and 160 non-abusers. Drug use exclusion criteria were: heroin addicts who have used alcohol extensively in their lifetime (>100 grams or 3.5 ounces per week on average and/or >100 grams in a single occasion more than once a month), alcoholics, who have used other illicit drugs more than 10 times during their lifetime, heroin+Alcohol group excludes those who have used other illicit drugs more than 10 times during their lifetime (e.g., ephedrine, marijuana). Control participants cannot exceed alcohol intake of >100 grams pure ethanol per week (3.5 ounces) on average and/or >100 grams pure ethanol in a single occasion more than once a month and/or use of illicit drugs more than 10 times during their lifetime. Other exclusion criteria were: BPRS more than 5 points, diagnosed AIDS, Raven IQ test < 80, serious brain damage in the past, using of antidepressants and other psychotropic drugs. Psychiatric, background, and drug history evaluations were administered after detoxification to screen for exclusion criteria and characterize the sample. Executive Cognitive Functions (ECF) that largely activate areas of the prefrontal cortex and its circuitry measured include complex visual pattern recognition (Paired Associates Learning), working memory (Delayed Matching to Sample), problem solving (Stockings of Cambridge), executive decision making (Cambridge Decision Making Task), cognitive flexibility (Stroop Color-Word Task) and response shifting (Stop Change Task). All three patient groups reported higher ratings on the Brief Psychiatric Rating Scale (BPRS) than controls. Control subjects had the highest Global Assessment of Functioning (GAF) scores Controls and alcoholics reported the highest self health rating. In many aspects, the heroin addicts were similar to alcohol and alcohol-heroin dependent groups in neurocognitive deficits relative to controls. However, compared with the other drug groups, heroin addicts had shorter latencies and less error proneness in visual pattern recognition, marginally better visual memory and learning, more efficient problem solving and response shifting, and greater cognitive flexibility. Conversely, they showed significantly more disadvantageous decision making and longer deliberation times. Because the nature and degree of recovery from drug abuse are likely a function of the type or pattern of neurocognitive impairment, differential drug effects must be considered. Differences in neurocognitive functioning between heroin addicts with or without HIV were not found. One of the possible explanations is the early stage of HIV without neurocognitive deficits.

### Psychiatric co-morbidity and suicidality among methamphetamine dependent patients who seek treatment in Malaysia

A. Hatim1, S. Mas Aya2, H. Habib1, M. Mustafa3, J. Gill1, R. Rusdi1, A. Amer Siddiq1.

1University Malaya, Dept of Psychological Medicine, Kuala Lumpur, Malaysia; 2University Malaya, Dept of Social and Preventive Medicine, Kuala Lumpur, Malaysia; 3University Malaya, Dept of Pharmacology, Kuala Lumpur, Malaysia

Although there has been a marked worldwide increase in methamphetamine (MAMP) dependence, the psychiatric sequelae of MAMP dependence has not been well described compared to amphetamine-related psychiatric disorders. It is only in the past decade has psychiatric related disorders or sequelae in MAMP users started to receive more descriptive attention. The objective of this study is to determine the prevalence of psychiatric co-morbidity among MAMP-dependent Malaysians who seek treatment, and to identify the psychiatric co-morbidity predictors for suicidality among this high-risk group subjects.

**Methodology:** The study was conducted at University Malaya Medical Centre (UMMC) and Papar drug rehabilitation centre in Malaysia. The study population were those who above 18 years old and meeting the DSM-IV-TR criteria for methamphetamine dependence. Patients were briefed on the study and written consent was obtained. Only patients with the last use of methamphetamine within 30 days were included in the study. A face-to-face interview was conducted using a structured questionnaire to collect data on sociodemography and drug use history. The Mini International Neuropsychiatric Interview (MINI) was administered to screen for major psychiatric disorders including suicidality. The interviews were conducted by a qualified psychiatrist. Subjects were assured that all personal information was strictly confidential. Ethical approval was obtained from Medical Ethics Committee of UMMC.

**Results:** A total of 305 subjects were enrolled in this study. The mean age of the subjects was 30.5±8.2 years. Almost all were male, with only 3 (1%) female. Mean age at first methamphetamine use was 23.9±8.8 years and mean duration of methamphetamine use was 6.4±4.9 years. 50.2% of the subjects had lifetime psychotic disorder, 32.1% had antisocial personality disorder, 17.7% had Major Depression, 16.4 % had Bipolar Disorder (Mania) and 4.6% had Panic Disorder. The prevalence of those categorised as having “high suicidality” was 12.1%. Major Depressive Disorder, Panic Disorder, and Current as well as Lifetime Psychotic Disorders were all significantly associated with suicidality. Poly-substance use, found in 60.3% of the subjects, was also significantly associated with suicidality (OR, 3.1). Multiple logistic regression was then carried out and it was found that, the independent risk factors of suicidality were Major Depression (OR 7.3; 95% CI.: 3.0, 17.8) and a Lifetime Psychotic Disorder (OR 5.1;95% CI.: 1.3, 20.3).

**Conclusion:** The prevalence of psychiatric co-morbidity and suicidality is high in this population. We feel that identification and treatment of comorbid psychiatric illnesses in this population is of upmost importance. It is unethical not to screen and treat for psychiatric illnesses in this population, and cause unnecessary suffering, knowing very well the rate of psychiatric illnesses in them is high. Failure to identify comorbid psychiatric illnesses here means an opportunity for treatment is lost in a population that is otherwise difficult to reach in the community.

### Modulation of rewarding effects of psychotropic drugs by GABA and dopamine mechanisms from the bed nucleus of the stria terminals

P. Shabanov1, A. Lebedev2, M. Sheveleva2.

1Military Medical Academy, Dept of Pharmacology, St. Petersburg, Russia; 2Institute of Experimental Medicine RAMS, IP Paccou: Dept of Physiology, St. Petersburg, Russia

**Introduction:** The bed nucleus of the stria terminalis, which is important in medial forebrain bundle self-stimulation, is heavily populated with GABAergic medium spiny neurons that intercommunicate via local axon collaterals [1]. Given recent attention to the role of the extended amygdala system structures in brain reward processes [2], this study examines the relative contributions of GABAergic and dopaminergic mechanisms of the bed nucleus of the stria terminalis to the rewarding effects of medial forebrain bundle stimulation, activated by psychostimulants (amphetamine),