

PhD Symposium

Newcastle upon Tyne • 13 November 2024

Session: Alcohol and other drug use

Saba Ishrat – *Cannabis use, cognitive functioning, and dementia risks: An observational and Mendelian randomization study*

Background: Cannabis use for medical and recreational purposes has increased significantly over the past decade. While adverse effects on neurocognitive performance have been reported in adolescents and young adults, its impact on cognition and dementia risk in older adults remains unclear. This study examines the association between lifetime cannabis use, cognitive performance, and dementia risk in older adults.

Methods: We analyzed data from approximately 18,975 lifetime cannabis users and 60,598 non-users to assess associations between cannabis use and cognitive performance. Multiple linear regression and linear mixed-effects model analyses were conducted in R, adjusting for potential covariates. Additionally, bidirectional two-sample Mendelian randomization analyses were used to explore potential causal relationships.

Results: Lifetime cannabis use was associated with better performance on numeric memory, fluid intelligence, and the Trail Making (B) test compared to non-users. However, over time, the positive association between cannabis use and both fluid intelligence and Trail Making (A) test declined, while performance on the Symbol Digit Substitution Test showed a slight improvement. Mendelian randomization analyses did not support a causal relationship between cannabis use and cognitive function or dementia risk.

Conclusions: Lifetime cannabis use was initially associated with improved performance on certain cognitive tasks, though this positive effect decreased over time. Genetic analyses did not indicate a causal role for cannabis in cognitive performance or dementia risk, suggesting that observed associations may be due to residual confounding in observational analyses. Further research is needed to clarify the mechanisms underlying these associations which do not appear causal.

Christopher Oldroyd – *Willpower, identity, and negative attitudes may impede engagement with relapse prevention for patients with alcohol related cirrhosis*

Background: Complete abstinence is of critical importance following a hospital admission with decompensated alcohol related cirrhosis. Sadly, a majority of patients relapse to alcohol.

Methods: We conducted semi-structured interviews with 33 patients with alcohol related cirrhosis during a hospital admission. We used a grounded theory approach.

Results: Many patients were reluctant to engage in relapse prevention. Patients saw the hospital admission as a turning point and expressed a renewed personal commitment to abstinence. Patients understood the risk of returning to alcohol but cited fear as sufficient motivation to remain abstinent. There was a strong belief in the role of willpower and personal determination.

Most patients rejected the label “alcoholic”. Despite having developed advanced alcohol related liver disease, patients rationalised their alcohol consumption, drawing on social norms to justify previous alcohol use. Since they did not identify as having a substance dependence, they saw no need for relapse prevention.

Finally, many patients recounted negative experiences of relapse prevention. Common themes were not wanting to talk about alcohol, not wishing to interact with other service users, and experience or fear of stigma.

Conclusions: Following an episode of decompensation, patients understand the risks of returning to alcohol. However, the factors detailed above combine to create a major barrier to engagement with relapse prevention.

Benjamin Scher – *Drug consumption rooms as ‘inclusion health interventions’: A comparative qualitative study on the experiences of DCR client and staff in Birmingham, UK, Vancouver, Canada, and Athens, Greece*

Introduction: Qualitative research on Drug Consumption Rooms (DCRs) has reported various experiential benefits of clients, including increased feelings of well-being, safety and connection, however, few studies have explored in-depth client narratives of belonging and social inclusion.

Methods: This is a comparative paper which builds on three case studies from settings in which DCRs are implemented to varying degrees: Birmingham (UK), Vancouver, (Canada) and Athens (Greece). Qualitative methods included three months of ethnographic observations in each city, 16 focus groups and 80 interviews with people who access DCR services and staff in each city.

Results: The results of this comparative paper highlight that DCRs should be characterized as inclusion health interventions due to three distinct factors: 1) DCRs are frequently reported as places of belonging due to the safety, empowerment and peer-community enabled within the physical space of the DCR, 2) auxiliary services that promote social inclusion (in particular those that promote civic participation, i.e ID clinic, facilitate voting, clothing for employment, housing services, legal aid etc) facilitate broader social inclusion from the initial health service engagement and 3) the symbolic presence of the DCR facilitates a broader sense of belonging

amongst people who use drugs in relation to their place within society, including feeling valued by society and government as equal citizens deserving of health care and civic rights.

