



SRNT EUROPE 16TH ANNUAL CONFERENCE

10 -12 SEPTEMBER 2015 | MAASTRICHT, THE NETHERLANDS

The bigger picture towards multidisciplinary in nicotine and tobacco research

Programme and Proceedings Book



**SR
NT**
EUROPE

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Nederlands
Netwerk
voor
Tabaksonderzoek

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Welcome to SRNT EUROPE 2015 in Maastricht

Dear colleague,

It is a real pleasure to welcome all of you to one of the most beautiful cities in Western Europe: Maastricht. Maastricht is the oldest city of the Netherlands and was founded by the Romans. Maastricht is a typical European city. The well-known treaty of Maastricht was signed more than 20 years ago in this city and was the start of the European Union and led to the creation of the single European currency.

Is there a better place to have the European Conference of the SRNT than Maastricht? You may judge yourself after you have enjoyed excellent presentations, topical scientific discussions in our beautiful conference centre on walking distance of Maastricht University and the Academic Hospital, after you have enjoyed dwelling through the beautiful streets of Maastricht and after you enjoyed a first class diner in a magnificent castle on the Dutch-Belgium border enjoying an overview of a landscape so impressive, that you will probably never forget. We are looking forward to meet you all and to enjoy science, friendship and the typical local Limburg hospitality of Maastricht.



A stylized blue ink signature of Prof. Onno van Schayck.

Prof. Onno van Schayck



A stylized blue ink signature of Prof. Marc Willemsen.

Prof. Marc Willemsen

09:00-09:15	Room 0.4/0.5 Opening Ceremony <i>Marcus Munafo and Onno van Schayck</i>		
09:15-09:45	Room 0.4/0.5 Opening Keynote: Jacqueline Vink · Beyond the genetics of smoking behavior <i>Chair: O. van Schayck</i>		
09:45-10:45	Room 0.9 ORAL COMMUNICATIONS Topic: Genes and addiction <i>Chair: O. Salminen</i> 09:45-10:00 Genome-wide time-to-event analysis on smoking progression stages in a family-based study - <i>A. Loukola</i> 10:00-10:15 A zebrafish (Danio Rerio) model identifies a role for the XXXX gene in nicotine reinforcement and human smoking behavior - <i>R. Walton</i> 10:15-10:30 CYP2B6 rs2279343 polymorphism is associated with smoking cessation in bupropion therapy - <i>J. Scholz</i> 10:30-10:45 A genome-wide association study of a biomarker of nicotine metabolism - <i>A. Loukola</i>	Room 0.8 ORAL COMMUNICATIONS Topic: Pharmacotherapy <i>Chair: S. Adams</i> 09:45-10:00 Pharmacotherapy Treatment, Gender Differences and Smoking Cessation Rates - <i>V. Kiparoglou</i> 10:00-10:15 Varenicline is safe and effective for sober smokers in substance treatment - <i>D. Rohsenow</i> 10:15-10:30 Flexible and Extended Dosing of Nicotine Replacement Therapy or Varenicline in Comparison to Fixed Dose NRT for Smoking Cessation: The FLEX Trial - <i>H. Tullloch</i> 10:30-10:45 Cardiovascular and Neuropsychiatric Risks of Varenicline - <i>D. Kotz</i>	Room 0.4/0.5 ORAL COMMUNICATIONS Topic: Electronic cigarettes <i>Chair: A. McNeill</i> 09:45-10:00 Effects of electronic cigarette liquid nicotine concentration on plasma nicotine and puff topography in tobacco cigarette smokers - <i>A. Lopez</i> 10:00-10:15 Perceived relative harm of e-cigarettes over time and prediction of subsequent use - <i>S. Brose</i> 10:15-10:30 Release of metals from cartomisers into e-liquids and vapour: A study of UK e-cigarette brands with implications for design and regulation - <i>W. Stephens</i> 10:30-10:45 The health risks of using e-cigarettes - <i>W. Visser</i>
10:45-11:15	COFFEE BREAK-TRAJECTUM		
11:15-12:30	Room 0.9 SYMPOSIUM 1 Preventing tobacco industry interference in health policymaking: challenges, successes, and missed opportunities <i>Chair: M. Willemsen</i> <ul style="list-style-type: none"> Implementing World Health Organization Framework Convention on Tobacco Control Article 5.3 in the EU: challenges and opportunities - <i>H. Weishaar</i> Several bites at the cherry? Exploring the outputs of tobacco industry coalition building in stakeholder submissions to the UK Government - <i>J. Lie</i> 	Room 0.8 SYMPOSIUM 2 Specific issues for smoking and smoking cessation among persons with and without mental health disorders <i>Chair: I. Berlin</i> <ul style="list-style-type: none"> Smoking and Suicide Related Outcomes. Is the Relationship Independent of Mental Disorders? - <i>I. Berlin</i> Role of depressive symptoms in the smoking cessation process - <i>T. Korhonen</i> Treatment of Tobacco Use Disorders in Smokers with Serious Mental Illness: Toward Clinical Best Practices - <i>E. Evins</i> 	Room 0.4/0.5 SYMPOSIUM 3 Developing comprehensive tobacco dependence treatment and smokefree policy implementation for vulnerable groups <i>Chair: A. McNeill, E. Ratschen</i> <ul style="list-style-type: none"> European Psychiatric Association (EPA)-Position Statement on Smoking and Strategies for Smoking Cessation in People with Mental Illness - <i>T. Ruether</i> Smoking cessation for people with severe mental ill health: the UK SCIMITAR trial - <i>S. Gilbody</i> Implementation of health service guidance on smoking in mental health hospitals - <i>D. Robson</i>

	<ul style="list-style-type: none"> The tobacco industry's assault on democratic policy making: the case of the 2014 EU Tobacco Products Directive - <i>S. Peeters</i> Controlling corporate influence in health policy making? A review of governments' efforts to implement Article 5.3 of Framework Convention on Tobacco Control - <i>G. Fooks</i> 	<ul style="list-style-type: none"> Harm Reduction Using Nicotine Replacement Therapies in Mental Health Patients: A Gateway to Quitting Strategy - <i>R. Bittoun</i> 	<ul style="list-style-type: none"> Towards addressing smoking in Child and Adolescent Mental Health Services (CAMHS) and residential care homes for Looked-After Children (LAC): findings from exploratory research - <i>L. Huddleston</i>
12:30-13:30	LUNCH-TRAJECTUM		
13:30-14:00	Room 0.4/0.5 Clinical Theme Lecture: Paul Aveyard · Understanding and reducing non-adherence in smoking cessation <i>Chair: O. van Schayck</i>		
14:00-15:00	Poster session - Trajectum		
15:00-15:30	COFFEE BREAK-TRAJECTUM		
15:30-16:45	Room 0.9 SYMPOSIUM 4 Prevention, harm reduction and cessation: novel insights from basic science Sponsored by the SRNT Basic Science Network <i>Chair: S. Adams</i> <ul style="list-style-type: none"> Methadone's effect on nAChRs - a link between methadone use and smoking? - <i>O. Salminen</i> Evidence for a causal effect of coffee consumption on heaviness of smoking and smoking cessation - <i>M. Munafo</i> The transition into dependence: from impulsivity to habit formation in addiction - a theoretical update and overview of translational research in human neuroscience - <i>M. Luijten</i> Putting tobacco use context in context: from brain to behavior to treatment - <i>J. McClernon</i> 	Room 0.8 SYMPOSIUM 5 Social Network Analysis in Tobacco Control <i>Chair: S. Leischow</i> <ul style="list-style-type: none"> Coevolution of Information Sharing and Implementation of Evidence-Based Practices Among North American Tobacco Cessation Quilines - <i>L. Mercken</i> Using mixed-method network research to investigate tobacco control policy - <i>H. Weishaar</i> Diffusion of Innovations Theory Applied to Global Tobacco Control Treaty Ratification - <i>T. Valente</i> Network analysis of a Navajo Smokefree Policy Coalition - <i>S. Leischow</i> 	Room 0.2/0.3 WORKSHOP 1 Practical approaches to missing outcome data in smoking cessation trials <i>M. Blankers, G. van Breukelen, M. Candel</i>
16:45-17:45	Room 0.4/0.5 SRNT - E General Members Assembly		
18:30-20:00	Welcome Reception - Maastricht City Hall		

09:00-09:30	Room 0.4/0.5 Behavioural Science Theme Lecture: Robert West • What is the most that we can achieve with behavioural support for smoking cessation? <i>Chair: O. van Schayck</i>		
09:30-10:45	Room 0.9 SYMPOSIUM 6 New Innovations in eHealth Technology for smoking cessation <i>Chair: H. de Vries</i> <ul style="list-style-type: none">• Tailored eHealth Smoking Cessation via Video or Text: Results of a RCT - <i>H. de Vries</i>• Web-based implicit pictorial tasks for smokers who are unmotivated to quit smoking and smokers who made a quit attempt - <i>J. Elfeddali</i>• Intervention for smoking cessation in Youth - <i>M. Karek'a</i>• Systematically improving automated tailoring of smoking cessation assistance - <i>R. Borland</i>	Room 0.8 SYMPOSIUM 7 Preventing cancer through smoking cessation: A symposium supported by the Dutch Cancer Society (KWF) and Cancer Research UK <i>Chair: A. Cox</i> <ul style="list-style-type: none">• Smoking and smoking cessation in England: Findings from the Smoking Toolkit Study - <i>R. West</i>• Should Governments pay for smoking cessation? - <i>M. Willemssen</i>• Stop smoking services in the UK: current effectiveness and challenges - <i>L. Bauld</i>• Exploring Dutch practice nurses' adherence to smoking cessation guidelines and their needs for web-based adherence support - <i>D. de Ruijter</i>	Room 0.2/0.3 WORKSHOP 2 Economic evaluation: to put one's money where one's mouth is <i>S. Evers, R. de Kinderen, M. Hilgsmann</i>
10:45-11:15	COFFEE BREAK-TRAJECTUM		
11:15-12:00	Room 0.9 ORAL COMMUNICATIONS Topic: Cigarette packaging <i>Chair: M. Munafo</i> 11:15-11:30 Exploring novel ways of using tobacco packaging to communicate health messages: Interviews with marketing and packaging experts - <i>C. Moodie</i> 11:30-11:45 Dissuasive sticks: An extension of standardised (plain) packaging - <i>J. Hoek</i> 11:45-12:00 Neural correlates of cigarette health warning avoidance among smokers - <i>O. Maynard</i>	Room 0.8 ORAL COMMUNICATIONS Topic: Legislation <i>Chair: H. Weishaar</i> 11:15-11:30 Achieving strategic priorities with regulatory science - <i>D. van Bommel</i> 11:30-11:45 Working toward a ban on menthol tobacco in Canada: Setbacks and success - <i>L. Hagen</i> 11:45-12:00 The Impact of the European Tobacco Products Directive (TPD) on E-Liquid and its Packaging - <i>L. Price</i>	Room 0.4/0.5 ORAL COMMUNICATIONS Topic: Relapse prevention <i>Chair: I. Berlin</i> 11:15-11:30 Triggers of smoking lapses over the course of a quit attempt - <i>S. Ferguson</i> 11:30-11:45 Does acute tobacco smoking prevent cue-induced craving? - <i>E. Schlagentweit</i> 11:45-12:00 The development of the Coping with the Urge to Smoke Inventory (CUSI) - <i>J. Robinson</i>
12:00-13:00	Poster session-Trajectum		
12:30-14:00	Room 0.4/0.5 SATELLITE SYMPOSIUM SPONSORED BY PFIZER From addiction to smoking cessation <i>Chair: O. van Schayck</i> 12:45-13:05 Smoking addiction: The importance of breaking free - <i>W. van den Brink</i> 13:05-13:25 Abrupt Quitting-Is this the optimal way for patients to quit? - <i>P. Tønnesen</i> 13:25-13:45 Every smoker can "do something" to improve their chances of quitting - <i>R. West</i>		

09:00-09:30	Room 0.4/0.5 Policy Theme Lecture: Paul Cairney - The five elements of the policy process that help explain tobacco control <i>Chair: O. van Schayck</i>		
09:30-10:45	Room 0.9 SYMPOSIUM 10 Smoking Cessation in Pharmacy <i>Chair: R. Bittoun</i> <ul style="list-style-type: none">• Why pharmacists should engage in smoking cessation - <i>R. Bittoun</i>• Changes in knowledge about and attitudes towards smoking cessation in final-year pharmacy students following a smoking cessation educational activity - <i>M. Saba</i>• Empowering Malaysian Pharmacists as Smoking Cessation Service Providers - <i>M. Haniki Nik Mohamed</i>• Training and involvement of the French community pharmacists in smoking cessation - <i>M.P. Sauvant - Rochat</i>	Room 0.8 SYMPOSIUM 11 Quitting smoking in the European tobacco control context: Recent findings from the International Tobacco Control (ITC) Europe project <i>Chair: A. McNeill</i> <ul style="list-style-type: none">• The effectiveness of e-cigarettes when used for quitting: Findings from the ITC United States and United Kingdom Survey - <i>S. Hitchman</i>• Noticing e-cigarette advertisements and associations with use of e-cigarettes, denormalization of smoking, and quitting smoking: Findings from the ITC Netherlands Survey - <i>G. Nagelhout</i>• External validation of the Motivation To Stop Scale (MTSS) and comparison with the Stages of Change: Findings from the ITC Netherlands Survey - <i>K. Hummel</i>• Trends in tobacco industry and consumer strategies which limit the impact of price on reducing smoking: Findings from the ITC United Kingdom Survey - <i>T. Partos</i>	Room 0.2/0.3 WORKSHOP 4 Effective writing and publishing scientific papers: choosing the right journal <i>D. Kotz</i>
10:45-11:15	COFFEE BREAK - TRAJECTUM		
11:15-12:30	Room 0.9 ORAL COMMUNICATIONS Topic: Socially disadvantaged groups <i>Chair: TBD</i> 11:15-11:30 Tobacco control policy and socio-economic inequalities in smoking in 27 European countries - <i>J. Bosdriesz</i> 11:30-11:45 Kids Safe and Smokefree: A Multilevel Trial to Protect Children from Tobacco Smoke and Promote Cessation among Low-Income Parents - <i>B. Collins</i>	Room 0.8 ORAL COMMUNICATIONS Topic: Smoking cessation treatment <i>Chair: O. van Schayck</i> 11:15-11:30 Engagement in Smoking Cessation Treatments and Quit Rates among Smokers with Lower Motivation to Quit - <i>S. Fu</i> 11:30-11:45 Increasing implementation of effective smoking cessation strategies - The Quitstair - <i>C. Paul</i>	Room 0.4/0.5 ORAL COMMUNICATIONS Topic: Electronic cigarettes <i>Chair: M. Munafò</i> 11:15-11:30 Transitions between smoking and e-cigarette use: A qualitative study of adults in London, United Kingdom - <i>E. Wadsworth</i> 11:30-11:45 Perceptions of risk and addictiveness of e-cigarettes among young adults - <i>M. Cooper</i>

	<p>11:45-12:00 Population-based interventions for smoking cessation among socioeconomically disadvantaged smokers: a randomized clinical trial of proactive tobacco treatment - <i>S. Fu</i></p> <p>12:00-12:15 Socioeconomically disadvantaged Australian smokers' self-exempting beliefs and quit intentions - <i>A. Guillaumier</i></p>	<p>11:45-12:00 Long-term use of nicotine replacement therapy in UK stop smoking services: prevalence and impact on biomarkers of nicotine exposure and stress - <i>L. Shahab</i></p> <p>12:00-12:15 Associations Between Adviser Personality and Client Quit Rates in Stop Smoking Services - <i>H. Bates</i></p> <p>12:15-12:30 Treatment of tobacco dependence in the Czech Republic in 2015 - <i>E. Kralikova</i></p>	<p>11:45-12:00 Progression to Combustible Cigarettes after Electronic Cigarette Use among U.S. Adolescent Never-smokers - <i>J. Sargent</i></p> <p>12:00-12:15 Saliva cotinine and nicotine levels among tobacco cigarette smokers, electronic cigarette users, NRT users and dual users - <i>M. Goniewicz</i></p>
12:30-13:00	<p>Room 0.4/0.5 Closing session <i>Marcus Munafò and Marc Willemssen</i> LUNCH-TRAJECTUM</p>		



Committee

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- Ivan Berlin (Chair)
- Outi Salminen (Co-chair)
- Marcus Munafò
- Ann McNeill
- Daniel Kotz
- Liesbeth Mercken
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- Prof. Marc Willemsen (co-chair) - Maastricht University
- Fleur van Bladeren - Dutch Cancer Society
- Dr. Daniel Kotz - Maastricht University
- Dr. Margriet van Laar - Trimbos Institute
- Dr. Liesbeth Mercken - Maastricht University
- Dr. Gera Nagelhout - Maastricht University / Dutch Alliance for a smokefree society
- Dr. Marcel Pieterse - University of Twente
- Dr. Dewi Segaar - Alliantie Nederland Rookvrij, Dutch alliance for a smokefree society
- Prof. Jacqueline Vink - VU University
- Prof. Hein de Vries - Maastricht University
- Prof. Reinout Wiers - University of Amsterdam



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- H. de Vries
- H. Weishaar
- R. West

Sponsors

The Organizing Committee gratefully acknowledges contributions:



Gemeente Maastricht



General information

The congress takes place in the Maastricht Exhibition and Congress Centre (MECC Maastricht), Forum 100, 6629 GV Maastricht



All sessions will be organised in the congress centre in the Lobby (Level 0). The registration, poster sessions and lunch and coffee/tea breaks will be held at the Trajectum.

Parking

MECC Maastricht provides ample parking around the premises. Parking tickets can be purchased in the entrance hall and cost € 10,- per day, regardless of duration. The maximum vehicle height in the parking garage is 2.05 meters.

Registration desk

The registration area in the congress centre will be open for registration:

Wednesday 9 September 2015:	16:00-18:00 hrs. Pre-registration
Thursday 10 September 2015:	07:30-17:00 hrs.
Friday 11 September 2015:	08:00-17:30 hrs.
Saturday 12 September 2015:	08:30-13:00 hrs.

The registration fee includes:

- Admission to all scientific and poster sessions
- Lunch
- Daily coffee breaks
- Programme and Proceedings Book
- Welcome reception
- Free public bus transportation within the city of Maastricht

Payment registration fee

You can pay the registration fee on-site by credit card or cash. The official currency at the congress is Euros. Cheques and foreign currency are not accepted.

WIFI

You will have WIFI access on-site in the congress centre.

Network: MECC_Congrescentre

Password: meccmaastricht

Badges

For security reasons, badges must be worn throughout the congress. Be careful not to lose your badge, as the Congress Committee cannot be responsible for lost badges, tickets or other valuable items. Entrance to lecture halls, poster and registration area will not be allowed to any person without a badge.



Free public bus transportation within the city of Maastricht

Your conference badge offers you free use of the city bus to visit the city in the evening and for your daily transportation between your hotel and the congress venue. A city bus stops in front of MECC Maastricht every 10 minutes, bus stop Forum.

Certificate of attendance

All participants will receive a digital certificate of attendance by email after the congress.

Lunch and coffee breaks

Lunches and coffee breaks on Thursday, Friday and Saturday will take place at the Trajectum.

Anything lost?

Please go to the registration desk.

Language

The official language of the congress is English.

Mobile Phone Manners

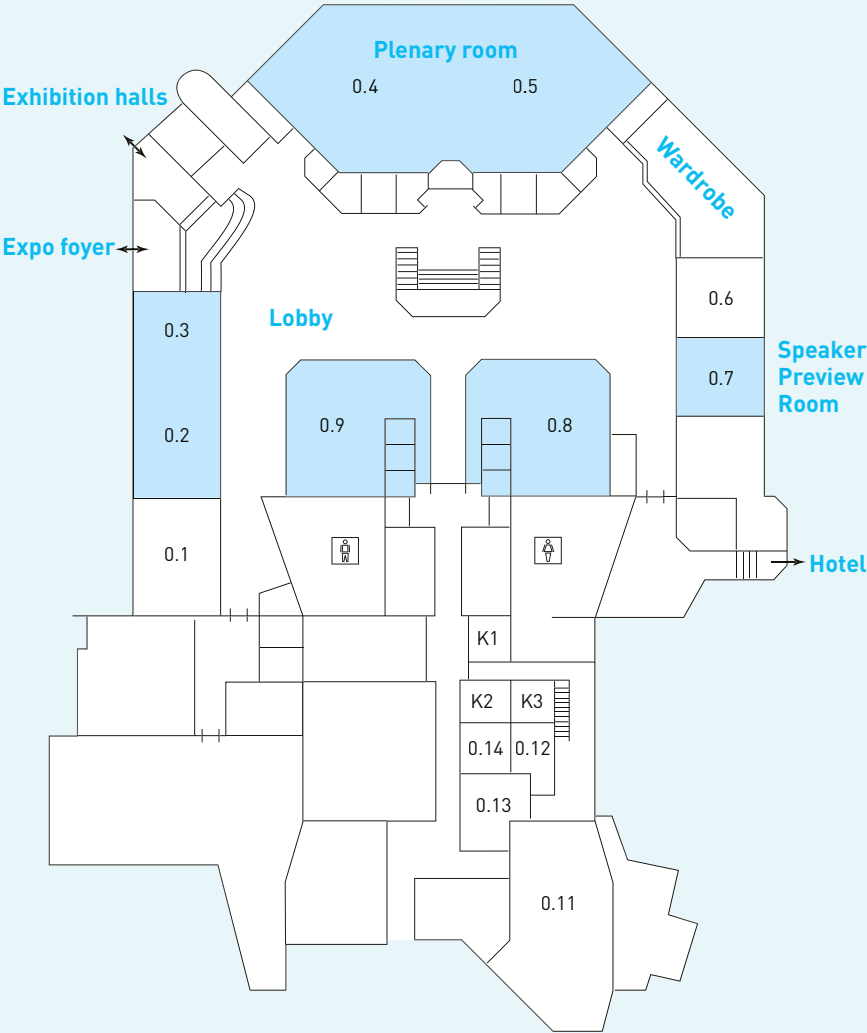
As a courtesy to other attendees, please observe good mobile phone manners. When attending sessions, please turn off your mobile phone and other wireless communications or use the silent notifications options. If you must take a call, please step out of the room rather than disrupting the event. Thank you for your cooperation.

Liability

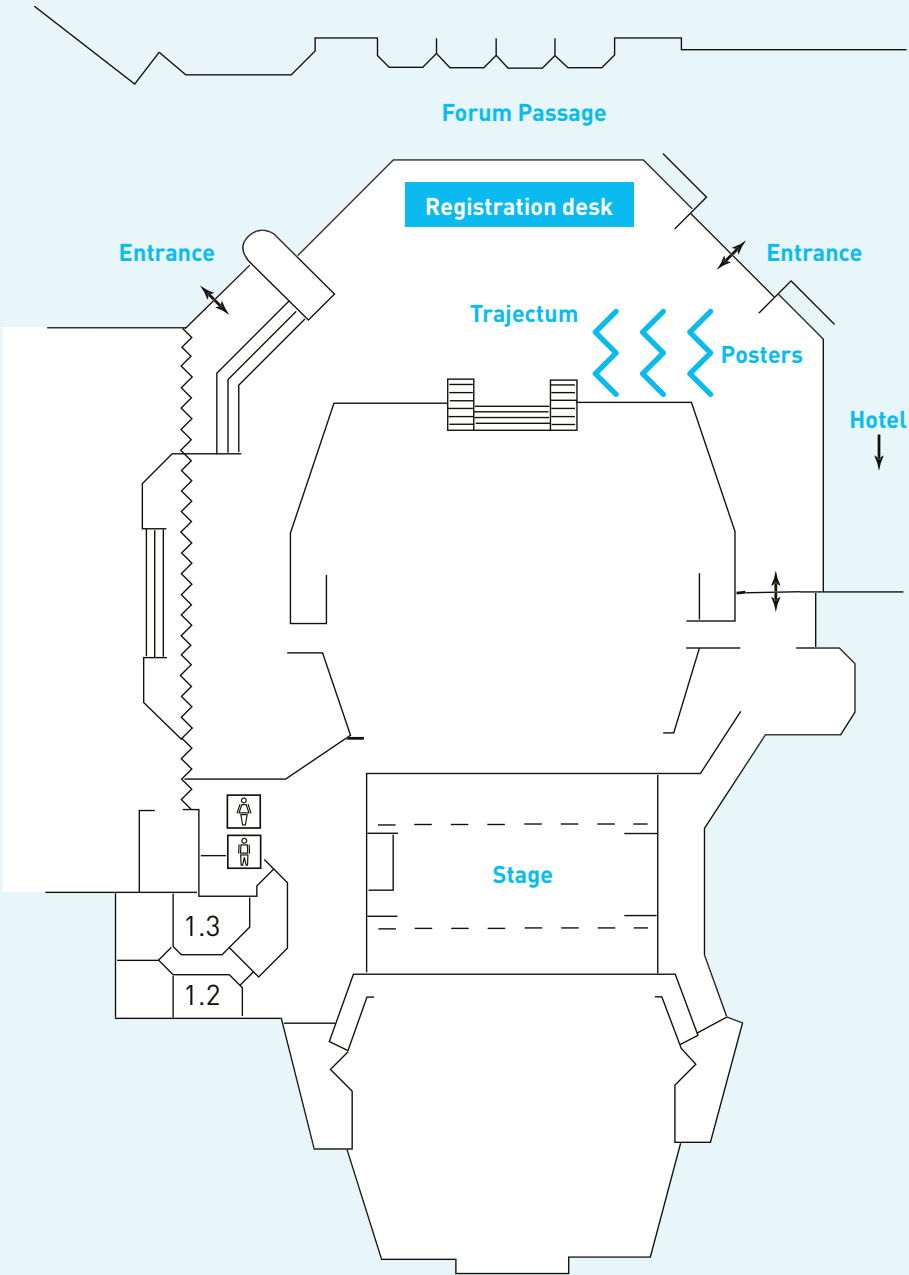
Upon registration, participants agree that neither the Organizing Committee nor the Conference Management can be subject to any liability concerning participation related activity. Participants should, therefore, organize their own (health and travel) insurance(s).

Floorplan

Level 0



Level 1



Scientific information

Oral presentations

Please make sure to bring your PowerPoint presentation on USB drive to the congress and hand it to a technician in the Speaker Preview Room (Level 0, Room 0.7), upon arrival, but at least 3 hours before your presentation. Please note that you will NOT be able to use your own laptop computer.

Poster presentations

Posters will be displayed throughout the registration area at the Trajectum. The posters are divided per topic. All topics, titles and abstract numbers of the presenters are displayed on the poster boards. The posters must be attached to the poster boards with push pins. The pins will be provided. You are required to be present at your poster during the Poster Sessions to facilitate discussion with other delegates.

Poster set-up and removal times

Please mount your poster before Thursday 10 September 2015, 10:00 hrs., and do not dismantle your poster before Saturday 12 September 2015, 12:30 hrs. The Congress Secretariat will remove all posters which have not been removed by 13:30 hrs.



Social programme

Welcome reception - Thursday 10 September 2015

The welcome reception will take place at the Maastricht City Hall at the Market Square. After the reception you are free to have dinner or return back to your hotel. As participant of the conference, you can make free use of the public transport (city bus) in the city of Maastricht by showing your conference badge.

Time: 18:30-20:00 hrs.

Registration fee: Free of charge but registration is required.



Conference dinner - Friday 11 September 2015

The congress dinner will take place at Château Neercanne. In the magnificent Jekerdal valley, adjacent to the Belgian border, is Château Neercanne, the only terraced castle in the Benelux. The beautiful Baroque gardens of the 17th century castle are divided over four levels, all of them UNESCO World Heritage Sites. The highest terrace offers a wonderful view over of the gardens and the magnificent valley. Château Neercanne has a rich cultural and culinary tradition. The unique wine cellars in the marl caves, where the Maastricht Treaty on the European Union was signed, form an unparalleled setting for a dinner. The conference dinner will be high quality culinary discovery through the Château and caves where you can taste several dishes made from local products.

The outside terrace will provide fabulous views on the surroundings, where the evening will start with an aperitif. You will enjoy a splendid dinner in the Carrière Poswick.

Time: 19:00-23:00 hrs., for registered participants only

Registration fee: € 80,- per person, bus transportation is included.

Transportation:

19:00 hrs. departure to Château Neercanne from MECC congress centre and the Maasboulevard.

23:00 hrs. departure from Château Neercanne by bus to MECC congress centre and the Maasboulevard.



Thursday 10 September 2015

Keynote Lecture

Beyond the genetics of smoking behavior

09:15 - 09:45 Room 0.4/0.5

J. Vink

Department of Biological Psychology, VU University, Amsterdam, the Netherlands

Twin and family studies have shown that smoking behavior is influenced by genetic factors. Heritability estimates range from low to moderate heritability for smoking initiation, to higher heritability estimates for quantity and dependence. In the past years, genome-wide association studies of smoking behavior revealed several interesting DNA regions and candidate genes. However, individual GWA studies did not report genome-wide significant results, because of the limited sample sizes. It is now recognized that a well-powered GWA needs to include tens of thousands of subjects. In 2010, three large consortia each carried out a meta-analysis for smoking phenotypes. The most significant finding was the association between the number of cigarettes per day and a cluster of nicotine receptor genes on chromosome 15. The individual genetic variants only explain a small proportion of the total variance in smoking behavior. The main question is how to proceed with genetic research to smoking behavior? The focus is shifting to research on the interaction between genetic vulnerability and environmental factors. More and more different techniques and applications are developed. The presentation will discuss recent progress and future directions in this field of research.

Clinical Theme Lecture

Understanding and reducing-non-adherence in smoking cessation

13:30 - 14:00 Room 0.4/0.5

P. Aveyard

Nuffield department of primary care health sciences, University of Oxford, United Kingdom

In this lecture I will describe how common non-adherence is and how much of the evidence simply describes whether or not medication was taken, which is surprisingly uninformative about medication because of the unique characteristic of smoking cessation. Drawing on data from the Cochrane review, I will examine evidence on how effective interventions are at improving adherence to medications in general and, a second review on improving adherence to smoking cessation medications for smoking cessation. Many interventions to improve adherence have focused on technological fixes, such as reduced frequency dosing and reminder systems. Qualitative and

quantitative behavioural research, however, shows us that the reasons for non-adherence are rooted in common beliefs about the nature of smoking, desirable ways to stop smoking, and about pharmacotherapy as an intervention. Drawing the evidence together, I will propose a framework for how we might best tackle this issue in future intervention studies.

