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KEYNOTE

The global burden of disease attributable to illicit drug use: Results from the GBD 2010 study

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Background: No systematic attempts have been made to estimate the global and regional prevalence of amphetamine, cannabis, cocaine and opioid dependence, and quantify their burden. We aimed to assess the prevalence and burden of drug dependence, as measured in years of life lived with disability (YLDs), years of life lost (YLLs), and disability-adjusted life years (DALYs).

Methods: We conducted systematic reviews of the epidemiology of drug dependence, and analysed the results with the Global Burden of Diseases, Injuries, and Risk Factors Study 2010 (GBD 2010) Bayesian meta-regression technique (DisMod-MR) to estimate population-level prevalence of dependence and use. GBD 2010 calculated new disability weights by use of representative community surveys and an internet-based survey. We combined estimates of dependence with disability weights to calculate prevalent YLDs, YLLs, and DALYs, and estimated YLDs, YLLs and DALYs attributable to drug use as a risk factor for other health outcomes.

Findings: Illicit drug dependence directly accounted for 20.0 million DALYs (95% UI 15.3–25.4 million) in 2010, accounting for 0.8% (0.6–1.0) of global all-cause DALYs. Worldwide, more people were dependent on opioids and amphetamines than other drugs. Opioid dependence was the largest contributor to the direct burden of DALYs (9.2 million, 95% UI 7.1–11.4). The proportion of all-cause DALYs attributed to drug dependence was 20 times higher in some regions than others, with an increased proportion of burden in countries with the highest incomes. Injecting drug use as a risk factor for HIV accounted for 2.1 million DALYs (95% UI 1.1–3.6 million) and as a risk factor for hepatitis C accounted for 502 000 DALYs (286 000–891 000). Suicide as a risk of amphetamine dependence accounted for 854 000 DALYs (291 000–1 791 000), as a risk of opioid dependence for 671 000 DALYs (329 000–1 730 000), and as a risk of cocaine dependence for 324 000 DALYs (109 000–682 000). Countries with the highest rate of burden (>650 DALYs per 100 000 population) included the USA, UK, Russia and Australia.

Interpretation: Illicit drug use is an important contributor to the global burden of disease. Efficient strategies to reduce disease burden of opioid dependence and injecting drug use, such as delivery of opioid substitution treatment and needle and syringe programmes, are needed to reduce this burden at a population scale.

PRESENTATIONS

A randomised controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal

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Importance: Prolonged cannabis use can lead to dependence and drive treatment demand. However, there are currently no approved medications for treating cannabis dependence or withdrawal. The cannabis extract nabiximols (Sativex) is approved in many countries for treating spasticity in multiple sclerosis and offers a potential agonist medication for assisting the treatment of cannabis withdrawal.

Objective: To evaluate the safety and efficacy of nabiximols (Sativex) in treating cannabis withdrawal.

Design & Setting: A two-site, double-blinded randomised controlled inpatient trial with a 28-day follow-up, conducted in hospital settings in New South Wales, Australia.

Participants: Fifty-one DSM-IV-TR cannabis dependent treatment seekers.

Interventions: A six-day regimen of nabiximols (maximum daily dose: 86.4mg THC and 80mg CBD) or placebo with standardised psychosocial interventions during a nine-day admission.

Main Outcome Measures: Severity of cannabis withdrawal and cravings (Cannabis Withdrawal Scale); retention in withdrawal treatment; and adverse events (AEs). Secondary outcomes include post-withdrawal cannabis use, health and psychosocial outcomes.

Results: Nabiximols treatment significantly reduced the overall severity of cannabis withdrawal relative to placebo ($F_{9,377.97}=2.39$, $P=0.01$), including effects on withdrawal-related irritability, depression and cannabis cravings. Nabiximols had a more limited, but still positive, therapeutic benefit on sleep disturbances, anxiety, loss of appetite, physical symptoms and restlessness. Participants given nabiximols remained in treatment longer during medication (Unadjusted HR: 3.66 [95% CI 1.18-11.37], $P=0.02$) with the numbers needed to treat to achieve successful retention in treatment of 2.84. Participants could not reliably differentiate between nabiximols and placebo treatment ($\chi^2_1=0.79$, $P=0.67$) and those receiving nabiximols did not report greater intoxication ($F_{1,6}=0.22$, $P=0.97$). The number ($F_{1,50}=0.3$, $P=0.59$) and severity ($F_{1,50}=2.69$, $P=0.1$) of AEs did not differ between groups. Both groups showed reduced cannabis use at 28-day follow-up, with no advantage of nabiximols over placebo for self-reported use ($F_{1,50}=0.1$, $P=0.75$), cannabis-related problems ($F_{1,50}=2.27$, $P=0.14$), or cannabis dependence ($F_{1,50}=0.006$, $p=0.9$).

Conclusions: In a treatment-seeking cohort, nabiximols attenuated cannabis withdrawal symptoms and improved patient retention in treatment. However, placebo was as effective as nabiximols in promoting long-term reductions in cannabis use following medication cessation. The data support further evaluation of nabiximols for management of cannabis dependence and withdrawal in treatment-seeking populations.

Evaluating the strength of alcohol policy frameworks and relationship with consumption

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Background: The burden of disease associated with alcohol consumption has prompted many countries to introduce national policies to mitigate the harmful use of alcohol. The World Health Organization and European Commission encourage countries to regularly review, monitor, and strengthen policy frameworks. However cross-national studies of policy strength are scarce, largely due to challenges in quantifying policies across countries and caveats with the small number of existing evaluation tools. Addressing these gaps, we developed the first evidence-based, quantitative tool - the Toolkit for Evaluating Alcohol policy Stringency and Enforcement (TEASE-16) - to assess level of stringency and enforcement. Here we present an overview of the TEASE-16 and demonstrate its application to the Western Pacific Region (WPR) where consumption is a significant public health concern.

Method: The TEASE-16 assesses the stringency and enforcement of 16 policies spanning five regulatory domains. The tool was applied to nine culturally and socioeconomically diverse countries in the WPR (Australia, Japan, New Zealand, Singapore, Hong Kong, China, Malaysia, Philippines, Vietnam).

Findings: Countries attained a median rating of 56.4 of a possible 100 points, ranging from 24.1 (Philippines) to 67.5 (Australia). A comprehensive sensitivity analysis supported the robustness of the TEASE-16, with countries' scores and ranks remaining relatively stable across different weighting schemes. Regression analysis revealed a strong, inverse relationship between consumption and policy strength; a 1-point increase in TEASE-16 score was associated with a 0.02 (liters/\$1,000 income) decrease in per capita consumption. Most countries in the WPR would stand to benefit from strengthening alcohol advertising and physical availability policies.

Conclusions: Countries with more stringent and strongly enforced alcohol policies have lower consumption. By highlighting areas of weaknesses, the TEASE-16 and current findings will be of much interest to policymakers and researchers wishing to monitor and strengthen alcohol policies, and estimate the likely impact of policy changes on consumption.

The persistence of adolescent binge drinking into adulthood: Findings from a 15-year prospective cohort study

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Background: Binge drinking in adolescence has become common in many countries but we know little about whether it persists into adulthood.

Methods: A 15-year prospective cohort study in Victoria, Australia. 1943 adolescents were recruited from secondary schools at age 14-15 years. Levels of past-week “binge” drinking (5+ standard drinks (SD) on a day, each 10g alcohol) and “heavy binge” drinking (20+ SD on a day for males, 11+ for females) were assessed during six adolescent waves, and across three adult waves up to age 29 years.

Results: Half of males (52%) and a third of females (34%) reported past-week binge drinking in adolescence. 90% of male and 70% of female adolescent-onset binge drinkers continued to binge drink into young adulthood. Seventy per cent of males and 48% of females who were not adolescent-onset binge drinkers reported binge drinking in young adulthood. Past-week “heavy binge drinking”, reported by 19% of males and 15% females in adolescence, increased substantially in the young adult waves (38% males, 27% females in any adult wave). There was some evidence of a decline at 29 years. Among adolescent binge drinkers (n=821), young adult binge and heavy binge drinking were predicted by being male, adolescent antisocial behaviour, and adverse consequences of drinking in adolescence (intense drinking, physical harm, and sexual risk taking related to alcohol consumption).

Conclusions: Binge alcohol use is common and persistent among young Australians. Efforts to prevent the onset of binge drinking during adolescence may substantially reduce harmful patterns of alcohol use in young adulthood.

Engagement with the criminal justice system among opioid dependent people: Retrospective cohort study

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Aim: Studies of offending among people who use drugs typically focus upon small and potentially unrepresentative samples. We examined an entire population of opioid dependent clients' contact with the criminal justice system.

Method: Retrospective linkage study of all entrants to opioid substitution therapy (OST) for opioid dependence in NSW, 1985-2010 (n=48,471) with data on court appearances from 1993-2011. Person years (PY) observation and charge rates for major crime categories estimated by sex, age, and time.

Results: A total of 639,386 charges laid were against cohort members from 1993-2011. Eight in ten males (79.3%) and 67.5% of females had at least one charge; rates were 93.5 per 100PY among males, and 52.8 per 100PY among females. Rates were highest at 15-19 years (175.2/100PY males, 75.6/100PY females) and 20-24 years (144.2/100PY males, 84.4/100PY females). The most frequent charges were theft and related offences (24.5% of charges), traffic and vehicle offences (16.3%), offences against justice procedures (10.5%), illicit drug offences (10.0%), intentional injuries (9.9%) and public order offences (8.9%). Twelve per cent of the cohort accounted for 50% of charges; 21% of the cohort accounted for 67%. Court costs totalled \$311 million (2012 AUD). The most frequently appearing 5.7% of the cohort accounted for 24.7% of costs (\$77.0M); 10.4% accounted for 38.6% of costs (\$120.1M); and 26.5% accounted for 70.2% (\$218.4M).

Conclusions: Through the use of a population-wide linkage, we were able to establish that a minority of opioid dependent people account for the majority of their criminal justice contact and levels of offending are not consistent over time, sex or age. These findings suggest considerable scope for the implementation of interventions to reduce criminal activity among this population.