Conclusion: The shift in analysis from DCRs as a purely harm reduction or overdose prevention intervention to one of 'inclusion health' could work towards a wider recognition of their effectiveness in addressing broader health and social inequities. At a policy level, this shift could result in increased political support for DCRs as recognized interventions, which through their design, effectively promote social inclusion.

Session: Tobacco and nicotine

Katherine Sawyer – *Association of tobacco and cannabis use with brain volume: a systematic review and meta-analysis*

Introduction: Tobacco is the leading cause of preventable death worldwide and cannabis, the most used drug under international control worldwide, is increasing in prevalence. Tobacco and cannabis have been associated with mental health problems and one mechanism for this association could be changes in brain structure. Tobacco and cannabis are often co-used; however, the co-use of tobacco and cannabis is often poorly measured and understood. We present, to our knowledge, the first systematic review and meta-analysis of the association between tobacco use, cannabis use and/or co-use with brain volume.

Methods: This review was preregistered on PROSPERO (CRD42022356982). 14754 title/abstracts were screened, with 101 studies included. Fifty-four studies investigated cannabis use, forty six investigated tobacco use, and one study investigated tobacco and cannabis co-use.

Results: Meta-analysis results indicate no strong evidence for differences in brain volume between cannabis users and non-users. There were differences in some regions between smokers and non-smokers, with smokers having a larger caudate and smaller total grey matter volume.

Conclusions: There is limited research investigating the association of current tobacco and cannabis co-use with brain volume. There is no strong evidence for differences in brain volume between cannabis users and non-users. There is some evidence for differences in some regions between smokers and non-smokers.

Nathan Davies – *Perceptions of children and young people, policymakers, and experts on the UK's smokefree generation proposal*

Introduction: In 2024, the UK government sought to introduce a ban on tobacco sales to those born in or after 2009, a policy known as smokefree generation (SFG). We explored perspectives among children and young people (CYP), policymakers and tobacco control experts (TCE) on acceptability, effectiveness and implementation of SFG.

Methods: Seven focus groups with 36 CYP aged 12-21 (median = 15) in England, and semi-structured interviews with 19 policymakers and TCE in the UK. Interview guides were developed

using the government's SFG plan, the halted New Zealand SFG policy and wider literature. Data were analysed inductively using the framework approach.

Results: Different themes were identified between groups. Many CYP, including those who used tobacco and vapes, viewed SFG as promoting freedom from addiction and harm. There was support for strict enforcement of retailers and for consultation with CYP on SFG communication and implementation. CYP had mixed views on SFG effect on smoking rates. Policymakers and TCE expressed greater certainty on SFG effectiveness but diverged on degree of enforcement required. Some participants thought SFG should cover e-cigarettes, but others disagreed. TCE described the process of the "policy window" opening for SFG.

Conclusions: The freedom-giving potential of SFG can resonate with CYP, including those who use tobacco and e-cigarettes. Enforcement, communication, and product coverage should be considered in design and implementation.

Emke Brazier – *Taking a social norms perspective to understanding decision making around e-cigarette use*

Introduction: E-cigarettes (EC) are a harm-reducing, effective cessation tool; however, 27% of adult smokers have not tried them. EC are not risk-free, so use in young never-smokers is concerning.

Methods: Online surveys explored factors predicting college students' EC use (N=339, 16-19y) and adult smokers' non-use (N=588, 19-72y). Bicchieri's social norms framework was used to explore if EC decisions are independent (driven by personal normative beliefs [PNBs]) or interdependent and driven by empirical expectations (EE; what they see others doing) and/or normative expectations (NE; what they think others believe they should do). Using Bicchieri's framework, hypothetical character vignettes manipulated these expectations to confirm preference to follow normative influence.

Results: EE, NE and PNBs predicted college students' EC use. The vignette hypothetical student was most likely to stop EC use when EE was low. Adult smokers' intentions to use EC were predicted by EE, PNBs, and other previously researched factors but not NE. The vignette hypothetical smoker was most likely to use EC when NE and EE were both high.

Conclusions: College students' EC use is more likely if they see peers vaping or approve of it themselves, confirmed by the vignettes. Adult smokers' intentions to use EC are more likely if they see peers/other smokers using ECs or approve of it themselves. Vignettes supported but, contrastingly, added the importance of other smokers' perceived approval of EC.