Symposium 1

Preventing tobacco industry interference in health policymaking: challenges, successes, and missed opportunities

11:15 - 12:30 Room 0.9

This symposium examines two issues of central importance to contemporary health policy: tobacco companies' efforts in shaping health policy and countries' efforts to prevent such interference in accordance with Article 5.3 of the World Health Organization Framework Convention on Tobacco Control (FCTC). Article 5.3 is an innovative policy instrument that aims to prevent tobacco industry interference in health policy, reputed to be the single biggest obstacle to tobacco control measures globally. Despite its potential value in facilitating strong implementation of the FCTC, there is little research on how Article 5.3 is applied in practice. The contributions to this symposium explore tensions between Article 5.3 and recent policymaking developments in the EU and its member states under Better/Smart regulation initiatives and examine major deficiencies in countries' efforts to give effect to the Article's Guidelines for Implementation.

Implementing World Health Organization Framework Convention on Tobacco Control Article 5.3 in the EU: challenges and opportunities

H. Weishaar

University of Glasgow, United Kingdom

Background and Aims: Article 5.3 of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) aims to prevent tobacco industry influence in health policymaking. Public health advocates have promoted strong implementation of its guidelines which outline best practice recommendations for putting Article 5.3 into effect; however the use of Article 5.3 by actors engaged in tobacco control policymaking remains largely unexplored. Focusing on health policymaking in the European Union (EU), this presentation reflects on tobacco industry arguments to undermine implementation of Article 5.3 and public health advocates' use of Article 5.3 to argue against tobacco industry interference.

Methods: Qualitative analysis of internal tobacco industry documents, policy documents and semi-structured interviews with key actors.

Results: Tobacco companies tried to undermine the implementation of Article 5.3 by framing debates in the context of EU policy commitments to 'better regulation' and 'good governance' and claiming that the article contravenes official standards on consultation. Public health advocates, on the other hand,

successfully employed Article 5.3 to increase reluctance among potential industry allies to demonstrate alignment with tobacco industry interests and argue for tobacco industry exclusion from EU policy debates on smoke-free policies.

Conclusion: The findings suggest that Article 5.3 was successfully promoted in the context of EU smoke-free policy, but was countered by the tobacco industry in the context of other policy debates. Given that Article 5.3 focuses on health policy, policies which fall beyond the remit of health ministries but which are instrumental in reducing tobacco use may be particularly susceptible to tobacco industry attempts to secure inclusion in policy discussions.

Several bites at the cherry? Exploring the outputs of tobacco industry coalition building in stakeholder submissions to the UK Government Consultation on Standardised Packaging

J. Lie

Maastricht University, The Netherlands

Background and aims: Countries adopting standardised packaging for tobacco products have faced strong opposition from the tobacco industry and allied parties. This paper examines commonalities in argumentation in submissions made to the UK consultation on standardised packaging and explores what similarities in argumentation between transnational tobacco companies (TTCs) and third parties suggest about tobacco industry coalition building within stakeholder submissions.

Methods: A qualitative content analysis was conducted of 3 TTC submissions and 41 submissions from 17 third party subgroups to the 2012 UK consultation on standardised packaging. Propositions used to argue against standardised packaging were coded using Nvivo and categorised into higher order themes. Similarities in propositions and themes deployed by TTC and different third party subgroups were systematically compared. In addition, arguments and themes deployed by third party subgroups were methodically compared against their core activities.

Results: An overview will be given of the degree of correspondence of propositions and themes used by TTCs and third party subgroups, as well as propositions/themes that are specific to third party subgroups. The extent to which similar propositions are not in line with third party subgroups' core activities will also be presented.

Conclusions: Findings will be discussed in light of the underlying tensions between 'Better regulation' practices, such as stakeholder consultation, and efforts to reduce tobacco industry influence in health policymaking in accordance with Article 5.3 of the World Health Organization Framework Convention on Tobacco Control. The results will be discussed in the context of agenda setting theory.

The tobacco industry's assault on democratic policy making: the case of the 2014 EU Tobacco Products Directive

S. Peeters

University of Bath, United Kingdom

Background and Aims: The 2014 EU Tobacco Products Directive (TPD) was negotiated within the parameters of two policy frameworks - Better Regulation, which transnational tobacco companies (TTCs) anticipated would increase their influence on health policy, and the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC), which seeks to reduce it. This study explores the scale and nature of TTC lobbying against the TPD, and how the two policy frameworks have affected TTCs' ability to exert influence.

Methods: Qualitative analysis of 581 freedom of information documents, 28 leaked Philip Morris International documents, 17 TTC documents from the Legacy Library, web content obtained via Google alerts and EU institutions' websites, and four stakeholder interviews.

Results: TTCs mounted a massive lobbying campaign, relying on a '3rd party coalition' (we identified 137 interest groups lobbying against the TPD, some with undisclosed financial links to TTCs). Better Regulation requirements for stakeholder consultation and impact assessment provided a conduit for TTC influence, with TTCs and linked third parties hijacking the consultation, contesting the supportive evidence and highlighting negative economic policy impacts. In contravention of FCTC Article 5.3, TTCs enjoyed repeated, undisclosed contact with senior Commission officials responsible for Better Regulation who then intervened in the process, delaying the directive and ensuring plain packaging was removed.

Conclusions: During the legislative process, Article 5.3 was not consistently applied by non-health Directorates of the Commission. Better Regulation practices appear to enhance the ability of powerful corporate actors to undermine policies detrimental to their business interests, and threaten institutional safeguards for public health protection.

Controlling corporate influence in health policy making? A review of governments' efforts to implement Article 5.3 of Framework Convention on Tobacco Control

G. Fooks

Aston University, School of Languages and Social Sciences, United Kingdom

Background and Aims: The World Health Organization (WHO) reports that 89 parties to the WHO Framework Convention on Tobacco Control (FCTC) have taken steps to prevent the tobacco industry from interfering with health policy development. However, this headline figure provides no indication of the strength of parties' efforts to follow the recommendations outlined in the Guidelines for Implementation for Article 5.3. In order to assess national progress made in implementing FCTC article 5.3, this paper systematically examines parties' implementation of the recommendations.

Methods: Qualitative analysis of data contained in legal instruments and official documents of FCTC parties, party reports on implementation, and responses to requests for information from parties.

Results: Only 6 parties have implemented more than half of the 34 guideline recommendations. The recommendations most commonly followed by parties to the treaty concern efforts to raise awareness of industry political activity. These are rarely integrated into public officials' training and typically fail to highlight risks posed by third parties and corporate social responsibility practices. The second most common measure concerns efforts to limit interactions between public officials and industry actors. Frequently, these tend to be restricted to health ministries, permitting industry lobbying of other government ministries. Specific obligations on tobacco manufacturers to disclose detailed information on lobbying, philanthropy, and political contributions, thereby allowing effective industry monitoring, are rare.

Conclusions: Few parties have taken comprehensive measures to put Article 5.3 into effect. Deficits in implementing Article 5.3 might help to explain why only a minority of FCTC parties have introduced comprehensive tobacco control policies.

Symposium 2

Specific issues for smoking and smoking cessation among persons with and without mental health disorders

11:15 - 12:30 Room 0.8

Aim: To provide specifics about smoking, smoking cessation and psychiatric comorbidities.

I. Berlin will introduce the topic, provide a short background information and focus on the smoking-suicide/suicide related outcomes relationship.

T. Korhonen will review the role of depressive symptoms in the smoking cessation process based on evidence from both population-based and clinical studies.

A.E. Evins will present recent body of evidence for efficacy and tolerability of cessation aids aimed to establish clinical best practices for smoking cessation treatment for those with psychiatric illness.

R. Bittoun will put current knowledge into practice in mental health facilities and will report patients' views.

Smoking and Suicide Related Outcomes. Is the Relationship Independent of Mental Disorders?

I. Berlin

Université P. & M. Curie, Faculté de médecine-Hôpital Pitié-Salpêtrière, Paris, France

Research shows that smoking is a risk factor for completed suicide. Suicide related outcomes (SRO): ideation, plans, wish to die and in particular, suicide attempt (SA), are the strongest predictors of suicide. Identification of and intervention on these risk factors for suicide allows preventing suicide. It is debated whether the smoking-SRO relationship is independent or not of mental disorders and whether it is associated with tobacco consumption only or a consequence of tobacco dependence.

We analysed both cross sectionally at Wave 1, N=43093, and longitudinally (Wave 1-Wave 2, N=34653 data of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). The cross sectional analysis of Wave 1 data showed that among ever smokers with lifetime depressed mood, an apparent protective effect of increased duration of smoking abstinence on SRO but this was neutralized by the presence of psychiatric co-morbidity.

The first longitudinal analysis we found that among individuals with low mood (N=7352) risk for future SRO was highest among relapsers, next highest among smoking beginners, and lowest among long-term (4+ years) former smokers. Compared to persistent smokers, the risk for SRO was lower among long-term but not among shorter-term abstainers.

A longitudinal analysis restricted to SA confirmed that persistent smoking, smoking initiation and relapse were associated with an increased risk of SA and long-term abstinence reduced SA risk. The smoking SA relationship was independent of any demographics, psychiatric diagnostics or tobacco dependence raising the hypothesis that smoking has a direct or indirect but specific brain toxicity triggering suicide and/or SRO.

Role of depressive symptoms in the smoking cessation process

T. Korhonen

University of Helsinki, Department of Public Health, Helsinki, Finland

While it has been suggested that smokers with depressive disorders are more likely to relapse after quit attempt, literature provides inconsistent support for this assumption. Namely, among smokers with psychiatric diagnosis and those participating in cessation interventions, current depressive disorder may hinder cessation, whereas prior major depressive disorder (MDD) does not predict poorer outcome.

Research designs may underlie inconsistency of evidence. For example, smokers with mild depressive symptoms may be over represented in cessation trials because they have not been successful in quitting on their own and are seeking treatment. However, smokers with current depressive disorder may be excluded from trials. It is also important to consider determinants of smoking cessation among depressed versus non-depressed smokers.

Although there is not much evidence, one might think that depressed smokers are less motivated to quit. However, for example Finnish data show that especially depressed female smokers express higher motivation to quit than non-depressed ones. On the other hand, self-efficacy may be lower

and level of nicotine dependence may be higher among depressed than non-depressed smokers. Another question is whether smoking cessation triggers depressive symptoms or relapse to MDD among quitters vulnerable to depression, though the latter seems not to be the case. It should be noted that depressed mood is part of nicotine withdrawal symptoms. Thus, it may be difficult to disentangle these symptoms from new onset or recurrent MDD. Most importantly, strong evidence shows that although in short-term smoking abstinence may increase risk for depressiveness, long-term successful abstinence improves the mood.

Treatment of Tobacco Use Disorders in Smokers with Serious Mental Illness: Toward Clinical Best Practices

A.E. Evins

Massachusetts General Hospital and Harvard Medical School, Boston, United States of America

Addiction to tobacco-derived nicotine remains highly prevalent. While 18% in the U.S. general population use daily, and 53% of those with serious mental illness using daily. While smokers with serious mental illness have been excluded from most large nicotine-dependence treatment studies, a growing evidence base is available to guide clinicians in assisting their patients with psychiatric illness to quit smoking. My aim is to present the evidence on safety and efficacy of smoking cessation interventions for those with serious mental illness. Smokers with schizophrenia spectrum disorders should receive varenicline or bupropion with or without nicotine replacement therapy in combination with behavioral treatment. Although more research is needed, preliminary evidence suggests that varenicline in combination with behavioral support is efficacious and well tolerated for smoking cessation for those with bipolar disorder and major depressive disorder. Controlled trials have found no evidence that in patients with serious mental illness, the use of pharmacotherapeutic cessation aids worsens psychiatric symptoms or increases the rate of psychiatric adverse events. Converging evidence indicates that a majority of smokers with serious mental illness want to quit smoking and that available pharmacotherapeutic cessation aids combined with behavioral support are both effective for, and well tolerated by, these smokers.

Harm Reduction Using Nicotine Replacement Therapies in Mental Health Patients: A Gateway to Quitting Strategy

R. Bittoun

Clinical School, Smoking Research Unit, Faculty of Medicine, Brain and Mind Research Institute, Sydney Medical School, Sydney, Australia

Smokers with mental illness who may not want to quit are unaware that concomitant nicotine replacement therapy (NRT) and smoking is a safe, economically viable option to reduce tobacco-related harm. We have

extended previous research into this harm-reduction strategy and provided a gateway to quitting approach in mental health settings. In a within-subject design, pre-intervention and post-intervention attitude questionnaires were administered and harm-reduction treatment education was randomly delivered to smokers with mental health issues at our mental health Outpatient Clinics. Amongst other data collected were mental health diagnosis, tobacco dependence indices, characteristics of previous quit attempts, and attitudinal responses to NRT-supported harm-reduction. The education provided was in a simple written format that delineated the evidenced safety and harm reduction benefit of concomitant NRT and smoking. 42 mental health clinic outpatients self-identifying as tobacco smokers participated. Initial understanding of the safety and benefit of concomitant smoking and NRT as a harm-reduction strategy was poor. Education about this strategy was strongly associated with augmented motivation to elect this strategy. Educating patients with mental illness in NRT-supported harm-reduction can promote willingness to engage in this strategy and potentiates future quit attempts. Harm-reduction and gateway to quitting approaches are of particular pertinence in the present context of persistently high tobacco use and dependence, low cessation and sustained abstinence rates. We have gone on to use this strategy on patients admitted into mental health facilities that are now totally smoke free.

Symposium 3

Developing comprehensive tobacco dependence treatment and smokefree policy implementation for vulnerable groups

11:15 - 12:30 Room 0.4/0.5

This symposium will focus on the development and evaluation of comprehensive tobacco dependence treatment and smoke-free policy implementation for adults with mental disorder, and young people accessing mental health services and living in public care. We begin by framing the symposium within a European perspective based on recommendations from the European Association of Psychiatrists. The second presentation will discuss the implementation of a complete smoke-free policy across the largest mental health trust in Europe which includes a nicotine dependence treatment pathway from routine identification of smokers through to structured support. The third presentation describes the findings from a pilot randomised controlled trial assessing a bespoke smoking cessation package for adults with mental disorder drawn from primary care and community settings. The final presentation discusses first steps towards developing tobacco dependence treatment services for young people accessing specialist mental health services and those in public care.

European Psychiatric Association (EPA) - Position Statement on Smoking and Strategies for Smoking Cessation in People with Mental Illness

T. Ruether

Ludwig-Maximilian Universitaet, Munich, Germany

Background: Smoking has a strong, negative influence on the life expectancy and quality of life of mental health patients, and remains the leading preventable cause of death in this group. Despite these statistics, in some countries smokers with mental illness are disadvantaged in receiving intervention and support for their tobacco dependence, which is often overlooked or even tolerated. The European Psychiatric Association (EPA) aimed to review the literature to develop recommendations to improve smoking-related treatment and care of patients with mental illness.

Methods: Systematic review and synthesis of the current evidence on tobacco dependence and withdrawal in patients with mental illness, and their treatment, presented in a statement from the EPA.

Results: The EPA statement provides seven recommendations for the core components of diagnostics and treatment in this patient group. These recommendations concern: (1) the recording process, (2) the timing of the intervention, (3) counselling specificities, (4) proposed treatments, (5) frequency of contact after stopping, (6) follow-up visits and (7) relapse prevention.

Conclusion and recommendations: EPA recommendations have the potential to improve the care, health and well-being of patients suffering from mental illness.

Smoking cessation for people with severe mental ill health: the UK SCIMITAR trial

S. Gilbody

University of York, United Kingdom

Background: People with severe mental ill health are three times more likely to smoke, contributing to widening health inequalities and reduced life expectancy. We therefore aimed to pilot a new intervention targeted at smokers with SMI and the methods of recruitment, randomisation and follow up for a full trial.

Methods: We designed a bespoke smoking cessation package that could be delivered by mental health nurses. This consisted of behavioural support and medication. In a pilot randomised controlled trial, 97 participants with bipolar illness and schizophrenia were randomly allocated to usual care (n=51) or usual care plus bespoke smoking cessation (n=46). Participants were recruited from UK primary care and mental health settings. Simple randomisation was used with computer generated random numbers. It was not possible to blind participants, GPs, and researchers to the treatment allocation. Our primary outcome was carbon monoxide verified smoking status at 12 months. The trial was registered (ISRCTN79497236).

Results: There was good engagement with a bespoke smoking cessation intervention, but no usual care participants accessed NHS smoking cessation services. For 68 participants for whom we had data at 12 months (35 usual care

and 33 intervention), the rate of smoking cessation was higher amongst those who received a bespoke smoking cessation intervention (36% versus 23%; adjusted odds ratio 2.9, 95% CI 0.8 to 10.5). A range of secondary outcomes supported the effectiveness of the intervention.

Conclusion and recommendation: It was feasible to recruit and randomise people with SMI to a bespoke smoking cessation intervention. This adds to accumulating randomised evidence. The effectiveness of a specially-designed smoking cessation programme for people with SMI should now be tested in a fully-powered RCT. The fully-powered trial commences in late 2015.

Implementation of health service guidance on smoking in mental health hospitals

D. Robson

King's College London, United Kingdom

Background: In England, health service guidance (NICE, 2013) recommends mental health services implement comprehensive smoke free policies that includes hospital grounds, mandatory identification of smoking and developing care pathways for the tobacco dependence treatment and provision of evidence based training for staff. The objective was to evaluate the implementation of this guidance in the largest mental health service in Europe and this presentation gives preliminary findings of the training and treatment pathway.

Methods: Questionnaire data from pre and post training sessions was analysed for changes in competencies using a paired t-test. Using electronic case records an assessment of trends in recording smoking status, provision of treatment and referrals to smoking cessation services was made.

Results: 1174 staff members completed online education and average knowledge score before training was 54.4% and after 87.6%; $t(47.7)=1061$, $p<0.001$. 124 staff members completed advanced skills training and similar significant increases in knowledge, attitudes and confidence were observed pre and post. Baseline data showed 11% of case records ($n=5,588$) had a smoking status recorded. Referrals have increased from 0 in 2014 to 142 in March 2015. Success of the identification of smoking status and referrals will be presented.

Conclusion and recommendation: Early evaluation of the implementation of the guidance shows the importance of training and that routine identification and treatment pathways for smokers with mental health problems are feasible and effective.

Towards addressing smoking in Child and Adolescent Mental Health Services (CAMHS) and residential care homes for Looked-After Children (LAC): findings from exploratory research

L. Huddleston

University of Nottingham, United Kingdom

Background: Tobacco smoking is disproportionately prevalent among young people with emerging mental health problems and those in public care. Despite

this and the resulting health inequalities, very little tobacco research has been carried out in child and adolescent mental health services (CAMHS) and residential care homes for looked-after children (LAC). The presented studies aimed to assess current smoking-related practices and attitudes to inform the development of tobacco dependence support services in these settings.

Methods: A mixed-methods study was carried out in CAMHS outpatient services in a large English city, including a survey of 120 clinicians, qualitative interviews with five young people with mental health problems, and a brief survey of 25 parents and carers. In residential care homes for LAC, a survey of 134 residential care staff in four local authorities and semi-structured interviews with home managers and residential support staff in three children's homes were conducted. Surveys and interviews explored knowledge, attitudes, practice, and experiences in relation to addressing smoking in these settings.

Results: Findings will detail misconceptions relating to smoking found across surveyed staff groups; associations between training attendance and clinical practice in CAMHS; concerns expressed in relation to smoking by youth in care (e.g. the role of tobacco in anti-social behaviour within the homes, and the use of tobacco in building and maintaining relationships); and attitudes towards quitting, and future service development.

Conclusion: Opportunities for addressing tobacco dependence among youth with mental health problems and LAC are being missed. Further research is required to assess the feasibility and effectiveness of interventions in these groups.

Symposium 4

Prevention, harm reduction and cessation: novel insights from basic science

15:30 - 16:45 Room 0.9

Developing novel treatments for smoking cessation requires basic science insights into the mechanisms of tobacco dependence. This symposium will highlight recent advances using a range of methodologies, across animal and human studies. The studies illustrate a number of exciting new directions for developing effective interventions, from prevention to harm reduction and cessation.

Methadone's effect on nAChRs - a link between methadone use and smoking?

O. Salminen

University of Helsinki, Finland

Methadone is a long-acting opioid agonist that is frequently prescribed as a treatment for opioid addiction. Almost all methadone maintenance patients are smokers and there is a correlation between the smoking habit and use

of methadone. Methadone administration increases tobacco smoking and heavy smokers use higher doses of methadone. Nevertheless, methadone maintenance patients are willing to quit smoking, although quit rates are low. Studies on nicotine-methadone interactions are an example of bedside-to-bench approach, i.e. observations in clinical settings have been studied experimentally in vivo and in vitro. In vivo studies have revealed the interplay between nicotine and the endogenous opioid system. At the receptor level methadone has been shown to be an agonist at human $\alpha 7$ nAChRs and a non-competitive antagonist at human $\alpha 4\beta 2$ and $\alpha 3^*$ nAChRs. These drugs do not have significant interactions at the level of drug metabolism and thus the interaction is most likely pharmacodynamic. The net effect of the interaction may depend on individual characteristics since pharmacogenetic factors influence the disposition of both methadone and nicotine.

Evidence for a causal effect of coffee consumption on heaviness of smoking and smoking cessation

M. Munafò

University of Bristol, United Kingdom

Coffee consumption is associated with a range of smoking behaviours. Given the widespread use of coffee worldwide, and the substantial health burden posed by smoking, determining the *causal* impact of coffee consumption on smoking behaviour is of clear public health importance. However, traditional observational studies do not allow us to confidently determine direction of causality between variables, and cannot rule out the possibility of confounding. Mendelian randomisation (MR) offers a solution to these issues. This approach uses genetic variants which robustly associate with an exposure of interest (e.g., coffee consumption) as proxies for said exposure. We performed two-sample MR analyses, using publicly available data, to explore the causal effect of coffee consumption on smoking initiation, smoking heaviness, and smoking cessation. Data from the Coffee and Caffeine Genetics Consortium and the Tobacco and Genetics consortium were used to estimate gene-exposure and gene-outcome associations respectively. Summarised estimates from multiple genetic variants were combined using fixed effects meta-analysis. No evidence for a causal effect of coffee consumption on smoking initiation was observed. However, we observed evidence consistent with a causal effect of coffee consumption on smoking heaviness. Each additional cup of coffee consumed per day corresponded to a ~ 1.5 cigarette per day *decrease* in daily consumption (beta -1.49 , 95% CI -2.88 to -0.09 , $p=0.037$). This relationship may be mediated by caffeic acid, a polyphenol present in coffee which inhibits the activity of CYP2A6, a nicotine metabolising enzyme. We also observed evidence consistent with a causal impact of coffee consumption on smoking cessation. Each additional cup of coffee consumed per day corresponded to a 26% reduction in the odds of being a former (relative to current) smoker (OR 0.74 , 95% CI 0.56 to 0.98 ,

$p=0.038$). This effect may be due to the impact of cigarette smoke on caffeine metabolism, and the resultant experience of caffeine toxicity following smoking cessation. These results have the potential for clinical application, and would benefit from follow-up in an experimental setting.

The transition into dependence: from impulsivity to habit formation in addiction - a theoretical update and overview of translational research in human neuroscience

M. Luijten

Radboud University, the Netherlands

In the last decades, the addiction literature has identified powerful affective and cognitive processes explaining the chronic character of addiction, including impulsivity and the strong reactivity to conditioned substance cues (cue-reactivity, craving, attentional bias). At the same time, animal research shows the importance of habit formation in the developmental trajectory from experimental substance use towards compulsive drug use. According to habit formation models, there is a difference between goal-directed and habitual substance use. More specifically, during the initial experimentation phase of substance use, substance use is supposed to be goal-directed. In this stage, positive reinforcing effects of substances of abuse serve as a strong expected outcome. After prolonged substance use, stimulus-response associations become stronger, leading to inflexible and compulsive substance use that is no longer guided by expected outcomes. Importantly, habit formation models suggest that reduced impulsivity is a crucial risk factor for the transition into dependence. In the current presentation a literature overview will be provided of translational studies investigating goal-directed versus habit behaviour in human addictive behaviours. Furthermore, recent data about habit propensity in smokers will be presented. Habit propensity in this study is measured by means of an instrumental learning paradigm. The results show that smokers did not differ from controls in terms of habit propensity, however, within smokers, more severe nicotine dependence is associated with increased habit responding.

Putting tobacco use context in context: from brain to behavior to treatment

J. McClernon

Duke University, United States of America

Environmental contexts associated with prior smoking increase craving and provoke smoking behavior. Clinicians have long recognized these associations and frequently advise patients to avoid environments associated with smoking in order to avoid relapse. Moreover, preclinical research on nicotine and other drugs of abuse has delineated both the behavioral and neural mechanisms responsible for the encoding and retrieval of drug-environment associations. In this talk, I will describe a

translational program of research seeking to bridge the gap between clinical intuition and preclinical research by conducting basic human research, intervention development and clinical trials on the role of environments in nicotine dependence and its treatment. In early research, we observed that smoking-related environments (e.g. a bar or bus stop) elicit robust craving, and that this effect is amplified when environments are personally associated with smoking (e.g. the particular smoker's bar or bus stop). Extending this research, in a recent fMRI study of 40 adult smokers, we found that viewing environments personally associated with smoking resulted in uniquely increased activation in posterior hippocampus—a region shown to be critical to the retrieval of drug-environment memories in animal models. Moreover, we identified that the right anterior insula—a region functionally connected to the hippocampus—plays a role in mediating the influence of personal smoking environments on smoking behavior. Based on these prior findings, in current research we are evaluating whether first-line pharmacotherapies (i.e. varenicline, nicotine patch) attenuate subjective and behavioral markers of environment reactivity. We are also developing novel interventions that seek to minimize the influence of smoking-related environments by making them the backdrop for extinction-based treatments. Finally, we are evaluating whether individual differences in behavioral and neural markers of smoking environment reactivity are predictive of cessation outcomes. Collectively, this translational program of research is bridging the gap between preclinical findings and clinical intuition and will hopefully result in novel and more effective smoking cessation interventions. Additional directions for research and intervention development will be discussed.

Symposium 5

Social Network Analysis in Tobacco Control

15:30 - 16:45 Room 0.8

Social Network Analysis has rapidly emerged as an important methodological approach to study all kinds of social systems. In the present symposium we aim to demonstrate how social network analysis can be used to further the scientific field of Tobacco Control. The first presentation will focus on information sharing and implementation of evidence-based practices within a longitudinally observed network of tobacco cessation quitlines. The second presentation will demonstrate how mixed-method social network research can help investigating policy networks, advocacy coalitions and commercial sector engagement in tobacco control, using the development of European Union smoke-free policy as a case study. The third and final presentation will focus on the global diffusion of FCTC (the Framework Convention of Tobacco Control) and is followed by a general discussion session.

Coevolution of Information Sharing and Implementation of Evidence-Based Practices Among North American Tobacco Cessation Quitlines

L. Mercken

Department of Health Promotion, Maastricht University, School for Public Health and Primary Care, the Netherlands

In the United States and Canada, 65 tobacco cessation quitlines now operate independently and provide various cessation services. Even though substantial evidence is available regarding the specific cessation practices that are effective, not all quitlines implement the same practices. However, all quitlines have the same goal (helping smokers quit) and share information and resources regarding tobacco cessation services under the umbrella of the North American Quitline Consortium (NAQC). We examined the coevolution of information sharing and implementation of evidence-based practices among these US and Canadian tobacco cessation quitlines within the North American Quitline Consortium (NAQC). Web-based surveys were used to collect data from key respondents representing each of 74 participating funders of NAQC quitlines during the summer and fall of 2009, 2010, and 2011. We used stochastic actor-based models to estimate changes in information sharing and practice implementation in the NAQC network. Results showed funders were more likely to share information within their own country and with funders that contracted with the same service provider. Funders contracting with larger service providers shared less information but implemented significantly more practices. Funders connected to larger numbers of tobacco control researchers more often received information from other funders. Intensity of ties to the NAQC network administrative organization did not influence funders' decisions to share information or implementation of practices. Our findings show the importance of monitoring networks such as the NAQC network over time. We recommend increased cross-border information sharing and sharing of information between funders contracting with different and smaller service providers.

Using mixed-method network research to investigate tobacco control policy

H. Weishaar

MRC/CSO Social and Public Health Sciences Unit, University of Glasgow, Glasgow, United Kingdom

Networks and coalitions of stakeholders play a crucial role in the development and implementation of public health policies, with previous research highlighting that policy networks in tobacco control are characterised by an antagonism between supporters and opponents of comprehensive tobacco control. Using the development of European Union smoke-free policy as a case study, this presentation explores how mixed-method social network research can help to investigate a policy network in tobacco control. Textual data from public documents, consultation submissions

and websites were extracted, converted and analysed using plagiarism detection software and structural network analysis and qualitative data from public documents and 35 interviews were thematically analysed drawing on network concepts. The findings show that policy debates were dominated by two coalitions of stakeholders with starkly opposing positions on the issue. One coalition, consisting primarily of health-related organisations, supported comprehensive smoke-free policy, whereas the other, led by tobacco manufacturers' organisations, opposed the policy initiative. While the quantitative analysis enabled understanding of the network's structure and components, the qualitative analysis provided in-depth information about specific actors' positions, relationships and interactions. It will be discussed how mixed-method network research can offer powerful tools for empirically testing and analysing complex policy networks and increasing understanding of the political determinants of the tobacco epidemic. Mixed method network research can guide public health practitioners, advocates and policymakers in developing effective strategies for tobacco control advocacy and policy.

Diffusion of Innovations Theory Applied to Global Tobacco Control Treaty Ratification

T. Valente

Institute for Prevention Research, Department of Preventive Medicine.
School of Medicine, University of Southern California, United States of America

This study applies diffusion of innovations theory to understand network influences on country ratification of an international health treaty, the Framework Convention for Tobacco Control (FCTC). From 2003 to 2014 approximately 90% of United Nations member countries ratified the FCTC. We hypothesized that communication between tobacco control advocates on GLOBALink, a 7,000-member online communication forum in existence from 1992 to 2012, would be associated with the timing of treaty ratification. We further hypothesized dynamic network influences such that external influence decreased over time, internal influence increased over time, and the role of opinion leader countries varied over time. In addition we develop two concepts: Susceptibility and influence that uncover the micro-level dynamics of network influence. Statistical analyses lend support to the influence of co-subscriptions on GLOBALink providing a conduit for inter-country influences on treaty ratification and some support for the dynamic hypotheses. Analyses of susceptibility and infection indicated particularly influential countries. These results have implications for the study of policy diffusion as well as dynamic models of behaviour change.