Personalised feedback for risky drinkers identified in emergency departments: Six month outcomes of a randomised controlled trial conducted as part of the Alcohol Action in Rural Communities (AARC) study

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Background: Evidence exists for the efficacy of emergency department (ED)-based brief alcohol interventions, but attempts to incorporate face-to-face interventions into routine ED practice have been hampered by time, financial, and attitudinal constraints. In an attempt to provide evidence regarding an intervention which imposes minimally on clinical staff workloads without being prohibitively expensive, mailed personalised feedback was evaluated in ED patients as part of the AARC project. Among patients with an alcohol-related ED presentation, those receiving mailed feedback consumed 12.2 fewer drinks per week than the control group, at 6 week follow-up. Whether this effect would be maintained beyond 6 weeks, and whether the intervention had an impact on alcohol-related harm, however, remained unknown. This follow up study sought to answer that question.

Methods: A randomised controlled trial of patients presenting to five rural EDs in New South Wales, Australia, was conducted. ED patients aged 14 years and older were screened using the Alcohol Use Disorders Identification Test, and those scoring eight or more were randomly allocated to the intervention or control group (N=304). Participants in the intervention group received mailed personalised feedback regarding their alcohol consumption. The control group received no feedback.

Results: Six months after receiving the intervention, the statistically significant reduction in drinks consumed per week among patients presenting with alcohol-related ED presentations was no longer present. There was, however, a statistically significant reduction in repeat ED presentations in patients with higher levels of education: among patients who had completed high school or further education, the intervention group had one-third the odds of experiencing a repeat ED presentation during the 6 month follow-up period compared with the control group.

Conclusions: Mailed personalised feedback has a statistically significant short-term impact in reducing the number of drinks consumed per week among patients with an alcohol-related ED presentation, and a statistically significant longer-term impact in reducing repeat ED presentations among patients with high school or further education. Future research examining whether the intervention can be adapted to be more effective in patients with lower levels of education, and whether a 'booster' can extend the impact of the intervention, is warranted.

A randomised controlled trial of sublingual buprenorphine–naloxone film versus tablets in the management of opioid dependence

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Background: Buprenorphine–naloxone sublingual film was introduced in 2011 in Australia as an alternative to tablets. This study compared the two formulations on subjective dose effects and equivalence, trough plasma levels, adverse events, patient satisfaction, supervised dosing time, and impact upon treatment outcomes (substance use, psychosocial function).

Methods: 92 buprenorphine–naloxone tablet patients were recruited to this outpatient multi-site double-blind double-dummy parallel group trial. Patients were randomised to either tablets or film, without dose changes, over a 31 day period.

Results: No significant group differences were observed for subjective dose effects, trough plasma buprenorphine or norbuprenorphine levels, adverse events and treatment outcomes. Buprenorphine–naloxone film took significantly less time to dissolve than tablets (173 ± 71 versus 242 ± 141 s, $p = 0.007$, $F = 7.67$).

Conclusions: The study demonstrated dose equivalence and comparable clinical outcomes between the buprenorphine–naloxone film and tablet preparations, whilst showing improved dispensing times and patient ratings of satisfaction with the film.

Alcohol consumption and related harm in Australia: Understanding recent trends

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This study aims to unpack the recent divergence between trends in harm rates and trends in population-based measures of consumption observed in Australia. One theory put forward to explain these disparate trends has been a 'polarisation' of consumption – in other words, differing trends in consumption in different sub-populations. This polarisation hypothesis has been empirically tested amongst adolescents in Sweden, with evidence found that, while overall consumption in this group was falling, heavier consumers were drinking increasing amounts. These findings, if generalisable, provide a robust explanation for the recent divergences in overall measures of per-capita consumption and harm rates.

In this study, we undertake a detailed study of how the distribution of Australian consumption has changed between 2001 and 2010, using four waves of the National Drug Strategy Household Survey (NDSHS), a large population survey. We explore the proportion of consumption accounted for by various sub-sections of the population and assess whether shifts in the distribution of consumption leading to more concentrated heavy consumption can be identified. Specific analyses based on age, sex and socio-economic status were undertaken to provide a more nuanced understanding of whether demographic factors can explain any of the recent trends in Australia. The results show evidence of increases in drinking among the heaviest drinkers offset by declining drinking across the remainder of the population. These findings provide some support for polarisation of consumption and suggest the need for policy interventions aimed particularly at the heaviest drinkers in society.

Tackling 'drug-related' crime: Are there merits in diverting drug misusing defendants to treatment?

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Aim: To assess what additional impact exposure to the Magistrates' Early Referral Into Treatment (MERIT) program in New South Wales (NSW) has on the prevalence, frequency and seriousness of known offending among drug misusing defendants.

Methods: Secondary analysis of anonymised extracts derived from the MERIT Information Management System, Corrective Services NSW Offender Information Management System (OIMS) and the Bureau of Crime Statistics and Research Re-Offending Database. The units of analysis include an experimental group of 1,017 defendants who exited the MERIT program in 2008 (including program completers and non-completers) and a comparison group of 1,017 drug misusing offenders sentenced in non-MERIT courts (and identified via OIMS) during this period. Both groups were selected from a larger pool of cases (N=3,319) using propensity score matching and are therefore equivalent to each other on a range of demographic, main offence, criminal history and time at risk variables.

Results: Include a comparative assessment of (i) trends in annual conviction rates and the number of offences during each of the five years prior to sampling and 12 months post; (ii) changes in the number of offences committed in the 12 months pre and post-sampling; (iii) changes in offence seriousness over this period; (iv) survival analysis for days to first proven re-offence; and (v) the impact of a number of factors on the likelihood of re-offending. The results show considerable reductions in the prevalence, frequency and seriousness of proven re-offending following exposure to MERIT, but comparable changes were observed among 'matched' offenders not accessing this support.

Conclusions: Adaptations to MERIT policy and practice aimed at maximising the program's crime prevention impact are proposed and discussed.

Indigenous intervention research: Examining what we know and how we might do better

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Introduction: Key critical reviews of the international and Australian Indigenous intervention literature have identified a clear lack of Indigenous intervention research, relative to other research types, especially descriptive studies. The persistence of relatively poor health among Indigenous Australians and the apparent inertia in shifting the focus of research toward interventions suggests the need for more innovative approaches to conducting Indigenous intervention research.

Aims: This presentation has two aims. First, to summarise the findings that NDARC-related reviews have contributed to the existing review effort. Second, to identify alternative approaches to Indigenous intervention research and present preliminary data from two novel approaches to conducting intervention evaluations: a community-based intervention to reduce binge drinking among young people; and a community-based intervention targeting high-risk young people.

Results: NDARC reviews on a range of Indigenous topics have consistently confirmed the results of international reviews, but they also highlight the lack of methodological rigour in Indigenous intervention research. An alternative approach to implementing and evaluating Indigenous interventions is identified, the feasibility of which is illustrated by two novel approaches to conducting Indigenous intervention evaluations involving NDARC. Preliminary outcome data from one of these, a community-based intervention to reduce binge drinking among young people, suggest the intervention achieved a 16% reduction in the proportion of young people who reported binge drinking in the last 12 months. The second study is only just commencing, but the process of engagement and any available data will be described.

Conclusions: The current quality of Indigenous research could be improved, which may require new ways of engaging with Indigenous communities. Although NDARC studies represent two small and emerging examples, they do suggest that more effective partnerships between Indigenous communities and researchers are possible, and may even improve the methodological quality of Indigenous research.

Early onset cannabis use and young adult outcomes: An integrative data analysis of three Australasian cohorts

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Introduction: Current research into heavy early onset cannabis use has been hampered by the fact that this group of users often are not adequately represented in existing cohort studies. Integrative data analyses may overcome this limitation. This study aimed to obtain more robust estimates of the effect of heavy adolescent cannabis use on particular life-course outcomes by age 25 years by developing integrative analyses across three large and long-running Australasian cohort studies (Australian Temperament Project, n=2443; Christchurch Health and Development Study, n=1265; Victorian Adolescent Health Cohort Study, n=2032).

Method: A consistent metric for each measure of interest was identified across studies. Regression analyses were applied to integrated data to obtain pooled effect sizes adjusted for study effects and potential confounding factors.

Results: Results (OR, 95%CI) provide more robust estimates of the association between daily adolescent cannabis use and young adult outcomes including reduced educational attainment (0.3, 0.2-0.4) and increased depression (1.6, 1.1-2.4), self-harm (3.8, 2.0-7.4), welfare dependence (1.7, 1.1-2.9), other illicit drug use (10.9, 7.7-15.6) and cannabis dependence (57.4, 37.7-87.6).

Conclusion: This study is the first to bring together data from large, mature cohorts on the relationships between heavy early cannabis use and adult consequences. Results represent a significant advance over standard practice in meta-analysis by integrating data at the participant level. The novel statistical approach allows an examination of cannabis use not possible within individual cohorts. Findings demonstrate the pervasive effects of heavy early cannabis use across a number of domains and reinforce public health concerns about minimising the use of cannabis among school-aged populations.

International trends over time in the prevalence and harms of alcohol and cannabis use: What is the evidence for the closing gender gap?

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Harms associated with alcohol and cannabis use account for a significant amount of the burden of disease worldwide. Traditionally, alcohol and cannabis use and related harms are more prevalent in males than females. However, there is emerging evidence to suggest that the epidemiology of alcohol and cannabis use is changing with females “catching up” to their male counterparts in rates of alcohol and cannabis use, and alcohol- and cannabis-related harms. If this is indeed the trend then a radical reconceptualisation of prevention, early intervention and treatment is required. This project aims to systematically summarise the published literature on sex differences in a number of key indicators of alcohol and cannabis epidemiology, with a specific focus on whether these indicators have shown changes over time. This paper will present the results of this review and will discuss the implications for prevention and treatment.

Online availability of illicit and emerging substances

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Issue: A growing number of participants in the 2011 and 2012 Ecstasy and Related Drugs Reporting Systems (EDRS) indicate the use of the internet for drug purchasing and information. This is especially the case for Emerging Psychoactive Substances (EPS), but also with other illicit substances via the 'Silk Road', an anonymous online marketplace. This calls for increased monitoring of internet marketplaces in the interest of timely and responsive monitoring of illicit drug purchasing.

Approach: Online retailers shipping EPS to Australia were identified and quantified monthly using methodology similar to that used by the European Monitoring Centre for Drugs and Drug Addiction. In addition to this, retailers on the Silk Road Marketplace were quantified by substance type and available forms at fortnightly time points. Findings from both online monitoring systems are compared with current findings from the EDRS and the National Illicit Drug Indicators Project (NIDIP).

