence either in general or in school populations (scoring only fifth after marijuana, Ecstasy, LSD and “magic mushrooms”). However, when it comes to the most dangerous patterns of drug use (long-term and/or injection drug use of any drug other than cannabis or Ecstasy), methamphetamines are clearly the heaviest used drugs in the country (20,500 of estimated 31,000 are problem drug users).

Methamphetamine users represent a majority of those seeking treatment in the Czech Republic (57 percent, i.e., 4,870) of all persons seeking treatment, and 60 percent (2,605 persons) of those who have done so for the first time in 2005. Similarly, pervitin users represent 69 percent (i.e., 12,300 persons) of injectors who used low-threshold services (needle exchange programs and HR services) in 2005. Pervitin users display some interesting characteristics (shorter period between inception of drug use and service seeking and more treatment periods before achieving abstinence) than users of other illegal drugs in the Czech Republic. Interestingly, pervitin is only the third greatest cause of fatal overdose (after opiates and solvents) in the country. Methamphetamine users do not differ

in seroprevalence of viral hepatitis C antibodies when compared with the representative sample of Czech injection drug users (35 percent). Overall, 53 percent (i.e., 1,128) of all persons arrested because of primary drug crimes (possession, production, trafficking, etc.) are related to methamphetamine use.

Thus, the group of problem methamphetamine users is the central target of Czech public health policy related to psychotropic substances and of drug policy as a whole.

Much more research, using the retrospective and recent data, is needed to achieve a better understanding of the phenomenon of methamphetamine abuse that is increasing worldwide. The use of rich Czech epidemiologic and treatment data has the potential to contribute significantly to the joint efforts that are underway to tackle the problem.

Predictive Factors for Drug Addict Patients’ Treatment Results

Treatment

Colombia

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This study aims at two goals: to identify some of the most important risk and protective factors associated with relapse treatment and to develop a predictive model for treatment outcomes. This study comes from the hypothesis that “relapse among drug addicted patients receiving treatment is lower in those patients who get involved in occupational or work activities.” At the same time, it intends to explore and gather evidence that allows us to conclude on the risk and protective factors that predict treatment results in drug-addicted patients.

This is a case-control study. The sample is comprised of 152 cases (75 cases referred to as failure, total or partial relapse, and 77 controls known as success, total or partial abstinence) that had completed treatment at a Colombian mental health and addiction public center.

There was bivaried analysis of demographic characteristics, personal, family, and legal history, prior treatments, substance abuse before and after completion of treatment, family relationships, and work-financial situation. The multivaried phase was conducted through a predictive logistic regression model.

Similar outcomes were found on demographic characteristics. The principal risk factors were found: how time is spent (OR: 45.6), drug abuse in best friend (OR: 24.8), drug abuse in sexual partner (OR: 14.9), affective indifference (OR: 17.8), affective overprotection (OR: 13.5), blocked family communication (OR: 17.2), unemployed or

without productive occupation (OR:3.6), and not contributing to support family (OR: 17.3).

Protective factors were: personal motivation to treatment (OR: 0.476), support group participation (OR: 0.125), democratic authority model in family (OR: 0.019), and direct communication and acceptance in family (OR: 0.042 and 0.03).

The predictive model showed that outcomes on treatment predictive variables are: drug abuse by best friend, democratic authority within the family as risk factors and direct communication and productive occupation as protective factors.

In conclusion: (1) Authority, communication, and affective relationships within the family were rated as most important in the study results; (2) a risk family model for relapse is expressed in the results comprised by: family surroundings with no authority or the presence of other patterns of flexible and permissive authority, families with closed communication space, and emotional links where overprotection or indifference in others is predominant; (3) a protective family model, which may support the interventions plan aiming to lower relapse is made up of a scheme of democratic family authority, direct communication among its members, and an affectionate relationship where the feelings of acceptance are predominant; and (4) it may be concluded that not having a job or productive activity is a relapse risk that confirms the hypothesis on which this study was based.

Activation of Muscarinic and Nicotinic Acetylcholine Receptors in the Nucleus Accumbens Core is Necessary for the Acquisition of Drug Reinforcement

Basic Science

Austria

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Neurotransmitter release in the nucleus accumbens core (NACore) during the acquisition of remifentanyl or cocaine reinforcement was determined in an operant runway procedure by simultaneous tandem mass spectrometric analysis of dopamine, acetylcholine, and remifentanyl or cocaine itself. Run times for remifentanyl or cocaine continually decreased over the five consecutive runs of the experiment.

Intra-NACore dopamine, acetylcholine, and drugs peaked with each intravenous remifentanyl or cocaine self-administration and decreased to pre-run baseline with half-lives of 10 minutes. As expected, remifentanyl or cocaine peaks did not vary between the five runs. Surprisingly, however, drug-contingent dopamine peaks also did not change over the five runs, whereas acetylcholine peaks did. Thus, the acquisition of drug reinforcement was paralleled by a continuous increase in acetylcholine overflow in the NACore, whereas the overflow of dopamine, the expected prime neurotransmitter candidate for conditioning in drug reinforcement, did not increase. Local intra-accumbens administration by reverse microdialysis of either atropine or mecamylamine completely and reversibly blocked the acquisition of remifentanyl reinforcement.

Our findings suggest that activation of muscarinic and nicotinic acetylcholine receptors in the NACore by acetylcholine volume transmission is necessary during the acquisition phase of drug reinforcement conditioning.

Injection Stimulant Use and HIV Risk in Ukraine

Epidemiology

Ukraine

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Injection drug use continues to drive the HIV epidemic in the Ukraine, the most affected country in Europe. By November 2006, 99,813 cases of HIV were reported, 64.7 percent of which were IDUs. The drugs injected included opiate extract and home made stimulants.

