



## PhD Symposium 2023

Wednesday 8th November

11:00 – 17:15

Crowne Plaza, Newcastle upon Tyne



Programme & Abstracts

#SSAPhD23

# Programme – SSA PhD Symposium 2023

(please click title to jump to abstract)

<b>Programme – SSA PhD Symposium 2023</b> (please click title to jump to abstract)	
11:00 – 11:10	Welcome and introductions
<b>Session One: Nicotine and smartphone use (Full presentations)</b> Chair: Dr. Katie East	
11:10 – 11:25	<b><i>Dr. Harry Tattan-Birch, University College London</i></b> Tobacco-free nicotine pouch use in Great Britain: A representative population survey 2020–2021.
11:25 – 11:40	<b><i>Daniel Hollingworth, Leeds Beckett University</i></b> Differentiating e-cigarette use and dual use: The role of impulsivity.
11:40 – 11:55	<b><i>Shuang Su, University of Amsterdam</i></b> Unravelling problematic smartphone use: The qualitative perspectives and the Smartphone Use Problems Identification Questionnaire (SUPIQ).
<b>Podcasting as an academic activity: a workshop</b>	
12:00 – 13:00	<b><i>Dr. Rob Calder, Head of Communications at the SSA.</i></b> <b><i>Zoe Swithenbank, PhD Addicted to Research, the SSA PhD students podcast.</i></b> In this session, delegates will learn about designing and producing an academic podcast.
<b>LUNCH - Provided</b> <b>13:00 to 14:00</b>	
<b>Session Two: Treatment, practice, and recovery (Full presentations)</b> Chair: Dr. Sophie Orton	
14:00 – 14:15	<b><i>Ben Scher, University of Oxford</i></b> A qualitative evaluation of Athens' drug consumption room: Preliminary findings.
14:15 – 14:30	<b><i>Tricia McQuarrie, Middlesex University</i></b> Translating research into practice: An investigation into the translation, adaption, and implementation of contingency management into drug and alcohol services.
14:30 – 14:45	<b><i>Iveta Tsenkova, King's College London</i></b> Peer engagement in homeless substance use research through creative expression.
<b>Session Three: Treatment, practice, and recovery (Rapid presentations)</b> Chair: Saba Ishrat	
14:45 – 14:50	<b><i>Sadie Lavelle Cafferkey, Trinity College Dublin</i></b> A nurse led model of integrated care for people experiencing substance use in resource poor or rural settings.

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14:50 – 14:55	<b>Rachel Coleman, University of Hull</b> Identification of alcohol withdrawal in acute hospitals: A systematic review.
14:55 – 15:00	<b>John Robins, King's College London</b> The profile of alcohol use disorder in suicidal crisis and its impact on outcomes following crisis care And treatment.
15:00 – 15:05	<b>K. Nicki Annunziata, Trinity College Dublin</b> Vicarious trauma among addiction nurses and the role of leadership.
15:05 – 15:15	<b>Panel discussion and Q&amp;A with the rapid presenters</b>
<b>AFTERNOON BREAK</b> <b>15:15 to 15:45</b>	
	<b>Session Four: Alcohol, nightlife, and substance-free spaces (Rapid presentations)</b> Chair: Dr. Nathan Critchlow
15:45 – 15:50	<b>Lucy Burke, University of Sheffield</b> Does why we drink matter? Exploring the mediating effect of drinking motives between socio-demographic characteristics and consumption of no- and low-alcohol (NoLo).
15:50 – 15:55	<b>Fiona Matley, Oxford Brookes University</b> The good, the bad, and the hard to contemplate: a qualitative exploration of perspectives on risky drinking practices in UK midlife adults.
15:55 – 16:00	<b>Beth Meadows, Glasgow Caledonian University</b> Exploring sober nightlife spaces for LGBTQIA+ communities.
16:00 – 16:05	<b>Rebecca Kuiper, Liverpool John Moores University</b> Testing the utility of functional near infrared spectroscopy in detecting neurocognitive differences across social drinking.
16:05 – 16:15	<b>Panel discussion and Q&amp;A with the rapid presenters</b>
<b>AFTERNOON BREAK</b>	
	<b>Session Five: Cannabis and pharmacology (Full and rapid presentations)</b> Chair: Dr. Melissa Oldham
16:15 – 16:30	<b>Saba Ishrat, University of Oxford</b> Association between cannabis use and brain imaging phenotypes in UK Biobank: An observational and Mendelian randomization study.
16:30 – 16:45	<b>Megan Greener, University of Nottingham</b> A transcriptomic analysis of the role of Dopamine and cAMP-regulated phosphoprotein, Mr 32 kDa (DARPP-32) in addiction.
16:45 – 16:50	<b>Sally Turner, University of Bristol</b> Understanding the relationship between cannabis use and attention-deficit hyperactivity disorder.
16:50 – 16:55	<b>Danilo Romero, Karolinska Institutet</b> Risk for measurement error when using the AUDIT-C to monitor outcomes of brief Interventions: Evidence from simulated and real-world trial data.
16:55 – 17:00	<b>Dr. Simon Erridge, Imperial College London</b>