Key Findings: Findings from EPS searches indicate a high availability of stimulant and hallucinogen phenethylamine type stimulants, as well as synthetic cannabinoids and tryptamines. Findings from the Silk Road marketplace searches indicate a high availability of cannabis, EPS, and MDMA available to Australia. Amongst Australian retailers the most commonly available substances are MDMA followed by EPS and prescription drugs.

Implications: The high availability of EPS is concerning due to the lack of clear knowledge on potential side effects of many of these substances. Additionally, many of these substances are marketed as 'legal' despite being controlled substances within Australia. The high prevalence of Australian retailers on the Silk Road Marketplace is also a concern due to the relative ease of posting illicit substances domestically than internationally.

Conclusion: Online marketplaces must continue to be monitored for information that may inform future trends in availability within Australia.

POSTERS

These have been grouped by general topic area. Please note many posters address more than one issue/substance.

POSTERS: PREVENTION

The *Climate Schools Interactive (CSI) Study: Protocol of a cluster randomised controlled trial of the internet-based *Climate Schools: Ecstasy and Emerging Drugs Module**

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Introduction: Although the prevalence of ecstasy use in young people is relatively low, for those teenagers who do use ecstasy, the potential for harm is considerable, and therefore there is a clear need for effective prevention. Recently, there has been growing concern about the availability and misuse of New and Emerging Drugs (NEDs) designed to mimic the effects of illicit drugs, such as ecstasy. At present, no evidence-based program exists which aims to specifically target the prevention of ecstasy and emerging drug use among young people. To fill this gap, the proposed study will evaluate whether an online, school-based prevention program, known as the *Climate Schools: Ecstasy and Emerging Drugs Module*, can address and prevent the use of ecstasy and emerging drugs among Australian students. This poster presents the study protocol of a randomised controlled trial (RCT) of the module.

Method: We will seek to demonstrate the effectiveness of the module by running a cluster RCT among Year 10 students at 12 Sydney schools in 2014. Schools will be randomised to either the *Climate Schools* intervention (n=6), or to a control group (n=6). All students will complete a self-report survey at baseline, post-intervention and six, 12 and 24 months after the intervention. Outcomes measured include ecstasy- and emerging drug-related knowledge, intentions to use these substances, patterns of use of ecstasy and emerging drugs and a range of secondary outcomes.

Discussion and Implications: To our knowledge, this will be the first trial of an internet-based program specifically designed to target ecstasy and emerging drug use among adolescents. If deemed effective, the *Climate Schools: Ecstasy and Emerging Drugs Module* will provide schools with an interactive and novel prevention program for ecstasy and emerging drugs that can be readily implemented by teachers.

A cross-validation trial of the internet-based *Climate Schools: Alcohol and Cannabis* course

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Introduction: This poster aims to present the preliminary findings from a cross-validation trial of the *Climate Schools: Alcohol and Cannabis* course, an internet-based prevention program for alcohol and cannabis use in adolescents.

Method: A cluster randomised control trial was carried out in 13 schools across Sydney as part of the larger CAP intervention trial. Six schools were randomly allocated to the novel internet-based *Climate Schools* intervention where they received 12 interactive lessons on alcohol, cannabis, and related harms during Year Eight (13-14 years). Seven schools were allocated to the control group, where they received their usual health education over the year. Intervention and control groups were assessed at baseline and immediately after the intervention. Approximately 1105 students completed the baseline assessment (578 in intervention and 527 in control). The questionnaire assessed patterns and prevalence of alcohol and cannabis use, alcohol and cannabis related knowledge, attitudes towards alcohol and cannabis and harms associated with one's own use of alcohol and cannabis.

Results: Preliminary analyses have indicated that compared to controls, students in the *Climate Schools* intervention group reported significantly greater alcohol and cannabis-related knowledge, were less likely to have ever had a sip of alcohol, to have drunk any alcohol in the past six months and less likely to intend on drinking in the future.

Conclusions: Although preliminary, these results show early support for the *Climate Schools: Alcohol & Cannabis* course as an effective internet-based prevention program. Analysis of 12-month follow-up data is needed to explore the longer term effects of the program among Australian adolescents.

Bullies, victims and bully-victims: Internalizing and externalizing problems

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Introduction: Bullying has been gaining increasing attention as a significant problem affecting the health and wellbeing of school-aged children. Bullying involvement in adolescence is of particular concern, due to the great importance of peer relationships during this stage of development, and because the typical onset of substance use and mental disorders occurs during the adolescent years. Research on risk factors for bullying involvement suggests that internalizing problems (e.g. anxiety, depression) and externalizing problems (e.g. substance use, behavioural problems) are predictors of both bullying victimisation and perpetration. Further, it is apparent that both internalizing problems and externalizing problems often result as a consequence of bullying victimisation and perpetration. The current study aims to explore the associations between bullying involvement (victimisation and perpetration) and internalizing/externalizing problems in a sample of Australian adolescents.

Method: This study will examine baseline data collected as part of the Climate and Prevention (CAP) study, a large school-based randomised controlled trial of a substance use prevention intervention. We will examine associations between bullying involvement (victimisation and perpetration) and internalizing/externalizing problems amongst a sample of Year 8 students [n=2269]. Bullying involvement was measured using an adapted version of the Olweus Bully Victim Questionnaire. Internalizing and externalizing problems were assessed using the Substance Use Risk Profile Scale, the Strengths and Difficulties Questionnaire, the depression and anxiety subscales from the Brief Symptom Inventory, the Reactive-Proactive Aggression Questionnaire, and substance use questions used in previous CLIMATE SCHOOLS trials.

Results: Pending.

Discussion and Implications: Information on risk factors for bullying involvement can be used to inform preventive interventions for bullying victimisation and perpetration. Evidence of internalizing and externalizing problems arising as a consequence of bullying involvement indicates that reducing bullying is likely to reduce the incidence of substance use problems and mental disorders. Further, the overlap between internalizing/externalizing problems, bullying involvement, substance use, and mental disorders indicates that interventions focused on reducing internalizing and externalizing problems can simultaneously reduce the incidence of all three of these significant problems.

Secondary effects of a personality-targeted substance misuse prevention intervention: Does the *Preventure* program influence bullying among Australian adolescents?

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Objective: A school-based, personality-targeted, coping skills intervention known as *Preventure* has demonstrated significant preventative effects on substance use amongst adolescents with high-risk personality types. This study examined the effects of *Preventure* on bullying victimisation and perpetration amongst adolescents with personality risk factors.

Method: A randomised controlled trial was carried out in secondary schools across Sydney, Australia, as part of the larger *Climate Schools and Preventure* intervention trial. Six schools were randomly allocated to the *Preventure* intervention and eight to the control group, where they received their usual health education over the year. The *Preventure* intervention involved two 90 minute group sessions, based on cognitive behavioural therapy, and tailored to four personality types shown to increase risk of substance misuse. Students were allocated to the groups based on their scores on the Substance Use Risk Profile Scale, which categorises students into a low-risk personality type, or one of four high-risk personality types: impulsivity, sensation-seeking, anxiety sensitivity or negative thinking. Baseline data was collected for a total of 1084 Year 8/9 students (479 in *Preventure* and 605 in control). Bullying was measured using an amended version of the 'Revised Olweus Bully/Victim Scale'. The students were followed up six and 12 months post-baseline; the six month data was examined to explore whether the *Preventure* program significantly reduced bullying prevalence, in comparison to the control group.

Results: Half the students reported having been bullied in the past six months and one quarter reported bullying others in the past six months. Bullying involvement differed according to personality type; bullying victimisation was highest for those in the 'negative thinking' group and bullying perpetration was highest for those in the 'impulsivity' group. There were no significant differences between the *Preventure* & Control groups at six month follow-up, controlling for baseline bullying.

Conclusions: Bullying was common among this sample of Australian adolescents. It was apparent that bullying involvement differed by personality type. While no differences in bullying were found between the Control and *Preventure* groups at the six month follow-up, the effects of *Preventure* on bullying should become clear at the 12 month follow-up. Evidence of the effectiveness of a personality-targeted approach to bullying intervention would have important implications for bullying interventions in Australia.

Secondary effects of a universal internet-based program to prevent alcohol and cannabis use amongst Australian adolescents: Reducing truancy, moral disengagement and psychological distress

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Introduction: The *Climate Schools* universal internet-based preventive intervention has been proven to reduce the frequency of alcohol and cannabis use, and increase alcohol and cannabis related knowledge amongst adolescents.

As this intervention aims to reduce substance use behaviour by increasing resistance to peer pressure, teaching generic competency skills and promoting positive choices, the aim of this study was to examine the extent to which this approach can also reduce associated risk-factors and psychological distress in adolescents.

Method: A cluster Randomised Controlled Trial (RCT) was conducted in Sydney, Australia to assess the efficacy of the universal Climate Schools: Alcohol and Cannabis course. The evidence-based course is facilitated by the internet and consists of 12 novel and curriculum consistent lessons delivered over six months.

A total of 764 year eight students (mean age: 13.1 years) from 10 Australian secondary schools were randomly allocated to the internet-based prevention program (n=397, five schools), or to their usual health classes (n=367, five schools).

Participants were assessed at baseline, immediately post, and six and 12 months following completion of the intervention on their levels of truancy, psychological distress, moral disengagement and self-efficacy to resist peer pressure for transgressive behaviours.

Results: Results show that compared to the control group, students in the intervention group showed significant reductions in truancy, reduced psychological distress and reduced moral disengagement up to 12 months following completion of the intervention. No difference was found between groups on levels of self-efficacy to resist peer pressure.

Conclusions: These intervention effects indicate that internet-based preventive interventions designed to prevent alcohol and cannabis use can concurrently reduce other associated risk-behaviours and psychological distress in adolescents.

Preventing adolescent substance use using the targeted 'Preventure' intervention: What do Australian students think?

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Issue: Research has shown that adolescents with 'high-risk' personality profiles are more likely to misuse substances compared to those with 'low-risk' profiles. This has led to the development of Preventure, a personality-targeted substance use prevention intervention. Preventure has shown to be effective in reducing substance use among adolescents in the UK and Canada. This intervention has since been modified for Australia, with enhanced graphics and adaptations made to the scenarios to reflect Australian cultural norms. This study aims to present the Australian students' feedback on the acceptability of this modified intervention.