Session: Gambling, technology and digital interventions

Tosan Okpako – *Developing a brief immersive virtual reality scenario for smokers unmotivated to quit*

Introduction: Most adults do not have immediate plans to quit smoking. Few individual-level interventions focus on prompting quit attempts that would otherwise not happen. This PhD is focused on developing a virtual reality (VR) scenario that encourages adults to quit smoking.

Methods: i.) A cross-sectional survey looking at the association between age and interest in VR for supporting cessation using logistic regression. ii. Co-design focus groups with adults who smoke, using art-based methods. iii.) Focus groups with intersectoral stakeholders in health and VR. iv.) A realist literature review.

Results: Interest in VR for cessation was similar across all age groups except those >65 years, when adjusted for gender and social grade (OR adjusted:0.31, 95% CI: 0.16-0.60). In the co-design study, participants reported that the immediate rewards of smoking outweighed any concerns about future health effects, which felt theoretical. Participants sketched content juxtaposing alternative versions of their future, where they had quit or not quit. Family members were drawn as supporting characters to increase the emotional salience. Primary care locations were the preferred implementation option. Results for studies 3-4 will be ready in November.

Conclusions: A VR intervention may be best targeted to young and middle-aged adults. The developed content should make the consequences of smoking feel more real and personally relevant to the end-user to increase motivation to quit.

Leon Y Xiao – *Illegal loot box advertising on social media: An empirical study using the Meta and TikTok ad transparency repositories*

Aims: Loot boxes are gambling-like products in video games that can be bought with real-world money to obtain random rewards. They are widely available to children, and stakeholders are concerned about potential harms, e.g., overspending. According to the UK advertising regulator, companies must disclose, if relevant, that a game contains loot boxes specifically. Whether highly popular video game advertising on social media is compliant has not been assessed.

Method: Adverts on Meta-owned platforms (e.g., Facebook) and TikTok, representing the most recent and most viewed adverts respectively (N = 317), were scraped from the platforms' ad repositories.

Results: Only 7% of ads disclosed loot box presence. 93% were non-compliant with UK advertising regulations and consumer protection law. In the UK alone, the 93 most viewed TikTok adverts failing to disclose loot box presence were watched 292,641,000 times total or approximately 10 impressions per active user. Multiple complaints to the regulator using these results have all been upheld and set key precedents influencing industry practice, as featured in The Guardian.

Conclusions: Many people were repeatedly exposed to prohibited and socially irresponsible advertising. This study is the first to rely on ad transparency repositories to obtain objective data. How data access empowered by law can and should be used by researchers is practically demonstrated. Future addiction research should make use of such advertising platforms.

Christy Milia – *Metacognition and problem-recognition in at-risk and problem gambling: A cross-sectional comparative study*

Background: People tend to underreport their problems with gambling, especially when these are of milder severity. Metacognition may be useful in understanding such gambling problems due to its key role in self-awareness.

Methods: This study explored metacognition and problem recognition in approx. 255 at-risk and problem gamblers, as measured by the Pathological and Problem Gambling Measure (PPGM) and the Problem Gambling Severity Index (PGSI). The two groups were compared across several metacognitive and problem-recognition variables captured via online self-reports.

Results: Mann-Whitney tests showed that most metacognitive and problem-recognition constructs were significantly higher amongst problem (vs. at-risk) gamblers. No significant difference was observed in metacognitions about cognitive confidence only when using the PPGM and thought suppression only when using the PGSI. Based on binary logistic regression data, recognition of resource-related harms and desire thinking (verbal perseveration) were the only predictors of PPGM problem gambling classification. Negative metacognitions about gambling and recognition of health-related harms were the only predictors of PGSI classification.

Conclusions: These findings suggest addressing negative metacognitions, desire thinking (verbal perseveration), and resource- and health-related problems in future early interventions for gambling and caution against using problem gambling severity measures for inferential purposes

Session: Rapid presentations (Qualitative and other methods)

Shinasa Shahid – *Exploring cultural dynamics of ethnic women in addiction recovery: A comparison of three women from different ethnic backgrounds*

Introduction: The existing recovery capital (RC) literature primarily focuses on white males. This study aims to fill this gap by exploring addiction recovery among three culturally diverse UK women, utilizing CHIME-D (Connectedness, Hope/Optimism, Identity, Meaning, Empowerment, and Difficulties) and RC frameworks. It seeks to compare their recovery paths, combining quantitative data with lived experiences, and barriers specific to women in recovery.