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	UK medical cannabis registry: a clinical analysis of patients with substance use disorder.
<b>17:00 – 17:10</b>	<b>Panel discussion and Q&amp;A with the rapid presenters</b>
<b>17:10</b>	<b>Closing remarks</b>
<b>18:30</b>	<b>Evening social – Puccini Restaurant, 29 Pudding Chare, Newcastle upon Tyne NE1 1UF</b>



## Session One

### *Nicotine and smartphone use*

Chaired by: Dr. Katie East, SSA Academic Fellow ▪ King's College London

## Tobacco-free nicotine pouch use in Great Britain: A representative population survey 2020–2021.

Dr. Harry Tattan-Birch ▪ University College London

### Abstract

**Introduction:** Tobacco-free nicotine pouches are products that are placed between the lip and gum, where they deliver nicotine to users. Little is known about nicotine pouch use in Great Britain since they entered the market in 2019.

**Methods:** Data came from a monthly representative survey of the adult ( $\geq 18$  years) population in Great Britain (England, Scotland, and Wales) between November 2020 and October 2021 ( $n = 25,698$ ). We estimated the weighted prevalence of pouch use overall and stratified by demographics and other nicotine use.

**Results:** Nicotine pouch use was rare among adults, with a weighted prevalence of just 0.26% (95% compatibility interval [CI] = 0.19–0.35). Prevalence doubled from November 2020 to October 2021 (0.14% to 0.32%; prevalence ratio [PR] = 2.22, 95% CI = 1.33–3.70). Pouch use was over four times more common among men than women (0.42% vs. 0.09%; PR = 4.55, 95% CI = 2.27–9.09) but less common in older age groups ( $p < .001$ ). Pouch use was more prevalent among current smokers (0.87%; PR = 13.60, 95% CI = 5.46–33.89) compared with never smokers (0.06%). Prevalence was also elevated among e-cigarette (1.64% vs. 0.15%; PR = 10.59, 95% CI = 5.74–19.52) and nicotine replacement therapy users (2.02% vs. 0.21%; PR = 9.75, 95% CI = 4.64–20.49).

**Conclusions:** One in 400 adults in Great Britain use nicotine pouches, but the prevalence increased from 2020 to 2021. Pouch use is largely concentrated among young and middle-aged men who also use other nicotine products.

## Differentiating e-cigarette use and dual use: The role of impulsivity.

Daniel Hollingworth ▪ Leeds Beckett University

### Abstract

**Introduction:** Elevated impulsivity has been associated with e-cigarette vaping, but research has yet to explore differences that may exist between e-cigarette-only users and dual users of cigarettes and e-cigarettes across multiple dimensions of impulsivity. The present study provides a comprehensive investigation of how multiple dimensions of trait and state impulsivity may differ between types of nicotine users and non-users.

**Methods:** Impulsivity was measured using the UPPS-P, and four tasks; monetary delay discounting, cigarette choice, vaping choice, and go-no/go. A sample of 100 participants completed these measures online and were categorised as either a non-user, cigarette only, e-cigarette only, or dual user.

**Results:** Sensation seeking was higher in users of e-cigarettes, whereas negative urgency was higher in users of cigarettes. Use of e-cigarettes was also associated with steeper discounting and heightened disinhibition, whilst use of cigarettes was associated with only steeper discounting. Discounting of cigarette rewards was higher in dual users compared to cigarette users.

**Conclusions:** Varying dimensions of impulsivity can distinguish between users of e-cigarettes and cigarettes. Whilst impulsivity did not differentiate between e-cigarette and dual users, dual users displayed greater preference for immediate cigarette rewards compared to cigarette only users. These results have clinical implications for prevention and intervention strategies regarding nicotine use.