Network analysis of a Navajo Smokefree Policy Coalition

S.J. Leischow, J. Okamoto, P. Nez Henderson, T. Valente

Department of Health Services Research, Mayo Clinic

The purpose of this analysis was to map a coalition (Team Navajo or TN) of

organizations and individuals in Navajo Nation working for smokefree workplaces and public places. Network information was collected by asking TN members to report their relationships with other members and opinions/beliefs about smokefree policies on Navajo Nation. All four TN networks strategic planning, information sharing, education, and service delivery were highly centralized around a few individuals. The average number of ties for coalition members for each network were relatively high, with the highest average for the information sharing network (mean=23.66 ties) and the lowest for the service delivery network (mean=17.41 ties). The education and information sharing networks had the highest density (0.21 for both), and the service delivery network had the lowest density (0.15). The highly centralized network indicates that the group, right now, relies heavily on a small number of people to connect the rest of the group. This can make knowing who to go to for information easier, but this type of network structure also tends to be more vulnerable to becoming fragmented if a central person were to leave the network. Low reciprocity for the networks could indicate an uneven flow of communication across members, with a small core of members who actively communicate with each other and many members on the periphery who only receive communications.

Workshop 1

15:30 - 16:45 Room 0.2/0.3

Practical approaches to missing outcome data in smoking cessation trials

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¹ Trimbos Institute, Utrecht, the Netherlands

² Maastricht University, the Netherlands

How should tobacco researchers address missing data? In this workshop, the validity of common approaches to handle missing smoking status data, such as penalized imputation ("missing=smoking"), (multiple) imputation and the direct likelihood method is evaluated under various types of missingness (MCAR=completely at random, MAR=at random, MNAR=not at random).

A common approach to dealing with missing smoking outcomes in trials is to assume those missing at follow-up are (still) smoking. This assumption may seem conservative, but as will be shown in the first part of this workshop this is often not the case. Approaches such as multiple imputation and the direct likelihood method will be shown to lead to more valid estimates than assuming missing=smoking, under realistic scenarios.

In the second part of this workshop the direct likelihood method as implemented in, for instance, SPSS mixed regression will be applied to clinical trial data. Next, the merits of this method will be illustrated by analysing the same data three times: the intact data, the data after creating

a substantial amount of MCAR, and the data after creating a substantial amount of MAR missingness. For missing predictors, multiple imputation is needed, but this comes at the price of additional modelling. How to do this will be demonstrated in the final part of this workshop.

After this workshop, participants have a basic understanding of missing data approaches, and have been shown how those can be applied using conventional statistical software such as SPSS.

Oral Communications

Topic: 21 - Genes and addiction, Abstract Nr: 81

Genome-wide time-to-event analysis on smoking progression stages in a family-based study

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Various pivotal stages in smoking behavior can be identified, including initiation, conversion from experimenting to established use, development of tolerance, and cessation. Previous studies have shown high heritability for age of smoking initiation and cessation; however, time-to-event genome-wide association studies aiming to identify underpinning genes that accelerate or delay these transitions are missing to date. Here, we investigated which SNPs across the whole genome contribute to the hazard ratio of transition between different stages of smoking behavior by performing time-to-event analyses within a large Finnish twin family cohort (N=1,970), and further conducted mediation analyses of plausible intermediate traits for significant SNPs. Genome-wide significant signals were detected for three of the four transitions: (i) for smoking cessation on 10p14 ($p=4.47e-08$ for rs72779075 flanked by *RP11-575N15* and *GATA3*), and (ii) for tolerance on 11p13 ($p=1.29e-08$ for rs11031684 in *RP1-65P5.1*), mediated by smoking quantity, and on 9q34.12 ($p=3.81e-08$ for rs2304808 in *FUBP3*), independent of smoking quantity. In the analysis of smoking initiation, rs73050610 on 19q13.33 (flanked by *TRPM4* and *SLC6A16*) was highlighted, and achieved genome-wide significance ($p=2.96e-08$) when adjusted for first time sensations. Multiple SNPs in *TRPM4* showed replication in an independent Australian twin family sample. Previous literature links all the highlighted genes to smoking behavior, further supporting the detected associations. Our results suggest that complex neurotransmitter networks including dopamine and glutamate may play a critical role in initiation, and imply that mechanisms underlying airway inflammation may influence smoking cessation.

Topic: 21 - Genes and addiction, Abstract Nr: 41

A zebrafish (*Danio Rerio*) model identifies a role for the XXXX gene in nicotine reinforcement and human smoking behavior

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Background: There is substantial genetic variability in smoking behavior, but the molecular mechanisms underlying this habit remain largely unknown.

Methods: We performed a population-based behavioural genetic screen of N-ethyl-N-nitrosourea (ENU)-mutagenized zebrafish to establish heritability of nicotine conditioned place preference and identify relevant genes. We examined the gene effects on human smoking in three study groups: chronic obstructive pulmonary disease (COPD) (n=272); asthma (n=293); residents and carers in sheltered accommodation; (n=298).

Results: Change in place preference (Cp) for nicotine was normally distributed in the first generation. The second generation had a mean Cp of 0.08 for low response families ($P = 0.0002$) and 0.07 for high responders ($P = 0.001$). The third generation had mean Cp of 0.21 for high and 0.01 for low responders. 14 gene breaking mutations were present in the high responder line of which only one in XXX segregated with Cp. Analysis of gene expression in nicotinic and dopaminergic signaling pathways in wild type and XXX mutant (2, 3 and 5 day) zebrafish larvae showed increased expression of CHRNA5. In human studies two loci in XXX, rsXXXXXX and rsXXXXXX, were associated with number of cigarettes smoked each day (-4.24 , [95% CI -6.80 , -1.68 , $p=0.00125$], -3.99 , [-6.534 , -1.44 , $p=0.00227$]).

Conclusions: Nicotine preference is heritable in fish as in humans and loss of function mutations in XXX which affect axonal guidance lead to increased nicotine preference. This work establishes a new animal model for nicotine addiction and identifies a novel mechanism underlying nicotine dependence in humans.

Topic: 21 - Genes and addiction, Abstract Nr: 20

CYP2B6 rs2279343 polymorphism is associated with smoking cessation in bupropion therapy

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Some studies indicated that polymorphisms in the *CYP2B6* gene (which encodes an isoenzyme that metabolizes bupropion) and in the *ANKK1* gene (which is highly associated with the *DRD2* gene that encodes type 2 dopamine receptor) might influence response to therapy. Thus, the aim of the present study was to evaluate whether the *CYP2B6* and *ANKK1* polymorphisms are associated with response to smoking cessation therapies in patients from a smoking assistance program. **Methods:** The cohort study enrolled 478 smokers who received

behavioral counseling and drug therapy (bupropion, nicotine replacement therapy, and/or varenicline). Smoking cessation success was considered for patients who completed 6 months of continuous abstinence. Fagerström test for nicotine dependence (FTND) and Issa situational smoking scores were analyzed for nicotine dependence (ND). The *ANKK1* rs1800497, *CYP2B6**4 (rs2279343), *CYP2B6**5 (rs3211371), and *CYP2B6**9 (rs3745274) polymorphisms were genotyped by high resolution melting analysis or by restriction fragment length polymorphism. *Results:* Patients with *CYP2B6* rs2279343 AA genotype had higher success rate (48.0%) compared with patients with AG or GG genotypes (35.5%) on bupropion therapy. The AA genotype was associated with higher OR for success during bupropion therapy (OR=1.92, 95%CI=1.08-3.42, $p=0.03$), in a multivariate model. We did not observe significant differences in the FTND and Issa scores according to the studied polymorphisms. *Conclusion:* We showed that patients with *CYP2B6**4 (rs2279343) variant had lower success rate with bupropion. Likely, the *CYP2B6**4 variant, which leads to a rapid predicted metabolic phenotype for the isoenzyme, influences the pharmacological activity of the bupropion. Our finding suggests that *CYP2B6**4 may be an important genetic marker for individualized pharmacotherapy of the bupropion.

Topic: 21 - Genes and addiction, Abstract Nr: 80

A genome-wide association study of a biomarker of nicotine metabolism

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Individuals with fast nicotine metabolism typically smoke more and are less likely to succeed in quitting, and thus have a greater risk for smoking-induced diseases. Further, the efficacy of smoking cessation pharmacotherapy is dependent on nicotine clearance rate. Our objective was to utilize a biomarker of nicotine clearance (3-hydroxycotinine/cotinine, i.e. nicotine metabolite ratio, NMR) in a genome-wide association study (GWAS) to identify novel genetic variants influencing nicotine metabolism. We performed a GWAS in three Finnish cohorts (FinnTwin, Young Finn Study, FINRISK2007), followed by a meta-analysis of the 1518 subjects, and scrutinized significant SNPs with methylation quantitative loci analyses. We detected association on 19q13 with altogether 719 SNPs exceeding genome-wide significance. The strongest evidence for association emerged for *CYP2A6* (min $p=5.77E-86$), the main metabolic enzyme for nicotine. Other interesting genes with genome-wide

significant signals included *CYP2B6*, *CYP2A7*, *EGLN2*, and *NUMBL*. Conditional analyses revealed three independent signals on 19q13. A genetic risk score constructed using the independent signals further associated with smoking quantity in two independent Finnish samples. Methylation values in CpG sites within the region were shown to be influenced by genotypes of the highlighted SNPs, and causal inference test suggested that some of the effect of SNPs on NMR may be mediated through methylation. In conclusion, our novel NMR GWAS revealed three independent *CYP2A6* variants that explain a strikingly large fraction of variance (21-31%) in NMR, suggesting that they may tag multiple functional variants. It is plausible that both genetic and epigenetic factors on 19q13 influence nicotine metabolism.

Topic: 29 - Pharmacotherapy, Abstract Nr: 73

Pharmacotherapy Treatment, Gender Differences and Smoking Cessation Rates

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Pharmacotherapy is a key element in smoking cessation programmes. In the UK, three treatments are currently offered: Champix, Zyban and Nicotine Replacement Therapy (NRT).

Data from 89740 contacts using Stop Smoking Services from 10 different Primary Care Trusts within the UK over the period 2002-2015 were analysed in relation to (i) uptake and the nature of smoking cessation services used (ii) successful quit rates taking into account interactions with other factors. A successful quit attempt is defined according to the Russell standard on observation after 4 weeks. These effects were assessed using a logistic regression model also incorporating the effect of age, gender and the type of service. Preliminary results from the analyses of these data show that the most effective treatment in terms of quit rates was Champix ($\beta=+0.11$, $p=0.004$). In terms of interactions, significant differences in quit rates were observed with respect to NRT and female quitters ($\beta=-0.03$, $p=0.02$), NRT and type of service used and between Champix and type of service used. Different rates of service use were also observed in relation to gender and age with more females using the service at a young age. In terms of successful quits, males were observed to have a significantly greater chance of quitting. It was also found that this difference was influenced by the age of the client, with the relative chance of females quitting decreasing with age. These findings will be presented in detail and both clinical implications and issues concerning generalisability of results will be discussed.

Topic: 29 - Pharmacotherapy, Abstract Nr: 9

Varenicline is safe and effective for sober smokers in substance treatment

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Rationale: Varenicline, the most effective smoking medication, has few contraindications and reduces alcohol use, so may be best for substance dependent smokers. We investigated effects of varenicline versus nicotine patch (NRT), with brief advice adapted for sobriety concerns, for smokers in treatment for substance dependence.

Methods: Smokers (n = 137) in any substance treatment from the community were randomized to 12 weeks varenicline (plus 1 week dose run-up) vs. nicotine patch, double-placebo controlled, plus 8 sessions advice and medication management. Randomization was stratified by history of major depression and gender. Smoking point-prevalence abstinence (7-day) was assessed during medication and at 3 and 6 months after treatment start, with cotinine or CO confirmation.

Results: Within treatment, 13% had complete abstinence at 8 weeks in each condition (ns). At 3 months, 13% with varenicline and 3% with NRT had point-prevalence abstinence ($p < .05$) and at 6 months 9% with varenicline and 3% with NRT had point-prevalence abstinence ($p = .18$). At 6 months, heavy drinking (16% in varenicline, 29% in NRT), and drug use (67% in varenicline, 77% in NRT) were non-significant. Results did not differ by history of major depressive disorder (28% of participants) or gender. No serious adverse events occurred. Depression decreased from baseline to 2 weeks in both conditions equally.

Conclusions: Varenicline with brief advice increased the odds of smoking abstinence at 3 months and did not harm SUD recovery. Thus, varenicline has utility and safety in this population and is recommended in this population.

Topic: 29 - Pharmacotherapy, Abstract Nr: 13

Flexible and Extended Dosing of Nicotine Replacement Therapy or Varenicline in Comparison to Fixed Dose NRT for Smoking Cessation: The FLEX Trial.

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Background: Extended and combined pharmacotherapies to treat tobacco dependence may increase smoking abstinence; few studies have examined their effectiveness. We compared NRT (standard 10-week treatment; NRT); extended duration, combined formulations of NRT (NRT+); and varenicline (VR) to assess their efficacy in smoking cessation.

Methods: Smokers (N=737; 59% with lifetime psychiatric illness) were randomly assigned to the above conditions. The primary outcome was carbon monoxide confirmed, continuous abstinence rates (CO-CAR) from weeks 5-52. Secondary outcomes were: CO-CAR from weeks 5-10 and 5-22; and, CO-confirmed 7-day point prevalence (CO-7PP) at weeks 10, 22 and 52.

Results: NRT+ and VR produced statistically significant increases in CO-CAR for weeks 5-10 (37.1% and 35.6% vs. 23.3%, respectively; OR=1.58 [CI 1.09-2.30] and 1.50 [CI 1.03-2.18], respectively); and, VR resulted in higher CO-CAR at weeks 5-22, as compared to NRT alone (24.3% vs. 13.9%; OR=2.02 [CI 1.26-3.22]). No group differences were observed for CO-CAR from weeks 5-52. Results with CO-7PP as

the dependent variable showed that that NRT+ was more effective than NRT at 22 weeks (24.1% vs.15.5% ; OR=1.73 [1.10-2.73]) and VR was found to be superior to NRT at week 52 (20.6% vs. 13.9%; OR=1.62 [1.01-2.60]).

Conclusions: Our results indicate that: varenicline and extended, combination NRT enhance success in the early phases of quitting and at end-of-treatment; and, that varenicline improves quit rates in the long-term (as measured by CO-7PP) when compared to monotherapy NRT. Smoking cessation success may be enhanced by prescribing extended, titrated and combined doses of NRT or varenicline.

Topic: 29 - Pharmacotherapy, Abstract Nr: 3

Cardiovascular and Neuropsychiatric Risks of Varenicline

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Background: Use of varenicline is limited by concerns about possible associated risks of serious adverse cardiovascular and neuropsychiatric events.

Objective: To investigate whether use of varenicline is associated with serious cardiovascular and neuropsychiatric adverse events.

Methods: In a retrospective cohort study, we used data from one of the world's largest family practice databases (QResearch®), and identified patients who received a prescription of nicotine replacement therapy (NRT; N=106,759; reference group), bupropion (N=6,557), or varenicline (N=51,450) in the period between January 2007 and June 2012. Patients were followed-up for six months to compare incident cardiovascular (ischemic heart disease, cerebral infarction, heart failure, peripheral vascular disease, and cardiac arrhythmia) and neuropsychiatric (depression and self-harm) events using Cox proportional hazards models, adjusted for confounders. Propensity score analysis was used to account for potential confounding by indication. We also modelled the effects of potential unmeasured confounders.

Results: Neither bupropion nor varenicline showed an increased risk of any cardiovascular or neuropsychiatric event compared with NRT (all hazard ratios (HRs) <1.00). Varenicline was associated with a significantly reduced risk of ischemic heart disease (HR=0.80, 95%CI=0.72-0.87), cerebral infarction (HR=0.62, 95%CI=0.52-0.73), heart failure (HR=0.61, 95%CI=0.45-0.83), arrhythmia (HR=0.73, 95%CI=0.60-0.88), depression (HR=0.66, 95%CI=0.63-0.69), and self-harm (HR=0.56, 95%CI=0.46-0.68). Similar results were obtained from the propensity score analysis. Modelling of unmeasured confounding showed that an increased risk of adverse events in users of varenicline was very unlikely.

Conclusions: Varenicline does not appear to be associated with an increased risk of cardiovascular events, depression or self-harm when compared with NRT.

Topic: 17 - Electronic cigarettes, Abstract Nr: 24

Effects of electronic cigarette liquid nicotine concentration on plasma nicotine and puff topography in tobacco cigarette smokers

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Electronic cigarettes (ECIGs) aerosolize a liquid solution that usually contains humectants (propylene glycol and/or vegetable glycerin), flavorants, and the dependence-producing drug nicotine in various concentrations. This study examined the extent to which ECIG liquid nicotine concentration is related to user plasma nicotine concentration in ECIG-naïve tobacco cigarette smokers. Sixteen ECIG-naïve cigarette smokers completed four laboratory sessions that differed by the nicotine concentration of the liquid that was placed into a 1.5 Ohm, dual coil "cartomizer" powered by a 3.3 v battery: 0, 8, 18, or 36 mg/ml. In each session, participants completed two, 10-puff ECIG use bouts with a 30-second inter-puff interval; bouts were separated by 60 minutes. Venous blood was sampled in each session and plasma nicotine concentration analyzed. Puff duration, volume, and flow rate were also measured. Relative to 0 mg (bout 1 mean=3.8, SD=3.3) significant increases in plasma nicotine concentration were observed immediately after the bout for the 8 (bout 1 mean=8.8 SD=6.3), 18 (bout 1 mean=13.2, SD=13.2), and 36 mg/ml (bout 1 mean=17.0, SD=17.9) liquid concentration; an identical pattern was observed for bout 2. Shorter puff durations were observed in the 36 mg/ml condition compared to 0 mg/ml. Puff volume increased during the second bout for 8 and 18 mg/ml conditions only. To our knowledge, this is the first study to examine the relationship between ECIG liquid nicotine concentration and user plasma nicotine concentration in ECIG-naïve cigarette users, and the first to demonstrate a tobacco cigarette-like plasma nicotine delivery profile in this population.

Topic: 17 - Electronic cigarettes, Abstract Nr: 45

Perceived relative harm of e-cigarettes over time and prediction of subsequent use

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Background: Extensive discussion of potential harms, benefits and appropriate regulation of e-cigarettes may affect people's perception of their harm relative to cigarettes. Perceptions of harm may influence likelihood of use.

Objectives: 1): To assess changes in perceived harm of e-cigarettes relative to cigarettes over two years and 2): to assess whether perceived relative harm predicted subsequent e-cigarette use.

Methods: Web-based survey of a national general population sample of smokers and ex-smokers in Great Britain, baseline in 2012 (n=5000, n=4553 aware of

e-cigarettes), follow-ups in 2013 and 2014 (44 % and 31% response rate). 1) Perceived relative harm was rated at all time-points by 1203 respondents as: more harmful, equally harmful, less harmful, or don't know (dichotomised into less harmful versus otherwise), and changes over time assessed using Friedman and McNemar tests. 2): Logistic regression adjusting for 2012 age, gender, income and smoking status was used to assess whether perceived relative harm in 2012 predicted e-cigarette use in 2013 in n=1588 baseline non-users.

Results: 1) Perceived relative harm changed ($\chi^2=20.67$, $p<0.001$); there was no change from 2012 to 2013 ($p=1.0$), but from 2013 to 2014, the proportion perceiving e-cigarettes to be less harmful than cigarettes decreased ($\chi^2=16.55$, $p<0.001$). 2) Perceiving e-cigarettes to be less harmful than cigarettes predicted subsequent use (OR=1.39; 95% CI: 1.07-1.79, $p=0.013$).

Conclusion: Among a sample of smokers and ex-smokers, accurately perceiving e-cigarettes as a less harmful alternative to smoking predicted use; this perception declined over time. Clear information on the relative harm of cigarettes and e-cigarettes is needed.

Topic: 17 - Electronic cigarettes, Abstract Nr: 48

Release of metals from cartomisers into e-liquids and vapour: A study of UK e-cigarette brands with implications for design and regulation

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Metals matching those found in the container and electronic components have been identified in e-liquids extracted from filled cartomisers. The objectives of the study were to quantify the metals extracted from a wide range of cartomisers in order to determine the contamination processes and to assess the risks to vapers potentially exposed to these metals.

Liquids from 60 cartomisers from leading UK outlets were extracted by centrifuge and analysed by ICPMS. The concentrations of Co, Ni, Pb, Sn and some other metals were generally much higher than equivalent uncontaminated refill e-liquids (sometimes by several orders of magnitude). The process of metal transference into liquids is active in almost all cartomisers, probably related to catalytic reactions during the long period that metals and liquid are in contact. With appropriate transformation the metal concentrations in these liquids may be compared directly with tobacco smoke and the data indicate that the vaper may be exposed to significantly higher levels of the probable human carcinogens Ni and Pb. The potential for transference of metals from e-liquid to aerosol during the process of vaping was investigated by directly extracting metals from vapour into an acid solution.

It is concluded that the cartomiser design, preferred by 47% of UK users in 2014, may inadvertently expose users to harmful concentrations of some toxic metals, especially the carcinogens nickel and lead. The findings suggest

that these metal hazards could be significantly reduced or even eradicated but only by establishing minimum standards of cartomiser design and construction.

Topic: 17 - Electronic cigarettes, Abstract Nr: 30

The health risks of using e-cigarettes

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The use of e-cigarettes has increased dramatically in recent years. Nearly all e-cigarette users ('vapers') started using e-cigarettes under the assumption that it is less harmful than smoking. However, not much is currently known about the health risks associated with e-cigarette use.

We assessed the health risks for e-cigarette users in three steps. Firstly, we conducted a survey among vapers to establish which products are popular and to obtain data on e-cigarette vaping topology. Because considerable individual differences were found in vaping topology, this led us to define three different user profiles. Secondly, we analysed the composition of e-liquids and vapour to determine the concentrations of a range of potentially harmful components. Lastly, we assessed the expected health risks for each user profile based on the composition of the vapour.

E-cigarette vapour contained several impurities, including di- and triethylene glycol, aldehydes, metals and nitrosamines. Aldehydes in the vapour did not originate from the e-liquids but formed during the heating process. Metals in vapour also originated from the vaporizer. Aldehyde levels varied markedly between vaporisers, even between seemingly identical vaporisers of the same manufacturer.

Several compounds are present at levels that can be detrimental to human health. Inhalation of e-cigarette vapour can lead to irritation of and/or damage to the respiratory tract, palpitations, decreased lymphocyte count and an increased risk of developing cancer. However, the health risks expected from e-cigarette use were found to depend strongly on the behavior of users and are less severe than those associated with smoking tobacco.

Friday 11 September 2015

Behavioural Science Theme Lecture

What is the most that we can achieve with behavioural support for smoking cessation?

09:00 - 09:30 Room 0.4/0.5

R. West

Epidemiology and Public Health, University College London, United Kingdom

Addiction to cigarettes is puzzling and somewhat different from other addictions. Relapse to smoking following a quit attempt is unrelated to any positive pleasure or functions that smoking provides, and minimally related to the experience of nicotine withdrawal symptoms with one notable exception: urges to smoke. Yet without some kind of support 85% of people trying to quit relapse within 4 weeks, 70% of those that remain relapse within a year, and 20-30% of those that succeed for a year relapse in the following years. The science of behaviour change has advanced considerably in the past 20 years and it is now possible to construct a package of behaviour change techniques that, together with pharmacological support, radically improve the chances of success. So much so, that when applied diligently and with a high level of clinical skill, 12-month biochemically verified continuous abstinence rates of more than 40% can be routinely achieved. The question is: can we do better and what are the best bets for improving outcomes still further. This lecture will examine the options.

Public Health Theme Lecture

Mind the Gap - reducing inequalities in smoking

14:00 - 14:30 Room 0.4/0.5

A. Amos

Centre for population Health Sciences, University of Edinburgh, United Kingdom

Smoking is the leading preventable cause of premature mortality and socioeconomic inequalities in health in the UK and Europe. Smoking prevalence in many countries is declining but the social gradient in smoking is not. This is of increasing concern as we assess which strategies will be most effective in achieving the 'end game' in tobacco control in the UK and other countries. There is good evidence on which tobacco control policies reduce youth and adult smoking. However, their equity impact is uncertain. This presentation will give an overview of inequalities in smoking in Europe. It will then draw on the findings of three recent systematic reviews on social inequalities and smoking to identify those policies which have a positive equity impact ie reduce inequalities in smoking. The reviews covered population and individual level interventions/policies on youth smoking prevention, population level

interventions/policies on adult smoking cessation, and individual level adult cessation support interventions. The presentation will highlight the lack of studies which have assessed the equity impact of tobacco control policies. Finally, it will consider the implications of these findings for developing effective equity-orientated tobacco control strategies.

Symposium 6

New Innovations in eHealth Technology for smoking cessation

09:30 - 10:45 Room 0.9

This symposium addresses innovations for smoking cessation via eHealth. Hein de Vries will present the results of the advantage of using video tailoring over textual approaches, including cost-effectiveness results. Iman Elfeddali will present the effects of Web-based implicit retraining strategies for smokers who are unmotivated to quit smoking and smokers who are motivated to quit smoking. Maria Karekla will present the findings of a new tailored eHealth program using acceptance-commitment therapy to foster smoking cessation. Ron Borland will present the results of three randomized controlled trials on computer tailoring. The studies were funded by various sources (the study of Hein de Vries and Iman Elfeddali were funded by the Netherlands Organisation for Health Research and Development). Conflicts of interest: N.A.

Tailored eHealth Smoking Cessation via Video or Text: Results of a RCT

H. de Vries

Caphri/Department of Health Promotion, Maastricht University, the Netherlands

Background: Several RCT's demonstrated that computer tailored smoking cessation advice is more effective than a general message. This study compares the effects of tailored text messages and tailored video messages via the Internet with a control group, and also assessed the cost-effectiveness.

Method: Smokers willing to quit within six months were assigned to a video computer tailoring group with video messages (n=670), a text computer tailoring group with text messages (n=708), or to a control condition with short generic text advice (n=721). The results after 6 and 12 months were assessed, using 7-day point prevalence abstinence and prolonged abstinence as the main outcomes. Analyses were conducted using multiple imputation techniques as well as using intention-to-treat and complete cases.

Results: The effect of the various analysis showed that both conditions were more effective than the control group after 6 months. At 12 months concerning prolonged abstinence condition resulted in 10% quitters versus 6.4% in the control group ($p < .05$); the text condition was not significantly better any more than the control group with 7.3% quitters. The cost-effectiveness analysis also revealed a cost-effective effect for the video condition. We did not find differences in effects for education level.

Conclusion: Video tailoring is more effective than text tailoring and future implementation of this program in the Netherlands is thus recommended. The program was both effective for high and low educated smokers.

Web-based implicit pictorial tasks for smokers who are unmotivated to quit smoking and smokers who made a quit -attempt

I. Elfeddali

Caphri/Department of Health Promotion, Maastricht University, the Netherlands

Background: The last decades, there has been increased interest in the application of implicit or indirect tasks in the field of addictive behaviors.

Methods: Two RCTs, study 1 consisted of two conditions (a Web-based Attentional Bias Modification (ABM) training and a control condition) testing the efficacy of multiple session ABM training with regard to continued smoking abstinence in 475 smokers who made a quit-attempt; study 2 had three conditions (ABM training; approach-avoidance training and a control group) and tested the efficacy of the interventions with regard to implicit biases underlying the pros/cons of smoking in a sample of smokers unmotivated to quit smoking (N=450).

Results: Study 1 indicated a significant positive effect on continued abstinence in heavy smokers (complete case: OR = 3.30; P = 0.01; CI = 1.31-8.31; conservative analyses: OR = 2.50; P = 0.02; CI = 1.15-5.47). ABM had no effect in light to moderate smokers and no significant effect on cognitive biases. In study 2, the ABM training resulted in a borderline significant lower bias (B = -19.50; p = .05, compared to the control group), the effect of the approach-avoidance training was significant (B = -8.98; p = .04).

Conclusions: The positive effects in heavy smokers as well as the effect on bias with regard to the pros/cons of smoking warrant further research into the potential of Web-based implicit retraining for smokers who are motivated to quit smoking as well as for smokers who are not yet motivated to quit.

Intervention for smoking cessation in Youth

M. Karekla

University of Cyprus, Cyprus

Smoking remains a global concern, especially in youth, and cessation practices have not sufficiently achieved to make youth quit. The aims of the present study were: (a) to create and examine the acceptability and satisfaction for an Avatar led Acceptance and Commitment Therapy (ACT) internet-based intervention for smoking cessation in youth, (b) to compare ACT to a waitlist-control group for smoking cessation and smoking related outcomes, and (c) to examine ACT treatment processes and mechanisms of change. Participants were 357 high schools and university students, aged 15-28 years old (M = 21.06, SD = 2.96) randomized to either the treatment or

waitlist-control group. The treatment group completed 6 sessions of an ACT internet-based intervention. Participants found the program satisfactory, useful and motivating. Analyses showed participants in the treatment group had significantly higher quit rates than the control group (51.9% vs. 14.3% respectively; OR = 6.46, 95% CI = 1.76 -23.71, $p = .005$). A significant effect of the intervention was found on the treatment group by decreasing nicotine dependence, average number of cigarettes smoked, increasing self-efficacy and intention to quit smoking. Furthermore, the treatment group resulted in significant increases of acceptance of smoking triggers and smoking cognitive defusion compared to the control group. Mediation analyses showed that smoking cognitive defusion mediates the relationship between group and cessation self-efficacy and intention to quit. Results of this study are very encouraging for the use of internet-based, avatar led ACT as a smoking cessation intervention for youth.

Systematically improving automated tailoring of smoking cessation assistance

R. Borland

The Cancer Council Victoria, University of Melbourne, Australia

Computer tailored personalised advice programs can be delivered as blocks of advice and/or as streams of messages to phones or other devices.

They are a great way of testing theoretical concepts as the delivery can be precisely specified. This paper describes three RCTs of automated smoking cessation interventions.

Methods: Three randomized controlled trials: involving adding structured planning to automated advice letters; evaluating text messages compared with a mobile app; and comparing tailored letters, txt messages and their combination to a non-tailored website.

Results: Levels of engagement in the interventions was well below targeted levels. Even so, the interventions clearly help, with clear benefits in all studies. We found no evidence that combining both forms improved outcomes, but this may be a failure of content not approach. A text messaging intervention delivered to the normal phone inbox was superior to an app which required separate access. Simplifying planning and focussing on simple strategies including implementation intentions, and a focus on post-quit planning was successful over the base program without these elements.