Approach: Preventure was trialled in 2012 as part of the CAP study, a large school-based randomised controlled trial of a substance use prevention intervention. Approximately 300 'high-risk' students from 12 schools received the Preventure intervention. This intervention was run by Clinical Psychologists and consisted of two 90-minute sessions run one week apart utilising cognitive behaviour and motivational interviewing techniques. At the completion of the Preventure groups, students were asked to provide anonymous feedback on the relevance, usefulness and acceptability of Preventure.

Key Findings: A summary of student evaluation data about Preventure is presented.

Implications and Conclusion: The Preventure intervention was found to be acceptable and well received in an Australian adolescent context, which places it as a unique tool in the prevention of substance use among 'high-risk' youth in Australia.

The Climate Schools Combined (CSC) Study: Internet-based prevention for anxiety, depression and substance use in young Australians

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Background: Anxiety, depressive and substance use disorders account for three quarters of the disability attributed to mental disorders. Moreover, these disorders frequently co-occur, have similar risk factors and interact, yet there are few effective preventive programs for both these common disorders. The *CLIMATE Schools Combined* (CSC) intervention aims to address this gap by evaluating an integrative approach to prevent these common disorders, which combines the evidence-based *CLIMATE Schools: Alcohol and Cannabis* course with the *CLIMATE Schools: Anxiety and Depression* course.

Aim: This poster will outline the protocol of the CSC study which will determine the effectiveness of the integrated CSC intervention in reducing mental health and substance use problems in adolescents. This will be the first trial, internationally, to evaluate this integrative approach.

Method: The effectiveness of the CSC intervention will be assessed through a cluster randomised control trial (RCT) in 84 schools across three states in Australia. Schools will be randomised to one of four programs: 1) the Climate Schools: Anxiety and Depression course only; 2) the Climate Schools: Alcohol and Cannabis only; 3) the CSC intervention; or 4) health education as usual. All students will be assessed on levels of substance knowledge, substance use and mental health symptoms at baseline, immediately pre- and post- each *CLIMATE Schools* program (i.e., *Substance Use and Mental Health*) and 18, 24 and 30 months after baseline.

Conclusion: Determining the effectiveness of the CSC intervention will highlight the importance of an integrative approach to the prevention of substance use and mental health disorders. The wider implication is the potential for a paradigm shift in the approach to the development of preventive programs for other comorbid health concerns. This will be a most significant contribution to promoting and maintaining the good health of the community and reducing the burden of disease, social costs, and disability associated with mental disorders.

POSTERS: YOUNG PEOPLE

Mapping the trajectory of anxiety, depression and alcohol use across adolescence

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Introduction: While anxiety, depressive and substance use disorders account for three quarters of the disability attributed to mental disorders, we have limited knowledge on the natural history of when these problems start to develop and what this means for prevention and treatment. While previous research has examined the prevalence of anxiety and depressive disorders across adolescence, an understanding of the symptom trajectory in early adolescence is needed. Of particular interest is the relationship between depression, anxiety and alcohol use, as these problems frequently co-occur, have the same risk factors and interact.

Aim: The present study will concurrently map the trajectories of anxiety, depression and alcohol use in a sample of Australian adolescents over the course of one year.

Method: Data was collected for the purpose of evaluating a large randomised controlled trial of a school-based intervention, intended to decrease substance use (The CAP study). Data from the control group only will be presented, such that any effects of the intervention on the natural trajectory of alcohol use as well as anxiety and depression symptoms will not confound the results. In total, 605 students across seven schools in New South Wales and one school in Victoria will be included in the analysis. Students completed measures of anxiety and depression symptoms (BSI and K6) and reported on the frequency and amount of their alcohol use at the beginning of Year Eight (mean age 13yrs). The same students completed the measures six and 12 months later.

Results: Alcohol use, anxiety and depression symptoms, will be concurrently mapped over one year. The 12 month data is currently being collected and will be available in June 2013 when analyses can be conducted.

Implications: A clear understanding of the early trajectory of depression and anxiety symptoms and alcohol use in adolescents is crucial to inform the timing of early intervention programs.

Associations between personality traits and alcohol misuse: A longitudinal study on an Australian adolescent population

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Introduction: Externalising personality traits, such as impulsivity and sensation seeking, have been linked with early onset drinking and alcohol misuse in adolescence. However the link between internalising personality traits, such as anxiety sensitivity and negative thinking, and alcohol use remains unclear. Some research suggests these traits are risk factors for early onset alcohol use and abuse. Other research suggests those with anxiety sensitivity may avoid alcohol use in adolescence for fear of losing control of their actions.

Objective: The present study will examine whether impulsivity, sensation seeking, anxiety sensitivity or negative thinking traits predict early alcohol use or misuse in an Australian adolescent sample over the course of 12 months.

Method: Data was collected as part of a larger randomised controlled trial of a high school-based intervention, designed to reduce alcohol and substance use. The present study analysed data from the control group of this trial. In total, 605 students across seven schools in New South Wales and one school in Victoria completed the study. Personality traits were measured using subscales (Impulsivity, Sensation Seeking, Anxiety Sensitivity, Hopelessness) of the Substance User Risk Profile Scale. In order to obtain data on patterns of alcohol use, participants were asked what age they consumed their first full alcoholic beverage and about their drinking habits in the past six months. These measures were assessed at baseline when participants were in year eight (mean age was 13 years), at six-month follow-up and at 12-month follow-up.

Results: Data for baseline and six-month follow-up have been collected. Data for 12-month follow-up is currently in the collection phase and will be available for analysis by May 2013.

Conclusions: Results are expected to show impulsivity and sensation seeking are associated with early alcohol use and alcohol misuse in adolescents. Results concerning anxiety sensitivity and negative thinking will help ascertain whether these traits should be considered risk or protective factors for alcohol misuse in adolescence. This information can be used to inform future early intervention programs.

Developing an online game on illicit drugs and related harms

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Introduction: Past studies have shown that games are an effective medium for teaching students. The present study aims to develop an online game on the topic of illicit drugs, with a secondary goal to promote negative attitudes towards illicit drugs and increase knowledge for those who play it.

Method: Focus groups were run with 115 students in five schools across New South Wales and Western Australia to investigate where students would like to be able to access the game and to gain insight into the sort of game they would like to see developed. The feedback obtained from the focus groups is being used to develop the game which is currently underway.

Results: A summary of the focus group results, current progress and screen shots of the game will be presented.

Discussion: A prototype of the game will be tested with a student population to ensure it is usable and satisfactory, as previous studies have found these to be predictors for gains on content knowledge. The final version of the game is expected to promote negative attitudes towards illicit drugs and increase knowledge about illicit drugs and related harms.

Peer support and the potential for peer mentoring in a program for high risk youth in rural New South Wales

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Aboriginal and Torres Strait Islander youth show more risky behavior than non-Indigenous youth and are 26 times more likely to be imprisoned. Juvenile delinquency increases the chance of offending and related problems later in life. Peer mentoring is an effective approach to break this cycle, especially for marginalized groups and when incorporated into existing programs or services. This study investigated the role of peer support and the potential for peer mentoring in a program targeting high risk young people, of which 50 percent of the participants are Aboriginal. This program, BackTrack (Armidale, NSW), aims to break the offending cycle by offering a welcoming, “family” environment to high risk youth, with a mixture of personal development and practical skills. This program has helped many boys out of the offending cycle into mainstream employment. Qualitative, semi-structured interviews were conducted with six BackTrack graduates, two youth workers, two teachers and two representatives from external organizations involved in BackTrack. The interviews dealt with the support the BackTrack graduates had experienced, the support the involved adults provided and whether they saw potential for a structured peer mentoring aspect of BackTrack. Graduates experienced support from both the other participants in BackTrack and the involved adults. They felt supported in acquiring life skills such as work ethics and conflict management. Graduates could relate to the adults and older participants in BackTrack, and see them as a role model, because of their shared background. This shared background also provides the adults with unique understanding, empathy and respect towards the participants. Five interviewees could see potential for structured peer mentoring in BackTrack, but the majority felt there was no need for a structured peer mentoring aspect, since a lot of natural mentoring was already happening. These natural supportive relationships were perceived to be one of the most important factors in BackTrack’s success.

Electrophysiological evidence of subtle deficits in recognition memory processes in young heavy drinkers and cannabis users

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Introduction: Long-term heavy use of cannabis and alcohol are known to be associated with memory impairments. In this study, we examined whether subtle deficits were observable in young adults using both behavioural measures and brain electrical activity indices.

Methods: Twenty-one regular heavy drinkers, 18 regular cannabis users and 22 controls aged 18-21 completed a modified verbal learning test while brain electrical activity was recorded. Average brain activity was calculated for words which were subsequently remembered vs. not remembered, and for presentations of learnt words, previously seen words, and new words in a later recognition test.

Results: Relative to controls, heavy drinkers showed trends to poorer initial learning and greater forgetting; cannabis users also showed the latter effect. In recognition tests, heavy drinkers were less likely to recognise learnt words, while cannabis users were slower to reject previously seen and new words. At encoding, both cannabis users and heavy drinkers showed reductions in the usual remembered vs. not remembered effect (200ms post-stimulus) observed in controls. In the recognition test, heavy drinkers responded to previously seen words similarly to learnt words (550ms post-stimulus). Heavy drinkers also showed a reduced positivity to learnt words approximately 180ms post-stimulus. Cannabis users displayed a reduced frontal negativity (400ms) to all words, but were mostly similar to controls.

Discussion: The results suggest the presence of subtle brain dysfunction associated with encoding and recognition not significant enough to cause substantial behavioural differences, and underline the potential for brain dysfunction with early exposure to alcohol and cannabis.

POSTERS: ALCOHOL

Comparison of adolescent alcohol use at baseline and first follow-up: Results from the Drinking and Teens Project

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Background: Alcohol is one of the leading contributors to the burden of disease in young people. Furthermore, international population data suggests that adolescent alcohol use and misuse has been increasing in recent years. Despite this, little is known about the context of adolescent alcohol initiation and the development of harmful drinking trajectories. This research compares baseline and follow up data from an Australian longitudinal cohort.

Method: A total of 1,950 parent-child dyads, recruited from Australian secondary schools, participated in the baseline surveys. During 2010/11, 1,911 parents and 1,909 children completed baseline surveys and in 2011/2012, 1,848 parents and 1,861 children completed follow-up surveys. Measures include demographics, alcohol use and harms; rules; parental style and monitoring; family relationships and conflict; peer substance use and approval; and delinquency.