# Unravelling problematic smartphone use: The qualitative perspectives and the Smartphone Use Problems Identification Questionnaire (SUPIQ).

Shuang Su ▪ University of Amsterdam

## Abstract

**Introduction:** Problematic smartphone use (PSU) has gained attention, but its definition remains debated. To grasp PSU and enable comprehensive measurement, our study used a two-fold approach: understanding PSU-related experiences through qualitative research and creating the Smartphone Use Problems Identification Questionnaire (SUPIQ) based on insights from the qualitative inquiry.

**Methods:** In the qualitative phase, semi-structured interviews were conducted with 28 European university students. In the questionnaire development phase, two samples were studied: a university community (n=292) and the general population (n=397). SUPIQ's validity was assessed through exploratory and confirmatory factor analyses, correlation analyses, and visualized partial correlation network analyses.

**Results:** Qualitative findings showed participants' addiction-like experiences, including craving, preoccupation, negative effects, loss of control, coping, tolerance-like and withdrawal-like symptoms. Questionnaire development yielded a 26-item SUPIQ with seven factors (Craving, Coping, Habitual Use, Social Conflicts, Risky Use, Withdrawal, Tolerance), demonstrating strong validity.

**Conclusions:** Smartphones' unique role in daily life differentiates them from traditional addictions. To understand PSU, broadening its definition beyond addiction criteria is crucial. Our findings highlight SUPIQ's potential as an assessment tool, urging further research to refine its utility and clinical application.

## Session Two:

### Treatment, practice and recovery (Full presentations)

Chaired by: Dr. Sophie Orton, SSA Academic Fellow ▪ University of Nottingham

#### A qualitative evaluation of Athens' drug consumption Room: Preliminary findings.

Ben Scher ▪ University of Oxford

##### Abstract

**Background:** Drug Consumption Rooms (DCRs) have become integral to public health systems in over 17 countries including in Greece, where in March 2022 the city of Athens opened the country's first legally sanctioned site. Since its opening, no qualitative research has been done into the experiences of people accessing the site, or with regards to the community of people who inject drugs locally who still do not use the site. The aim of this study was to capture those experiences as a way of assessing and improving upon the DCR's operational policies and practices as well as informing the future implementation of DCR's in other contexts.

**Methods:** Employing a participatory rapid-ethnographic approach, this study collected data through 4 weeks of ethnographic observation, 1 community consultation, 5 focus groups with service users, 12 interviews with staff and 25 interviews with people who use drugs locally who do not access the DCR.

**Results:** Preliminary findings suggest those who regularly attend the DCR experience many of the positive benefits described within the larger literature, including: 1) feelings of safety, security and protection from the physical and structural violence experienced within street-based settings, 2) satisfaction with the referral systems available from the DCR, 3) enhanced feelings of socialization and connection, 4) enhanced trust with staff and 5) a belief that the DCR was having broader positive impacts in the community. People who use drugs locally who did not attend the DCR described multiple barriers, including: 1) lack of awareness of facility, 2) heavy police patrolling around the service, 3) uneasy with over medicalization of the service, 4) fears around anonymity of the service and 5) dissatisfaction with rules of the service.

**Conclusions:** The opinions, attitudes, and lived experiences of DCR service users and potential users should be used to inform the design of services as a means of overcoming barriers to their uptake and efficacy. Recommendations for this local context include: 1) involving peers in the delivery of services to make it a more welcoming and relatable service, 2) establish a peer advisory committee so that service users have ongoing input into the delivery of services, and 3) the urgent need to amend policing practices to avoid pushing potential service users away from the vicinity of the site.



## Translating research into practice: An investigation into the translation, adaption, and implementation of contingency management into drug and alcohol services.

Tricia McQuarrie ▪ Middlesex University

### Abstract

**Introduction:** The problematic use of drugs and alcohol (D&A) is a major public health priority. Evidence-based interventions (EBIs) exist to treat problematic D&A use however their implementation is often slow and complex, affecting the quality of treatments offered to services users. One effective intervention which has a strong evidence-base and is recommended in multiple clinical guidelines is Contingency Management (CM). CM involves providing a 'reward' (in the form of vouchers and verbal praise) to encourage behaviours which align with personal recovery (attending an appointment, medication adherence and abstinence).

**Aim:** To explore the practical challenges associated with the implementation of CM in D&A treatment services in England.