This is a secondary data analysis from a cross-sectional study investigating the HIV/HCV spread and risk factor patterns in an IDU population in Vinnitsya, Ukraine. Three hundred and fifteen IDUs were recruited in 2005 using the snowball sampling technique. Quantitative data was collected using the Risk Assessment Battery (RAB) Form 90, and locally-specific demographic questionnaire. Qualitative data on stimulant use practices was also collected.

All 315 participants had a history of injecting opiates in the past year. Forty point three percent reported injecting stimulants in their lifetime (St+), and

males were using more often than females (43.9 percent versus 25 percent, $p=0.01$). Twenty-three point three percent of the sample injected stimulants in the past 30 days (ns. difference by gender). Stimulant injection practices differed from those of opiates; former (“vint,” “jeff,” “mul’ka”) were cooked by users for themselves or by an experienced peer who cooked for the drug users, whereas opiates are often cooked by dealers for sale in large amounts. Stimulant recipes varied in complexity, acting substance (catinone, ephedrone, methamphetamine), and their precursor (phenylpropanolamine, ephedrine, norephedrine, teophedrine), which could be obtained illegally or extracted from over-the-counter medications (“Effect,” “Coldact,” “Actifed”). Potassium permanganate, known to cause severe encephalopathy, is used in a majority of the recipes. HIV risk was significantly higher in the St+ group (drug risk score 8.4 ± 4.4 versus 6.8 ± 4.3 , $p=0.001$; sex risk score 5.4 ± 1.7 versus 4.7 ± 2.1 , $p=0.005$). Use of syringe exchange programs was more frequently in the St+ group ($p=0.005$). Prevalence of HCV and HIV was higher in stimulant users (76.9 percent versus 72.1 percent and 16.5 versus 12.9 percent, accordingly), but difference did not reach the level of statistical significance.

Injection stimulant use is common in the Ukraine. Differences in injection practices between stimulants and opiates have implications for HIV risk. Ease of preparation and low cost contribute to rapid expansion of stimulant use in the Ukraine and should be considered for prevention efforts.

Changes of the Activity of Hypothalamo-Pituitary-Adrenocortical Axis (HPA) During Heroin Dependence and Cue-Induced Craving

Basic Science

China

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The objective of this study was to understand the function of HPA axis during heroin dependence and the changes of ACTH and Cortisol during heroin-related cue-induced craving.

The blood levels of ACTH and Cortisol were compared between heroin-dependent patients shortly after detoxification ($n=19$) and the control group ($n=21$). Self-reported craving, blood pressure, heart rates, diameter of pupil, and blood level of ACTH and Cortisol were measured in heroin-dependent patients before and after heroin-related cue exposure.

The blood levels of Cortisol in heroin-dependent patients shortly after detoxification were higher compared with those in controls (31.9 ± 18.0 versus 18.7 ± 7.4 ; $t=3.14$, $p=0.003$); the blood level of ACTH in heroin-dependent patients also showed a higher tendency compared with that in controls (20.2 ± 15.5 versus 9.1 ± 7.3 ; $t=1.66$, $p=0.10$). Heroin-related cue exposure induced self-reported craving, increased the heart rates, blood pressure, and the diameter of pupil in heroin-dependent patients, but did not produce significant changes in their blood levels of ACTH and Cortisol (20.2 ± 15.5 versus 12.9 ± 10.3 ; $t=0.95$, $p=0.36$; and 31.9 ± 18.0 versus 24.1 ± 13.7 ; $t=1.77$, $p=0.10$).

The activity of hypothalamo-pituitary-adrenocortical (HPA) axis is increased shortly after detoxification in heroin-dependent patients. Heroin-related cue exposure induces craving and produces physiological changes among heroin-dependent patients. It is suggested that to decrease the sensitivity of drug use, related cues may be helpful to decrease craving and prevent relapse.

Spontaneous Recovery of Nicotine Cue Reactivity in Rats

Basic Science

Russia

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Exposure to drug-associated cues is thought to be one of the major factors contributing to the relapse of drug-seeking and taking behaviors. There are several factors that limit efficacy of the drug cue reactivity extinction procedures. One of such factors is spontaneous recovery that refers to the recovery of the extinguished behavior with the passage of time. The present study aimed to assess if cue reactivity extinction results in long-lasting loss of drug-conditioned behavior.

Male Wistar rats (with restricted access to food) were trained to nose-poke to receive intravenous infusions of nicotine (0.03 mg./kg. per infusion, base) under a fixed ratio (5 times out of 60) schedule of reinforcement. After stable nicotine self-administration was acquired, nose-poking behavior was extinguished in the absence of nicotine-associated cues (operant extinction phase). During the subsequent tests, nicotine was also not available, but nose-poking resulted in response-contingent presentation of nicotine-associated cues.

In Experiment 1, responding with conditioned reinforcement was significantly extinguished across 6 consecutive tests if the tests were held daily or every 3 days (with or without intervening extinction sessions with no cue presentations). However, there

was much, little, or no extinction if the interval between tests was increased to 7 days. In Experiment 2, a single reactivity test was conducted at different intervals after the operant extinction phase (1–28 days). There were no significant effects of the interval (i.e., no ‘incubation’ of cue reactivity). In Experiment 3, cue reactivity was extinguished after 5 daily sessions and then the final test was given after a delay of 1–28 days. It was found that extinguished, responding fully, recovered after a delay of either 14 or 28 days.

Taken together, these results indicate that extinction of nicotine cue reactivity does not result in a permanent loss of the behavior, which may recover with the passage of time.

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