Conclusions: Simple strategies that link to people's everyday activities appear to be work better than seemingly stronger or similar interventions which fail to adequately engage users. This needs to occur without ignoring the complexity of the challenges faced in maintaining cessation. The challenge is getting participants to engage fully with the strategies and exercises provided without a person to provide social pressure to comply. This may be achieved by having the interventions that highlight simple ideas.

Symposium 7

Preventing cancer through smoking cessation: A symposium supported by the Dutch Cancer Society (KWF) and Cancer Research UK

09:30 - 10:45 Room 0.8

This symposium brings together colleagues from two of Europe's main cancer charities, the Dutch Cancer Society (KWF) and Cancer Research UK (CRUK) along with the researchers whose work they fund. Smoking is the leading preventable cause of cancer and for this reason both CRUK and KWF are committed to supporting research that furthers our understanding of how best to reduce smoking rates further. This symposium focuses on current work on smoking cessation in the UK and the Netherlands. It highlights findings from a number of recent studies in both countries that outline available approaches for adult smokers to quit, uptake of different aids and services and outcomes achieved. It also reflects on future priorities for research and will provide an opportunity for discussion on collaboration between funders as well as researchers working on preventing tobacco-related cancers. The session will be chaired by Alison Cox from CRUK. Fleur van Bladeren from KWF will lead the discussion.

Smoking and smoking cessation in England: Findings from the Smoking Toolkit Study

R. West

University College London and UK Centre for Tobacco and Alcohol Studies, London United Kingdom

The Smoking Toolkit Study involves monthly national household surveys of representative samples of the adult population of England. It has been running since late 2006 and has accumulated data on more than 150,000 people. An important aim of the project is to track 'key performance indicators' relating to smoking and smoking cessation. Another important aim is to assess the real-world effectiveness of different aids to cessation, such as nicotine replacement therapy and electronic cigarettes. These two aims serve to evaluate tobacco control policies and help inform future policies. This presentation will summarise key findings from the first 8 years of operation of the study. In terms of major trends, cigarette smoking prevalence declined by 0.8 percentage points per year. Take up of smoking declined by 1.5 percentage points per year. Cigarette consumption declined by 0.3 cigs per day. Exclusive use of hand-rolled cigarettes increased by 2.9 percentage points per year. The average cost of smoking increased by 49p per week per year. The percentage of smokers trying to reduce the amount they smoke declined. The percentage of smokers using an additional nicotine product increased because of an increase in use of e-cigarettes. The percentage of recent ex-smokers (<12 months) using a nicotine product increased because of an increase in use of e-cigarettes. The proportion of never smokers using a nicotine product remained at less than 0.5%

with similar proportions for NRT and e-cigarettes. The proportion of long term (>12 months) ex-smokers using a nicotine product increased to 7%. Similar trends were observed for all indices across age, social grade and gender.

Should Governments pay for smoking cessation?

M. Willemsen

Department of Health Promotion, Maastricht University, the Netherlands

Background: Following a successful experiment in one province of the Netherlands, in 2011 financial reimbursement for behavioural pharmacological support was made available to all Dutch smokers. The withdrawal of the reimbursement in 2012 and the subsequent re-introduction in 2013, created a unique natural pre-post research design to study effects under real life conditions. This presentation will discuss the results of all published Dutch studies to date that took advantage of this unique research opportunity.

Methods: We identified six studies that examined the introduction of the reimbursement in 2011 in the Netherlands and that used data that allowed for before – after comparisons. Research methods included (interrupted) time-series analyses, retrospective database analysis, and longitudinal surveys. Outcome measures included changes in smoking prevalence, increases in quitline enrolment, use of and adherence to stop-smoking medication, use of behavioural counseling, quit attempt rates, quit success, and rate of searching for information on smoking cessation with Google.

Main findings: The introduction of national reimbursement was associated with increases in calls to the national telephone quit line, increases in use of pharmacological therapy, more quit attempts, quit success, and a decrease in smoking prevalence.

Conclusion: Evidence from different data sources all supported the conclusion that a national reimbursement for smoking cessation may help governments to reach national tobacco control targets.

Stop smoking services in the UK: current effectiveness and challenges

L. Bauld

University of Stirling and UK Centre for Tobacco and Alcohol Studies, Stirling, United Kingdom

Free at the point of use smoking treatment services were established in the UK from 1999, providing access to stop smoking medication and behavioural support from trained advisers. Since then a series of studies have been conducted examining their reach and effectiveness. This presentation will reflect on the findings of two observational studies using the same research design conducted a decade apart and supported by CRUK through the UK Centre for Tobacco and Alcohol Studies. The most recent research involved 3000 smokers who set a quit date with the services in 2012-2013, 8% of whom were biochemically validated as abstinent from smoking at one year. Smokers who accessed specialist one to one and specialist group support were two and three times

more likely (respectively) to have quit than those who were supported to stop in pharmacies or primary care settings. Current challenges for the services including a significant drop in client numbers due to health service reorganisation and the use of electronic cigarettes will be outlined, as well as future priorities for research.

Exploring Dutch practice nurses' adherence to smoking cessation guidelines and their needs for web-based adherence support

D. de Ruijter¹, H. de Vries¹, C. Hoving¹, E. Smit²

¹Department of Health Promotion, Maastricht University, the Netherlands

²Department of Communication Science, University of Amsterdam, the Netherlands

Nowadays, practice nurses often provide smoking cessation counseling in Dutch general practices. However, practice nurses sub-optimally adhere to evidence-based smoking cessation and the socio-cognitive determinants explaining their adherence have not yet been investigated. Web-based interventions could improve guideline adherence by providing advice tailored to adherence determinants.

To inform their development and improve the impact of smoking cessation guidelines in clinical practice, this study explored socio-cognitive determinants of practice nurses' adherence to smoking cessation guidelines and their needs for web-based adherence support.

Semi-structured individual interviews, based on the I-Change Model and The Diffusion of Innovations Theory, with nineteen Dutch practice nurses were conducted in May-September 2014. Data was systematically analyzed using the Framework Method and considered reliable (Kappa .77; percent agreement 99%).

Respondents reported psychological (e.g. difficulties enhancing patient motivation) and practical (e.g. outdated information on quit support compensation) barriers to smoking cessation guideline adherence. Most respondents were interested in web-based adherence support, especially in the form of a tailored program that is easy to use, free to (re-)visit and compatible with their current smoking cessation practices.

Practice nurses' smoking cessation guideline adherence can be improved by addressing psychological and practical barriers that they face when providing smoking cessation support to patients.

A web-based tailored program could provide practice nurses with relevant feedback on dealing with perceived psychological and practical barriers. Moreover, practice nurses' needs regarding the design and content of the program should be taken into account to optimize its impact.

Symposium 8

Development and evaluation of digital mobile smoking cessation applications: addressing key challenges

14:30 - 15:45 Room 0.9

Digital mobile applications could offer a low cost wide-reach way of helping smokers to stop. However, their development and evaluation presents major methodological challenges. This symposium will address a range of these challenges. One challenge is how to evaluate the large number of apps available on the market when undertaking RCTs on them is not feasible. The first paper will describe a system for characterising smartphone applications in terms of their behaviour change techniques and ease-of-use and engagement features. A second challenge concerns how to obtain robust outcome measures. The second paper will describe an innovative RCT of a smartphone app designed to evaluate the impact of inclusion of craving control and management features, including using remote CO testing in the primary outcome assessment. A third challenge involves how to tailor apps to specific populations. The third paper will describe an online survey involving a theory-based behavioural diagnosis aimed at identifying appropriate behaviour change techniques to include in an Arabic smoking cessation app. A fourth challenge involves how to determine optimal content of apps. The fourth paper will describe a factorial experiment aimed at identifying the optimum combination of modules to include in a smartphone application to help pregnant smokers to stop.

Characterising stop-smoking smartphone apps in terms of inclusion of evidence-based behaviour change techniques, and engagement and ease-of-use features

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Department of Family Medicine, CAPHRI School for Public Health and Primary Care, Maastricht University Medical Centre, Maastricht, the Netherlands

Background: It is not feasible to evaluate hundreds of stop-smoking smartphone apps by means of RCTs. Yet, there is a need for some form of evaluation to assess whether they are likely to provide any benefit and examine whether or not as a whole, the apps are improving over time.

Aims: To evaluate available stop-smoking smartphone apps in terms of inclusion of evidence-based behaviour change techniques (BCTs) and the use of recommended engagement and ease-of-use features; and to compare these characteristics in 2012 versus 2014.

Methods: Stop-smoking apps for iPhones were coded in terms of presence or absence of BCTs, engagement and ease-of-use features using a method that had been shown to be reliable. Apps available in 2012 were compared with ones available in 2014.

Results: The rate of inclusion of potentially effective BCTs was low at less than 50%. The percentage of apps that supported identity change, rewarded abstinence and advised on changing routines declined from 2012 to 2014. The proportion that advised on methods of coping with cravings and on use of stop-smoking medications increased. The use of recommended engagement features declined while adoption of ease-of-use features was nearly universal in 2014 (95%).

Conclusion: Freely available stop-smoking apps for iPhones appear to focus primarily on ease-of-use features and mostly use few evidence-based BCTs, with no evidence for improvement from 2012 to 2014.

Developing a strategy for evaluating stop-smoking smartphone apps in randomised controlled trials: the example of BupaQuit

A. Herbec

Cancer Research UK Health Behaviour Research Centre, University College London, London, United Kingdom

Background: Smartphone apps could aid smoking cessation, but little is known about acceptability, usage and effectiveness of such interventions, and there are substantial challenges to designing studies to evaluate them.

Aims: To develop a robust evaluation strategy for smoking cessation smartphone apps.

Methods: The stop-smoking smartphone app, BupaQuit, was adapted from an existing app, SmokeFree 28 (SF28) to include additional craving monitoring and management (CM) tools based on motivational theory. An evaluation strategy was developed that aimed to evaluate the effectiveness of its CM components while addressing bias arising from differential engagement and loss to follow up between intervention and control apps, and providing confidence in outcome assessment through cost-efficient remote biochemical verification.

Results: The resulting evaluation strategy involved 1) automated collection of data on engagement with particular app components and associations between these, user characteristics, and outcomes, 2) creating a 'minimal credible intervention' as the control condition to minimise disengagement together with putting substantial resources into achieving high follow up rates, and 3) use of USB-connectable personal CO monitors sent by post to participants self-reporting abstinence.

Conclusion: The features of smartphone apps and the usage patterns that make them potentially so useful as population level smoking cessation aids also make them very challenging to evaluate using traditional methods. Novel solutions to this problem are needed.

Identifying relevant psychological targets for smoking cessation apps for Arabic smokers

R. West

Epidemiology and Public Health, University College London, United Kingdom

Background: Arabic smokers may constitute a population with different smoking cessation needs than smokers usually studied. Smartphone app could help to meet those needs but there is very little information on how to design such apps.

Aims: To identify potentially important targets for behaviour change techniques to include in apps to aid smoking cessation in Arabic smokers.

Methods: An online survey of Arabic smokers in Saudi Arabia, and the US was conducted using a variety of channels for recruitment. The survey asked about access to smartphones and undertook a preliminary 'behavioural diagnosis' to assess how far interventions to promote smoking cessation would need to focus on different factors. Respondents were asked 'what it would take' for them to try to stop smoking: 1) reflective motivation (believing that stopping would be a good thing), 2) automatic motivation (feeling a genuine desire to stop), 3) psychological capability (having the mental strength), or 4) opportunity (having stronger social norms around stopping and availability of medication).

Results: A total of 314 smokers completed the survey. The most prevalent factor identified by respondents was having a genuine desire to stop (85%) followed by having the psychological capability (71%). Social norms were also judged to be important (60%). Access to aids to medication and reflective motivation were less commonly endorsed as factors.

Conclusions: With Arabic smokers, smoking cessation smartphone apps may need to focus heavily on creating a genuine desire to stop and a belief that users have the ability to achieve this goal.

Factorial experiment for the optimisation phase of a smartphone app to aid smoking cessation in pregnancy

I. Tombor

Cancer Research UK Health Behaviour Research Centre, University College London, London, United Kingdom

Background: Pregnant smokers may benefit from digital interventions to help them stop. The app is based on multiphasic optimisation strategy (MOST). This involves an optimisation phase in which intervention components are evaluated in a factorial experiment.

Aims: To report on methods of, and preliminary findings from a factorial experiment for the optimisation phase of development of the SmokeFree Baby smoking cessation app.

Methods: SmokeFree Baby was designed around five experimental modules, each in a 'minimal' and 'intensive' version: 1) identity change, 2) stress management, 3) health information, 4) promoting use of face-to-face support, and 5) behavioural substitution. This generated 2^5 (32) experimental groups. Data on participants' demographic and smoking characteristics, app usage, behaviour change targets and smoking abstinence at each login are being collected. The target sample size for the study is 400. The study uses a factorial design, there will be sufficient power to assess the additive effect of each module.

Results: Between October 2014 and April 2015, 489 people downloaded

SmokeFree Baby. Of these, 34.6% (N=169) were pregnant smokers aged 18+; 94.1% of these completed the registration and set a behaviour change goal. Participants reported high motivation to stop smoking, but low confidence in their ability to stop. On average the app is opened 2.6 times so far.

The study is ongoing and final results will be presented at the conference.

Conclusions: A factorial experiment appears feasible in the optimisation phase of a smoking cessation app for pregnant smokers. A high proportion of users completed the registration.

Symposium 9

Smoking prevention through different measures: necessity and effectiveness of prevention policies, school-based prevention and e-health.

14:30 - 15:45 Room 0.8

This symposium will address the necessity and effectiveness of smoking prevention from different perspectives, namely smoking prevention policies, school-based prevention programs and individual e-health interventions. Tobacco use among adolescents is the result of a combination of individual and environmental risk factors and can be defined as a heterogenous, multifaceted, and multidetermined behavior. Because the onset and development of substance use is grounded in early childhood development, individual developmental processes, family and peer relations etc, it is important that prevention initiatives focus on both adolescents themselves (i.e., influencing knowledge and behavior) and their physical and social environment (i.e., policies and informing and educating parents), thus targeting a combination of risk factors. Combining different policy measures, such as an increase in the prices and restrictions on sales with up-to-date information to parents, and effective evidence-based educational programs for children and adolescents is expected to enhance the impact on tobacco use behaviors. Through a combination of different measures, tobacco use can be targeted and healthy behaviors promoted. These different measures and their effectiveness will be discussed during the symposium.

Tobacco packaging as a prevention tool

C. Moodie

Institute for Social Marketing, University of Stirling, Stirling, United Kingdom

It is well established that tobacco advertising and promotion influences smoking susceptibility and uptake. As a result, most countries have banned tobacco advertising, promotion and sponsorship, or at least place some restrictions on how tobacco is marketed. As other channels are closed off, packaging has assumed greater importance as a marketing tool for tobacco companies. Tobacco packaging is also important for governments, with on-

pack health warnings a simple and cost-effective way of reaching consumers. The role of health warnings on packs and their potential to deter smoking uptake will be discussed. One way to increase the salience of the on-pack warnings is via plain (or standardised) packaging, which also helps reduce the appeal of the pack, product and smoking, and reduce confusion about product harm as a result of pack design. Ireland, France and the United Kingdom have recently legislated for plain packaging, and the role this may have in deterring uptake will be discussed. The presentation will also draw attention to other ways, beyond the on-pack warnings and plain packaging, in which packaging could be used to help prevention efforts.

School-based programs to reduce and prevent tobacco use in different age groups: What works for whom? Systematic review and meta-regression analysis

R. Otten

Trimbos Institute, Utrecht, The Netherlands

Findings from systematic reviews and meta-analyses about the effectiveness of school-based programs to reduce and prevent tobacco use are inconclusive. In order to be effective, preventive programs might have to be aligned with the developmental stages of the intended target groups (childhood, early, middle, or late adolescence). The present study provides an overview of universal and targeted preventive programs while distinguishing four age groups and examining which intervention characteristics are the effective components for the respective groups.

Methods and findings: Databases were searched for controlled studies of school-based prevention programs. Effect sizes and program characteristics were entered in a meta-analytic data file. Multivariate meta-regression analysis was used to analyze the associations between effects and program characteristics. Our study evaluates 288 programs with 436,180 participants. The findings show that specific aspects of school-based programs are effective for some in some developmental stages, but not for other age groups.

Conclusions: Adopting a developmental perspective when designing and offering preventive interventions for tobacco use is pivotal. Elementary school students benefit most from decreasing risk factors and enhancing protective factors, such as personal competencies and effective parenting. Training personal competencies is beneficial for early adolescents as well, as are several activities targeting social norms considering substance use. In middle adolescence, universal programs are not very effective. High risk students benefit most from programs based principles of cognitive behavioural therapy. During late adolescence, opportunities for tobacco use prevention increase. Larger effect sizes are found for both universal programs and programs targeting high risk students.

Smoking prevention via computer tailored eHealth: Evidence from Dutch RCT's

H. de Vries

CAPHRI School for Public Health and Primary Care, University of Maastricht, Maastricht, The Netherlands

Background: Since Evans introduced the peer pressure paradigm, smoking prevention programs have been developed to inform youngsters about the risks of smoking, and to empower them with refusal skills. Studies often show effects, although they may decay over time as adolescence is full with challenges. Applications to tailored eHealth programs have not been extensively discussed yet.

Method: We will present the results of four RCTs in which the Integrated Change Model was used in order to provide tailored feedback to youngsters about smoking prevention. These programs were developed for children from the primary school (10-12 years) and the secondary school (14-18 years).

Results: The first study, using mailed letters, showed both effects among children in primary school as among children in secondary school. However, its translation into eHealth - although appreciated by children and teachers - failed to demonstrate effectiveness due to a much lower smoking prevalence rate obtained during the last decade. Studies 3 and 4 were aimed at secondary schools and both showed to have significant effects.

Conclusion: Translation of principles of the social skills paradigm for smoking prevention into tailored eHealth programs can be effective and are thus recommended to be implemented into the regular school health promotion curriculum. Yet, in order to reach optimum successes, a comprehensive long term approach is recommended that entails a duration of several years and the utilization of other methods such as price and sales policies.

Texas Tobacco Center of Regulatory Science on Youth and Young Adults - Project Debunk: Informing and correcting perceptions regarding tobacco products among young adults

A. Prokhorov

U.T. MD Anderson Cancer Center, Houston, United States of America

Youth and young adults are targeted as new consumers of conventional and new and emerging tobacco products with limited access to communications conveying accurate product risks. Contemporary youth are highly dynamic, and require innovative strategies to communicate health risks. The objectives of the investigation are to assess the receptivity and perceptions of participants regarding risk of tobacco and nicotine product use. A text message library was developed, guided by constructs from the Elaboration Likelihood Model. Messages were developed by manipulating message depth (simple vs. complex), framing (gain vs. loss), and appeal (rational vs. emotional). The preliminary evaluation of the prospective text messages was accomplished by engaging college students (focus groups; n=30) and

experts in behavioral science and health communication (message reviews; n=15). A 2X2X2 randomized two-arm crossover design will be used to determine the most effective and persuasive of the eight message combinations. Community college participants (n=640) will receive 1 of 8 message types, each representing a unique combination of characteristics in two message campaigns 30 days in length. We hypothesize that the three main effects of interest (message depth/framing/appeal) will have a synergistic effect on perceived risk of using nicotine and tobacco products. The main purpose of this research is to inform the Food and Drug Administration of effective strategies for delivering youth-oriented health messages.

Workshop 2

09:30- 10:45 Room 0.2/0.3

Economic evaluation: to put one's money where one's mouth is

S. Evers, R. de Kinderen, M. Hiligsmann

Maastricht University, the Netherlands

The problem of increasing health expenditures throughout the world has been a focus of the public debates for years. In order to allocate scarce resources, scientific information is needed in which both an evaluation is done of the costs and effects of an intervention, preferably at a societal level. Economic evaluation is a technique that is developed to assess costs and benefits of alternative health strategies to provide a decision-makers framework. The aim of this workshop is to give an introduction of the basic principles of economic evaluations with the focus on interventions in the area of tobacco interventions. In this workshop the necessity of performing economic evaluation will be discussed, the methods of performing economic evaluation will be lectured, including the boundaries, and the risk on bias in economic evaluation. After the introductory lectures participants will apply their new knowledge about economic evaluation on an example in small working groups. The 75 minutes workshop consists of plenary session with lectures, a workgroup session, and discussion.

Workshop 3

14:30 - 15:45 Room 0.2/0.3

Dealing with Media

P. Thorne¹, L. Bauld²

¹Cancer Research, United Kingdom

²University of Stirling, United Kingdom

Public engagement and understanding of research on nicotine and tobacco is essential to support effective policy and interventions. Researchers working in

this field need to work with the media to communicate research findings and, where appropriate, help shape regulation and practice. This workshop will bring together a senior press officer from the world's largest independent cancer charity, Cancer Research UK (CRUK) and academics who conduct research on smoking cessation and tobacco control.

Paul Thorne from CRUK will outline examples from his experience of communicating findings from cancer prevention research, with a particular focus on tobacco, over a number of years. This includes research findings on the impact of tobacco marketing and standardised packaging, for example. The workshop will outline how individual academics, University press offices and research funders can work together to improve public understanding of the health impacts of smoking and what is involved in tobacco control policy, including through social media. Case studies of particular current issues will be highlighted including research conducted by Professor Linda Bauld and colleagues on electronic cigarettes and other current issues. The workshop will be interactive with a particular emphasis on how national and European research can achieve global impact. It will have a practical focus, particularly relevant to early career researchers or those interesting in generating media interest in specific issues in nicotine and tobacco research.

Oral Communications

Topic: 9 - Cigarette packaging, Abstract Nr: 1

Exploring novel ways of using tobacco packaging to communicate health messages: Interviews with marketing and packaging experts

C.S. Moodie

University of Stirling, Stirling, United Kingdom

Background: Tobacco packaging is crucial for informing consumers of the risks of smoking and benefits of quitting.

Objective: To explore innovative ways of using packaging to communicate health messages, beyond on-pack warnings and plain packaging.

Methods: Face-to-face interviews were conducted with commercial marketing and packaging experts (N=12), two professions that understand consumer behaviour, to explore: 1) Pack inserts, 2) Cigarettes displaying a warning, and 3) A pack playing an audio health message when opened. Participants were also asked to propose other ways the pack could potentially be used to communicate health messages.

Results: The on-cigarette warning was considered a strong deterrent, which would confront smokers, put off non-smokers, signal to youth that it is neither cool nor intelligent to smoke, and prolong the health message. Inserts were considered an appropriate supplement to the on-pack warnings, particularly if featuring gain-framed messages, and helpful for engaging smokers contemplating quitting. The pack with an audio health message could put

smokers off but was considered annoying, which may lead smokers to decant their cigarettes into alternative carriers. Other options proposed included the use of speciality inks for pictorial warnings, which would change appearance when touched so as to attract attention to them, or conductive inks allowing for moving images on packs and even the delivery of on-pack anti-smoking advertising.

Conclusions: Tobacco packaging, as a platform for health communication, is not being used to its full potential.

Policy recommendation: Inserts and cigarettes displaying health messages are two options available to regulators for supplementing on-pack warnings.

Topic: 9 - Cigarette packaging, Abstract Nr: 37

Dissuasive sticks: An extension of standardised (plain) packaging

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¹University of Otago, Dunedin, New Zealand

²University of South Australia, Sydney, Australia

Several countries have recently announced they will implement plain, or standardised, packaging; these plans create an important opportunity to extend the measures enacted by Australia, which focus solely on the external package. Although smokers display tobacco packages, they actually consume cigarette sticks; measures that decrease the physical attractiveness of these sticks could complement plain packaging. To test the effect of cigarette stick appearance relative to other product attributes, we undertook an online survey of 313 self-defined daily smokers or social smokers over the age of 18. Respondents completed a within-subjects choice experiment using a 2 x 3 x 3 x 6 orthogonal design that compared cigarette packs with different levels of branding, warning theme and size, and cigarette stick appearance, including four sticks specifically designed to look unattractive (and two control sticks). Respondents evaluated one randomly-chosen block of 12 choice sets and identified the pack they would be most and least likely to buy. A stick featuring the warning "minutes of life lost" together with a graphic illustrating those 15 minutes was the most aversive of those tested; sticks shown in unappealing green and brown colours, or featuring the warning "smoking kills", were all significantly less preferred than a standard white stick with a brown or white filter. Relative to other attributes, the warning theme and stick appearance had the strongest influence on choice behaviours. The findings suggest dissuasive sticks could enhance the effects of plain packaging, further de-normalize smoking, and reduce the residual appeal smoking has to young people.

Topic: 9 - Cigarette packaging, Abstract Nr: 43

Neural correlates of cigarette health warning avoidance among smokers

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University of Bristol, Bristol, United Kingdom

Background: Eye-tracking technology has demonstrated that daily smokers

actively avoid cigarette package health warnings. This avoidance may be a result of two different biases. Through repeated exposure to warnings, a pre-cognitive perceptual bias may develop, leading to the reduced attentional salience of the warnings. Alternatively (or additionally), avoidance behaviours may be a result of higher order cognitive biases, such as reduced emotional processing. Using electroencephalography (EEG), the aim of this study was to distinguish between these two possibilities. Understanding the mechanisms underlying health warning avoidance will be important in preventing this avoidance with effective health warning design.

Method: Non-smokers ($n = 20$) and daily smokers ($n = 20$) attended a single EEG testing session where they completed a battery of tasks involving viewing cigarette package health warnings and control stimuli. These elicited the Event Related Potentials of interest: visual P1, visual Mismatch Negativity (vMMN), a proxy measure of early sensory processing, the P3a, an index of selective attentional orientation and the Late Positive Potential (LPP), a measure of higher order cognitive biases.

Results: Non-smokers and daily smokers showed a similar P1 and vMMN response to health warning stimuli. By contrast, non-smokers showed an increased P3a amplitude ($F_{1,38} = 4.26, p = 0.046$) and a larger LPP ($F_{1,38} = 5.16, p = 0.029$) as compared to daily smokers.

Conclusion: We find no difference in P1 or vMMN between non-smokers and daily smokers, indicating that there is no early perceptual bias in smokers' visual perception of health warnings. By contrast, we see both a difference in the P3a response and the LPP response between these groups when viewing health warnings. Together these findings suggest that daily smokers are less sensitive to the emotional content of cigarette health warnings, indicating that in order to design effective warnings, their content and framing should be changed to increase their emotional salience, and help to counteract the higher order cognitive bias observed.

Topic: 23 - Legislation, Abstract Nr: 14

Achieving strategic priorities with regulatory science

D. van Bommel, C.L. Backinger

Office of Science, Silver spring, United States of America

Tobacco regulatory science is focused on informing the Center for Tobacco Products (CTP) Food and Drug Administration's (FDA) regulatory authority with respect to the manufacture, marketing, and distribution of tobacco products. FDA regulates tobacco products based on a public health standard that considers the product's impact on the population as whole, including users and nonusers. Tobacco regulatory science serves as a critical bridge between tobacco products and public health by enabling FDA to assess various tobacco products' inherent risks, use behavior and patterns of use, and regulate them accordingly. Although a vast a sound science base exists, new research will build upon this evidence as research informs the

development of regulatory actions and the assessment of the impact of CTP's activities on public health. Research also will help to inform the review of tobacco products seeking to enter or remain on the market. This presentation will provide an overview of the statutory questions regarding product review, describe tobacco regulatory science, provide examples of tobacco regulatory actions in the area of product review regulations and guidance, and provide research examples that could inform regulatory actions. The five CTP strategic priorities will also be presented including product standards, comprehensive FDA nicotine regulatory policy, pre- and post-market controls via regulations and product reviews, compliance and enforcement, and public education.

Topic: 23 - Legislation, Abstract Nr: 71

Working toward a ban on menthol tobacco in Canada: Setbacks and success

L.C. Hagen¹, L. James²

¹Action on Smoking & Health (ASH Canada), Edmonton, Canada

²Heart and Stroke Foundation of Canada, Ottawa, Canada

In 2010, Canada became the first country to ban selected flavoured tobacco products to help reduce tobacco use among youth. However the legislation exempted a number of product categories including menthol flavoured tobacco.

Successive national youth smoking surveys revealed high rates of menthol tobacco use among Canadian youth. The surveys found that one third of Canadian youth smokers are using menthol cigarettes compared with only 1 in 20 adult smokers. The surveys also revealed that youth menthol smokers are consuming 60 percent more cigarettes than regular smokers and they are much less likely to quit.

Canadian health organizations have been actively pursuing menthol bans and have made progress at the regional level. The provinces of Alberta, Ontario and Nova Scotia have passed laws to ban menthol flavoured tobacco although none have come into force to date. Health organizations are urging other provinces and the federal government to ban menthol tobacco and other flavoured products.

Canadian tobacco companies have launched aggressive campaigns to fight menthol bans and they have achieved some success in forestalling implementation.

However it appears that the tide is now turning in favour of the health community and significant progress is anticipated in 2015.

This presentation will examine the experience of Canadian health organizations in securing bans on menthol tobacco including lessons learned and the required elements for success.

The presentation will provide participants with insights into securing a ban on menthol tobacco and other flavoured tobacco products.

Topic: 23 – Legislation, Abstract Nr: 8

The Impact of the European Tobacco Products Directive (TPD) on E-Liquid and its Packaging

L. Price

APPE, Wrexham, United Kingdom

Until recently, the European e-cigarette market has largely been unregulated. In May 2014, a revision to the EU's Tobacco Products Directive (TPD) included a section on e-cigarettes and associated products, including e-liquid. EU member states have until May 2016 to transpose the revised TPD in to their national laws.

This presentation will examine the impact of the revised TPD on e-liquid and its packaging and will include;

An overview of the current European e-liquid market and trends

Review of current packaging and sources, including an comparison of the advantages and disadvantages of packaging materials

The elements of the revised Tobacco Products Directive relating to e-liquid and its packaging, including terms and timing of implementation

How the revised TPD directly impacts the producers and distributors of e-liquid in the EU

Topic: 34 – Relapse prevention, Abstract Nr: 5

Triggers of smoking lapses over the course of a quit attempt

S.G. Ferguson¹, S. Shiffman², L. Blizard²

¹University of Tasmania, New town, ²Australia

Background and Aims: It is well-documented that both withdrawal severity and exposure to smoking cues can trigger smoking lapses. However the relationship between these two sets of triggers is not well understood. Here we explore the time course of smoking triggers during a quit attempt.