**Methods:** Drawing on theories and frameworks from the field of Implementation Science, specifically the Context and Implementation of Complex Interventions framework, a multiple level, mixed-method research design will be adopted including: (1) a national survey of D&A providers to assess the rates of CM implementation; (2) a case study investigation in multiple D&A sites comprising of interviews and focus groups with professionals and service users; (3) interviews with commissioners exploring their views on implementing CM and other EBIs in the Addictions.

**Impact:** This PhD will identify the barriers and facilitators to the successful implementation of CM and produce essential evidence for further implementation studies in the D&A field.

## Peer engagement in homeless substance use research through creative expression.

Iveta Tsenkova ▪ King's College London

### Abstract

My PhD project aims to address knowledge gaps in the theoretical models of youth homelessness substance use, the mechanisms of work of psychosocial substance use interventions, and the theoretical underpinnings of substance use service development. To improve the quality of the PhD project I organised, hosted, and co-facilitated a creative art expression workshop for peers with lived experience of homelessness and substance use.

Through the event issues of art creation as a way to address public perceptions of worthlessness and pity manifesting from stigma were addressed (Kidd, 2009). Creativity was explored as a foundation of establishing an effective communication with researchers, peers, and the public (Kidd, 2009; Nyamathi, 2011). The event promoted creativity as a source of self-care, positive identity formulation, promotion of feelings of self-efficacy and self-esteem for peers (Schwan, 2018).

In this presentation, I will discuss reflections of organising, recruiting, and co-facilitating the workshop. My reflections will discuss trauma informed approaches used and the recruitment of an artist to facilitate the event. I will reflections on creating a safe, comfortable, and engaging space where individuals felt comfortable engaging, sharing their stories and creating art. I will discuss the need to continuously involve peers in research creating and design, as well as share some of the work created at the event.

**Session Three:**  
***Treatment, practice and recovery (Rapid presentations)***  
Chaired by: Saba Ishrat, SSA PhD Student ▪ University of Oxford

**A nurse led model of integrated care for people experiencing substance use in resource poor or rural settings.**

**Sadie Lavelle Cafferkey ▪ Trinity College Dublin**

**Abstract**

**Background:** Globally, approximately 275 million individuals have used substances within the last year, with over 36 million people experiencing a substance use disorder. Alongside this, most recent figures found that over 500,000 deaths are attributable to substances, with 30% as a result of overdose (UNODC, 2021). Substance use is associated with, and not limited to, increased mortality, morbidity, unemployment, intimate partner violence, decreased economic productivity and psychiatric disorders (WHO, 2017). The implementation nurse-led models of care in an addiction setting have been proven to improve access, enhance outcomes and promote recovery (Comiskey et al, 2019 & 2021).

**Aims and Objectives:** The overarching aim is to develop a nurse-led model with an integrated care pathway for people experiencing addiction within rural or resource poor regions.

**Methodology:** This study will be an explanatory mixed method study design. The quantitative component will be an objective retrospective analysis of existing secondary data on the prevalence and nature of addiction in rural regions. Following this, the qualitative component will explore the subjective experiences of people experiencing addiction and accessing the local care pathways, and those of HCPs providing addiction support in rural areas.

**Results:** Data analysis is currently being undertaken and results will be presented in November at the Symposium.

## Identification of alcohol withdrawal in acute hospitals: A systematic review.

Rachel Coleman • University of Hull

### Abstract

**Aims:** This study aimed to examine identification of alcohol withdrawal in acute general hospitals. This included exploration of which screening tools are used, whether clinical characteristics are assessed to identify alcohol withdrawal and which clinical management tools are used.

**Methods:** A narrative systematic review design was selected and studies were identified through CINAHL Complete, MEDLINE and PsycInfo using a search strategy developed around key search terms “alcohol withdrawal” “inpatient” and “identification”.

**Results:** In the 30 included papers, seven screening tools were used to identify alcohol withdrawal (AUDIT, FAST, PAWSS, AUDIT-C, AUDIT-PC, CAGE, CAGEAID), four clinical management tools (CIWA-Ar, GMAWS, SASI, RASS) and clinical characteristics including alcohol consumption, time since last drink, intoxication, history of withdrawal, urine and blood screening and social problems. Examples were found where hospital sites used different screening thresholds, e.g. one study used FAST >10 and another used  $\geq 9$ . Assessment of clinical characteristics varied in terms of comprehensiveness and thresholds, e.g. one site used consumption of >6 drinks per day as a screening tool, whereas another used >4 drinks within <2 hours.