Results: Sixty-eight per cent of adolescents (M=12.5 years) reported lifetime alcohol involvement at baseline and 19.8% reported any use in the previous six months. At follow-up one (M=13.9 years), 44% of adolescents reported using alcohol in the past 12 months. Parent factors (including frequency and quantity of alcohol consumption, drinking alcohol in the presence of their child and younger age of parent alcohol initiation) and child factors (including rule breaking and aggressive behaviour, gender and peer alcohol use and approval) were associated with adolescent alcohol initiation and drinking in the past year.

Conclusion: The context of adolescent alcohol initiation and use provides important insight into understanding the nature of use, misuse and development of harmful drinking trajectories during adolescence. Given that alcohol involvement often commences during this developmental period, understanding how different initiation and consumption contexts shape different trajectories may play an important role in future screening and prevention efforts. This in turn can inform international alcohol policy, as well as communities and families.

A managed alcohol program for Sydney's homeless

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About 50% of homeless persons are alcohol dependent. More than a third of homeless persons admitted to St Vincent's Hospital present with alcohol or drug related problems. The needs of homeless alcohol dependent people cannot be adequately addressed by Sydney's abstinence-based housing services. Consequently, they may be forced into unplanned alcohol withdrawal, increasing the risk of seizures and alcohol-related brain injury. Others may engage in risk taking behaviour including increased drinking immediately prior to entering shelters to avoid "wasting" alcohol or stay on the streets risking violence rather than enter abstinence-oriented services.

Managed Alcohol Programs (MAP) are a novel approach to assist homeless people with chronic and severe alcohol dependence. They dispense a regulated amount of alcohol at set times. MAPs overseas report reduced alcohol consumption, binge drinking, convulsions, visits to emergency departments and encounters with police.

Sydney has at least 350 alcohol dependent homeless persons, but no managed alcohol programs. Attempts to introduce MAPs have been rejected by Government which cite a lack of rigorous evidence as a barrier to implementation. This poster will review the evidence for MAPs and consider whether Sydney might benefit from having a MAP.

12-month follow-up of neurocognitive profiles of people with comorbid depression and alcohol use

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To our knowledge this is the first report of repeated neuropsychological assessment over 12 months in a sample of 71 people with comorbid depression and alcohol use disorders. Participants were given a range of neuropsychological assessments at baseline and again at 12 months. 12 month results were interpreted as potential factors in recovery from depression and/or alcohol use disorders. The findings indicated that reducing the number of drinking days per week was associated with improvements in memory, executive functioning, fluid intelligence and full scale IQ. Similarly, reduction in quantity of alcohol consumed was associated with a range of cognitive benefits. Improvement in depressive symptoms was reflected in better memory, executive functioning and fluid intelligence. The value of neuropsychological assessment in aiding treatment selection was supported.

Fetal alcohol exposure and developmental outcomes for children: A meta-analytic review

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There is evidence of detrimental effects of heavy prenatal alcohol exposure on intellectual ability in childhood. However, relatively little is known about potential effects of low to moderate alcohol consumption during pregnancy. A meta-analysis conducted 10 years ago (Testa, 2003) suggested that moderate levels of consumption does impact infant cognitive development. Current Australian guidelines advise that the safest option is to abstain from drinking during pregnancy. However a significant number of Australian women continue to consume alcohol during pregnancy. It is therefore critical to examine the effect this exposure may have on child development. However, few studies have investigated this, and there is significant variation in research methodologies and findings.

This study aims to clarify this by extending the work by Testa (2003). Use of meta-analysis to pool samples will increase power to examine the impact of alcohol use on intellectual ability. Studies published from 2000-2013 that assess intellectual ability of children who were exposed to alcohol in utero were reviewed. A comprehensive database search identified 3141 potential articles. Studies were included in the final analysis if they (a) Reported alcohol use in pregnancy; (b) used standardised measures of intellectual functioning in childhood/adolescence as outcomes; and (c) included a control group of abstaining mothers. This resulted in 19 independent effect sizes being extracted from four articles.

Results suggest there is a highly significant difference in IQ scores between those exposed to alcohol in utero and those whose mothers abstained during pregnancy. Children in the exposed group are estimated to have IQ scores roughly one standard deviation lower than abstinent mothers. However, there is a paucity of research using standardised, researcher-administered outcome measures of intellectual functioning in children with prenatal alcohol exposure recorded. Children exposed to low levels of alcohol prenatally remain an under-researched population.

The progression of drug and alcohol use, mental health, and attachment through pregnancy and post-natally: Relationships and patterns

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Issue: Pregnancy and the early postnatal period represent a critical developmental window for the health and well-being of the growing foetus/infant. This period is likewise one of potential vulnerability and risk when both maternal well-being and foetal/infant development can be compromised. Maternal drug and alcohol use, mental health, and attachment to the developing foetus/infant, have each been identified as factors which are important during this early developmental window. Despite this knowledge, few studies have documented the progression of these behaviours across pregnancy and through the early postnatal period. Utilisation of data from a longitudinal birth cohort to map usual patterns of maternal drug and alcohol use, mental health and attachment to the developing foetus/infant would allow for improved understanding of the progression of these factors pre and postnatally and would also identify potentially critical points for intervention.

Approach: This study will utilise data (n=383) from a longitudinal birth cohort study of pregnant women being assessed during the prenatal and early postnatal period. Comprehensive data was collected on: demographic information, drug and alcohol use (quantity and frequency of caffeine, alcohol, tobacco and illicit substance use), mental health (Depression, Stress and Anxiety Scale) and foetal/infant attachment security (Maternal Antenatal/Postnatal Attachment Scales). Assessments were conducted in pregnancy (trimester one, two and three) and postnatally (eight weeks).

Aims: This poster aims to -

- Describe maternal substance use through pregnancy and in the early postnatal period (eight weeks).
- Describe maternal mental health (stress, anxiety and depression) and attachment to the foetus/infant in the pre and postnatal periods.
- Investigate whether maternal attachment to the foetus/infant is related to alcohol use at trimester three and eight weeks postnatally.

Adolescent predictors of alcohol use disorders in young adults

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Objectives: We know little about longitudinal patterns of alcohol use and alcohol use disorders in young adults. While DSM-IV alcohol use disorder is a dichotomous diagnosis, it can be underpinned by multiple combinations of symptom patterns and drinking experiences. We aim to extend the scant literature on this issue with a 10-year follow-up of a representative cohort of 1943 young Australians followed from 14 years, by: (i) characterising the heterogeneous experience of alcohol use disorder symptoms in young adults, and (ii) examining if there are unique adolescent predictors of young adult alcohol use disorder.

Materials and Methods: DSM-IV alcohol use disorder (abuse and dependence) was assessed at 24 years among participants reporting at least weekly drinking, or consuming multiple drinks per drinking day, in the past year. Participants meeting an alcohol dependence diagnosis were coded negative on alcohol abuse. Using existing literature, latent class analysis (LCA) will be used to characterise the sample's patterns of alcohol use disorder. Appropriate regression techniques will be used to examine adolescent predictors of class membership according to whether LCA gives ordered categories of severity (e.g. ordinal logistic regression) or there appear to be qualitatively different categories of class membership. Adolescent predictors of subtypes will include: adolescent alcohol use patterns and problems, antisocial behaviour, personality, mental health and other drug use.

Results: Preliminary analyses indicate that 7% of participants met diagnostic criteria for alcohol abuse and 12% alcohol dependence at 24 years. The majority of participants endorsed only one abuse criteria, typically recurrent alcohol use in hazardous situations (7.1%) and failure to fulfil major role obligations due to alcohol use (6.5%). The most commonly endorsed dependence criteria were: using more than intended or for longer than intended (41.4%), tolerance (21.6%) and persistent to desire to quit/failed quit attempts (18%).

Conclusions: These data will provide important information regarding the patterns and experiences of alcohol use disorder in the age group in which alcohol use is most prevalent. A better understanding of predictors of disorder subtypes will help inform prevention and intervention strategies.

POSTERS: CANNABIS

Neural markers for recovery in cannabis withdrawal

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Introduction and Aims: Cannabis induced cerebral perfusion deficits are identifiable as reduced Electroencephalogram (EEG) spectral power. Previous work has shown that EEG band powers do not significantly increase during cannabis abstinence in regular, non-treatment seeking cannabis users, suggesting that cerebral perfusion deficits persist. This work uses EEG spectral phenotypes to explore recovery during cannabis withdrawal.

Design and Methods: The study employed a within subject prospective design with 10 participants with DSM-IV cannabis dependence during two weeks of monitored abstinence from cannabis. Resting EEG measurements were taken for two minutes with eyes closed at two time points (before and after 14 days of abstinence), from frontal and occipital electrodes. Artefact free EEG was converted to log band power in the frequency bands: Theta (4 – 7.9 Hz), Alpha (8 – 13.9 Hz), and Beta/Gamma (14 – 40 Hz) using a Fast Fourier Transform and analysed for changes from baseline to abstinence. Demographic, drug use and withdrawal data were explored as potential moderators of EEG change.

Results: None of the EEG frequency measures were significantly different between baseline and withdrawal at either frontal or occipital electrodes. Age at first cannabis use was a significant moderator of EEG power change in the Beta/Gamma frequency band ($p=0.001$).

Discussion and Conclusions: The study demonstrates that the age at first cannabis use significantly moderates the recovery observed in Beta/Gamma EEG band power in frontal lobes during abstinence from cannabis. Sample size is small and so power is limited in the present study, but further work on the possibility for biological recovery is warranted.

Cannabis and sleep

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This paper presents the preliminary findings from a systematic review regarding the relationship between cannabis use and sleeping patterns. The initial search was conducted utilising eight literature databases and included search terms relating to both cannabis and sleep, without restriction on publication date. Following the removal of duplicate papers, 1485 articles were identified. Two researchers then reviewed each paper by title and abstract, selecting English language studies of humans. In addition, articles which were reviews, opinion pieces, editorials, or case reports were removed. Following this process, a total of 127 articles were of interest. This paper presents the findings from these articles and focuses on the effects of cannabis administration on sleep patterns (including medicinal trials), the prevalence of sleep problems among cannabis users and the use of cannabis to alleviate sleep problems, and changes to sleep patterns following cannabis abstinence.

Assess, Plan, Track, and Tips (APTT): Developing and testing the first smartphone app for managing cannabis use

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Background: Stigma and accessibility issues are barriers to seeking treatment for cannabis use problems. In order to resolve these issues, we created the first highly interactive, comprehensive, and evidence-based smartphone app for treating cannabis use. Our presentation will detail findings from two studies. The first examines cannabis users' perceptions regarding the usability and helpfulness of the app, while the second examines the feasibility and outcomes of using the app for one month.