Setting: Two field-based cessation studies.

Participants: 186 participants who experienced a lapse during monitoring.

Methods: Participants used hand-held electronic diaries to monitoring their smoking in real-time for up to 7 weeks over the course of a quit attempt. Participants were instructed to record every cigarette they smoked. During lapses, participants were asked to report the primary trigger of the event; this, including the time of the event relative to quit day, were logged by the electronic diary.

Results: The probability of a first lapse being triggered by withdrawal rose in the initial days of a quit attempt before dropping as the quit attempt progressed ($p=.001$). The probability that a quit attempt was triggered by a smoking cue was initial low, but rose over the course of a quit attempt ($p=.014$).

Conclusions: The results are consistent with both the time course of withdrawal symptoms and with theoretical predictions about the relationship between nicotine dependence and stimulus control. The results have implications for tailoring smoking cessation treatments; in particular,

for the stepwise provision of smoking cessation assistance over the course of a quit attempt.

Topic: 34 - Relapse prevention, Abstract Nr: 66

Does acute tobacco smoking prevent cue-induced craving?

E. Schlagintweit, P. Barrett

Dalhousie University, Halifax, Canada

Background: Smoking cessation aids appear to be limited in their ability to prevent craving triggered by exposure to smoking-associated stimuli; however, the extent to which cue-induced cravings persist following actual tobacco smoking is not known.

Methods: Thirty two (18 male) ≥ 12 hour abstinent dependent smokers completed two sessions during which they smoked a nicotine-containing or denicotinized cigarette. Instructions regarding the nicotine content of the cigarette varied across sessions, and all participants were exposed to a neutral cue followed by a smoking cue after cigarette consumption. Craving was assessed before and after cigarette consumption and cue exposure.

Results: The acute administration of either nicotine-containing or denicotinized cigarettes were found to immediately reduce craving (p values < 0.001) but smoking-associated stimuli increased craving regardless of nicotine expectancy or administration (p values < 0.001). When analyses were limited to include only participants that believed nicotine content instructions, acute administration of nicotine-containing cigarettes lead to greater reductions in intention to smoke than acute administration of denicotinized cigarettes (p values < 0.01); however, increased cue-induced craving was still observed regardless of nicotine content (p values ≤ 0.001).

Conclusions: While acute tobacco smoking reduces acute craving in the absence of smoking-related stimuli, neither smoking-related nicotine administration nor expectation prevents increases in craving following exposure to smoking-associated stimuli.

Topic: 34 - Relapse prevention, Abstract Nr: 98

The development of the Coping with the Urge to Smoke Inventory (CUSI)

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Despite the ubiquity of this nicotine withdrawal symptom, craving, or the urge to smoke, is poorly associated with smoking behavior. Measuring success at coping with smoking urges may be more informative. We developed the Coping with the Urge to Smoke Inventory (CUSI) and validated it on smoking and nicotine withdrawal behavior. We collected CUSI, smoking behavior, and withdrawal data from adult smokers ($n=1016$) enrolled in one of three smoking-cessation

randomized clinical trials. We used factor analytic techniques to construct the CUSI, and validated it on measures of smoking behavior and withdrawal collected out to 1 year after quitting. Psychometric analysis of the CUSI indicated a 2-factor model, which we named the Resolve and Resign scales. The CUSI scales demonstrated construct validity when compared with measures of smoking urge, nicotine dependence, and affect. In terms of predictive validity, the CUSI Resign scale better predicted relapse than did a measure of smoking urges. The CUSI is a valid and reliable measure of coping with smoking urges that better predicts smoking cessation outcome than measuring smoking urges. These results suggest that evaluating self-perceived success at coping with the urge to smoke might be more prognostic than simply measuring urge to smoke.



Saturday 12 September 2015

Policy Theme Lecture

The five elements of the policy process that help explain tobacco control

09:00 - 09:30 Room 0.4/0.5

P. Cairney

History and Politics, University of Stirling, United Kingdom

The WHO Framework Convention for Tobacco Control has prompted major change in global tobacco control. However, policy implementation has been uneven, producing the possibility of 'smoke free' outcomes in some countries but not others. I identify the factors associated with a policy environment conducive to tobacco control policy and implementation to produce an ideal-type 'comprehensive tobacco control regime'. It requires these factors to be present: their department of health takes the policy lead; tobacco is 'framed' as a public health problem; public health groups are consulted at the expense of tobacco interests; socioeconomic conditions are conducive to policy change; and, the scientific evidence is 'set in stone' within governments. These factors help us explain why it takes so long to produce comprehensive tobacco control (20-30 years in many countries) even when the evidence of smoking-related harm is well established and countries have made a firm commitment to address the problem.

Symposium 10

Smoking Cessation in Pharmacy

09:30 - 10:45 Room 0.9

This symposium will focus on why pharmacists should engage in the regular delivery of smoking cessation interventions, the significance of incorporating smoking cessation teaching in the pharmacy curriculum of universities, a presentation on how to implement pharmacy-based smoking cessation services in the real world and finally progressing these standards into the context of European pharmacy practice.

Why pharmacists should engage in smoking cessation

R. Bittoun

Smoking Research Unit, University of Sydney, Australia

Pharmacists the world over are often the first line health professionals in contact with smokers. They serve as trusted healthcare professionals with whom patients tend to consult about health and medication-related issues. They are in a unique position to identify smokers who may, amongst other medical consequences, present initially to a pharmacist with smoking related

symptoms. We devised a simulated patient survey where an actor became a “high risk” smoker seeking assistance at a community pharmacy. One was a pregnant female aged 28 and the other a person requesting help for her father, who was a patient with cardiovascular disease. 100 pharmacists were survey. 42% of these pharmacists advised medications to quit, while 13% advised against nicotine replacement therapies in these cases. These community pharmacists, untrained in smoking cessation, responded poorly to specific pharmacotherapeutic issues including dosages, side effects, interactions and contraindications of smoking cessation aids. This could be explained by the fact that little is known about smoking cessation aids beyond what is provided on the pack by the manufacturer. Pharmacists know little about the effects smoking has on other medications that a person may be taking, the need to adjust dosages when quitting smoking and the genetic variances in responses to some cessation medications.

Changes in knowledge about and attitudes towards smoking cessation in final-year pharmacy students following a smoking cessation educational activity

M. Saba

Faculty of Pharmacy, University of Sydney, Australia

A clinical information needs analysis, previously conducted with pharmacy students, indicated knowledge gaps in students’ awareness of evidence-based smoking cessation practices. As a result, a smoking cessation educational activity was designed, implemented and evaluated with a full-cohort of final-year undergraduate pharmacy students at the University of Sydney, Australia. The 3-hour Smoking Cessation in Pharmacy (SCIP) workshop was designed on the principles of adult learning and incorporated multiple learning strategies. The Smoking Cessation in Pharmacy (SCIP) survey, a previously validated and psychometrically tested questionnaire, was utilised to assess students’ knowledge about current smoking cessation-related practices and their attitudes toward the potential roles of pharmacists in implementing smoking cessation services. The questionnaire was administered both before and after the implementation of the educational intervention. Data analysis of the completed questionnaires was conducted using the Predictive Analytics SoftWare. Pre- and post-education mean total knowledge and attitude scores (\pm SD) were calculated to evaluate the effect of the implemented workshop. A total of 131 pharmacy students completed the questionnaires. The pre-workshop mean total knowledge score was 65.8 ± 9.1 , and the total attitude score 86.4 ± 12.1 . The post-workshop mean total knowledge and attitude scores were 74.9 ± 8.1 and 88.8 ± 9.1 , respectively. Paired sample t-tests, used to compare the changes in the obtained scores, indicated a statistically significant improvement in students’ knowledge and attitudes after the completion of the workshop. The results of this study clearly highlight the significance of up-to-date education and professional

training in the area of smoking cessation to enhance healthcare professionals' awareness, confidence and practice skills.

Empowering Malaysian Pharmacists as Smoking Cessation Service Providers

M. Haniki Nik Mohamed

PharmD, Principal, Malaysian Academy of Pharmacy, Malaysia

The Certified Smoking Cessation Service Provider (CSCSP) program was launched in 2004 by the Malaysian Pharmaceutical Society and Malaysian Academy of Pharmacy. The main objective is to provide practicing pharmacists with specialized knowledge and skills to assist smokers quit. The program consists of two parts; didactic (one day face-to-face workshop) and experiential learning (one day attachment at any government's quit smoking clinic). The CSCSP manual covers epidemiology of tobacco use, tobacco control strategy, understanding and assessment of tobacco dependence, behavioural and pharmacological interventions and establishing cessation service. Experienced facilitators delivered lectures and facilitated workshops involving role-play based of real life-cases. Participants then perform a list of activities during the quit smoking clinic attachment, including observation and actual counseling of smokers under supervision of the service provider, whom will then sign the check-list form to verify accomplishment of tasks. In August 2010, an online CSCSP module was launched (www.acadpharm.org.my). Assessment is done via online quizzes where 80% is the passing mark. Feedback obtained from pharmacists have been overwhelmingly positive. To date, approximately 1700 have been fully certified as CSCSPs, majority being community pharmacists. The online module is also incorporated into training program of pharmacists under the Pharmacy Division, MOH and curricula of several pharmacy schools. A pre- and post-module assessment of pharmacy students demonstrated significant knowledge improvement; $X^2(1, N=130) = 32, p=0.003$ as well as counseling skills assessed via objective structured clinical examination. This provides additional evidence on the positive impact of CSCSP program for future pharmacists.

Training and involvement of the French community pharmacists in smoking cessation

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As early as 1996 the European Pharmacists' Charter on Action Against Smoking declared that "pharmacists are committed to tackling the smoking problem

as an integral part of their professional responsibilities and will take relevant action to eliminate the risks of smoking for the communities they serve". Although NRT is widely promoted in European community pharmacies training for smoking cessation skills are lacking.

In France, the 2009 HPST Law strengthened the mission of community pharmacists (CPh) in prevention, health education and primary care, a legal base for CPh to counsel smokers (with chronic conditions, pregnant women, parents of children exposed to passive smoking...). The pharmacist can also identify smokers when dispensing prescriptions for diseases for which tobacco is a proven risk factor. According to the smoker's profile the CPh can contribute to smoking cessation, directly at the pharmacy, and/or in partnership with physicians. After a description of training in smoking cessation provided in the 24 French faculties of Pharmacy, the specific actions implemented at the Faculty of Clermont-Ferrand will be detailed (i.e., training by development of situation by reversed pedagogy, by simulation and by role playing, by conception of written message or video which can be used on the screen of the "Pedagogic Pharmacy School" of our University). Demonstration of CPh practices and the results of a cohort study performed in Clermont-Ferrand, France, will illustrate the efficiency of trained CPh in smoking cessation.

Symposium 11

Quitting smoking in the European tobacco control context: Recent findings from the International Tobacco Control (ITC) Europe project

09:30 – 10:45 Room 0.8

The International Tobacco Control Policy Evaluation Project (the ITC Project) systematically evaluates key policies of the WHO Framework Convention on Tobacco Control (FCTC) at the population level. The ITC Project has conducted longitudinal cohort surveys in five European countries: France, Germany, Ireland, The Netherlands, and United Kingdom. This Symposium will explore key findings from these countries, including: the use of electronic cigarettes and cessation (ITC United Kingdom and United States surveys); the influence of advertising about electronic cigarettes (ITC Netherlands); validation of the Motivation to Stop Scale (ITC Netherlands); and the effects of price (ITC United Kingdom).

The effectiveness of e-cigarettes when used for quitting: Findings from the ITC United States and United Kingdom Survey

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Background and Aim: Many smokers report using e-cigarettes to quit smoking. However, there is little evidence on the effectiveness of e-cigarettes when used on quit attempts in 'real-world' population settings.

Methods: Data from Wave 8 (2010) and Wave 9 (2013) of the UK and US International Tobacco Control Surveys. Respondents who were smoking at Wave 8 and successfully followed-up at Wave 9 and reported making a quit attempt (N=514). At Wave 9, respondents were asked about types of help used at last quit attempt. Adjusting for predictors of quitting at Wave 8, e-cigarettes were compared to other methods of help using logistic regression analyses with quit for at least 30 days at Wave 9 set as the outcome.

Results: Model (1) Compared to all respondents not using e-cigarettes on their last quit attempt, respondents who used e-cigarettes were more likely to have quit ($p < 0.0001$; OR=6.06; 95% CI=2.87-12.78). Model (2) Respondents using e-cigarettes on their last quit attempt were more likely to quit than those using no medications or e-cigarettes to quit ($p < 0.0001$; OR=7.43; 95% CI=2.68-20.56), and those who used NRT ($p = 0.0062$; OR=4.35; 95% CI=1.52-12.45), but no different than those who used varenicline/bupropion ($p = 0.1096$; OR=2.51; 95% CI=0.81-7.74).

Conclusions: This study provides evidence of the effectiveness of e-cigarettes for quitting smoking. When used at last quit attempt, e-cigarettes were more effective than using no medications or NRT, but were not more effective than varenicline and/or bupropion. Limitations include possible differential recall of products used to quit.

Noticing e-cigarette advertisements and associations with use of e-cigarettes, denormalization of smoking, and quitting smoking: Findings from the ITC Netherlands Survey

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Background: Much attention has been directed towards the possible effects of e-cigarette advertisements on adolescent never smokers. However, e-cigarette advertising may also influence perceptions and behaviors of adult smokers.

Main objective: To examine whether noticing e-cigarette advertisements is associated with current use of e-cigarettes, denormalization of smoking, quit smoking attempts, and quit smoking success.

Methods: We used longitudinal survey data from two waves of the ITC Netherlands Survey among smokers aged 16 years and older ($n=1198$). Respondents were asked whether they noticed e-cigarettes being advertised on television; on the radio; and in newspapers or magazines in the previous 6 months.

Results: There was a significant increase in noticing e-cigarette advertisements between 2013 (13.3%) and 2014 (36.0%), across all media. The largest increase was in television. There was also a substantial increase in current use of e-cigarettes (from 3.1% to 13.3%), but this was not related to noticing advertisements ($OR=0.96$, $p=0.835$). Additionally, there were no significant associations between noticing advertisements and denormalization of smoking ($Beta=0.01$, $p=0.612$). Respondents who noticed advertisements were more likely to have made a quit smoking attempt in the same period ($OR=1.50$, $p=0.005$), but did not more often successfully quit smoking ($OR=1.13$, $p=0.609$).

Conclusion: Awareness of e-cigarette advertisements has increased sharply in the Netherlands between 2013 and 2014 along with increased use, but the two appear unrelated. The advertisements do not seem to have influenced denormalization of smoking or quit smoking success, but noticing them was associated with more quit smoking attempts.

External validation of the Motivation To Stop Scale (MTSS) and comparison with the Stages of Change: Findings from the ITC Netherlands Survey

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Background: The Motivation To Stop Scale (MTSS) is a single-item instrument which has been shown to predict quit attempts in the next 6 months in a previous validation study conducted in England. The aim of the current study was to determine the performance of the MTSS among a sample of Dutch smokers in predicting a quit attempt after 12 months. A secondary aim was to compare the predictive validity of the MTSS with that of a Stage of Change assessment.

Methods: Data from three consecutive waves of the International Tobacco Control (ITC) Netherlands Survey were analyzed (N=1272). The predictive validity of the MTSS was determined by a logistic regression analysis with scores in 2012 or 2013 predicting a quit attempt in the 12 months to 2013 or 2014. A Receiver Operating Characteristics (ROC) curve of the MTSS was calculated and compared with an ROC curve of a Stage of Change measure.

Results: A total of 450 smokers (35.4%) made a quit attempt after 12 months. Our results showed a good relationship between scoring on the MTSS and making a quit attempt in the next 12 months (OR=18.15, 95% CI=8.12 to 40.58 for the most versus least motivated group). The predictive validity of the MTSS (ROCAUC=0.68) was similar to that of a Stage of Change assessment (ROCAUC=0.65).

Conclusion: The MTSS is a valid instrument to measure smokers' motivation to quit in the Netherlands and the UK. It is also valid for predicting quit attempts after 12 as well as 6 months.

Trends in tobacco industry and consumer strategies which limit the impact of price on reducing smoking: Findings from the ITC United Kingdom Survey

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Background: Increasing the tax on tobacco is a very effective population-level intervention to reduce smoking. Yet both the tobacco industry (e.g. through brand segmentation) and smokers (e.g. through tax avoidance via duty free purchases or tax evasion by purchasing from illegal sources) engage in strategies that undermine this intervention. The objective of this study was to investigate the changing trends in these price minimizing strategies in the UK, focusing particularly on socio-economic status (SES) differences.

Methods: Data are taken from 9 survey waves of the International Tobacco Control (ITC) project, spanning a period from 2002 to 2013. We link adult UK smokers' reported usual brand, place of purchase and price paid, to tobacco industry and retail reports on recommended prices and brand categories (e.g. "premium" and "economy").

Results: Brand segmentation increased over time, with more brands available

in both the highest and lowest price categories. Segmentation was especially marked for Roll-Your-Own tobacco. SES differences also emerged, with low income smokers minimizing price by buying economy priced packs and turning to RYO, and high-income smokers more likely to buy in bulk or duty free. Some tax avoidance and evasion strategies declined over time.

Conclusion: Price minimizing strategies have changed over time in the UK, and differ by SES.

Recommendations: We recommend that tobacco control, public health, and governmental organizations closely monitor industry brand segmentation activities, as well as tax avoidance and evasion by smokers.

Workshop 4

09:30 - 10:45 Room 0.2/0.3

Effective writing and publishing scientific papers: choosing the right journal

D. Kotz

Heinrich-Heine-University Düsseldorf, Germany

How do I choose the right journal for my scientific paper? How does this choice affect my writing? What do I need to know about recent developments in electronic and open access publication? What is important when writing for a specific journal? What does the editorial process involve? How can I increase my chance of getting my paper under review and finally published? Issues like these will be addressed in a workshop aimed at effective writing and publishing scientific papers in international, peer-reviewed journal, with specific attention for research on nicotine and tobacco. During an interactive session we will use examples and exercises to learn the do's and don'ts of choosing the right journal for, and submission of, a scientific paper. This 75-minute workshop is primarily targeted at researchers who are in the early years of their writing career but is also interesting for more advanced researchers who wish to increase the impact of their publications and the joy of writing.

Oral Communications

Topic: 6 - Socially disadvantaged groups, Abstract Nr: 4

Tobacco control policy and socio-economic inequalities in smoking in 27 European countries

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Background: National tobacco control policies were positively related to smoking cessation across Europe in early 2000's, with no socio-economic inequalities. Objective: This study aims to assess if this association can be replicated with more recent data, from more countries, and also for smoking intensity.

Methods: We used data from three Eurobarometer surveys (2006, 2009, and 2012) from 27 EU member states, with a total study sample of 73,617 respondents. We used multilevel logistic regression models to study associations between the tobacco control scale (TCS) and both smoking cessation and smoking intensity. We assessed socio-economic inequalities for both education and occupation separately, with adjustment for age, sex, and survey wave.

Results: We found no significant overall association between the TCS and smoking cessation. We did observe an association with smoking cessation in the high educated (OR: 1.13, 95%CI: 1.08-1.19), but not in the low educated. No differences were found according to occupation. For smoking intensity, we also observed no overall associations with the TCS. There were significant associations among this middle and high educated and among the manual occupation group.

Conclusions: We were not able to replicate the previously reported association between national-level tobacco control policy and smoking behaviour. However, we did find evidence for associations among the high educated, suggesting a negative equity impact. This could have contributed to rising inequalities in smoking cessation throughout Europe during the 2000's.

Recommendations: Future tobacco control policies should be specifically and explicitly aimed at reducing socio-economic inequalities.

Topic: 6 - Socially disadvantaged groups, Abstract Nr: 51

Title: Kids Safe and Smokefree: A Multilevel Trial to Protect Children from Tobacco Smoke and Promote Cessation among Low-Income Parents

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Reducing childhood tobacco smoke exposure (TSE) in high-risk populations remains a public health priority. Parental smoking is the primary cause of child TSE. Pediatric clinic visits can motivate parents to quit smoking. However, smoking interventions are not routinely deployed and often lack sufficient intensity to promote sustained cessation. Our trial tested a multilevel intervention: a system-level pediatrics intervention combined with individual-level counseling to increase parents' motivation ("will") and skill to quit smoking and protect children from TSE. Three major health systems integrated "Ask, Advise, Refer (AAR)" guidelines into electronic health records. Investigators trained providers and used academic detailing to enhance TSE clinic messaging. After receiving clinic-level AAR, eligible parents were randomized to proactive telebased interventions

(either TSE/cessation counseling, or attention control/nutrition education). Smoking outcomes were assessed at 3-months via phone interview. AAR training results: over 350 providers referred parents to the trial; 80% of providers adhered to all training objectives. Parents' characteristics: mean age=33 years old, 83% female, 83% African American, 79% below poverty line. Mean child age = 5 years old. At 3-months, more parents in AAR+counseling vs. AAR+attention control adopted home smoking bans vs no ban (96% vs. 82%, OR=6.0); eliminated exposure to parents' smoke across settings (57% vs. 33%, OR=2.6) and quit smoking (30.4% vs. 8.5%, OR=4.9). Both groups demonstrate improved TSE protective behaviors, with moderately greater improvement among counseling parents than controls. Counseling promotes greater likelihood of quitting smoking, suggesting that integration of clinic- and individual-level intervention produces improved outcomes compared to standard pediatric AAR alone.

Topic: 6 - Socially disadvantaged groups, Abstract Nr: 83

Population-based interventions for smoking cessation among socioeconomically disadvantaged smokers: a randomized clinical trial of proactive tobacco treatment

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Background: Evidenced-based tobacco cessation treatments are underutilized, especially by socioeconomically disadvantaged smokers, which contribute to widening socioeconomic disparities in tobacco related morbidity and mortality.

Methods: The OPT-IN trial tested the effects of a proactive outreach tobacco treatment intervention on population-level smoking abstinence and tobacco treatment utilization among a population-based sample of socioeconomically disadvantaged smokers. Current smokers (N=2406) who were enrolled in the Minnesota Health Care Programs (MHCP), the state's publicly funded health care programs, were randomly assigned to proactive outreach (tailored mailings and telephone calls) and free cessation treatment (NRT and intensive, telephone counseling). The primary outcome was self-reported 6-month prolonged smoking abstinence at one year and was assessed by follow-up survey among all current smokers regardless of interest in quitting.

Results: The proactive intervention group had a higher long-term quit rate at one year than usual care (16.5% vs. 12.1%, OR 1.47, 95% CI 1.12-1.93). In selection models accounting for non-response, the effect of the proactive intervention on prolonged abstinence persisted (OR 1.39, 95% CI 1.10-1.71). Use of evidence-based tobacco cessation treatments were significantly greater among proactive outreach participants compared to usual care, including combination

counseling and medications (17.4% vs. 3.6%, OR 5.69, 95% CI 3.85-8.40).

Conclusions: Population-based proactive tobacco treatment increases engagement in evidence-based treatment and is effective for long-term smoking cessation among socioeconomically disadvantaged smokers. Dissemination of population-based proactive treatment approaches may be an effective strategy to reduce the prevalence of smoking and socioeconomic disparities in tobacco use.

Topic: 6 - Socially disadvantaged groups, Abstract Nr: 96

Socioeconomically disadvantaged Australian smokers' self-exempting beliefs and quit intentions

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Limited research has examined self-exempting beliefs about tobacco smoking in socioeconomically disadvantaged populations. Investigating beliefs used to rationalise or justify smoking will have important implications for the content of anti-smoking programs targeted at disadvantaged groups, who show the lowest rates of cessation. This study aimed to: 1) assess the prevalence of self-exempting beliefs among a sample of socioeconomically disadvantaged smokers, and; 2) identify associations of these beliefs, socio-demographic characteristics, and smoking-related cognitions with quit intentions. Current smokers seeking welfare assistance from a Community Service Organisation in NSW, Australia were invited to complete a cross-sectional touchscreen computer survey. Data was collected between March-December 2012. Responses to a 16-item self-exempting beliefs scale, intention to quit, smoker identity, and enjoyment of smoking were assessed. N=354 smokers (response rate 79%). Most participants earned

Topic: 37 - Smoking cessation treatment, Abstract Nr: 61

Engagement in Smoking Cessation Treatments and Quit Rates among Smokers with Lower Motivation to Quit

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Background: Current guidelines advise providers to first assess smokers' readiness to quit, and then offer cessation therapies only to smokers ready to quit and motivational interventions to smokers not ready to quit.

Objectives: We examined the relationship between baseline readiness to quit level and subsequent smoking cessation behaviors to determine the effect of proactive smoking cessation interventions on smokers at different stages of change.

Methods: Secondary analysis of a pragmatic clinical trial among 3006 smokers randomized to proactive care or usual care.

Results: At baseline, 35.8% of current smokers were in preparation, 38.2% in contemplation and 26.0% in precontemplation. Uptake of smoking cessation treatments varied by readiness to quit and was higher in proactive care across readiness to quit levels. Among smokers who were in preparation, 21.0% of proactive care achieved 6-month prolonged abstinence compared to 13.8% of usual care, OR 1.7 (95% CI 1.2, 2.4). Similarly, proactive care increased abstinence among smokers in contemplation (11.0% for proactive care vs. 6.5% for usual care, OR 1.8 (1.1, 2.8). Smokers in precontemplation quit smoking at similar rates (5.3% for proactive care vs. 5.6% for usual care, OR 0.9, 95% CI 0.5, 1.9).

Conclusions: Proactive care increased engagement in smoking cessation treatment across all levels of readiness to quit and smoking cessation among smokers in the preparation and contemplation stages but not among those in precontemplation.

Practice implications: Restricting cessation therapies to only those smokers who are ready to quit may result in lower use of treatment and lower smoking cessation rates.

Topic: 37 - Smoking cessation treatment, Abstract Nr: 2

Increasing implementation of effective smoking cessation strategies - The Quitstair

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Background: A number of countries need to significantly accelerate reductions in smoking rates to reach policy targets. The 'Quitstair' is a comprehensive stepped care model that encourages those who can quit with minimal intervention to do so, and offers more intensive support to those who need it.

Aim: To identify the uptake of the Quitstair model and cessation rates among proactively recruited community smokers.

Methods: A cohort pilot-test involving 250 current smokers from the general community in New South Wales, Australia. Random-digit dialling was used to identify households with a smoker and randomly select a smoker from each eligible household. Participants completed a telephone interview at recruitment and 4 months later. The stepped care intervention involved sequential steps through different types of support (e.g. written/online materials, Quitline telephone counselling, pharmacotherapy, referral) over a 4 month period. Intervention delivery was guided by a stepped care coordinator who contacted participants by telephone at 3, 7, 9 and 13 weeks.

Results: Approximately 55% of pro-actively-recruited smokers opted to enter the program. Drop-out rates at each step of the Quitstair ranged from 2% to 8% of remaining participants. The majority of participants: made at least one quit attempt; elected to follow the model and agreed to use more than one evidence-based strategy to assist in a quit attempt.

Conclusions: The Quitstair approach represents a shift towards a coordinated, systematic, and long-term model of care that includes repeated effort to assist individuals to use evidence-based strategies. A randomised controlled trial of the approach is planned.

Topic: 37 - Smoking cessation treatment, Abstract Nr: 78

Long-term use of nicotine replacement therapy in UK stop smoking services: prevalence and impact on biomarkers of nicotine exposure and stress

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Background: Long-term use of nicotine replacement therapy (NRT) for harm reduction (complete or partial substitution of cigarettes) is relatively uncommon in the UK general population and complete substitution is associated with decreased nicotine intake. However, as UK licensing has recently changed to incorporate harm reduction, more information is needed on the prevalence and impact of NRT use for this purpose in regulated national stop smoking services (SSS).

Main objective: To determine the prevalence of long-term NRT use and association with selected biomarkers among SSS clients.

Methods: SSS clients were asked about their NRT use and smoking status (CO-verified) at 12 months follow-up (N=1,047); a subsample (N=258) provided baseline and follow-up saliva samples analysed for cotinine (a nicotine biomarker) and alpha amylase (a stress biomarker).

Results: Of SSS clients 6.0% (95%CI 4.3-8.3%, N=35) were still using NRT at 12 months; abstainers were significantly more likely to be users than relapsers (OR 2.91, 95%CI 1.38-6.11). There was a significant NRT use by smoking status interaction on cotinine levels (Wald χ^2 (1)=5.3, p=0.021): abstainers who did not use NRT long-term had reduced cotinine levels at follow-up while current smokers and abstainers with long-term NRT use maintained baseline levels. NRT use did not change alpha amylase levels, irrespective of smoking status.

Conclusions: Long-term NRT use by clients is rare, suggesting limited, if any, impact of licensing changes on SSS. It does not impact stress biomarkers but contrary to general population findings, complete substitution maintains nicotine intake, indicating more effective NRT use by SSS clients.

Topic: 37 - Smoking cessation treatment, Abstract Nr: 104

Associations Between Adviser Personality and Client Quit Rates in Stop Smoking Services

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Background: The four-week CO-verified success rates of individual Stop Smoking Services (SSS) varies widely. Advisor personality may be one factor that explains this variation.

Aim: To determine if stop smoking advisors' scores on major dimensions of personality were associated with clients' four-week CO-verified quit status.

Method: QuitManager data from 1,958 treatment episodes completed by 19 stop smoking advisors in two SSSs were used in the analysis. Clients' four-week CO-verified quit status was the outcome variable. Five dimensions of advisor personality, as measured by the Ten-Item Personality Inventory, were included as predictor variables: openness-to-experience, conscientiousness, agreeableness, extraversion, neuroticism. Client (i.e. age, sex, ethnicity, medication use, social grade) and other advisor characteristics (i.e. age, sex, years of experience) were entered as confounding factors. Results: A multi-level random intercept model indicated that clients of advisors with a higher extraversion score had greater odds of being abstinent at four weeks (OR=1.15, 95% CI=1.03 - 1.18). None of the other personality dimensions were associated with client abstinence from smoking.

Conclusions: More extraverted stop smoking advisors appear to have greater success in advising their clients to quit smoking. If this finding is confirmed it could indicate useful areas to focus on in advisor training.

Topic: 37 - Smoking cessation treatment, Abstract Nr: 27

Treatment of tobacco dependence in the Czech Republic in 2015

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Background: Treatment of tobacco dependence and education system is growing constantly in the Czech Republic.

Objective: To describe system of education and practice in treatment of tobacco dependence in a Middle European country.

Methods: Summary of experiences from educational and other activities of the Society for Treatment of Tobacco Dependence.