**Conclusions:** Approaches taken in the acute hospital setting with regards to identifying alcohol withdrawal are highly varied, and there is no systematic application of tools and approaches. This highlights the need to explore this area further, and for a standardised approach in acute hospitals with regards to guidelines for care of patients experiencing alcohol withdrawal.

# The profile of alcohol use disorder in suicidal crisis and its impact on outcomes following crisis care and treatment.

John Robins ▪ King's College London

## Abstract

**Background:** Current suicide prevention policies do not address the spectrum of alcohol using behaviour, reflecting an evidence base which is largely built on unidimensional measures of alcohol use from general population or emergency department samples.

**Methods:** I analysed electronic health record data from three different crisis care and community treatment settings: a Latent Class Analysis of suicidal individuals detained at a centralised Place of Safety (cPoS) (n=640); a logistic regression of patients under the care of a Crisis Resolution Team (CRT) after suicide attempt (n=1615); and a proportional hazards regression of service-users accessing Community Drug and Alcohol Team (CDAT) treatment for their alcohol use (n=7145).

**Results:** I found three profiles of alcohol using behaviour among suicidal cPoS detainees: low-risk-drinking, binge-drinking, and dependent-drinking. The three profiles were associated with divergent patterns of post-crisis risk, with dependent-drinking being associated with the highest odds of death or recontact with emergency psychiatric care, but binge-drinking the lowest. Prevalence of hazardous, harmful, and dependent alcohol use was relatively low among suicidal CRT patients (17%), but it was not associated with increased odds of death or service recontact in the year after treatment. However, this may be due to more severe Alcohol Use Disorder profiles still being excluded from CRT care. I found a range of risk factors for suicide behaviour among CDAT service users, including; history of suicide attempts; current suicidal plans or carer concern; mental health problems; use of drugs other than opioids, cocaine, or cannabis; female sex; and social isolation. Abstinence from alcohol was associated with a 50% reduction in risk of suicide attempt.

**Conclusions:** Taken together, my findings from the cPoS and CRT settings are suggestive of a possible unmet treatment need for suicidal patients with alcohol dependence, given the poorer prognosis associated with alcohol dependence in cPoS detainees, and the relative paucity of patients with alcohol dependence among those accessing treatment by CRTs. Although CDAT services do not provide intensive psychiatric care, engagement with such services may help prevent suicide in those with alcohol dependence, and my findings may help inform the collaborative process of risk formulation among this high-risk population.

## Vicarious trauma among addiction nurses and the role of leadership.

*K. Nicki Annunziata* ▪ Trinity College Dublin

### Abstract

**Introduction:** Vicarious trauma (VT) arises from working with traumatised patients, impacting professionals' well-being. Addiction nurses face heightened vulnerability to VT. This study explores VT's prevalence, risks, protective factors, and the role of leadership in this context.

**Methods:** An explanatory sequential mixed-method approach was employed. Phase 1 involved a quantitative survey, with 175 European addiction nurses sampled conveniently. Phase 2 included qualitative interviews with 15 nurses. Data were analysed using SPSS and inductive thematic analysis.

**Results:** The study uncovered significant insights: (1) 89% of addiction nurses exhibit moderate/high VT risks; (2) shared risk factors and coping mechanisms are evident, however, those are different from other professions; (3) organisational leadership inadequately addresses VT; and (4) VT awareness among nurses is lacking.

**Conclusions:** Addiction nurses confront serious VT risks due to patients' trauma exposure. The findings highlight associated risks and protective factors. Additionally, deficiencies in organisational leadership contribute to potential VT escalation. VT remains under recognised and unacknowledged within addiction nursing practice. By effectively identifying and addressing VT risks, implementing protective measures, and enhancing organizational leadership, this study aims to mitigate the threat of VT for addiction nurses and contribute to the overall well-being of addiction nurses and service users.

## Session Four

### ***Alcohol, nightlife, and substance-free spaces (Rapid presentations)***

Chaired by: Dr. Nathan Critchlow, SSA Academic Fellow ▪ University of Stirling

#### **Does why we drink matter? Exploring the mediating effect of drinking motives between socio-demographic characteristics and consumption of no- and low-alcohol (NoLo)**

Lucy Burke ▪ University of Sheffield


##### **Abstract**

**Introduction:** To reduce harm caused by alcohol, the UK government aims to increase the availability of no- and low-alcohol (NoLo) drinks (under 1.2% ABV). To be effective, consumers must substitute standard alcohol with NoLo. NoLos are drunk most by young, more affluent, men. Yet it is the poorest who experience the most harm from alcohol suggesting the policy may increase health inequalities. Understanding why people drink is important when developing and evaluating interventions to reduce harmful drinking behaviour. This study explores whether there is a relationship between the reasons people drink alcohol (their drinking motives, e.g. to be sociable, because it's fun) and consumption of NoLo. It also explores whether drinking motives mediate relationships between sociodemographic factors and NoLo consumption.