Methods: The article deployed a case study design involving a mixed methods approach to explore recovery pathways and resulting RC, based on in-depth interviews and recovery capital assessments with three women from white, black, and Asian ethnic backgrounds.

Results: While one of the three participants, reports very strong and positive RC on the REC-CAP questionnaire, the other two are at a much earlier stage in their journey. In contrast to the white female participant, who lacks personal RC and has significant barriers around ongoing substance use, the Black and Asian Minority Ethnic (BAME) participants report cultural challenges and difficulties engaging with mainstream services.

Conclusion: Recovery is a personal and individualized journey, but one that is predicated on social support, belonging and access to cultural and community resources. For BAME participants, accessing and engaging with appropriate peer support is essential in building RC and fulfilling the requirements of CHIME.

Josh Dumbrell – *Nature-based interventions for men experiencing homelessness and problem substance use*

Introduction: Men face higher rates of physical and mental health and substance use problems but are less likely to seek support than women. Despite some national policy efforts, men's health remains neglected. Nature-based interventions (NBIs) offer a potential strategy to address these disparities by leveraging the therapeutic benefits of natural environments.

Methods: A realist synthesis was conducted to determine why NBIs work, for whom, and under what circumstances. Initial scoping and expert input shaped programme theory development, with the emerging Context-Mechanism-Outcome framework guiding data extraction, theory testing and refinement.

Results: Men benefit from nature engagement, through activities that yield tangible outputs, and prefer structured, purposeful activities that include challenge and achievement. Activities such as hiking, shelter building, and problem-solving promote mental wellbeing, empowerment and address substance use issues. Leadership, individual contributions to group productivity, and skill-sharing opportunities foster a sense of belonging and enhance group cohesion, identity formation, and self-efficacy.

Conclusion: This PhD research will inform a co-designed NBI tailored for men facing homelessness and substance use challenges. Outcomes include improved health, and greater engagement in health-promoting activities. This research advocates for gender-responsive health strategies and supports complementary pathways to wellbeing.

Robyn Scharte – *Substance use and interoception: A systematic review and meta-analysis*

Introduction: Interoception, the sense of the physiological state of the body, is being investigated as an important factor in mental health disorders, including substance use disorders (SUDs). Risk factors for SUDs, such as altered decision-making, reward processing and emotion dysregulation, have been linked to interoception.

Method: This systematic review and meta-analysis aimed to investigate variations in interoception among individuals with a SUD or under the influence of a substance compared to healthy individuals. Four electronic databases were searched. Studies assessing behavioural or self-report measures of interoception, or neural activity during interoceptive related paradigms in adults meeting SUD criteria, or in healthy adults after substance administration, were included. Meta-analyses were conducted separately on studies with participants with a SUD and participants under the influence of a substance.

Results: A total of 23 studies met the inclusion criteria, with 18 studies investigating interoception in individuals with a SUD and 5 studies in healthy adults following substance administration. Results showed a decrease on interoceptive abilities among those with a SUD compared to healthy individuals.

Conclusion: The findings outline possible alterations of interoception in SUD. Implications on how these alterations might play a role in relevant risk factors will be discussed.

Corrina Leppin – *Exploring the needs, desires, and concerns of potential users of a digital smoking cessation just-in-time adaptive intervention: A focus group study with adults who smoke and smoking cessation professionals*

Introduction: Just-in-time adaptive interventions (JITAs) provide their users with real-time, tailored behavioural support, presenting a promising innovation for smoking cessation. However, there is a dearth of research into stakeholder perspectives on how JITAs could or should be implemented.

Methods: Focus groups with adults who smoke (three groups; N=19, 31.6% female) and stop-smoking advisors (one group; N=5, 60% female) were conducted January-June 2024. Topic guides addressed the integration of a JITAI into its users' lives and care provision, preferred content and features, and data and privacy. The transcripts and observational notes are currently being analysed using Framework Analysis, guided by the Theoretical Domains Framework and the Technology Acceptance Model.

Results: Full results will be available in time for the symposium. Preliminary analyses indicate that adults who smoke feel that an intervention would need to balance being easy to use and flexible with being “disruptive enough” to aid their smoking cessation process. Stop-smoking advisors emphasised the importance of accessibility and integration with other services. Both groups expressed ambivalence around issues of privacy and data protection.