Results: Brief intervention is required by law. It is applied by majority of doctors, but not majority of nurses or pharmacists. Education of medical doctors (N=40,000) is done via one-day in-person workshops, which are run several times per year under the Czech Medical Chamber, national guidelines for treatment of tobacco dependence were published in 2015. Intensive treatment is covered in 40 Centres for Tobacco-Dependent, interventions

are reimbursed by health insurance, but not medication. One-year abstinence in our centre is 34.6 % (N=4,355 patients). Nurses' (N=100,000) education is exponentially growing in last years: Since 2007, one-day workshops were run several times per year. Collaboration with the International Society of Nurses in Cancer Care with broad educational activities has taken place and national guidelines for nurses were published in 2015. Pharmacists (N=5,000) are more interested since 2014: about 100 pharmacies have created Centres for Smoking Cessation with trained staff (=elearning, two-days workshop and one-day practice in one of Centres for Tobacco-Dependent). National guidelines for pharmacists were published in 2014.

Conclusion: Treatment of tobacco dependence is still not fully recognized among other medical interventions, but situation is slowly improving. Consistent support from leading authorities is necessary for further growth.

Topic: 17 - Electronic cigarettes, Abstract Nr: 70

Transitions between smoking and e-cigarette use: A qualitative study of adults in London, United Kingdom

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Aims: E-cigarettes are a harm reducing substitute for tobacco cigarettes but their benefits are likely only optimised when people stop smoking altogether. However, little is known about the experience of transitioning between cigarettes and e-cigarettes. We explored smokers' and ex-smokers' experiences and motivations for starting and stopping e-cigarette use.

Methods: Semi-structured interviews with 30 participants in London during summer 2014 (17 female; 13 male) who were either smokers or ex-smokers and currently using or previously used e-cigarettes for at least a month. Audio recorded interviews were coded, and analysed thematically.

Findings: E-cigarette initiation was prompted by curiosity or friend's recommendation, predominantly with the goal of quitting tobacco cigarettes. Respondents' first experiences were mixed; most had tried a 'cigalike' type e-cigarette and did not think they matched up to tobacco cigarettes. Continued use required motivation and research or trial and error. Common reasons for stopping/continuing with e-cigarettes were their palatability, ability to satisfy cravings, cost and ease of use compared with smoking. Current limited knowledge of e-cigarettes and product limitations, including faulty products or nicotine running out, were also barriers to on-going use. E-cigarettes were commonly perceived as needing improvement, particularly in terms of product reliability and consistency. Experiencing perceptible health benefits and being a tactile behavioural hobby were positive benefits cited by continuing users.

Conclusions: E-cigarettes are most commonly used to quit smoking but persistence was largely needed initially as the experience of vaping was different from tobacco smoking. Transitions seemed dependent on product experience and motivation.

Topic: 17 - Electronic cigarettes, Abstract Nr: 31

Perceptions of risk and addictiveness of e-cigarettes among young adults

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Introduction: Among the adult population, studies have found that the prevalence of e-cigarette use is highest among young adults in particular. It is important to understand perceptions about e-cigarettes among young adults as they are prone to both experimenting with and solidifying substance use during this period. The current study examined associations between user status and both risk perceptions and perceived addictiveness among young adults.

Methods: Cross-sectional preliminary data were analyzed from Wave 1 of a rapid-response surveillance system of young adults ages 18-29 from Texas 2-year and 4-year colleges ($n=4,717$). Multinomial logistic regression was used to assess harm perceptions and perceived addictiveness of e-cigarettes among four categories of respondents: non-users, exclusive e-cigarette, exclusive cigarette and dual users.

Results: Significant associations were found between user status and perceived harm and addictiveness. Exclusive e-cigarette, exclusive cigarette and dual users were more likely to hold both medium ($OR= 1.93, 1.58$ and $1.63, p<.001$, respectively) and low ($OR= 4.16, 2.25$ and $2.44, p<.001$, respectively) perceived addictiveness as compared to high perceived addictiveness when compared to non-users. Dual users were more likely to hold medium ($OR= 1.96, p<.001$) perceived harm and exclusive e-cigarette and dual users were more likely to hold low ($OR= 3.05$ and $3.21, p<.001$, respectively) perceived harm as compared to high perceived harm when compared to non-users.

Conclusions: Young adults who rate e-cigarettes as low or medium on the continuum of harm and addictiveness may be more susceptible to use. Practitioners should incorporate these findings into appropriate risk communication on e-cigarettes.

Topic: 17 - Electronic cigarettes, Abstract Nr: 15

Progression to Combustible Cigarettes after Electronic Cigarette Use among U.S. Adolescent Neversmokers

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Objective: To determine whether baseline use of e-cigarettes among non-smoking and non-susceptible adolescents and young adults is associated with progression to cigarette smoking.

Setting and Participants: National U.S. sample of participants ages 16-26 years who were committed (attitudinally non-susceptible) never cigarette smokers when they completed baseline surveys in 2012-2013. Cigarette and e-cigarette use were assessed at baseline and one year later and multiple imputation used to address attrition.

Main Outcome Measure: We examined transitions between committed never-smoker, attitudinally susceptible never-smoker, and ever cigarette smoker using multinomial logistic regression and controlling for sex, age, race/ethnicity, maternal education, sensation seeking, parental, and cigarette smoking by parents & friends. Sensitivity analyses assessed varying approaches to missing data and recanting.

Results: Among the 694 respondents, 53.8% were female and 76.5% were non-Hispanic white. At baseline, 16 (2.3%) used e-cigarettes. Over the one-year follow-up, 11 of 16 (69%) e-cigarette users and 128 of 678 (19%) non-e-cigarette users progressed. In fully-adjusted models, baseline e-cigarette use was independently associated with progression to ever cigarette smoking (Adjusted Odds Ratio [AOR] = 8.3, 95% Confidence Interval [CI] = 1.2-58.6) and to susceptibility to future cigarette smoking (AOR = 8.5, 95% CI = 1.3-57.2). Sensitivity analyses yielded consistent results in level of significance and effect size.

Conclusions and Relevance: In this national sample of U.S. 16-26 year-olds, use of e-cigarettes at baseline was strongly associated with progression to cigarette smoking trial. These findings are based on small numbers, but if confirmed could somewhat undermine the harm-reduction value of e-cigarettes.

Topic: 17 - Electronic cigarettes, Abstract Nr: 23

Saliva cotinine and nicotine levels among tobacco cigarette smokers, electronic cigarette users, NRT users and dual users

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Significance: There is high variability across nicotine-containing products in nicotine content, yield, and delivery. Although these products differ in efficacy of nicotine delivery, users may titrate the drug to achieve desired blood levels. Concerns have been raised that smokers who use an additional product (dual users) may experience increased nicotine exposure when compared to single product users.

Objective: To assess the differences in nicotine intake among users of one type of nicotine-containing product and dual users.

Methods: Participants (N=181) were categorized into five groups: tobacco smokers, e-cigarette users, nicotine replacement therapy (NRT) users, and tobacco smokers who also use e-cigarettes or NRT (dual e-cigarette and dual NRT users, respectively). We collected saliva samples from the participants and measured cotinine and nicotine concentrations using gas chromatography. Saliva cotinine and nicotine concentrations were compared

among five groups using multivariate analysis controlling for sex, age, and ethnicity.

Result: Mean concentration (\pm SE) of cotinine in smokers was 355.5 ± 61.3 ; e-cigarette users 258.6 ± 61.5 ; NRT users 238.0 ± 58.9 ; dual e-cigarette users 235.3 ± 58.1 ; and dual NRT users 161.1 ± 55.9 ng/mL. Mean concentration (\pm SE) of nicotine in smokers was 388.2 ± 156.2 ; e-cigarette users 256.4 ± 156.7 ; NRT users 527.8 ± 150.2 ; dual e-cigarette users 458.7 ± 148.0 ; and dual NRT users 282.0 ± 142.4 ng/mL. There were no significant differences in saliva concentrations of both biomarkers among all groups of users ($p < 0.05$).

Conclusions: Our data suggest that nicotine intake is similar across users of different nicotine-containing products. Dual use was not associated with higher nicotine exposure when compared to the use of single product.



Posters

Topic: 1 - Adolescents, Abstract Nr: 11

Mapping the estimated smoking prevalence amongst adolescents in six European cities

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Background: The smoking prevalence as estimated by a young person (one aspect of subjective social norm) is strongly associated with smoking uptake. The aims of this study were to assess the determinants of estimated smoking prevalence and to assess the degree of clustering at the school and country level.

Methods: Data of 10,283 14-17 year old students in 50 secondary schools in six European cities were derived from the 2013 SILNE survey. The outcome variable was the estimated smoking prevalence in the school, measured on a 0-10 scale (10 represented 100% smoking prevalence). Multilevel linear regression models estimated the associations of individual and school-level characteristics with the estimated prevalence. The model including all variables was stratified by socioeconomic position (SEP).

Results: The estimated smoking prevalence was low in males, in non-smokers, in students with non-smoking friends, and students with high SEP. The estimated smoking prevalence was not associated with school policies or with the availability of cigarettes in the school surroundings. The determinants were very similar between low and high SEP. The variance attributable to school-level was larger in low SEP compared to high SEP (11 versus 7%), while variance attributable to country-level was smaller in low SEP (9 versus 18%).

Conclusion: In both high and low SEP, the estimated smoking prevalence in the school was lower in males, in non-smokers, in students with non-smoking friends. Variations between schools and countries indicate potentials to influence this aspect of subjective social norm.

Topic: 1 - Adolescents, Abstract Nr: 69

Validation of a nicotine dependence measure for adolescents (mFTQ): An international comparison

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Background: In 1996, a modified version of the Fagerstrom Tolerance Questionnaire (mFTQ) was derived to assess nicotine dependence among high-risk adolescent smokers (Prokhorov et al., 1996). This modified version containing seven items demonstrated good internal consistency and internal validity in U.S. participants.

Objectives: To test the internal consistency and validity of the mFTQ scale internationally.

Methods: Participants were recruited from countries enrolled in a pilot study to evaluate an eight-session teen smoking cessation program (Sussman, 2012). Seven countries, including Spain, China (Chen et al., 2002), Russia, India, Thailand, USA and Israel collected data on items comprising the mFTQ scale. Each item was scored using the original scoring protocol. Cronbach's alpha, inter-item and item-total correlations assessed the internal consistency of the scale. Validity of the mFTQ was established on the basis of associations between FTQ total scores and tobacco use indicators using regression analysis.

Results: Participants were 13-19 years of age, majority being male. Mean mFTQ values differed across countries with Russia, USA and Thailand having higher scores compared to other countries. All items were significantly correlated with total mFTQ score. Cronbach's alpha ranged from 0.42 to 0.67 since items comprising different aspects of adolescent nicotine addiction varied across countries. For instance frequent inhalation rates varied from 16% in India to 69% in Spain. Our presentation will examine these variations. For all countries the mFTQ score was significantly associated with tobacco use indicators.

Conclusion/ Recommendations: Our findings suggest that the mFTQ has potential for measuring tobacco dependence in adolescents (13-18 years) internationally.

Topic: 1 - Adolescents, Abstract Nr: 86

Smoking as an informed choice among young adult Maori and Pacific smokers

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Tobacco companies often describe smoking as an “informed adult choice”, which implies smokers fully assess the risks they face before consciously deciding to smoke and continue smoking. Because smoking prevalence is much higher among indigenous peoples and some ethnic minorities, we explored how Māori and Pacific young adults commenced smoking and the extent to which they made informed choices. Using Chapman and Liberman’s informed choice framework, we developed a semi-structured interview protocol and undertook 25 in-depth interviews with young adults who had commenced smoking after age 18, when they were legally adults. Interviews lasted 30–60 minutes; recordings were transcribed verbatim and analysed using a thematic analysis approach. We identified three key themes: contradictory identities; components of the informed choice framework (particularly limited understanding of risk and minimal personal acceptance of risk), and retrospective recognition of addiction. Few participants demonstrated more than a general awareness that smoking was harmful; few could identify more than two or three specific risks, even fewer understood the implications of those risks, and almost none showed any evidence they had assessed and personally accepted those risks. None understood addiction or how that would compromise the choices they could exert. The findings challenge industry arguments and suggest “informed choice” claims are little more than an attempt to hold smokers responsible for repercussions few understood and even fewer accepted.

Topic: 1 - Adolescents, Abstract Nr: 103

Tailoring Smoking Cessation Programmes to Young People, How do we Promote, Engage and Deliver such Programs Well? A Case Study of Sandwell Stop Smoking Service (a Partnership between DECCA and Quit 51)

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In the UK and USA, around one in four young people smoke, with between 80,000 and 100,000 young people initiating smoking every single day globally (Stanton & Grimshaw, 2013). Whilst there is some evidence to suggest community interventions reduce uptake of smoking in young people, evidence is neither strong nor concrete (Carson, Brinn, Labiszewski, Esterman, Chang, & Smith, 2013). Smoking cessation programs can often be difficult to engage young people, with the majority generally been tailored to the needs of adult smokers, which, perhaps do not meeting the needs of younger service users.

Sandwell, situated in West Midlands has a large proportion of young people smoking. Approximately 2.6% of 11-15 year olds, 7.2% of 15 year olds, and 12.4% of 16-17 year olds are estimated to be regular smokers (Public Health England, 2013). This highlights the need for targeted intervention with young people. As part of Quit 51's provider contract with Sandwell Council, Quit 51 wanted to better their service when it comes to helping younger people to quit smoking. As a result of this, a partnership was formed in Sandwell with DECCA (Drug Education, Counselling and confidential Advice) Service, who work with young people specifically targeting drug use. Along with DECCA, Quit 51 provided a service which; Engaged 12-17 year olds in their schools Liaised directly with schools in order to generate referrals into the service

Through posters displayed to students, and teachers / other school staff identifying students who smoke informing pupils of the service and encouraging them to use it

Offered a flexible, tailored approach to its patients using a variety of intervention techniques to help patients quit.

Offered a variety of resources such as; activity sheets, quit certificates, and text messages / telephone calls (if consented) in school holidays / between appointments with their stop smoking adviser to help patients to stay on track

This poster presentation will further detail the work Quit 51 and DECCA do in Sandwell, including case studies, quit rates and service pathway.

from 1st April 2013, a total of 161 young people have registered to use our service. 141 (88%) set a quit date, 56 (40%) quit at 4 weeks, and 38 (27%) quit at 12 weeks. Service feedback was also very positive with some service users stating: *"It was really helpful. The most helpful part was the adviser being so friendly every week and having access to NRT without having to buy it"*. This presentation will further detail our service model.

Topic: 1 - Adolescents, Abstract Nr: 116

Use intensity more important than choice of product? Results from a school-based cross-sectional study of adolescent cigarette and snus use

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Background: Snus use has increased dramatically in Norway for several years, and snus is now more prevalent than cigarettes in younger age groups.

Methods: With the aim to study the patterns of tobacco use among Norwegian adolescents, and inspect how user groups compare to each other in terms of other lifestyle and risk correlates, 736 15-year old tobacco users from a school-based cross-sectional survey were asked about their smoking and snus use status. Associations with alcohol use, leisure time activities, problem behaviors and gender were studied bivariately and in logistic regression. Principal component analysis was applied to extract leisure time activity- and problem behavior-factors.

Results: Dual use was very common, extending to 41.5% of the tobacco users,

and making separate analysis of smokers and snus users less informative. Broadly speaking, the tobacco users divided in three sub groups with regard to risk taking and lifestyle. All types of occasional tobacco users (snus, cigarettes or dual) were low on risk behaviors. All types of daily single-product users, including those who occasionally used the other product (i.e. dual users) scored higher than the occasional users on risk behaviors. Those who used both products daily scored higher on risk behaviors than all other tobacco user groups.

Conclusion: Fragmented use patterns in adolescence undermine the dichotomy often applied in research between smokers and snus users. Use intensity seems more important than choice of product.

Topic: 6 - Socioeconomically disadvantaged, Abstract Nr: 89

Australian socioeconomically disadvantaged smokers' responses to increasing cigarette prices: A qualitative study

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Despite substantial modelling research assessing the impact of cigarette taxes on smoking rates across income groups, few studies have examined the broader financial effects and unintended consequences of tobacco prices on smokers in the lowest income groups. This study explored how socioeconomically disadvantaged smokers manage smoking costs on limited budgets, and the impact this has on material deprivation, financial stress and cessation cognitions. Semi-structured interviews were conducted with 20 Australian smokers recruited from a Community Service Organisation providing crisis welfare assistance to disadvantaged people. Interviews explored the perceived impact of tobacco costs among socioeconomically disadvantaged smokers, including the effects on essential household expenditure, smoking behaviour and quit cognitions. Interviews were audio-taped, transcribed verbatim and analysed using thematic framework analysis. Instances of smoking-induced deprivation and financial stress, such as going without meals, substituting food choices, and struggling to pay bills in order to purchase cigarettes were routine experiences among socially disadvantaged smokers and their community. Price-minimisation strategies and sharing tobacco resources within social networks were used as strategies to maintain smoking. Participants reported tobacco price increases were good for preventing uptake, and that larger price rises and subsidised cessation aids were needed to help them sustain abstinence. Tobacco taxation policy should consider impact on the financial and material well-being of socioeconomically disadvantaged smokers who may find it difficult to quit unassisted. Governments should consider providing and promoting effective cessation aids and programs at the time of tobacco price increases to counter the negative consequences of rising costs and support quit attempts.

Topic: 7 - Addictions / relationship with other addictions, Abstract Nr: 47

Smoking and caffeine consumption: overlap in genetic and environmental influences

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Background: Smokers consume more caffeine than non-smokers. To what extent this association is due to an overlap in genetic and/or environmental factors is uncertain.

Objective: To investigate the co-occurrence of smoking and caffeine consumption with two genetically informative methods.

Methods: Self-reported smoking behaviour and caffeine consumption (coffee, tea, cola, energy-drinks) were measured in the Netherlands Twin Register (n=10,620 twins[3,479 complete pairs], mean age 33.0[SD 14.5], 68.1% female) and the Avon Longitudinal Study of Parents and Children (n=5,744, mean age 33.0[SD 4.5], 100% female). Bivariate twin models compared the similarity between monozygotic twins (~100% genetically similar) and dizygotic twins (~50% genetically similar) on current smoking (yes/no) and caffeine use (high≥400mg/low<400mg). In both cohorts, bivariate Genome-wide Complex Trait Analysis (GCTA) was performed, assessing genetic overlap between smoking and caffeine use from measured genetic variants.

Results: Of NTR participants, 17.2% currently smoked and 10.4% were 'high' caffeine consumers. In ALSPAC this was respectively 21.2% and 6.7%. Current smoking and high caffeine use were positively associated in both cohorts (p-value Chi-square<0.001). Correlational patterns in twin pairs confirmed that both genetic and shared environmental factors influence both of the phenotypes. Preliminary analyses imply that the overlap is mainly explained by environmental factors and for a small part by genetic factors, which will be verified with GCTA.

Conclusion: Current smoking and high caffeine use are positively associated. Analyses are ongoing and will be presented at the SRNT-E.

Recommendations: When investigating the mechanism underlying smoking behaviour, use of other substances like caffeine should be taken into account.

Topic: 7 - Addictions / relationship with other addictions, Abstract Nr: 95

Staff attitudes and perceived barriers towards smoking cessation care provision in Australian drug and alcohol treatment centres

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The delivery of smoking cessation care in the substance abuse treatment

setting is sub-optimal and infrequent. Understanding the barriers faced by staff and the current level of organisational readiness to change around addressing tobacco use in this setting is important in order to increase delivery of care. This study aimed to: 1) examine staff attitudes, barriers and perceived organisational readiness to change regarding smoking cessation care delivery to substance abuse treatment clients, and; 2) examine factors associated with positive attitudes to the provision of smoking cessation care. An online survey was conducted with 502 staff of 33 drug and alcohol treatment services across four mainland states of Australia. The majority of respondents supported the integration of smoking cessation intervention as part of routine care. The most important barriers identified were the lack of organisational funding to address smoking (30%) and client inability to afford smoking cessation medicines (28%). Staff scored their organisation's readiness to increase the delivery of smoking cessation care to their clients 6/10 ($SD=2.552$). These results indicate staff of drug and alcohol treatment services hold broadly positive attitudes towards addressing tobacco use with their clients and perceive their organisation ready to increase this provision of care despite some barriers. Examining current attitudes of staff in drug and alcohol treatment settings, organisational barriers and readiness will enable development and tailoring of organisational interventions to increase the likelihood of implementation and sustainability of evidence-based smoking cessation care.

Topic: 8 - Behavioural interventions, Abstract Nr: 17

Subtypes of smokers according to the restructured clinical scales (RC) of the MMPI-2-RF

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Background and aims: Smokers constitute a heterogeneous group that may require different types of intervention when quitting smoking. The aim of the present study was to identify subtypes of smokers according to their psychopathology.

Methods: Participants were 281 smokers (60.5% women) who sought psychological treatment for smoking cessation. The RC scales of the MMPI-2-RF were used for the assessment of psychopathology and the FTND, NDSS-S and SCID were used to assess nicotine dependence. Cluster analysis was conducted to identify the types of smokers in the sample.

Results: Smokers were grouped into two clusters. Participants classified as Cluster 1 ($n = 162$) were characterized by scores under 65 in the RC of the MMPI2-RF (indicating likely absence of psychopathology), a higher likelihood of being non-nicotine dependent, having a tertiary education, and being abstinent at the end of treatment and at 12 months follow-up. Participants classified as Cluster 2 ($n = 119$) were characterized by RC scores greater than 65 (indicating likely psychopathology), a higher likelihood of being nicotine

dependent, having some secondary education, and continuing smoking at the end of treatment and at 12 months follow-up.

Conclusions: Results indicate there is a group of smokers characterized by high levels of psychopathology, nicotine dependence and a low educational level. These smokers are likely to experience far greater barriers to quitting than other smokers. We should develop new treatments focused on these smokers as they represent a significant proportion of the population of smokers that require more attention and research.

Topic: 8 - Behavioural interventions, Abstract Nr: 50

Physical activity engagement affects mental health outcomes in a high risk, understudied population: A rationale for multiple health behavior change interventions with incarcerated female smokers.

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Prison systems are increasing efforts to promote health interventions among incarcerated populations. Smokers, in particular, are important targets of behavior change interventions due to elevated death and disease risk and greater challenges to healthy lifestyle adoption. This study examined healthy lifestyle attitudes and behaviors of female inmates enrolled in an indoor cycling + health education program to inform further development of prison-based, multiple health promotion efforts.

Methods: N= 209 incarcerated women completed baseline interviews prior to enrolling in a no-treatment control or an 8-week cardio-health intervention (an indoor cycling class during which health coaches presented didactic, print, and audio/visual information focused on smoking cessation, stress management, physical activity (PA), nutrition, and healthy weight management). Assessments focused on health behaviors, fitness, and attitudes.

Results: Participants were 33.8 (+ 10.3) years old; 47% smokers; 57% African American, 92% overweight or obese. Partial correlations controlling for days incarcerated suggested that smokers and nonsmokers had similar PA, diet behaviors, and fitness levels. However, smokers reported greater stress ($r = .19$, $p = .06$) and the perception of being less healthy ($r = -.24$, $p = .004$) than nonsmokers. Compared to sedentary smokers, smokers with weekly recommended PA reported greater quality of life ($r = .19$, $p = .03$) and perception of being healthy ($r = .29$, $p = .001$); and were less likely to have a mental health diagnosis ($r = -.29$, $p = .001$).

Discussion: Baseline associations between increased PA and mental health outcomes suggest potential benefits of a multi-behavior change intervention that promotes PA in a prison system targeting a high-risk group of female smokers.

Topic: 9 - Cigarette packaging, Abstract Nr: 38

An in-depth analysis of novel on-pack warning labels

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Increasing adoption of plain, or standardised, packaging creates an opportunity to refresh on-pack warnings, which typically feature health messages. Many young adult smokers regard health warnings as ineffective because they rationalise their behaviour and exempt themselves from the risks shown. To examine whether alternative warnings might elicit stronger cessation-related responses, we developed and tested 33 new images that featured social messages (including physical attractiveness, social justice, and industry denormalisation themes) as well as novel health messages. We conducted in-depth interviews with 26 young adult smokers (daily and intermittent) and recent quitters recruited using social media and community advertising. Interviews lasted between 45 and 75 minutes; recordings were transcribed verbatim and analysed using thematic analysis. Key themes highlighted the importance of disgust and fear arousal; some respondents saw “gore” and “grossness” as necessary to generate the dissonance that would cue quitting. However, images showing child labour, animal testing, and the effects of smoking on children also elicited strong responses, particularly from participants who either did not see health risks as personally relevant, or who had a nihilistic approach to their own well-being. Irrespective of their self-regard, these participants condemned behaviours that exposed vulnerable others to risks and removed choices they believed these individuals should have. While arousal of negative emotions such as fear stimulates cessation-related thoughts among some young adults, eliciting anger and outrage may more effectively promote quitting among others. To communicate with the varied sub-groups within the wider smoker population, policy makers should consider using more diverse warning messages.

Topic: 10 - Clinical, Abstract Nr: 88

Tobacco use in Opioid Dependent Users on agonist maintenance treatment

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Background: Despite higher smoking rates among opiate dependent persons on agonist maintenance treatment, there are limited studies available about tobacco use characteristics in this population, especially in India.

Objectives: This study aims to examine the pattern and severity of tobacco use, readiness to quit, perceived personal health risk susceptibility of tobacco use among opioid dependent users on agonist maintenance treatment with Buprenorphine at a community clinic run by National Drug Dependence Treatment Centre, AIIMS, New Delhi

Materials & methods: Thirty males on maintenance treatment were assessed using Tobacco Use Characteristics, Fagerstrom Test for Nicotine Dependence, Readiness to Change questionnaire and Smoker’s Perceived Health Risk Evaluation.

Results: Mean age of the sample was 41(S.D=13.5) years , most(73.4%) married with 60% subjects currently employed. Most were predominantly smokers(93.4%). Mean age of starting tobacco use was very early i.e 13±2.3 years. Most were chronic users(15±5 years) and mean number of bidi/day was 18.8±10. Mean FTND (measuring severity of dependence) score was 5.4 ± 2.3 among smokers. Majority(97%) reported decrease in tobacco use after entering agonist maintenance treatment. Perception of tobacco related health risk was found to be very low esp. about coronary heart disease and 75% subjects had never made an attempt to quit tobacco in the past. 40% were not interested in quitting.

Conclusions: Chronic use and low perceived harm from tobacco warrant immediate clinical attention. Education regarding grave health risk of tobacco use, motivation enhancement therapy and provision of treatment support for tobacco cessation are important.

Topic: 12 - Cognitive processes, Abstract Nr: 65

Nicotine deprivation leads to elevated neural representation of smoking-related cues in early object-sensitive visual cortex

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Cue-elicited craving and attention bias play a critical role in the maintenance of smoking addiction. Higher-order motivation and reward related brain regions have been implicated in these processes, while few imaging studies have found visual activity in response to smoking cues. We investigated whether tobacco addiction biases basic visual processing in favour of smoking-related images. We hypothesize that the neural representation of smoking-related objects in the lateral occipital complex (LOC) is elevated after a period of nicotine deprivation compared to a satiated state, but that this is not the case for object categories unrelated to smoking. Fourteen current smokers (≥ 10 cigarettes a day) were scanned in two sessions: once after 10 hours of nicotine abstinence and once after smoking ad libitum. Participants were presented with 24 blocks of 8 colour-matched pictures of cigarettes, pencils or chairs.

The functional data were analysed through a pattern classification approach. In right LOC, the classifier was able to discriminate between patterns of activity elicited by smoking related (cigarettes) and neutral objects (pencils) above chance levels only during abstinence but not during satiation. Moreover, discrimination between two neutral object categories (pencils and chairs) did not differ significantly between the deprived and satiated conditions. In left LOC prediction accuracies for both types of objects did not differ significantly between deprivation and satiation. The discriminability between smoking- and non-smoking visual objects is elevated in object-selective brain region right LOC after a period of nicotine abstinence. This indicates that attention bias likely affects basic visual object processing.

Topic: 12 - Cognitive processes, Abstract Nr: 117

Improving Evaluation of Smokers for More Successful Quit Attempts

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Following the SRNT-E sponsored training course on "Methodology of Clinical Research in Smoking and Setting Up and Running Specialist Smoking Cessation Service" in 12/2010, we have started a "Smoking Cessation Clinic" at Ege University Institute on Drug Abuse, Toxicology and Pharmaceutical Science (BATI), using SRNT-E guidelines.

Smoking cessation treatments are widely used in Turkey including NRT, Bupropion and Varenicline. Ministry of Health supports drug expense reimbursement (100% for Bupropion and Varenicline). Smoking cessation treatments consist of counseling and drug treatments but professional psychological support is not common in most of the clinics. Therefore besides drug expense reimbursement some other approaches such as psychological support should be added for more successful results.

100 smokers (male:58, female:42) who have consulted our clinic in last three months were evaluated using Fagerstrom Test for Nicotine Dependence (FTND) and The Autonomy over Tobacco Scale (AUTOS).

Demographic data: Age=38.28±11.48, Starting age (StAg)=16.71±3.51 Pack years (Py)=28.9, Previous quit attempts (Pqa)=0.91±1.14, Daily number of cigarettes=26.89±11.14, Longest time (days) without smoking previously=150.68±343.43, FTND scores= 7.21±2.19, AUTOS Total scores 22.02±7.42, Withdrawal score: 7.68±2.76, Psychological Dependence score: 6.28±2.94, Cue-Induced Urges to Use Tobacco score: 8.06±2.55

FTND and AUTOS scores indicate that highly addicted population consult for smoking cessation. Also these populations have not tried to quit several times before they consult our clinic. Psychological Dependence and Cue-Induced Urges to Use Tobacco scores show that not only drug treatment but also psychological support should be considered in order to obtain better quitting rates.

Topic: 13 - Community interventions, Abstract Nr: 29

Factors associated with the effectiveness and reach of NHS Stop Smoking Services for pregnant women in England

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The UK National Health Service provides Stop Smoking Services for pregnant women (SSSP) but there is a lack of evidence concerning how these are best organised. This study investigates influences on services' effectiveness and also on their reach.

Survey data collected from 121/141 (86%) SSSP were augmented with data from

Hospital Episode Statistics and the 2011 UK National Census. 'Reach', was defined as the proportion of pregnant smokers setting a quit date with SSSP support, and 'Effectiveness' as the proportion of those women who also reported abstinence four weeks later. A bivariate response Markov Chain Monte Carlo model was used to identify service-level factors associated with the Reach and Effectiveness of SSSP.