**Methods:** The study recruited adult drinkers from 2 waves (n~3500) of the Alcohol Toolkit Study, a nationally representative survey that collects demographic data (age, gender, social grade, education, and socioeconomic deprivation), consumption of alcohol (AUDIT-C), and NoLo. Five items from the DMQ-R, a validated scale measuring drinking motives, captured the frequency of drinking for the following motives: Social, Enhancement, Coping-Anxiety, Coping-Depression, and Conformity. I will fit structural-equation models to explore relationships between sociodemographic factors, alcohol and NoLo consumption, and the extent to which these are mediated by drinking motives.

**Results:** Will be presented at the conference.

**Conclusions:** This is the first study to explore whether drinking motives are associated with drinking NoLo. The findings will improve our understanding of the impact of the policy on health inequalities.



## The good, the bad, and the hard to contemplate: a qualitative exploration of perspectives on risky drinking practices in UK midlife adults.

Fiona Matley ▪ Oxford Brookes University


### Abstract

**Introduction:** Although 78% of UK alcohol-specific deaths occur in midlife adults (MLAs) aged between 40 and 69 years, research focused on this age group is limited. This study aimed to explore influences on alcohol consumption in midlife, with a view to identifying barriers and facilitators of change.

**Methods:** Thematic Analysis was used to investigate data from 16 semi-structured interviews. Eight men and eight women aged 46 to 60 years, who engage in risky drinking practices (AUDIT-C  $\geq$  5), were recruited through opportunity sampling. Participants were Southeast UK based and mostly educated to at least degree level.

**Results:** MLA perspectives on drinking were constructed into three themes. Theme 1 relates to drinking practices which are perceived to be both acceptable and consonant with a preferred self-image. Theme 2 explores views about unacceptable drinking practices and behaviours, which are largely associated with others and distanced from the self. Theme 3 is focused on how an individual's own drinking behaviour may be in conflict with their preferred self-image, and the associated cognitive dissonance which may occur as a result of this.

**Conclusions:** UK MLAs have a complicated and often inconsistent relationship with alcohol. Themes 1 and 2 represent polarised views of drinking which could serve to protect a valued sense of self but also act as barriers to change. Theme 3 indicates that midlife adults may be motivated to change drinking behaviour in order to





## Exploring sober nightlife spaces for LGBTQIA+ communities.

Beth Meadows ▪ Glasgow Caledonian University

### Abstract

LGBTQIA+ (Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual and otherwise gender or sexuality diverse) people are more likely to experience substance related harm such as alcohol dependency, and have poorer mental health, than wider society. And yet, substances like alcohol play a central role in social and cultural spaces for this community. For example, nightlife is a primary social space, and cultural celebrations like Pride are often financially upheld by the alcohol industry. While this provides opportunities for social connectivity, it also forges harmful links between substance-use and being LGBTQIA+. The call for more substance-free spaces for LGBTQIA+ people has been repeatedly emphasised within existing literature.

Through qualitative methods of interviewing and focus groups, this PhD will assess the success and sustainability of LGBTQIA+ substance-free spaces in Glasgow, paying attention to key questions: What (or who) defines a substance-free space? How and when do community members access them? Who is (and isn't) being served, and why? Also, as the LGBTQIA+ community is not a homogenous group, intersectional differences will be attended to.

The PhD began in February 2023, so has no results yet, nor will they be in time for the symposium. Instead, I would present an outline of the key themes, drawing upon the literature review I am currently conducting, as well as outlining where the research intends to go in the data collection phase and beyond.

## Testing the utility of functional near infrared spectroscopy in detecting neurocognitive differences across social drinking.