Conclusions: By leveraging the complementary insights of adults who smoke and stop-smoking advisors, this study's findings will contribute to a broader understanding of how JITAs can be implemented within the smoking cessation treatment landscape.

Session: Rapid presentations (Quantitative methods)

Giang Vu – *Prevalence, trends, and correlates of disposable e-cigarette use among US youth*

Objective: To estimate the prevalence, trends and correlates of disposable e-cigarettes use among US youth.

Methods: Cross-sectional analyses of the National Youth Tobacco Survey (NYTS) 2019 to 2022 were conducted. Logistic regression models identified the significant factors associated with current disposable e-cigarette use in NYTS 2022 participants.

Results: Disposable e-cigarette use prevalence increased from 0.52% in 2019 to 5.13 % in 2022, surpassing the use of other types of e-cigarettes. Most disposable e-cigarettes contained nicotine (87.76%). The most commonly used flavours in disposable e-cigarettes were mint, fruit and candy, dessert or other sweet flavours. Disposable e-cigarette users were slightly older, thought e-cigarette had some or a lot of health harm and that their peers approved of e-cigarette use, having more peers who used these products and days in a week someone using products at home, seeing ads in shops and e-cigarette related posts on social media more often. Significant factors associated with disposable e-cigarette use included higher age, lower harm perception, having peers use and peer acceptance, having people using at home, seeing ads and related posts/ content on social media.

Conclusion: Mitigating these influences requires comprehensive regulatory measures and collaborative efforts between governments, health authorities, and social media platforms.

Mairi Gardner – *Investigating the nature of hedonic processes in those who consume refined sugar excessively: A novel study into sugar addiction*

Introduction: The obesity epidemic is a global health issue and is increasing at a rapid rate. Its multifaceted nature makes for a complex understanding of its pathology; however, a correlation exists between refined sugar consumption and obesity prevalence. Research aiming to understand the addictive-like nature towards foods that are highly palatable, and rich in refined sugars is critical.

Methods: A questionnaire was constructed and validated using a rigorous process assessing content, face, reliability, and feasibility testing. The data from the reliability testing phase was used to assess validity through statistical analysis using Spearman's correlation coefficients and Cronbach's alpha. Facial electromyography (FEMG) is also used to investigate initial facial reactions to different kinds of sugars i.e. refined sugars, natural sugars, and sweeteners with the aim to investigate the addictive-like nature of refined sugars.

Results: Data from the Spearman's correlation coefficients were in the range of 0.58-0.91 and the Cronbach's alpha statistics were in the range of 0.62-0.93 indicating good internal consistency. The FEMG study is currently underway, the results will be ready in time for this conference.

Conclusions: This questionnaire can be used in future research to investigate problematic eating behaviour, sugar consumption and possible 'sugar addiction'. FEMG results will aid to further investigate refined sugar 'addiction' and reactions to sugar-rich foods.

Annika Theodoulou – *The effect of individual-level smoking cessation interventions on socioeconomic inequalities in tobacco smoking: A Cochrane systematic review*

Background: People from lower SES groups are more likely to smoke and less likely to quit, making tobacco smoking a leading driver of health inequalities. We assessed whether effects of individual-level smoking cessation (SC) interventions differ by SES, and their potential impact on inequalities in smoking.

Methods: Systematic review and meta-analyses. We searched for RCTs on SC interventions compared to control or other SC intervention in adults. Studies must have reported SC rates, split by SES at ≥ 6 mths. We followed Cochrane methods and pooled ratios of ORs. We summarised all evidence in effect direction plots and categorised the intervention's potential impact on inequalities in smoking.

Results: We identified 77 studies, representing 127,791 randomised participants. 52 studies were at high overall risk-of-bias. We found that nicotine electronic cigarettes and cytisine had a possibly positive impact on inequalities in smoking vs control, and a possibly negative impact of bupropion. Unclear or no evidence were available for NRT or varenicline, respectively.

We found a possibly negative impact of print-based self-help and text-messaging, and a possibly negative impact of financial incentives. We found a possibly neutral impact of face-to-face counselling, and possibly positive impact of phone and internet interventions. All evidence was of very low to low certainty.

Conclusion: There is no clear evidence for use of differential SC interventions for people by SES.