Providing the majority of one-to-one contacts in a clinic rather than at home increased both Reach (β : 6.97, 95%CI: 3.34, 10.60) and Effectiveness (β : 7.37, 95%CI: 3.03, 11.70). Reach of SSSP was increased when the population served was more deprived (β for increase in Reach with a one unit increase in deprivation (IMD) score: 0.55, 95%CI: 0.25, 0.85); where a lower proportion of people had dependent children (β : -2.52, 95%CI: -3.82, -1.22); and where a greater proportion were in professional occupations (β : -0.31, 95%CI: -0.59, -0.03). Effectiveness of SSSP was decreased in areas that had a greater percentage of people >16 years with no educational qualifications (β : -0.51, 95%CI: -0.95, -0.07).

To engage pregnant smokers and to encourage them to quit, it may be more efficient for SSSP support to be focussed around clinics, rather than women's homes.

Topic: 14 - Comorbidity, Abstract Nr: 22

Continued tobacco smoking, alcohol use and depressive symptoms in a sample of head and neck cancer patients about to undergo radiotherapy

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Available evidence indicates that approximately one-third of patients with head and neck cancer (HNC) continue to smoke after diagnosis.

This study aimed to describe the rates of comorbid smoking, alcohol use and depression within a sample of HNC patients about to undergo radiotherapy.

As part of a NHRMC funded randomised controlled trial, baseline data on smoking characteristics, alcohol use and depressive symptoms were collected from a sample of HNC patients from four Australian radiotherapy departments. Self-reported smoking status and biochemical verification (CO breath analysis)

were assessed (standard cutoff > 10 ppm = smoker and as recently recommended for clinical trials >3 ppm = smoker).

The mean age of patients ($n=207$) was 58 years and 82% were male. 12% ($n=25/205$) of patients identified as current smokers and CO verification using the standard cutoff score did not increase this percentage. However, the lowered cutoff identified 32% ($n=117/193$) of patients as smokers. 79% of self-reported smokers met criteria for comorbid hazardous alcohol use and at least mild depressive symptoms. The rate of self-reported CO verified current smoking status is lower than existing literature yet consistent with previously reported rates when applying the standard and newly recommended cutoff respectively, indicating that some patients may be continuing to smoke despite self-reporting abstinence. This is the first Australian study to biochemically verify self-report of smoking in HNC patients about to undergo radiotherapy and the co-occurrence of smoking, alcohol use & depressive symptoms indicate that interventions in this population may need to address these comorbid factors.

Topic: 14 - Comorbidity, Abstract Nr: 56

Smoking in Mental Health Care Facilities in the Netherlands

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Introduction: Although elevated smoking prevalence is a leading cause of the reduced life expectancy of people with mental illnesses, smoking cessation and smoking policy are low on the agenda of mental health care facilities in the Netherlands. This presentation therefore addresses the following questions:

1. What is the content and practise of smoking policy in mental health care facilities in the Netherlands?
2. Which factors determine whether therapists support their patients to quit smoking?

Methods: Literature research, qualitative evaluation of smoking policies of 64 mayor mental health / addiction treatment facilities, and an internet-based survey among 600 employees of these facilities.

Results: Smoking policies in the 64 facilities met the legal requirements. However, much variation in smoking policy and the strictness of enforcement was found. Second, the intention to help patients quit smoking is found to be associated with whether or not staff members have helped patients quit in the past, staff members' attitude towards their role in supporting cessation, attitudes regarding health effects of smoking, and whether they feel supported to do so by the treatment facilities. Therapists' own smoking status, gender, and smoking policy within the facility is found to be of limited importance.

Discussion: Based on this study it is concluded that there may be a need for universal smoking policy in mental health care facilities. Knowledge and skills of employees regarding smoking cessation should be enhanced through

training, and the awareness and availability of effective cessation interventions for mental health patients should be improved.

Topic: 15 - Cotinine / biomarkers for smoking, Abstract Nr: 21

Are patients with COPD fast metabolisers of nicotine?

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Fast metabolisers of nicotine smoke more cigarettes per day and are known to be at greater risk of lung cancer. Fast metabolisers also require higher doses of nicotine replacement therapy (NRT) for effective treatment. The aim of the present study is to examine the relationship between nicotine metabolic rate and severity of Chronic Obstructive Pulmonary Disease (COPD) in the Caucasian population. COPD was assessed via routine spirometry breath test pre and post bronchodilators and patients categorised by the COPD-X guidelines as having mild, moderate or severe COPD. Simultaneously urine samples for Cotinine (COT) and 3Hydroxycotinine (3HC) were taken to determine their ratio and hence the speed of nicotine clearance. The results from this cross-sectional scoping study to date show a moderate relationship as predicted by the hypothesis that a higher 3HC to COT ratio is associated with the severity of COPD. This knowledge may help determine the need for more intensive NRT treatment for smoking cessation in COPD patients which may change the clinical course and prevent the progress of COPD in at-risk patients.

Topic: 16 - Education/training-professionals, Abstract Nr: 97

Web-based education for nurses' in tobacco dependence treatment in the Czech Republic

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Background: To describe international collaboration in nurses' education in tobacco control.

Methods: In 2014, “Eastern Europe Nurses - Helping Smokers Quit” project of the International Society of Nurses in Cancer Care delivered educational webinars about tobacco dependence and its treatment: one focused at tobacco dependence and its treatment, on tobacco dependence and oncology. Each were approximately 30 minutes. To assess the impact of these webinars, we have contacted nurses via online advertisement prior and 3 months after webinar education with request to fill in online survey assessing their daily practice, knowledge and attitudes in tobacco dependence treatment. Together, 370 nurses completed baseline questionnaires and 286 nurses completed the 3 months follow-up survey. 277 valid questionnaires were used for analyses. Nurses were mainly female (270/277) with the mean age 42.83 yrs \pm 9.37 and mean duration of practice 20.84 yrs \pm 10.67. While majority were never smokers (159/277, 57.19%), one quarter were past smokers (N=72/277, 25.9%) and the rest current smokers (N=47/277, 16.91%).

Results: Three months after the webinar education, attitudes of nurses changed significantly: increase in brief interventions was noticed - ask ($p=0.007$), advise ($p=0.03$), assess ($p=0.002$), assist ($p=0.002$), while recommendation of quitline ($p=0.0005$) and smoke-free home ($p<0.0001$) were also more frequent. Nurses also realized overall importance of their involvement in tobacco control ($p<0.0001$).

Conclusion: Web-based education for nurses' lead to significant increases in delivery of brief interventions, recommendation of quitline and smoke-free homes. Nurses reported improvement in the importance of their involvement in tobacco control.

Topic: 17 - Electronic cigarettes, Abstract Nr: 6

Adverse Effects Associated with Electronic Cigarette Use: a Concept Mapping Approach

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Background: Electronic cigarettes (ECIGs) continue to grow in popularity, but little is known about the adverse effects associated with ECIG use.

Objective: The purpose of this study was to use concept mapping (CM) - an integrative mixed method participatory approach that incorporates group-level processes and multivariate analyses - to examine and summarize adverse effects associated with ECIG use among adults.

Methods: ECIG users ($n=111$) recruited through means including Craigslist, online “vapor” forums, and vape conferences and conventions completed an online CM module. The module included brainstorming statements to finish the focus prompt “<i>A specific negative or unpleasant effect e., physical or psychological) that I have experienced either during or immediately after using an electronic cigarette device is...” Participants sorted the statements and rated whether they had experienced the events in the statements.

Results: Multivariate analyses generated a map revealing five categories of adverse effects associated with ECIG use: Stigma, Device/Vapor Problems,

Worry/Guilt, Addiction Signs, and Physical Effects. ECIG users were more likely to report experiencing adverse events from the Stigma and Device/Vapor Problems categories compared to the Worry/Guilt, Addiction Signs, and Physical Effects categories. Participants differed in their reports of experiencing adverse events based on ECIG use characteristics.

Conclusions: The concept mapping model from this study identifies that there are both physical and psychological adverse outcomes associated with ECIG use.

Recommendations: If ECIGs are to be regulated, policy makers should attempt to minimize the likelihood of the adverse effects that may be associated with ECIG use.

Topic: 17 - Electronic cigarettes, Abstract Nr: 34

Effects of Electronic Cigarette Liquid Nicotine Concentration on Plasma Nicotine and Puff Topography in Electronic Cigarette Smokers

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Electronic cigarettes (ECIGs) aerosolize a liquid that usually contains humectants (propylene glycol and/or vegetable glycerin), flavorants, and the dependence-producing drug nicotine in various concentrations. This laboratory study examined the relationship between liquid nicotine concentration on plasma nicotine concentration and puffing behavior in experienced ECIG users. Sixteen participants used a 3.3-volt ECIG battery attached to a 1.5-ohm dual-coil "cartomizer" loaded with 1 ml of a flavored propylene glycol/vegetable glycerin liquid to complete four sessions that differed by nicotine concentration (0, 8, 18, or 36 mg/ml). In each session, participants completed two 10-puff ECIG use bouts (30-sec interpuff interval) separated by 60 minutes. Venous blood was sampled to determine plasma nicotine concentration and puff duration, volume, and flow rate were measured. Immediately after bout 1, mean plasma nicotine concentration was 5.5 ng/ml (SD=7.7) for 0 mg/ml liquid, with significantly higher mean concentrations observed for the 8 (mean=17.8 ng/ml, SD=14.6), 18 (mean=25.9 ng/ml, SD=17.5), and 36 mg/ml (mean=30.2 ng/ml; SD=20.0) liquid concentrations; a nearly identical pattern was observed for bout 2. Puff topography data were consistent with previous results in this population and revealed few significant differences across conditions or bouts. This study demonstrates a relationship between ECIG liquid nicotine concentration and user plasma nicotine concentration in experienced ECIG users. Some ECIGs may deliver nicotine to users in a manner that appears to exceed the nicotine delivery profile of a combustible tobacco cigarette, though the public health rationale for this excessive nicotine delivery is uncertain.

Topic: 17 - Electronic cigarettes, Abstract Nr: 35

A qualitative analysis of vaping among young adult smokers and non-smokers

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Many studies have documented vapers' attributes, but few have explored vaping motivations or practices. Vaping uptake among young adults is of particular interest as they have greater risk and experimental propensities, and tobacco companies have previously targeted them. Using social identity theory, we explored how vaping initiation and use occurs in social and individual settings, and examined how vapers construct and communicate social identities. We conducted 16 in-depth interviews with young adult vapers from New Zealand (where nicotine-delivering vaporisers cannot legally be sold). Participants were aged 18 to 30 and recruited using social media and community advertising. The interview protocol explored smoking and vaping, initiation circumstances, devices used, marketing exposure, and perceptions of relevant regulation. Interviews lasted 45-70 minutes and were transcribed verbatim; we analysed the data using a thematic analysis approach. Many participants had seen vaping discussed and promoted via social media and regarded it as experimental, yet safe. Nearly all had first vaped in a social setting where vaping allowed them to assert themselves against prevailing norms without risking the stigma they associated with smoking. Mavens had highly personalised vapourisers and acquired desired social attributes by displaying conspicuous consumption rituals. Participants saw vaping as acceptable, yet rebellious and cool; many saw their device as unique, yet felt connected to other through shared displays of "tricks" and via technological wizardry. Because few participants had considered nicotine addiction, and several had continued to smoke, policy makers should consider wider population health effects before allowing the promotion and sale of vaporisers.

Topic: 17 - Electronic cigarettes, Abstract Nr: 49

Development of an e-cigarette purchase task: A qualitative study

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Behavioral economic purchase tasks, which estimate the reinforcing efficacy of drugs by asking participants how much they would purchase of a drug in one day at increasing prices, have been successfully developed for cigarettes and widely used to predict real-world outcomes. However, a validated purchase task does not yet exist for e-cigarettes. Development of such a task is challenging due to the variety of devices available. To identify the relevant units, scale, and wording for an e-cigarette purchase task, focus groups (N= 5 groups, 2-7 participants per group) consisting of current e-cigarette users were conducted. Participants completed an e-cigarette purchase task (e-CPT) which asked how many puffs of their e-cigarette they would purchase if they cost various amounts of money (ranging from free to US\$5.00 per puff). The data indicated that the appropriate unit for an e-CPT varied across device type. Participants who primarily used refillable devices and purchased nicotine liquid felt that units such as milliliters would more accurately reflect their

purchasing behavior. Participants who used disposable or cartridge-based devices reported that the most relevant unit for them was the individual device or cartridge; however, they reported rarely buying more than one per day. In general, the average price at which they would no longer purchase puffs (~\$.50-2.00 each) and maximum amount spent (~\$2-5 per day) were much lower than those seen for purchase tasks with traditional cigarettes. A validated e-CPT will be an important measure for future studies of the reinforcing efficacy of e-cigarettes.

Topic: 17 - Electronic cigarettes, Abstract Nr: 72

Effect of liquid composition on particle size distribution and nicotine yield of electronic cigarette aerosol

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Background: Electronic cigarettes (ECIGs) heat and vaporize a solution of nicotine in propylene glycol (PG) and vegetable glycerin (VG). Reports of nicotine delivery associated with ECIG use vary widely. Some studies report negligible boosts in plasma nicotine levels while others report combustible cigarette-like delivery. Variables affecting nicotine delivery may include the total mass and particle size distribution (PSD) of the ECIG aerosol from a given product. The aim of this study was to analyze the effect of PG/VG ratio on nicotine yield and PSD of ECIG mainstream aerosol.

Methods: Aerosols were machine-generated from a tank-type ECIG using 10 solutions spanning a range of 100/0 to 0/100 PG/VG. The ECIG power and puffing regimen were held constant. Total particulate matter (TPM) was measured gravimetrically and PSD of aerosols produced by 3 different solvent ratios (100/0, 70/30, and 0/100) were measured. Mass PSD was measured using a cascade impactor and number PSD was measured using a fast electrical mobility spectrometer. Nicotine yields were measured using GC-MS.

Results: Greater liquid PG concentrations resulted in higher TPM and nicotine yields. On average, $76 \pm 7\%$ of the aerosol mass fell in the 0.5-1 μ m size range, and mass mean diameter ranged between 700-880nm for three solvent ratios. The particle number distribution peaked at 200nm in the 0/100 case and 100nm in the 100/0 case.

Conclusion: For a given nicotine liquid concentration, power input, and puff topography, greater PG content will result in greater nicotine emissions and aerosol concentration. Measured variations in PSD are likely not large enough to impact aerosol delivery.

Topic: 17 - Electronic cigarettes, Abstract Nr: 82

Use of electronic cigarettes before and during pregnancy

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Introduction: Electronic cigarette (e-cigarette) use is rapidly gaining in popularity. However, little is known about predictors and reasons for e-cigarette use by women of reproductive age, a group for which the potential risks and benefits of e-cigarette use are of particular interest.

Methods: As part of a clinical trial for smoking cessation, we surveyed pregnant smokers about their use of e-cigarettes and previous use of any adjunctive treatments for smoking cessation. We queried a subgroup of the women regarding their e-cigarette use during pregnancy.

Results: Forty-one percent (45/110) of participants had previously tried e-cigarettes. Ever users smoked more cigarettes per day before pregnancy ($p=0.029$), had a greater number of previous quit attempts ($p=0.041$), had lower confidence in their ability to quit smoking (self-efficacy) ($p=0.025$), and were more likely to have a history of substance abuse ($p=0.029$) than never users. Sixteen percent of participants (18/110) reported previous use of e-cigarettes for smoking cessation, which was more frequent than the use of any specific FDA-approved smoking cessation medication. Fourteen percent of participants (9/65) reported e-cigarette use during pregnancy, most commonly to quit smoking. Lower self-efficacy and a history of substance abuse were associated with e-cigarette use during pregnancy.

Conclusions: Use of e-cigarettes to quit smoking may be common in female smokers of reproductive age, including pregnant women. Self-efficacy and history of substance abuse may be associated with e-cigarette use in this population.

Recommendations: Further research is needed to determine the risks and benefits of e-cigarettes in pregnant women.

Topic: 17 - Electronic cigarettes, Abstract Nr: 99

Investigation on e-liquids: chromatographic content analysis & effects on cultured human liver cells

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While the debate on whether electronic cigarette (e-cigarette) is a smoking cessation method or not is still being argued, e-cigarettes, which are designed to mimic smoking experience, have become popular worldwide. However, two problems about these products have come into prominence: (i) inconsistency between label and contents, and (ii) unknown health effects.

Aim of this study is to develop methods that are capable of analyzing the contents of electronic cigarette refill solutions (e-liquids) accurately and to enlighten content-effect relation by determining the effects of these substances on cell viability *in vitro*.

High-performance liquid chromatography (HPLC) equipped with diode array detector (DAD) was used to determine nicotine levels of the e-liquids. Glycerol

and propylene glycol analyses were conducted with gas chromatography/mass spectroscopy (GC/MS). Human normal liver epithelial cell line THLE-2 was used to assess the effects of e-liquids on cell viability. Dose dependent cytotoxicity was measured by using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay.

A linear nicotine calibration plot was obtained with the equation of $y = 29,637x + 62,089$ ($R^2 = 0,999$). Nicotine levels were found to be in concordance with product labels of the e-liquids tested. Cell culture studies showed that IC_{50} values were inversely proportional with the amount of nicotine. Main cytotoxic effects of e-liquids on liver cells arose from the nicotine in our model which may be further subjected to change with other compounds such as flavors used. E-liquid composition should be audited to ensure that it reflects the product label.

Topic: 17 - Electronic cigarettes, Abstract Nr: 105

Quitting Smoking with an Electronic Cigarette - A Helpful Addition to a Quit Attempt or a Hindrance? An Analysis of Stop Smoking Service Users Who have used an Electronic Cigarette as a Sole Treatment or Alongside Licenced Treatments during their Quit Attempt

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Stop smoking services in the UK have seen a steady decline in uptake over previous years. This decline has been attributed to a number of factors, one including the rise of e-cigarette use. Whilst knowledge on the safety and effectiveness of e-cigarettes is still debateable, it is estimated that around 2.1 million people are currently using electronic cigarettes in the UK (ASH, 2014). With users taking up e-cigarettes for a number of reasons including for temporary abstinence, cutting down on the amount of cigarettes smoked, and their use as a method of quitting smoking (ASH, 2014).

Anecdotal evidence from qualitative research suggests that e-cigarette users find e-cigarettes effective at managing cigarette / nicotine cravings and preventing relapse compared to Nicotine Replacement Therapy (NRT) where users have cited feeling negative towards its side effects and feel these medications are ineffective at preventing a relapse (Barbeau, Burda, & Siegel, 2013). Evidence from previous qualitative work suggests users to benefit from e-cigarette use, however, there is limited research as to the effectiveness of these devices in aiding a quit attempt. Brow, Beard, Kotz, Michie, and West (2014) found in a study of real-world effectiveness of e-cigarettes that e-cigarette users were 1.63 (95% CI= 1.17-2.27) times more likely to report abstinence from smoking compared to patients using just NRT (purchased over-the-counter with no behavioural support).

This study will examine e-cigarette users and their quit rates from a real life data set of patients accessing 10 Quit 51 Stop Smoking Services across the UK. From this data set of over 80,000 quit attempts we will compare e-cigarette users (ECU) and non-e-cigarette users (NECU) in several ways. We will be

analysing the following; (1) Overall, do more ECU successfully quit at 4 / 12 weeks compared to NECU (irrespective to whether an e-cigarette was used alone or alongside a licenced treatment to quit), (2) Does using an e-cigarette (i) alone or (ii) alongside a licenced treatment produce larger quit rates at 4 / 12 weeks compared to using a licensed treatment alone, and (3) are there any differences between lost to follow up / relapse rates between ECU and NECU? Qualitative exploration of individual patients using an e-cigarette as; (a) a sole method of quitting smoking, (b) alongside another licenced treatment, (c) patients who have not used an e-cigarette as part of their quit attempt will be explored. This is to gain insight into; reasons why these devices have been chosen as part of a patients quit attempt, and how they have benefited / not benefited a patient with regards to how successful their quit attempt was. The following presentation will detail these study findings.

Topic: 17 - Electronic cigarettes, Abstract Nr: 114

Effects of chemical compositions in e-liquids on human pharyngeal carcinoma cells

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Electronic cigarettes gained popularity worldwide. Correspondingly, data on their toxicity profiles have been increased in past years.

This study aims to investigate the effects of various electronic cigarette refill solutions (e-liquids) on pharyngeal carcinoma cell viability in accordance with their nicotine and supplementary contents.

E-liquid samples were grouped as same nicotine levels/different flavors or same flavors/different nicotine levels. Human pharyngeal carcinoma cell line (Detroit 562) were grown in 96 well plates, and then incubated with e-liquid samples for 24 hours. Cell viability was assessed with 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay. Nicotine and supplementary contents (glycerol and propylene glycol analyses) were determined *via* high-performance liquid chromatography (HPLC) and gas chromatography/mass spectroscopy (GC/MS), respectively. E-liquids had both cytotoxic and proliferating effects based on doses and flavors used. At lower doses, they inhibited cell proliferation in pharyngeal carcinoma cells; most inhibition was seen in cappuccino with 71.6% viable cells compared to control. However, at higher doses this effect was reversed in favor of cell growth in samples containing cappuccino and strawberry flavors, 112.6%, and 105.6% viable cells, respectively. This was not the case for caramel flavor with 16.5% and 14.2% cell viability at corresponding doses that induced cell growth for cappuccino and strawberry flavors, respectively. Total outcome of e-liquids strongly depends on the ingredients, especially flavors used and shifts from cell inhibition to cell growth with the doses used in carcinoma model. Further research regarding dose-dependent mechanisms of action in both healthy and carcinoma cells is required. The Scientific and Technological Research Council of Turkey, Project#:114Z687

Topic: 17 - Electronic cigarettes, Abstract Nr: 120

Use of electronic cigarettes among adolescents in Norway

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Source of funding: Norwegian Institute for Alcohol and Drug Research (self-funded)

Conflicts of interests: None declared

Background: Concern regarding possible health effects of vaping of electronic cigarettes (e-cigarettes) is expressed. There is also the worry that vaping might lead to uptake of tobacco use among adolescents. The main objective was to study the existence of vaping among Norwegian adolescents, and to explore transitions between e-cigarettes and tobacco use.

Method: The sample holds 737 respondents from age 13 to 17 years (8th through 12th grade) responding to an electronic questionnaire at school in October 2014 and again six months later. The adolescents responded to questions about tobacco and vaping habits. This study represents the first phase of a large-scale longitudinal study starting autumn 2015. Descriptive statistics was used in the analyses.

Results: Out of 737 students, 163 smoked cigarettes at baseline, follow-up or at both waves, 195 used snus while 145 used e-cigarettes. Out of 30 students who used only e-cigarettes at baseline (no other tobacco products), nine (30 %) started with snus or cigarettes between baseline and follow-up. 33 students initiated e-cigarette-use between baseline and follow-up. Out of these, 15 used tobacco at both baseline and follow-up and six started to use tobacco in the same period, i. e. they were dual users of tobacco and e-cigarettes.

Conclusion: E-cigarette use was nearly as widespread as cigarettes, and dual use was relatively common. E-cigarettes preceded tobacco use for 9 out of 30 pure e-cigarette-users.

Recommendation for practice: We still know too little about the transitions between different nicotine products, and more research regarding this issue is needed.

Topic: 19 - Harm reduction, Abstract Nr: 64

Reduced exposure to harmful and potentially harmful constituents after five days of Tobacco Heating System 2.2 of use: A comparison with continued combustible cigarette use or smoking abstinence [Poland]

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This study is part of a global clinical program to assess Tobacco Heating System 2.2 (THS 2.2). The objective was to assess the reduction in exposure to 14 harmful and potentially harmful constituents (HPHCs) after 5 days of ad libitum use of THS 2.2 compared to continue smoking combustible cigarettes (CC) and smoking abstinence (SA).

This was an open-label, randomized, controlled, 3-arm parallel group, confinement study in 160 healthy smokers aged between 21 and 65 years. Smokers smoked their CC at baseline for 2 days, and were subsequently randomized to continue to smoke CC, to switch to THS 2.2, or to stop smoking for 5 days. Twenty-four hour urine was collected to evaluate the levels of BoExp using validated methods. This study was conducted according to GCP and is registered in ClinicalTrials.gov, number NCT01959932.

At the end of exposure, the levels of BoExp were significantly reduced by at least 50% in the THS 2.2 arm as compared to CC, approaching results obtained in the SA arm. The reductions were observed within 24 hours of starting THS 2.2 use. The average daily product use over the study slightly increased in the THS 2.2 arm, and remained in the same range in the CC arm. The Nicotine Equivalents were similar in both arms throughout the study. THS 2.2 was well tolerated. THS 2.2 showed a significant reduction in exposure to HPHCs after 5 days of use, as compared to CC, approaching levels of HPHCs observed after 5 days of SA.

Topic: 20 - Health consequences, Abstract Nr: 10

Dr. Nicolaes Tulp (1593 - 1674) on tobacco smoking and lung pathology in 1641

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The adverse effects of smoking on the lungs became generally recognized in the 20th century. However, already in the first half of the 17th century Dr. Nicolaes Tulp (1593 - 1674) is said to have related smoking with lung pathology. Tulp's original text is, however, not widely known and therefore it is interesting to discuss this work to enhance our knowledge of the early history of smoking and related diseases.

Tulp's original Latin text (1641) and the first Dutch translation of it (1650) were studied and translated into English. The text was reviewed in the context of Tulp's work, and the generally held views in those days of the relation between smoking and disease.

In the sixth case of the first volume (of three) of his 'Observationes Medicae' (1641) Tulp reported a drunk young man, who had died after being assaulted, and who at obduction presented visible abnormal lung tissue. Although Tulp described the - in those days - presumed beneficial effects of smoking, he also discussed the possibility of harmful effects of tobacco smoke on lung tissue. He warns for excessive smoking (and alcohol use), but he does not describe smoking as an addiction.

Tulp was one of the first physicians, in 1641, to describe and warn for the potential harmful effects of smoking on the lungs. He advocated moderate and not excessive use of tobacco. As our current knowledge of the early history of smoking related diseases is still limited, more research is necessary.

Topic: 20 - Health consequences, Abstract Nr: 16

Assessing the possible role of intrauterine effects in the association between maternal smoking during pregnancy and offspring depression in the Avon Longitudinal Study of Parents and Children using partner smoking as a negative control

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Offspring of mothers who smoke during pregnancy have greater risk of developing depression in adolescence. However, it is unclear whether this association is due to intrauterine effects or to confounding by environmental or genetic factors. We aimed to investigate the possible role of intrauterine effects of smoking on depression by using partner smoking during pregnancy as a negative control exposure for maternal smoking during pregnancy. We compared the associations of maternal and partner smoking during pregnancy with offspring depression in the Avon Longitudinal Study of Parents and Children. Smoking during pregnancy was defined as any report of smoking at any time during pregnancy. Offspring depression was measured at age 18 years using the Computerized Interview Schedule-Revised. Analyses were conducted using logistic regression, adjusting for potential confounders. Of the 14,544 pregnant women enrolled into the study, full data for analysis was available for 3,100 women, partners and their offspring. There was some evidence that maternal smoking during pregnancy was associated with higher odds of offspring depression (OR 1.44, 95% CI: 0.99, 2.07), but no clear evidence that partner smoking was associated with offspring depression (OR 0.87, 95% CI: 0.63, 1.20). There was some statistical evidence that the estimate for maternal smoking differed from that of partner smoking ($p=0.04$). Maternal smoking during pregnancy was more strongly associated with offspring depression at age 18 years than partner smoking, which is consistent with a possible intrauterine effect of smoking on offspring depression. These findings could further inform public health messages around smoking in pregnancy.

Topic: 20 - Health consequences, Abstract Nr: 18

Smoking status as a predictor of antidepressant medication

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Background: Smokers are more likely to have a history of depression than non-smokers, and persons with depressive disorders tend to be more often smokers than people in good mental health.

Objective: We aimed to study whether smoking status in 1990 predicts use of antidepressant medication in 10 years of follow-up (1995-2004).

Methods: The Finnish Twin Cohort is a longitudinal study of same sex twin pairs born in Finland before 1958, with a baseline survey in 1975. In 1990 a third survey

was conducted among twin pairs born in 1930-57 (response rate 77%). Antidepressant purchases during 1995-2004 from the national prescription register were linked with the twin cohort in order to access users of antidepressant medications. The 1990 questionnaire assessed, i.e. smoking status and depressiveness based on the Beck Depression Inventory. There were 10,768 individuals with data on smoking and depression.

Results: Covariate-adjusted logistic regression and incidence analysis showed that daily smokers at baseline had significantly elevated risk for purchases of antidepressants during follow up. In conditional logistic regression among discordant twin pairs who were not depressed at the baseline, the daily smoking twin had a two-fold risk (OR= 2.0, 95% CI 1.15-3.48) for buying antidepressants during follow up compared to their non-smoking co-twin (Monozygotic pairs: OR=2.14, 95% CI=0.54-8.52; Dizygotic pairs: OR=1.86, 95% CI=1.01-3.42).

Conclusion: Within-family analyses suggest that daily smoking is a significant risk factor for purchases of antidepressant medication compared to never smoking.

Recommendation: Smoking cessation should be addressed more carefully and effectively among depression patients who are smokers.

Topic: 20 - Health consequences, Abstract Nr: 25

Smoking status moderates the impact of overweight on abdominal obesity

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Background: The relationship between smoking and obesity is complex. Daily smokers have smaller average BMI (body mass index) than never smokers but they may still be at higher risk for abdominal obesity.

Objectives: The main objective was to investigate if smoking status moderates the risk of overweight for increased waist circumference (WC).

Methods: Total of 3716 participants were analyzed. Because of significant smoking status-by-BMI-interaction, they were categorized into twelve groups according to their BMI (normal vs. overweight) and smoking status (never smokers, recent quitters, former smokers, occasional smokers and light and heavy daily smokers). The cut-off for elevated WC was ≥ 94 cm for men and ≥ 88 cm for women. The associations between each group and elevated WC were analyzed by logistic regressions with normal weight never smokers as the reference category.

Results: In the fully adjusted models (sex, age, physical activity and alcohol consumption), the overweight daily heavy smokers (OR= 36, CL 95 % [20.0,

64.2]) had a higher risk for increased WC compared to normal weight never smokers, but also when compared to overweight never smokers (OR=21, CI 95 % [15.8, 26.7]; p-value for OR difference is <0.05).