Rebecca Kuiper ▪ Liverpool John Moores University

### Abstract

Neuroimaging studies have demonstrated a relationship between greater alcohol consumption and altered neurocognitive functioning, particularly in the prefrontal cortex (PFC) during executive control. The current study aims to test the utility of functional near infra-red spectroscopy (fNIRS) in detecting differences in PFC haemodynamics across non-clinical levels of alcohol consumption during executive functioning. fNIRS covering the bilateral PFC recorded haemoglobin activity whilst 30 social drinkers ( $21.40 \pm 4.72$  years old) completed 4 tasks measuring executive control. Comparing alcohol use disorder identification test (AUDIT) scores, there were no differences between lower and higher AUDIT scorers (AS) on 3 of the tasks. However, on the Wisconsin Card Sorting Task (WCST), high AS made significantly fewer perseverative errors. During the WCST, greater decreases in oxyhaemoglobin (HbO) and increases in deoxyhaemoglobin (Hbh) were observed in the superior and inferior right dorsolateral PFC amongst higher AS. PFC activity during the other cognitive tasks is currently being analysed. Overall, cognitive performance mostly did not differ by alcohol consumption, yet when it did, those reporting higher drinking levels made fewer set shifting errors. Participants drinking more also exhibited greater HbO and Hbh changes in right dorsolateral PFC areas. Further context will be acquired through analysis of PFC activity during tasks where performance did not differ.

## Session Five

### *Cannabis and pharmacology (Full and rapid presentations)*

Chaired by: Dr. Melissa Oldham, forthcoming SSA Academic Fellow ▪ University College London

#### **Association between cannabis use and brain imaging phenotypes in UK Biobank: an observational and Mendelian randomization study.**

**Saba Ishrat ▪ University of Oxford**

##### **Abstract**

**Introduction:** Despite the significant association between cannabis use and brain structure and function among adolescents and young adults, its impact on brain health among older adults remains understudied.

**Methods:** In this study, we analyzed 3,641 lifetime cannabis users and 12,255 controls from the UK Biobank, using brain imaging-derived phenotypes as measures of structural and functional connectivity. Associations with cannabis use were assessed using multiple linear regression while controlling for covariates, employing both hypothesis-driven and exploratory approaches. Additionally, we conducted two-sample Mendelian randomization (MR) to explore potential causality.

**Results:** Hypothesis-driven analyses showed no significant association between cannabis use and hippocampal or amygdala grey matter volumes. In exploratory analyses, after correcting for the false discovery rate, associations were observed with diffusion metrics in the genu and body of corpus callosum and anterior corona radiata. Furthermore, cannabis use associated with resting-state functional connectivity primarily in brain regions underlying default mode, central executive, motor, attention, visual and salience networks. Our MR analyses did not support a causal relationship between cannabis use and brain structure or function.

**Conclusion:** Overall, our findings indicate that the associations observed between lifetime cannabis use and later-life brain structure and function are not likely causal in nature.

## **A transcriptomic analysis of the role of Dopamine and cAMP-regulated phosphoprotein, Mr 32 kDa (DARPP-32) in addiction.**

**Megan Greener** ▪ University of Nottingham

### **Abstract**

We are amidst a global addiction crisis, yet stigmas surrounding addiction counterintuitively prevail. Understanding and appreciating the neurobiology of addiction is essential to dissolve this stigma and for the development of new pharmacological agents to improve upon currently narrow therapeutic options. Dopamine- and cAMP-regulated phosphoprotein, Mr 32 kDa (DARPP-32) is a key modulator of drugs of abuse and therefore addiction pathophysiology. Despite this, no robust investigations into the specific signalling pathways of DARPP-32 in the presence of abusable substances to determine the potential for pharmacological manipulation have been carried out. Here, we apply RNA-sequencing methods to provide a transcriptomic assessment of the role of DARPP-32 in modulating various drugs of abuse to replicate multiple substance use disorders. Namely, we investigate DARPP-32 modulation of the following abusable substances; ethanol (an alcohol); morphine (an opioid); cocaine (a psychostimulant), THC (a cannabinoid) and psilocin (a psychedelic). DARPP-32 signalling in addiction is clarified here and supports further investigations into compounds that could pharmacologically modulate both itself and the relevant target genes identified through this study. Agents capable of altering DARPP-32 signalling in this way could prevent or reverse drug abuse and improve upon currently substandard treatment options.

# Understanding the relationship between cannabis use and attention-deficit hyperactivity disorder.

Sally Turner ▪ University of Bristol

## Abstract

I aim to present my PhD plans and will not have results in time for the symposium.