Methods: For Study 1, 10 individuals (50% male; aged 17-38 years; 70% had a tertiary degree) interested in evaluating and/or reducing their cannabis use reported on how helpful, useful, and satisfied they were with the app after a two-hour testing session. For Study 2, nine participants (67% male; aged 17-53 years) interested in reducing their cannabis use have utilised the app for one month, and we expect to have 50 completed by September.

Results: Study 1 responses suggested that participants were satisfied with the app. In addition, over half reported that they would use the app instead of seeking face-to-face treatment and believed the app would address barriers to getting help. Preliminary Study 2 results show that at post-treatment, individuals have on average reduced the frequency of their cannabis use by 30% and their cannabis-related problems by 39%. These results are maintained at the one-month follow-up. Over half of the participants reported using the app for at least 20 days, and spending less than five minutes a day engaged with the app.

Implications: Results of Study 1 and 2 demonstrate that it is possible to create an evidence-based Smartphone app for managing cannabis use that cannabis users enjoy and will use. Pending results from Study 2 will assist in determining the potential efficacy of the app as well as suggesting avenues for improvement.

POSTERS: OPIOIDS/ INJECTING DRUG USERS

The diversion and injection of buprenorphine-naloxone film: Findings from the Australian post-marketing surveillance studies, 2012

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Aims: Buprenorphine-naloxone (BNX) film was introduced in Australia with public subsidy in October 2011. This study examines the diversion and injection of BNX film, compared to that for methadone (MET), buprenorphine (BPN) and BNX tablets.

Methods: Data collected for the Australian post-marketing surveillance studies conducted from 2007-2012 were utilised, including: OST sales data; specific surveys of sentinel populations (people who inject drugs, or PWID, and OST clients) and interviews with key experts (KE). Key outcome measures were: diversion of OST medication to illicit markets; injection of OST medication; and non-adherence with supervised dosing.

Results: In 2012, a minority of PWID (5%; 95% CI: 3-7) and OST clients (9%; 95% CI: 5-14) reported recent injection of BNX film, despite its agonist-antagonist formulation and its enhanced mucosal adhesion in the context of supervised dosing. Adjusting for background availability, the levels of injection of BNX film were mainly equivalent to those for BNX tablets, although both BNX preparations were injected less than BPN. Among BNX film clients, the majority (69%) of dispensed doses that were injected were unsupervised. BPN injection among PWID and OST clients was observed from 2007 to 2012, despite lower levels of availability and restrictions on the provision of unsupervised dosing.

Conclusions: Agonist-antagonist formulations, such as BNX tablets and film, may reduce injection, but have not deterred it completely. Multiple strategies are needed, such as clinical risk assessment, careful client selection for supervised/unsupervised dosing and ongoing client monitoring.

Rumination, depression and substance use: Findings from an Australian longitudinal study of heroin users

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The high prevalence of depression among opioid users is a cause for concern as opioid users who experience depression have poorer psychosocial and substance use outcomes. An understanding of the mechanisms underlying the relationship between depression and substance use is important for successful intervention. One factor that may play a part in this relationship is rumination - the tendency to repetitively focus on the causes, consequences and symptoms of one's negative affect. Rumination has been shown to play a role in the onset, severity and persistence of depressive symptoms and several studies indicate that it is also related to poorer substance use outcomes. This study will examine the relationship between rumination, depression and substance use in an adult sample of illicit drug users.

The Australian Treatment Outcome Study (ATOS) cohort includes 615 heroin users recruited between February 2001 and August 2002, in Sydney, Australia. This poster will present preliminary findings of the 11-year follow up, which is currently in progress. At the time of writing, 367 participants (60% of the sample) have been interviewed. Hierarchical logistic regressions will be used to examine the impact of rumination subtypes on substance use, depression, and related outcomes.

Preliminary findings indicate that a greater tendency to ruminate is associated with poorer substance use outcomes, independently of DSM-IV depression. In particular, a subtype of rumination known as "brooding" was found to be related to illicit substance use. This is an important finding because it pinpoints which kind of ruminative thoughts are the best target for treatment.

These findings are an important first step in identifying rumination, and in particular brooding, as a maladaptive construct that warrants attention in the treatment of substance use.

Health related issues (injecting, BBVI and mental health) among people who inject drugs in Australia: Findings from the 2012 Illicit Drug Reporting System (IDRS)

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Introduction: The Illicit Drug Reporting System (IDRS) monitors the price, purity, availability and use of illicit drugs annually in Australia. The IDRS focuses mainly on: heroin and other opioids, methamphetamines, cocaine and cannabis. The IDRS also looks at other issues related to drug use including injection-related problems, blood-borne viral infections and mental health. This presentation provides a closer look at health-related issues among people who inject drugs interviewed in the 2012 IDRS.

Methods: The IDRS involves the collection and analysis of three data sources: (1) interviews with people who inject drugs (IDRS), (2) interviews with experts who work with drug users such as treatment personnel and (3) existing databases on drug-related issues such as customs and overdose data.

Results: Nationally, 924 people who inject drugs were interviewed for the IDRS in 2012. Less than one-fifth of people who injected drugs reported lending a needle or using a needle after somebody else. Around one-quarter reported sharing injecting equipment (not including needles), around half re-used their own needle and over half re-used injecting equipment. Over half reported an injection-related issue in the last month, mainly scarring/bruising. Self-reported mental health problems in the last six months were reported by around half of the national sample. The most common mental health problem reported was depression followed by anxiety.

Conclusions: Greater understanding of the health-related issues among people who inject drugs regularly is required to better inform policy decisions and treatment delivery.

A preliminary examination of the long term outcomes for females with heroin dependence: Findings from the 11 year follow up of the Australian Treatment Outcome Study (ATOS)

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Introduction and Aims: To date little is known about the natural history of female heroin users, and their outcomes over the long term. This paper aims to investigate the preliminary findings of the long term outcomes for female heroin users, and how they compare to their male counterparts.

Design and Methods: The Australian Treatment Outcome Study is a longitudinal study of heroin dependence. A total of 615 participants (female = 210; 34%) were recruited between 2001 and 2002 and were followed up at three, 12, 24, and 36 months, and now again at 11 years.

Results: Out of 355 participants followed up thus far, 128 (38%) are female and have a mean age of 38 years. In the preceding month 74% named government pensions/benefits as their main source of income, and 71% currently were in their own accommodation. Of the 128 females, 53% are currently receiving some form of treatment for opioid dependence. Thirty two had used heroin in the last month, a further 14 had used in the last 12 months, and 82 had not used heroin in the preceding year. All females had reported at least one period of abstinence from heroin in the last 11 years, with the mean total months of abstinence being 71.

At this current follow up, females were compared to their male counterparts. Whilst no significant differences were found on heroin use, males were found to use more illicit substances overall than females. No significant differences were found between males and females on overall physical and mental health. Females were found to be significantly more likely to have a current episode of major depression.

Discussion and Conclusions: Whilst these are only preliminary findings it is expected these results will give us greater insight into the natural history of female heroin users.

POSTERS: DIAGNOSIS, TREATMENT AND INTERVENTIONS

Assessing mental health in old age: Investigating bias in the diagnostic instruments

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Epidemiological studies typically report lower prevalence of mental disorders among older adults relative to middle-aged and young adults. A possible explanation is that age-related bias in the screening items of diagnostic instruments leads to older adults being differentially screened out of the full assessment. This study investigated potential age-related bias in screening items for internalising disorders in three epidemiological surveys: the 1997 and 2007 Australian National Survey of Mental Health and Wellbeing (NSMHWB), and the 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). These surveys assessed mental disorders according to DSM-IV criteria using the Composite International Diagnostic Interview (CIDI) and the Alcohol Use Disorder and Associated Disabilities Interview Schedule–DSM-IV Version (AUDADIS-IV). A series of multi-group confirmatory factor analyses were performed for each survey to estimate measurement invariance across older (65-85 years), middle (35-64 years) and young (16-34 years) adults. Evidence of measurement invariance across age groups in each survey was found, indicating that older adults did not have significantly different response patterns to the screening items relative to middle-aged and young adults. While this does not rule out that other measurement errors may be present (e.g. age-related bias in the remaining items), these findings support the validity of the screening items in the CIDI and AUDADIS-IV.

The burden of drug and alcohol presentations on hospital-based services

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Introduction and Aims: Despite a high prevalence of drug and alcohol (AOD)-related morbidity among patients presenting to emergency departments, acute care settings and pre-admission clinics, previous research has found AOD-related morbidity is not commonly identified on admission. AOD-related morbidity has important implications for patient management whilst in hospital as well as on re-admission rates. This poster will present the epidemiological and demographic profile of ED patients and the role that substance use plays in that presentation.

Design and Methods: A patient survey was undertaken in the emergency department in eight New South Wales hospitals to identify the contribution of substance use to a patient's current presentation and the proportion of patients presenting with a recent history of substance use requiring an intervention. Data collection occurred 24 hours per day for a period of 10 days in each hospital. A sub-sample of patients identified as having a substance use problem were followed up at three months to examine their use of health services and uptake of referrals to drug treatment.

Results: Of the 1,615 patients who participated 34% screened positive for problematic substance use. Given that intoxication was an exclusion criteria this is likely a conservative estimate. Key variables of interest from the baseline survey include recent substance use, substance use as a contributing factor to the presentation, problematic use as identified using the ASSIST instrument and their use of alcohol and drug services.

Tailoring two evidence-based interventions for delivery to Aboriginal Australians: Perceptions of, and suggestions by, healthcare providers

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Introduction: Aboriginal Australians experience a disproportionate burden of alcohol-related harm compared to the total Australian population. Alcohol treatment approaches that simultaneously target individuals and family offer considerable potential to reduce these harms if they can be successfully tailored for routine delivery to Aboriginal Australians. The Community Reinforcement Approach (CRA) and Community Reinforcement and Family Training (CRAFT) are two evidence-based programs that Aboriginal people in rural New South Wales (NSW) considered to be acceptable for delivery in their community.

Aims: 1) To describe the process of tailoring the CRA and CRAFT for delivery to Aboriginal Australians; and 2) explore the perceptions of healthcare providers involved in the tailoring process, and the experiences of healthcare providers participating in CRA and CRAFT counsellor certification.

Methods: Semi-structured interviews with seven healthcare providers from a rural drug and alcohol treatment agency in NSW and notes from eight working group meetings attended by healthcare providers from an Aboriginal Community Controlled Health Service and a rural drug and alcohol treatment agency in NSW, were analysed using qualitative content analysis for information relating to perceptions of the CRA and CRAFT counsellor certification process and the modification of CRA and CRAFT for delivery to Aboriginal Australians.

Results: Healthcare providers saw value in the CRA and CRAFT counsellor certification process. CRA and CRAFT were thought to be applicable for Aboriginal Australians once language was changed, the number of sessions reduced and group sessions were available.

Discussion: Intervention resources have been tailored for Aboriginal Australians so that language is appropriate, total number of sessions has been reduced to six, and group session programs have been developed for CRA and CRAFT.

Conclusion: The positive impressions and experiences of the CRA and CRAFT counsellor certification process reported by healthcare providers and the modifications to the CRA and CRAFT interventions to make them more appropriate for delivery to Aboriginal Australians are indications that the CRA and CRAFT interventions will be feasible for delivery to Aboriginal Australians.

A randomised clinical trial of financial education intervention with nicotine replacement therapy (NRT) for low socioeconomic status (SES) smokers – a protocol description

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Background and aims: Reducing smoking among disadvantaged groups is a key preventative health priority. Previous research has identified financial stress (i.e. shortage of money or inability to pay bills) as a major barrier to quitting smoking especially among low socioeconomic status (SES) groups. This proposal aims to test the efficacy of a financial education and support program to decrease financial stress and improve self-reported cessation rates among low SES smokers in Australia.

Methods: A block randomised clinical trial (RCT) will be conducted. Daily smokers who are interested in quitting smoking and are currently in receipt of government benefits (N=1,064) will be recruited through study advertisements placed in Australian newspapers; posters placed in Australian Government social assistance agencies; and through Quitline telephone-based cessation support services. After completion of baseline assessments, participants will be randomly allocated to control and intervention groups using a permuted block approach. Participants in the control group will receive up to 10-weeks of free nicotine replacement therapy (NRT) plus Quitline support. Participants in the intervention group will receive the NRT and Quitline support plus four financial education and support sessions. The primary outcome measure, self-reported smoking cessation, will be assessed at two- and six-months following baseline. Financial stress, psychological well-being and quality of life will be assessed as secondary outcome measures.

Discussion: This RCT is the first to intervene in the cycle between financial stress and smoking by testing an innovative approach to improving smoking outcomes among low SES smokers. This RCT will yield important contributions to the evidence base regarding how best to address smoking among low SES groups.

Development of the *DEAL Project*: A brief, online intervention for depression and alcohol misuse comorbidity in young people

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Both depression and alcohol misuse represent two of the major modifiable disease burdens worldwide. Frequently these conditions co-occur and this co-occurrence is associated with greater functional impact, poorer treatment outcomes and increased costs to both society and the individual. Integrated treatments have been shown to be effective, however there is a large gap between those in need of treatment and those receiving it, particularly in young people. The increased availability of Internet-based programs to complement health care presents a unique opportunity in the treatment of this comorbidity. This study details the development of the first ever Internet-delivered, integrated treatment package for young people with depression symptoms and alcohol problems (the *DEAL Project*).

The development of the *DEAL Project* involved two stages both of which were considered critical to a successful intervention of this kind. The first stage reviewed the literature to ensure the program was based on the best clinical practice and the second involved collaboration with young people and field experts in both the alcohol and other drug sector and mental health to finalise content and determine applicability. These stages informed the creation of the subsequent program which consisted of four modules utilising cognitive behavioural techniques and motivational enhancement principles.

This program was well received in the focus testing and expert consultation. It provides an innovative new platform for the treatment of co-occurring depression and alcohol misuse in young people. It has the potential to improve outcomes, reduce disease burden, and increase treatment uptake in this vulnerable group.

Opioid substitution therapy in New South Wales 2001-2012: Comparison between buprenorphine and methadone users

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Background: Until the introduction of buprenorphine in 2001, methadone was the only subsidised treatment choice for opioid substitution therapy (OST) in Australia. Retention in OST remains a challenge for many opioid dependent individuals, with individuals frequently cycling in and out of treatment episodes.

Aims: To compare the characteristics of first-time users of methadone and buprenorphine; track treatment discontinuation and re-entry with methadone and buprenorphine; and examine the factors associated with an individual's risk of leaving their first OST treatment episode.

Methods: Retrospective data linkage study based on all 48,347 entrants into OST recorded in the New South Wales Pharmaceutical Drugs of Addiction System (1985-2010). These data were linked to the New South Wales Bureau of Crime Statistics and Research records of custody episodes (2000-2012). Characteristics of first-time methadone and buprenorphine users were compared descriptively and time-dependent Cox proportional hazard models were used to examine factors associated with an individual's risk of leaving their first treatment episode.

Results: A total of 15,600 individuals commenced their first OST treatment episode between 1 August 2001 and 31 December 2010. Of these, 46% (n=7,183) commenced buprenorphine and 54% (n=8,417) methadone. Approximately half of all individuals (56%) who commenced buprenorphine spent less than three months on treatment, compared to 30% who commenced methadone. Furthermore, those on methadone had the highest rate of retention in treatment at 12 months (44%) compared to buprenorphine (25%). Although retention in methadone treatment was consistently greater across all years, there was a 10-14% increase in retention in buprenorphine treatment between 2001 and 2010. Receiving buprenorphine in the community was associated with the greatest risk of leaving a first treatment episode (adjusted hazards ratio 1.57, 95% confidence interval 1.51-1.64)

Conclusions: Individuals commencing methadone are retained longer in treatment than those commencing buprenorphine, independent of the setting in which treatment is received.

The therapeutic and above therapeutic use of paracetamol among chronic non-cancer pain patients

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Background: There has been a recent increase in the prescribing of pharmaceutical opioids in Australia. Qualitative and quantitative reviews of chronic opioid therapy report that opioids only reduce pain by 30%. Paracetamol is readily available, cheap, have no restriction on purchase and in clinical practice is often used in conjunction with opioids to provide more adequate pain relief and improve quality of life. To date, however, there is little research regarding their effectiveness, nor the risks associated with their long-term use. This study draws on data collected for the Pain and Opioids In Treatment (POINT) study.

Aims: This study assesses the prevalence and correlates associated with paracetamol use at therapeutic and above therapeutic levels among chronic non-cancer pain (CNCP) patients prescribed opioids.

Method: The POINT study is a national prospective cohort that aims to follow 1500 chronic pain patients prescribed pharmaceutical opioids over a 24 month period. The interviews cover topics such as; chronic pain source, treatments, physical and mental health, physical functioning, social support and current and lifetime substance use. Daily dose, days of use and lifetime medication use data is collected at each time point for paracetamol and opioids as well as other medications. Participants are recruited from randomly-selected pharmacies across Australia. This study utilises data from 518 baseline interviews conducted for the POINT study.

Results/Progress: Forty-six per cent of the sample reported using paracetamol in the last week for their pain despite currently taking schedule eight opioids for pain. Data entry that will be used in correlations for this presentation is currently being completed.

Conclusion: Paracetamol is often used as a first line treatment for chronic pain but is also commonly used in conjunction with opioids. To date however, there is little research of the prevalence of therapeutic and above therapeutic use of paracetamol in chronic pain patients. Research quantifying both the benefit and the risk is essential, as paracetamol has no restriction on purchase and therefore have the potential to cause significant harm.

Examining the unique contribution of specific DSM-IV substance use disorders, over and above general externalizing psychopathology, when predicting anxiety disorders, affective disorders, suicidality, and psychosis

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Background: Previous research has demonstrated that co-morbidity between specific DSM-IV substance use disorders can be explained by a shared underlying dimensional factor, labelled as externalizing psychopathology. What is unknown is whether the relationship between various clinical correlates, that exacerbate the substance use disorders, are explained solely by the general externalizing load or whether there remains a unique contribution of each disorder.

Methods: Data were from the 2007 Australian National Survey of Mental Health and Wellbeing. The clinical correlates included: any DSM-IV anxiety disorder, any DSM-IV affective disorder, suicidality, and symptoms of psychosis. Several structural equation models were estimated by relating each substance use disorder (alcohol abuse/dependence, cannabis abuse/dependence, sedative abuse/dependence, stimulant abuse/dependence, opiate abuse/dependence) to a single externalizing latent factor. To form the baseline model, each clinical correlate was then related to the externalizing factor and model fit was examined. The specific contribution of each substance use disorder with each clinical correlate, over and above the general externalizing factor, was then estimated and tested for significant improvement in model fit.

Results: Each clinical correlate was salient (Beta path >0.40) and significant in the baseline models, suggesting that the presence of co-morbid anxiety or affective disorders, suicidality, and psychosis are associated with more severe levels of externalizing psychopathology. The specific variance components of each substance use disorder with each clinical correlate did not improve overall model fit or they were of little explanatory value, apart from the relationship between Sedative Dependence and any anxiety disorder (Beta path=0.467, $p=0.01$).

Conclusions: These findings suggest that the relationship between DSM-IV substance use disorders and important clinical correlates tends to be general and cumulative. There appears to be little that is unique about the DSM-IV disorders that explain the relationship with each clinical correlate, with one exception, the relationship between Sedative Dependence and any anxiety disorder. This suggests that anxious respondents are possibly self-medicating by using illicit sedatives and resulting in increased sedative dependence. The results have the potential to impact how DSM-IV substance use disorders are diagnosed and treated.

Behavioural activation treatment for co-occurring depression and substance use disorder: The Activate Study protocol

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Background: Epidemiological studies suggest that compared with the general population, mood disorders are up to 4.7 times more prevalent in drug dependent samples. Strikingly, the Australian National Survey of Mental Health and Wellbeing (NSMHWB) demonstrated that among individuals with a 12-month substance use disorder, 17.4% (almost one in five) had a diagnosis of comorbid major depression. Depression in this cohort has been associated with a more severe and protracted illness course and poorer treatment outcomes. Despite this, the development and assessment of behavioural interventions for treating depression among individuals with substance use disorder (SUD) have received little empirical attention. One treatment that shows promise, however, is Behavioural Activation Treatment for Depression (BATD-R).

Aims: To determine the efficacy of a modified version of BATD-R (*Activate*) in reducing symptoms of depression and SUD among individuals in opioid replacement therapy or residential rehabilitation treatment. Feasibility of implementation will also be examined.