**Introduction:** Cannabis is one of the most popular drugs worldwide. Despite various interpersonal harms of cannabis, increasing evidence points to its medicinal potential. Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder that affects 7% of adults worldwide. Individuals with ADHD are more likely to use cannabis and become dependent on it, compared to non-ADHD individuals. Preliminary work has shown that cannabis can alleviate symptoms of ADHD, without causing negative interpersonal effects. However, due to a lack of research, the medicinal potential of cannabis for ADHD treatment is unknown, and findings related to harms of cannabis within ADHD populations, are limited. This PhD aims to explore cannabis use, cannabis use disorder, and the medicinal potential of cannabis in ADHD populations and controls.

**Methods:** (1) Study 1 will be a systematic review and meta-analysis of the prevalence of cannabis use and cannabis use disorder in ADHD individuals. (2) Study 2 will be a qualitative investigation of cannabis use in adults with ADHD. (3) Study 3 will be a cohort analysis of clinical outcomes of ADHD patients who are registered with the UK Medical Cannabis Registry. (4) Study 4 will be an ecological momentary assessment (EMA) study that explores the acute effects of cannabis in adults with ADHD.

## Risk for measurement error when using the AUDIT-C to monitor outcomes of brief interventions: Evidence from simulated and real-world trial data.

Danilo Romero ▪ Karolinska Institutet

### Abstract

**Background:** Accurate outcome measures are key for valid inferences about the impact of Brief Interventions (BI) on problematic alcohol use. AUDIT-C, originally developed for primary care screenings, is commonly used in BI trials. Yet, its validity in such contexts is uncertain.

**Methods:** First, to assess AUDIT-C's internal structure in BI trials, we analyzed inter-item correlations in an internet-based trial ( $n = 1,169$ ) and  $k = 16$  other BI trials. We simulated general-population cohorts and applied varying cut-offs to assess their impact on AUDIT-C's psychometric performance. Second, we investigated differential responsiveness depending on baseline standard units (SU) by conducting an interaction analysis with SU difference score ( $SU_{t2-t1}$ ) as the outcome and  $AUDIT-C_{t2-t1}$  and initial SU as predictors, further probed using simple slopes.

**Results:** Contrary to general population cohorts, most BI trials exhibited a zero-to-negative inter-item correlation between the frequency-quantity items. Simulations suggested this is due to selection in BI trials. The simple slopes analysis, probing the significant interaction of  $AUDIT-C_{t2-t1}$  and baseline SU in predicting  $SU_{t2-t1}$  ( $\beta = .05$ ,  $SE = .02$ ,  $p = .005$ ), implied a one-unit  $AUDIT-C_{t2-t1}$  change resulted in greater average  $SU_{t2-t1}$  at higher initial SU, suggesting differential responsiveness.

**Conclusions:** Our results suggest AUDIT-C may: (1) generate an inadequate internal structure in BI trials, impeding its ability to meaningfully represent problematic alcohol use; (2) exhibit differential responsiveness to alcohol decrease, disadvantaging high consumers and potentially elevating type II error in clinical trials. We thus recommend caution in using AUDIT-C in BI trials.

## UK medical cannabis registry: A clinical analysis of patients with substance use disorder.

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### Abstract

**Background:** Cannabis-based medicinal products (CBMPs) have been suggested to reduce harm as maintenance therapy for substance use disorder (SUD). The aim of this study is to assess changes in patient reported outcome measures (PROMs) and opioid prescribing in individuals prescribed CBMPs for SUD.

**Methods:** A case series of patients with SUD from the UK Medical Cannabis Registry was analysed. Outcomes included changes at 1, 3, and 6 months from baseline of the EQ-5D-DL, single-item sleep quality scale (SQS), and General Anxiety Disorder-7 (GAD-7) questionnaire. Change in prescribed opioid consumption was assessed as change in oral morphine equivalent (OME) from baseline.

**Results:** Thirty-four patients met the inclusion criteria. The most common SUD was opioid use disorder (n=18; 52.94%). Improvements in GAD-7, SQS, and EQ-5D-5L at each follow up were observed ( $p < 0.050$ ). Median OME consumption at baseline was 274.95 [79.50-441.80] mg/day. This was reduced at 6 months (204.45 [61.88-354.85] mg/day;  $p = 0.043$ ), but there was no significant difference at 1 or 3 months ( $p > 0.050$ ). Three (8.81%) participants reported 17 (50.00%) adverse events.

**Conclusions:** There was an associated improvement in health-related quality of life PROMs and reduction in prescribed opioids in individuals with SUD prescribed CBMPs. CBMPs were well tolerated by most individuals in this 6-month analysis. Further evaluation through randomised controlled trials will be necessary to determine causality.