Method/Design: The study is a parallel, single blind, randomised controlled trial (RCT) conducted with depressed opioid replacement therapy clients and residential rehabilitation clients recruited from treatment services in New South Wales, Australia. Dynamic random allocation following minimisation methodology will be used to assign participants to one of two groups; *Activate* in conjunction with standard care, or standard care alone.

The *Activate intervention* is comprised of 10 individual 60 minute therapy sessions with a clinical psychologist employed on the research team. The control group will receive treatment as usual, which will be the model of care provided in accordance with standard practice at participating ORT and RR services.

Data collection will occur at baseline (pre-intervention), and three months and 12 months post baseline.

Discussion: The association between depression and substance dependence has been well documented, yet practical and effective treatment services are scarce. The findings of the present study will contribute significantly to understanding the types of programs effective in treating this comorbidity. This is likely to be of interest not only to the scientific and clinical community in Australia, but also internationally.

Trends in and determinants of loss to follow up and early mortality in a rapid expansion of the antiretroviral treatment program in Vietnam: Findings from 13 outpatient clinics

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Background: This study aims to describe the trends in and determinants of six month mortality and loss to follow up (LTFU) during 2005-2009 in 13 outpatient clinics in Vietnam.

Method: Data were obtained from clinical records of 3,449 Vietnamese HIV/AIDS patients aged 18 years or older who initiated antiretroviral treatment (ART) between 1 January 2005 and 31 December 2009. Mantel-Haenszel chi-square test, log rank test were conducted to examine the trends of baseline characteristics, six month mortality and LTFU. Cox proportional hazards regression models were performed to compute hazard ratio (HR) and 95% Confidence Interval (CI).

Results: Though there was a declining trend, the incidence of six month mortality and LTFU remained as high as 6% and 15%, respectively. Characteristics associated with six month mortality were gender (HR females versus males 0.54, 95%CI: 0.34-0.85), years of initiation (HR 2009 versus 2005 0.54, 95%CI: 0.41-0.80), low baseline CD4 (HR 350-500 cells/mm³ versus <50 cells/mm³ 0.26, 95%CI: 0.18-0.52), low baseline BMI (one unit increase: HR 0.96, 95%CI: 0.94-0.97), co-infection with TB (HR 1.61, 95%CI: 1.46-1.95), history of injecting drugs (HR 1.58, 95%CI: 1.31-1.78). Characteristics associated with LTFU were younger age (one year younger: HR 0.97, 95%CI: 0.95-0.98), males (HR females versus males 0.82, 95%CI: 0.63-0.95), and poor adherence (HR 0.55, 95%CI: 0.13-0.87).

Conclusions: To reduce early mortality, special attention is required to ensure timely access to ART services, particularly for patients at higher risk. Patients at risk for LTFU after ART initiation should be targeted through enhancing treatment counselling and improving patient tracing system at ART clinics.

POSTERS: CRIMINAL JUSTICE SYSTEM

Engagement with the criminal justice system among opioid dependent people: Comparison between Indigenous and non-Indigenous offenders

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Background: Indigenous Australians engage with the criminal justice system at disproportionately high levels compared to non-Indigenous Australians. While it is also known that Indigenous Australians are over-represented among heroin users, no previous study has compared the patterns of offending and episodes of incarceration among a population of opioid dependent individuals.

Aims: To compare the charges laid against Indigenous and non-Indigenous Australian opioid dependent offenders by examining types of offences and offending patterns by sex, age and calendar year; compare the outcomes of charges by sex; and determine the cumulative time and proportion of follow-up time spent in custody.

Methods: Retrospective data linkage study based on all 48,347 entrants into opioid substitution therapy recorded in the NSW Pharmaceutical Drugs of Addiction System (1985-2010), linked to the NSW Bureau of Crime Statistics and Research records of court appearances (1993-2011) and custody episodes (2000-2012). Individuals were flagged as Aboriginal or Torres Strait Islander if they were *ever identified* in any of the databases. Records for individuals with unknown/missing Indigenous status were excluded.

Results: Overall 34,962 individuals with a valid Indigenous status and at least one criminal charge were identified. Of these, 19.5% (n=6,830) were Indigenous – 13.2% male and 6.3% female. The median number of charges against Indigenous offenders (25, IQR 31) was significantly greater than non-Indigenous offenders (9, IQR 16) ($p < 0.001$). The proportion of Indigenous offenders charged with a violent offence was higher than non-Indigenous offenders, although lower proportions of Indigenous offenders were charged with a drug offence. Few other major differences in the charges laid against Indigenous and non-Indigenous offenders were observed. Indigenous offenders spent three times the amount of follow-up time in custody.

Conclusions: While Indigenous opioid dependent offenders were charged with a greater number of offences overall and spent longer in custody, the patterns of offending were largely similar between Indigenous and non-Indigenous individuals.

“Trafficking” or “personal use”: Do regular injecting drug users understand Australian drug trafficking laws?

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Issue: All Australian states and territories have adopted legal thresholds for drug trafficking, over which possession of an illicit drug is deemed “trafficking” as opposed to “personal use”. Yet the extent to which regular drug users understand the laws and their implications has been subject to limited academic scrutiny. Unmasking user knowledge is increasingly imperative as by virtue of their consumption and purchasing behaviour regular users can possess up to nineteen times the trafficable threshold for their personal use alone (Hughes, Ritter and Cowdery, in press).

Approach: This study identified levels of awareness and accuracy of knowledge amongst a national sample of Australian regular injecting drug users. Participants in the 2012 Illicit Drug Reporting System (IDRS) were asked whether, if arrested, quantity possessed would affect legal action taken. They then nominated the quantities of heroin, methamphetamine, cocaine and cannabis they perceived to constitute an offence of supply. This data was used to compare accuracy of knowledge by drug type and state.

Key Findings: It is hypothesised that regular injecting drug users will have inaccurate and largely inflated estimates of the maximum quantity for “personal use”. We moreover hypothesise that accuracy of knowledge will vary by state and drug type.

Implications and Conclusions: Drug trafficking laws appear to place at least some groups of users at risk of an unjustified charge/conviction as traffickers. If as hypothesised regular drug users have limited awareness of the laws, this increases the need to reduce the risks from drug trafficking laws and/or increase knowledge of laws amongst this population.

A global systematic review of hepatitis C virus in prisons and other closed settings

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Introduction: An estimated 2-3% of the world's population is infected with the hepatitis C virus (HCV). The primary mode of transmission is injecting drug use (IDU). There is a high prevalence of HCV risk behaviours among people detained in prisons and other closed settings (e.g. extra-judicial detention centres for people who use drugs). Risk behaviours while detained, such as drug injection and tattooing, may result in incident HCV infection inside closed settings.

Aims: To determine the rate of incident HCV infection and prevalence of HCV antibody (anti-HCV) among detainees of closed settings.

Method: We undertook an extensive review of the published and unpublished literature to identify relevant studies. Data were extracted for general detainee samples (i.e. samples unselected for drug use or any other characteristics) and samples of detainees with a history of IDU. We completed a meta-analysis of studies, with heterogeneity examined through stratification by global region and meta-regression. Regional and global summary estimates were used to extrapolate the size of the anti-HCV+ detainee population.

Findings: HCV transmission occurs in prisons, albeit at a lower rate than occurs among non-detained people who inject drugs. One in four detainees globally, and two thirds of detainees with a history of injecting drug use, is anti-HCV positive, equating to an estimated 2.2 million persons.

Static and dynamic predictors of crime among a heroin-dependent sample over a three-year period

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Aims: To examine static and dynamic predictors of crime among a heroin-dependent sample over a three-year period.

Design: Longitudinal prospective cohort study.

Setting: Sydney, Australia

Participants: The study uses data collected as part of the Australian Treatment Outcome Study (ATOS), a longitudinal study of 615 people with heroin dependence. Follow-up interviews were conducted at three, 12-, 24- and 36-months post-baseline.

Measurements: Past-month criminal involvement (property crime, drug dealing, fraud, violent crime), demographic, drug use and mental health characteristics were assessed at each interview.

Findings: Criminal involvement was consistently and independently predicted by male sex (OR 1.44), younger age (OR 0.96), criminal history (OR 1.33), lack of wage / salary as a main source of income (OR 2.17), more extensive heroin use (OR 1.09), greater severity of dependence (OR 1.21), meeting diagnostic criteria for ASPD (OR 1.91), screening positive for a diagnosis of BPD (OR 1.47), and major depression (OR 1.41) over the three-year period. The findings indicate that achieving gainful employment would reduce the likelihood of criminal involvement by 54%; successful treatment of major depression by 29%; reducing heroin use by one episode per day by 8%, and reducing severity of dependence by meeting one fewer criteria by 17%.

Conclusions: Findings from the present study provide strong evidence of the robust nature of the association between heroin use and dependence, co-occurring mental health conditions, and an individual's capacity for employment and criminal involvement.

A developmentally-focussed approach to understanding the violent offending careers of injection drug users

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Introduction/Aims: Using a developmental framework, this study examined whether the chronicity of violent offending careers among injecting drug users was a function of the age of onset of violent behaviour. Age of onset is understood as being strongly prognostic of longer, more serious offending careers. Developmental theory focuses on early-life risks and process which may differentiate between chronic and transient violent offending. The study aimed to identify distinct trajectories of violent offending and determine predictors of trajectory membership.

Method: Cross-sectional interviews of 300 regularly injecting drug users conducted in Sydney, Australia. Latent class analysis was used to determine trajectories based on age of onset, frequency, and duration of violence.

Results: Four violent offending trajectories were identified: 24% were non-violent (class 1); 19% were early-onset, chronic (class 2; *most serious group*); 24% were adult-starter transient (class 3); and 33% were adolescent-onset moderate violent offenders (class 4). When trajectory classes were compared on psychopathological, personality, maltreatment and substance use domains, class 2 had the greatest exposure to factors, and the non-violent class had the lowest risk exposure. Multinomial regression showed that classes 1, 3 and 4 differed from class 2 on impulsivity scores, severity of CD, severity of alcohol use problems, and age of onset of illicit drug use.

Conclusions: Chronicity of violent offending careers was differentiated by the age of onset of violence. Those who had an earlier onset of violence had a greater cumulative exposure to multiple psychosocial risks, specifically early life problems. The findings from this study make a strong case for early intervention.