Conclusions: Smoking status moderates the impact of overweight on central obesity, such that heavy daily smoking is associated with the most abdominal obesity.

Recommendations for practice. Excess risk for abdominal obesity caused by heavy daily smoking together with overweight should be taken into account in clinical practice.

Topic: 20 - Health consequences, Abstract Nr: 55

Time to first cigarette and hypertension in Korean male smokers

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Background: Morning blood pressure surge may affect to cardiovascular and cerebrovascular disease risks and time to first cigarette(TTFC) after waking within 30 minutes can induce Morning blood pressure surge.

Objective: We aimed to explore the association between TTFC and morning hypertension.

Methods: Korean male current smokers who had health check-up were included in this study (n=211). We measured blood pressure, biomedical and anthropometric variables in the morning. Age, body mass index, smoking, drinking, physical activity, and medication history were adjusted using logistic regression.

Results: The average of systolic and diastolic blood pressure were higher in the subjects with shorter TTFC (117.2 vs 125.3; 75.7 vs 81.0, $P < 0.001$). Compared with those who had TTFC greater than 30 minutes, the hypertension odds ratio for TTFC of shorter than 30 minutes was 3.87 (95% CI, 1.89-7.94, $P < 0.001$). The odds ratio for TTFC shorter than 30 minutes was remained significant after adjustment (4.84, 95% CI, 2.06-11.37, $P < 0.001$).

Conclusion: Hypertension has increased with earlier first cigarette smoking after waking.

Recommendation: Assessing TTFC would improve hypertension prevalence and may be useful for making treatment strategies for hypertension and cardiovascular disease risks.

Topic: 20 - Health consequences, Abstract Nr: 75

Metabolic changes found after abrupt smoking cessation.

The importance of a clinical follow-up for susceptible smokers

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Background: Cessation reduces health risks associated with smoking, however it is also associated with some adverse health consequences. The aim of this

study was to evaluate the metabolic changes occurring after smoking cessation in a group of heavy smokers.

Methods/design: A group of 48 smokers, mean age of 49.4 ± 10.9 years were included; they smoked a mean of 19.92 ± 9.26 cigarettes per day and had smoked 33.23 ± 17.89 packages per year during 33.4 ± 10.69 years. The target quit day was scheduled for week 3 through abrupt cessation.

Blood pressure (BP) and weight were evaluated weekly. Blood samples were taken on week 1 (still smoking) and 10 (seventh week post cessation). Glucose, triglycerides (TGC), high density lipoproteins (HDL-C), and insulin were determined. A control group of 96 healthy nonsmokers who attended a checkup unit was included (ratio 2:1).

Results: Weight and BMI found in heavy smokers were not lower when compared with nonsmokers, both showed a BMI over 25. Smokers had higher BP, TGC, insulin and lower levels of HDL-C than nonsmokers. After cessation TGC and insulin showed a statistical increase in men older than 55 years. Weight and BMI showed also an increase at the end of the treatment.

Conclusion: In men older than 55 years changes after abrupt cessation could cause insulin resistance and hypertriglyceridemia. For them cessation must be gradual, accompanied by pharmacotherapy, monitoring weight and metabolic variables through laboratory studies and with close clinical follow-up. Smoking cessation is always the best decision but in some persons we must worry about the outcome.

Topic: 20 - Health consequences, Abstract Nr: 76

Non alcoholic fatty liver disease (NAFLD) and tobacco. A strong association found in a group of Latin smokers

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Background: Recent findings establish that cigarette smoking stimulates lipid accumulation in the liver, produces acute hypoxia, chronic inflammation and high oxidative stress, therefore it is considered a risk factor for non alcoholic fatty liver disease (NAFLD). The aim of this study was to investigate the prevalence of NAFLD in a group of heavy smokers.

Design/Methods: We included 47 smokers with a mean age of 48.55 ± 10.47 years. The mean number of cigarettes smoked per day was 21.19 ± 9.65 (35.11 ± 16.35 packages per year) during 34.5 ± 11.89 years. Exclusion criteria were a current daily alcohol ingestion \geq than 20 g, viral hepatitis (B and C) and other causes of chronic liver disease. The diagnosis of NAFLD was made by ultrasound, and was classified as mild, moderate and severe according to its echogenicity. Glucose, triglycerides (TGC) and high density lipoproteins (HDL-C) were determined.

Results: Prevalence of NAFLD found was 77%, comparing with nonsmoker mexican healthy population (15%), the Odds Ratio (OR) obtained was 16.35 (CI

95% 8.03-31.5). Mean BMI was 26.44 ± 3.62 for women and 22.57 ± 3.63 for men. Glucose concentration was found normal in both sexes, in men TGC were higher than 150 mg/dl and HDL-C lower than 40 mg/dl. Mild NAFLD was found in 19 smokers (52.7%), moderate in 14 (38.9%) and severe in 3 (8.3%).

Conclusions: The prevalence of NAFLD found in the smokers was high (77%). Exposure to heavy smoking during long periods may be a risk factor for NAFLD and men are more sensible. There is a new reason to ban smoking: avoid chronic liver diseases.

Topic: 21 - Genes / genetic markers / genome wide association, Abstract Nr: 118
Investigating causality in associations between smoking and schizophrenia

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Background: Smoking is strongly associated with schizophrenia, and although historically it has been assumed that such an association is due to self-medication, more recently evidence has suggested that smoking might also be a risk factor for schizophrenia. We aimed to investigate this further using existing publicly available GWAS data.

Methods: We performed a two sample bi-directional Mendelian randomisation study using summary level genome-wide data on single nucleotide polymorphisms (SNPs) robustly associated with smoking initiation, and schizophrenia case status.

Results: In 34,241 schizophrenia cases and 45,604 controls, there was evidence in support of a causal association between smoking initiation and risk of schizophrenia. The odds ratio for schizophrenia in those who were ever smokers (conferred by 4 SNPs in the GWAS of smoking initiation) was 2.21 (95% CI 1.38, 3.52). Conversely, in 143,023 individuals in the TAG GWAS, there was evidence in support of a causal association between risk of schizophrenia and smoking initiation. The odds ratio for risk of ever smoking conferred by 81 SNPs in the schizophrenia PGC2 GWAS was 1.05 (95% CI 1.01, 1.09). MR Egger sensitivity analysis found no evidence for pleiotropy on the association between schizophrenia and smoking initiation (intercept 0.002, 95% CI -0.02, 0.02).

Discussion: Our findings indicate that the association between smoking and schizophrenia could operate in both directions. The strength of evidence for smoking initiation predicting schizophrenia is weaker than in the other direction, as the SNPs that predict smoking initiation are all in the same gene, so a direct effect on the outcome is harder to rule out.

Topic: 22 - Implementation / dissemination, Abstract Nr: 62

Understanding the stakeholders' intention to use model-based economic evaluations: a cross-sectional study

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Background: Despite an increased number of economic evaluations of tobacco control interventions, the uptake by stakeholders of these analyses to aid their decision making continues to be limited. Understanding the underlying mechanism in adopting such decision-support tools by stakeholders is therefore important.

Objective: Applying the Integrated Change Model [I-Change Model], this study aims to identify which factors determine potential uptake of (model-based) economic evaluations.

Methods: Interviews were conducted with stakeholders in five European countries (the Netherlands, Hungary, Germany, Spain, and the UK), using a questionnaire developed to capture I-Change constructs (7-point Likert scale). The sample was divided into two groups, intenders and non-intenders. Separate analyses of variance were conducted to assess group differences in individual beliefs. Multiple regression analyses were conducted to identify the main predictors of intention to use a decision-support tool.

Results: Ninety-three stakeholders participated in the survey. Significant differences in beliefs were found between non-intenders and intenders: risk perception, attitude, social support, and self-efficacy towards using the tool. In addition, country, attitude, and social support were significant predictors of the intention to take up the tool.

Conclusion and recommendations: This study is the first to provide a theoretical framework to understand differences in beliefs between stakeholders who do or do not intend to use (model-based) economic evaluations, and empirically corroborating the framework. This contributes to

our understanding of the facilitators and barriers to the uptake of these studies. Motivational factors are found to be important to consider in encouraging stakeholders to use economic evaluations.

Topic: 24 - Lobby/ advocacy, Abstract Nr: 40

Press coverage of smoking and health in Argentinean newspapers.

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Newspapers are a main way to depict pro and against tobacco related messages. It is key to know the extent and content of the tobacco messages to develop an adequate advocacy response.

Objective: to describe and compare the extent and content of tobacco related images (ads or not) and articles published in the largest Argentinean newspapers.

Methods: cross sectional study. We systematically chosen issues four month from each year of the 3 main national newspapers since 1995 to 2013 and recorded the number of tobacco images (ads or not) and tobacco-focused articles. We compared the day of publication, extension and placement within each item. As well, to analyze articles we collected the main theme, the mention of the hazards of smoking and classified them as pro or against tobacco control.

Results: It were identified 3804 images and articles from 6148 different issues. Non-ad images were the most frequent item 72%, followed by articles, 20% and ads 8%. All were published mainly on Sunday (largest circulation day). The non-ad images were the most common, 19.3%, followed by the ads, 5% and the articles, 3.6% ($p=0.000$). Comparing extension, the non-ad images occupied significantly more space: 6.4% had one page or more and articles 3% and the ad images had 2.7% of the same extension ($p=0,000$).

The articles's main topics were about legislation 38.4% and health 33.7%. Only 24.9% mentioned the hazards of smoking. Pro tobacco control articles were 64.8% and 35.2 were against or indifferent.

Conclusions: it is imperative to develop media advocacy strategies to increase pro tobacco control messages

Topic: 26 - Passive smoking / environmental exposure / second hand smoke, Abstract Nr: 53

Residential smoking bans among underserved maternal smokers completing intervention to reduce their children's exposure to tobacco smoke: The influence of individual maternal counseling and other smokers in the home.

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Addressing children's residential tobacco smoke exposure (TSE) is a public health priority. The "Family Rules for Establishing Smokefree Homes (FRESH)" trial previously demonstrated the efficacy of counseling to promote bioverified child TSE reduction and maternal quit rates. The goal of this study was to inform conceptual models to improve the FRESH intervention. We hypothesized that the presence of other residential smokers at pre-treatment would moderate (undermine) treatment efforts with mothers to facilitate residential smoking bans at EOT. N=300 high-risk maternal smokers were randomized to receive either (a) 16 weeks of tailored TSE-reduction counseling (up to 2 home visits and 7 telephone sessions,) or (b) written self-help materials with content parallel to counseling. The baseline variable "other smokers" was dichotomized (1=other smokers; 0=mom the only smoker) and an interaction term was calculated (treatment x other smokers) for inclusion in direct entry multivariable logistic regression. Results: Counseling compared to control participants were more likely to adopt home smoking bans at EOT (OR 1.79, .185 to .225). The presence of other smokers at home decreased smoking ban likelihood (.472, .229 to .294). There was no evidence of moderation. Conclusion: Residential smoking bans are important goals to protect children from TSE and promote smoking cessation. While other smokers did not undermine effects of treatment on smoking ban adoption, per se, their presence decreased the likelihood of ban adoption. Therefore, the FRESH intervention could be enhanced by adding programming to facilitate family-level behavior change efforts when other smokers live at home.

Topic: 26 - Passive smoking / environmental exposure / second hand smoke,
Abstract Nr: 54

Effects of residential smoking restrictions on children's tobacco smoke exposure and maternal quit rates: A mediation analysis of the Family Rules for Establishing Smokefree Homes (FRESH) Trial

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FRESH (Family Rules for Establishing Smokefree Homes) was a randomized controlled trial that demonstrated efficacy of behavioral counseling in reducing child tobacco smoke exposure (TSE) and promoting quit rates among high-risk maternal smokers. The purpose of this study was to test the hypothesis that increasing residential smoking restrictions during intervention mediates child cotinine (a biomarker of TSE) and maternal quit rates. Importantly, intention to quit was not a necessary criterion for enrollment. Methods: Eligible maternal smokers were randomized to receive either 16 weeks of tailored TSE-reduction counseling or written self-help

materials. Both conditions were designed to educate mothers about child TSE dangers, benefits of TSE reduction, and facilitate smoking behavior change. Results: N=300 were randomized (81% single, > 85% African American, age= 24.3 + 7.6; FTND = 4.6 + 1.8). Baron and Kenny steps were used to test for mediation. Controlling for theoretically-relevant variables (depressive symptoms, child age, other smokers, nicotine dependence), baseline to end of treatment (EOT) increase in residential smoking restrictions partially mediated intervention effects on maternal quit rates (OR= 7.77; 95% CI=2.6-22.5) and child cotinine (b= -.18, p<.02) at EOT. Additional analyses showed that adopting a complete smoking ban, rather than simply increasing indoor restrictions, has a larger effect on child cotinine reduction. Discussion: Increasing indoor smoking restrictions mediates treatment effects on quit rates and child TSE reduction (cotinine). Efforts to restrict residential smoking are important to protecting children from TSE. These same efforts appear to facilitate smoking cessation in a high-risk sample with increased challenges to quitting smoking.

Topic: 26 - Passive smoking / environmental exposure / second hand smoke,
Abstract Nr: 87

How to influence Romanian students secondhand smoke exposure - results of a longitudinal study

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Background: Numerous scientific studies have linked particle pollution exposure to a variety of health problems. This is especially true for fine particles which can get deep into the lungs and cause serious health problems.

Objective: Comparative assessment of air pollution (PM_{2.5}) in three Romanian universities, while an intervention-"smoke free university" project was underway at one of the three.

Methods: The study was carried out as a longitudinal study in 2013 and 2014, at medical university(A) and two non-medical universities(B and C). PM_{2.5} concentrations were measured using a TSI Aerosol Monitor SidePak in four to five similar locations on each campus, including both holiday and teaching periods and focusing on the same busiest time-slots. Results were compared with WHO-recommended values.

Results: In 2013 at medical university(A) PM_{2.5} concentrations in three measuring periods during the teaching periods surpassed recommended exposure values (a maximum value in one location of 0,076mg/m³, SD0,023). In 2014, after the "smoke-free university" project had started, values that surpassed recommended exposure levels were not observed at A. In non-medical Universities (B, C) we measured four points that exceeded the recommended value (0,070mg/m³, SD0,007) at B in 2013, and five measured points exceeded (0,071mg/m³, SD0,004) at C. In 2014 one point exceeded

recommended values at B while three points surpassed recommended exposure values at C.

Conclusion: Secondhand smoke exposure is present in smoke free places. Anti-tobacco policy has made progress against second hand exposure, as demonstrated through lower average PM2.5 values from 2013 to 2014.

Topic: 28 - Pharmacology, Abstract Nr: 84

A review of varenicline's preclinical in vitro and in vivo properties relevant for neuropsychiatric disorders

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The smoking cessation aid varenicline (Chantix, Champix) has been associated with neuropsychiatric adverse events (NPs AEs) based on spontaneous post-marketing reports, which led the FDA in 2009 to add a boxed warning to the Chantix label. The ongoing debate on whether this association is a causal relationship focuses on experimental evidence from meta-analyses of placebo-controlled clinical trials and observational studies, but so far little attention has been paid to one of the key criteria for causality, biological plausibility.

This study examined the pharmacological plausibility that varenicline causes NPs AEs when smokers replace nicotine with varenicline, by reviewing the effects of varenicline and nicotine in pharmacological in vitro and in vivo models that have relevance for neuropsychiatric disorders.

Preclinical data were collected from the literature, including receptor binding profiles, functional effects at nAChR subtypes, animal exposure data, effects on neurotransmitter release and effects on animal behavior in tests that are used to examine drugs for effects on mood, sensory gating and cognition. Reported data were converted to percentage change from control to normalize data from different tests, as well as to allow a comparison with the effects of nicotine and CNS drugs in the same preclinical tests.

The analysis of a large number of preclinical data shows no evidence for varenicline having pharmacological properties that would cause NPs AEs, i.e. the observed association cannot be plausibly explained by known biological mechanisms. The absence of biological plausibility does not support a causal relationship between varenicline use and the risk of NPs AEs.

Topic: 29 - Pharmacotherapy, Abstract Nr: 85

A smoking cessation intervention for hospitalized smokers increases cessation medication adherence

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Background: Smoking cessation medication (SCM) and counseling after hospital discharge help smokers quit, but sustaining adherence to medication after discharge is challenging.

Objective: To assess the effects of providing free SCM at hospital discharge with offers of refills and counseling about medication use post-discharge.

Methods: Participants were enrolled in a smoking cessation RCT of free SCM at discharge plus enrollment in an automated telephone system making 5 calls over 3 months ("sustained care", SC) vs. usual care (UC), referral to the state quitline, while hospitalized at Massachusetts General Hospital, Boston MA, from 7/2010 to 4/2012. Participants were daily cigarette smokers, interested in quitting and willing to use SCM. All received bedside counseling and medication recommendations. The automated calls encouraged SCM use, offered refills and call-backs from a counselor. Medication use, duration, and reasons for discontinuation were assessed in telephone surveys at 1, 3, and 6 months post-discharge.

Results: 93% of the 397 participants were reached for at least 1 follow-up survey. More SC than UC participants reported medication use (for any medication: 86% vs. 70%; for NRT: 81% vs. 65%, both $p < .001$). Median days of NRT use was higher in the SC than UC arm (90, IQR: 53-157 vs. 56, IQR: 14-92, $p < .001$). SC participants were more likely to discontinue NRT because they quit smoking (44% vs. 31%, $p < .05$) and less likely to discontinue due to its cost (1% vs. 8%, $p < .01$).

Conclusion: An intervention offering free SCM and sustained support increased the post-discharge use of SCM among hospitalized smokers.

Topic: 30 - Policy evaluation, Abstract Nr: 115

The tobacco endgame in Norway: what is the public support for a total ban on sales of smoking tobacco among Norwegian smokers, ex-smokers and non-smokers?

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Background: Envisioning the end of tobacco use altogether is increasingly considered an aim for future tobacco control policy (confer the "tobacco endgame" policies of Finland and New Zealand). This study investigated public support for a total ban on sales of smoking tobacco in Norway.

Methods: Participants were recruited from a web panel hosted by IPSOS MMI. Two web surveys were conducted, in 2010 ($n=5149$) and in December 2014-January 2015 ($n=5543$). Participants were asked to assess their support for a total ban of smoking tobacco in ten years' time. In addition, information on socio-demographics and smoking status (previous and current smoking plus quit plans) was collected. To investigate factors associated with support for a total ban, logistic regression was applied.

Results: Support for a total ban was low (35 %), even if a significant increase from 2010 to 2015 was observed. Support was lowest among daily smokers and highest among never smokers and the oldest age group (65 years +). These

differences remained significant after multiple controls. Differences due to smoking status increase over time.

Conclusion: Support for a total ban on sales of tobacco in Norway is currently low. Hence, such a measure is likely to generate legitimization and enforcement issues if passed as of now. However, support is increasing over time in all groups, suggesting that public opinion is likely to move in the direction of increased support in the future.

Topic: 31 - Pre-clinical, Abstract Nr: 74

Effects of three-months smoking abstinence on selected anthropometric and biochemical parameters

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Background: To explore possible effects of smoking cessation on selected anthropometric and biochemical parameters.

Methods: Twenty-two non-obese male adult smokers attending an ambulatory smoking cessation programme in Prague, Czech Republic, were examined at the baseline (mean age 37.92 yrs \pm 2.66, mean body mass index 25.56 \pm 0.69 kg/m²). Thirteen successfully quit smoking and were examined three months after smoking cessation (abstinence verified by CO measurement in expired air, cut-off 10 ppm); relapsed smokers were not followed up. Patients underwent 2-hour fasting liquid meal test with stimulation by Fresubine with repeated blood sampling and body composition measurements at both visits. Selected biochemical parameters (total cholesterol, LDL-C (low-density lipoprotein cholesterol), HDL-C (high density lipoprotein cholesterol), triglycerides, vitamins A, E, D, B12 (cobalamin), folic acid, HbA1c (glycated hemoglobin)) were measured in the fasting state, while serum concentrations of glycemia were measured in repeated samples (baseline, 5th, 15th, 30th, 60th, 90th and 120th minute).

Results: Three months after smoking cessation, body weight increased significantly (4.35 kg \pm 3.32 kg, $p < 0.001$). Although smoking cessation did not influence glycemia levels, glycated haemoglobin levels decreased significantly ($p = 0.015$). Majority of biochemical parameters remained unchanged (total cholesterol, LDL-C (low-density lipoprotein cholesterol), HDL-C (high density lipoprotein cholesterol), triglycerides, vitamins A, D, B12 (cobalamin), folic acid), while vitamin E levels decreased ($p < 0.001$).

Conclusion: Smoking cessation lead to significant weight gain and to decrease of glycated haemoglobin and vitamin E levels.

Topic: 32 - Pregnancy / prenatal, Abstract Nr: 44

The barriers and facilitators to smoking cessation during pregnancy from the perspectives of both pregnant women and their partners: a synthesis of qualitative studies and evidence from exploratory interviews

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Background: While many women quit smoking in pregnancy, others continue to smoke. Smoking behaviour is influenced by many factors including the role of partners. Further understanding of the perspectives of both women and their partners is key to developing innovative interventions to support cessation.

Methods: Syntheses of qualitative research of both women and partners' views of smoking in pregnancy were conducted using meta-ethnography; Forty-one interviews with pregnant women and 32 interviews with pregnant women's partners/significant others were also conducted across two sites in England and Scotland between October 2013 and September 2014. Analysis of interview data was guided by the Social Ecological Framework.

Results: Thirty-eight studies (1100 pregnant women) reported in 42 papers and nine studies (150 partners) reported in 14 papers were included in the systematic reviews. The syntheses identified smoking-related perceptions and experiences that acted as both barriers and facilitators for pregnant women and their partners to quit and stay quit, in addition to factors that were cited to continue smoking. From the exploratory analysis the themes central to cessation in pregnancy at an individual level were the perception of risk to the baby, self-efficacy, and smoking as a way of coping with stress. At an interpersonal level, partners' emotional and practical support, and smoking behaviour were important.

Conclusions: Perceptions and experiences of barriers and facilitators to smoking cessation in pregnancy are fluid and context dependent. Effective interventions for smoking cessation in pregnancy must take account of the interplay between the individual, interpersonal and environmental aspects of women's lives.

Topic: 32 - Pregnancy / prenatal, Abstract Nr: 107

Engaging Pregnant Women to a Stop Smoking Service - Creating Effective Referral Pathways and Increasing Quit Rates

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Quit 51 Stop Smoking Service was awarded the pregnancy stop smoking service in Telford and Wrekin in April 2014. Telford and Wrekin has a high rate of women who smoke in pregnancy and smoking at time of delivery (SATOD) had not significantly decreased for a number of years. On evaluation of previous service provision, Quit 51 identified a number of adjustments which needed to

be made to reduce the number of women SATOD. Quit 51 set out to create a service which;

- Engaged women as early as possible in their pregnancy
- Provided intensive behavioural support combining CBT / MI principles along with information surrounding the dangers of smoking in pregnancy
- Created an 'Opt out' system whereby women who are identified as smoking are automatically referred into our service
- Increased knowledge of the service to other healthcare professionals and develop/enhance referral pathways into the service through such professionals
- Encouraged partners of pregnant women who smoke to quit

Over one year, our service received approximately 600 referrals, 308 of which registered with our service. 213 (69%) women set a quit date, 99 (46%) quit at 4 weeks, 35 (16%) quit at 12 weeks, and most importantly 27 (13%) quit at delivery. Quit 51 stop smoking service embedded a pathway to smoking cessation in maternity services in Telford and Wrekin, we anticipate SATOD will continue to fall as a result of this implementation.

Providing this service has highlighted a number of recommendations for future practice including; creating an 'opt out' referral system for maternity services, developing strong relationships between maternity services and smoking cessation services, and training maternity services in brief advice and use of CO monitor equipment. This presentation will detail the processes involved in creating this service and the impact this service provision has had on quit rates in Telford and Wrekin. It will also detail the care pathway patients go through.

Topic: 33 - Primary care, Abstract Nr: 119

Tobacco Treatment in Primary Care Practice: An evaluation of the 'Ottawa Model for Smoking Cessation'

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Introduction: The 'Ottawa Model for Smoking Cessation' (OMSC) is a multi-component intervention program designed to increase tobacco treatment delivery in clinical practice settings. The aim of the present evaluation was to report on the impact (reach x efficacy) of the OMSC in primary care settings and examine determinants and predictors of outcomes.

Methods: A pre-post cross-sectional evaluation was conducted. Consecutive adult patients who smoked were enrolled at two time points: before and after OMSC implementation. Rates of tobacco treatment delivery, quit attempts, and smoking abstinence were assessed by telephone interview four months following enrollment. Main effects and differential effects for patient subgroups were examined.

Results: Thirty-two primary care clinics, 483 providers, and 3,870 patients were enrolled in the evaluation. A significant increase in the reach of tobacco treatment delivery was observed following introduction of the OMSC. No

significant differences in patient level outcomes (i.e. quit attempts or smoking abstinence) were observed at the post-assessment. Sub-group analysis found patients who were exposed to OMSC intervention model as planned were significantly more likely to report a quit attempt and achieve cessation. Specifically, receiving advice to quit (AOR 1.5 95%CI: 1.1, 2.0) or a dedicated smoking cessation consultation was associated with making a quit attempt (AOR 1.6, 95%CI: 1.1, 2.2). Use of a cessation pharmacotherapy was associated with increased rates of smoking abstinence (AOR 2.7, 95%CI: 1.7, 4.3).

Conclusion: To further impact patient-level cessation outcomes greater uptake of evidence-based interventions are required by both patients and providers.

Topic: 34 - Relapse prevention, Abstract Nr: 108

Maintenance pharmacotherapy for sustained smoking abstinence in those with and without severe mental illness: A pooled analysis

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Background: Relapse to smoking is common, and effective relapse prevention interventions have not been identified. Relapse following discontinuation of pharmacotherapy is particularly prevalent and rapid among smokers with serious mental illness (SMI).

Aim: To compare effectiveness of maintenance pharmacotherapy for relapse prevention in recently abstinent smokers with and without SMI.

Method: To conduct a pooled analysis of two randomized, double-blind, placebo-controlled trials of maintenance varenicline for relapse prevention in smokers with and without SMI.

Results: There were significant effects of diagnosis, treatment, and a diagnosis by treatment interaction on point-prevalence abstinence at week 24. Those with SMI had reduced likelihood of abstinence; those on varenicline had increased likelihood of abstinence, and the impact of SMI diagnosis on abstinence differed by treatment. On varenicline, the odds of week-24 abstinence did not differ between those with and without SMI ($87.2 \pm 0.8\%$ vs $81.9 \pm 0.2\%$, OR: 1.68, 95%CI: 0.53, 5.32, $p=0.38$). On placebo, the week-24 abstinence rate in those with SMI was less than half that for those without SMI ($29.4 \pm 1.1\%$ vs. $61.8 \pm 0.4\%$, OR: 0.26, 95%CI: 0.13, 0.52, $p=0.0002$). There were significant differences in time to first lapse ($\chi^2_{3df}=94.52$, $p<0.0001$; all pairwise comparisons $p<0.05$; SMI vs. non-SMI by placebo vs. varenicline. Time to first lapse was shortest in participants on placebo with SMI ($Q1=12$ days, 95%CI: 4, 16), without SMI ($Q1=17$ days, 95%CI: 17, 29), then those on varenicline without SMI ($Q1=88$, 95%CI: 58, 91, then with SMI ($Q1>112$, 95%CI: non-est.)

Conclusion: Maintenance varenicline normalized the relapse rate of smokers with SMI, such that it was similar to that of smokers without SMI. Maintenance varenicline may help smokers with and without SMI maintain long-term abstinence.

Topic: 35 - Sex differences, Abstract Nr: 39

Prevalence of violence against women in female smokers attended at one smoking cessation unit in Buenos Aires City: A cross-sectional study

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Several studies have shown that women smokers are twice more likely to report VAW than non-smokers. There is not data to support this association in Argentina where VAW prevalence at primary care level is about 44%.

Objectives: To assess the prevalence of VAW in female smokers who receive smoking cessation treatment; also to compare the prevalence of non-psychotic mental disorders and self-perception of health status between female with and without report of violence.

Method: The instrument was developed by The International Planning Parenthood Federation. It discriminates among emotional, physical and sexual abuse. To assess non-psychotic mental disorders and depression we applied the SelfReported Questionnaire (SRQ-20, developed by WHO) and the Beck's test (locally validated). We collected demographic data, perception of health status and tobacco related information.

Results: All women agree to participate. Lifetime prevalence of VAW was 66.9% and 13.20% reported some kind of current violence. Emotional and physical violence were the most frequent: 58.56% and 31.30%. Women were more likely to report VAW if they living with a partner: OR=4.04 (95% CI 1.68-9.72), had an unstable employment situation: OR=2.49 (95% CI 1.24-5.01), a Beck Score >20: OR=3.37 (95%CI 2.06-5.49) and had worst perception of their health status: OR=3.26 (95% CI 1.22-8.68)

Conclusion: VAW prevalence in our smoking cessation unit is 1.52 times than the prevalence at primary care level.

Recommendation: It is necessary more evidence to support the systematic screening.

Topic: 36 - Smoking bans, Abstract Nr: 12

School as a tobacco free zone? The perceived barriers of stakeholders at secondary schools without an outdoor school ground smoking ban

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Background: Where smoking bans at secondary schools in buildings is more international widespread, smoking bans at outdoor school grounds are less common. The question arises as to what keeps secondary schools from adopting an outdoor school ground smoking ban. The aim of this study was to

gain an in-depth understanding of the perceived barriers of stakeholders at secondary schools without an outdoor school ground smoking ban.

Methods: Qualitative data were obtained from 60 respondents of 15 schools. Semi-structured interviews were carried out with different stakeholders: directors, non-teaching staff, teachers, parents and students. Data were recorded and interviews were transcribed verbatim. Subsequently transcripts were analyzed using the General Inductive Approach. Member checks were conducted and inter-rater reliability was strengthened by comparing coding's of two independent coders for agreement.

Main results: The analyses showed that the perceived barriers can be distinguished in four categories: barriers of the user (e.g. lack of support), organizational barriers (e.g. decision-making process), barriers to innovation (e.g. complexity) and political barriers (e.g. legislation). More results will be presented in detail.

Conclusions: This study gives an in-depth understanding of the perceived barriers of stakeholders at secondary schools without outdoor school ground smoking bans and can provide practical tools which can be used in school tobacco control policies.

Topic: 36 - Smoking bans, Abstract Nr: 122

The relationship between the enforcement of school anti-tobacco policies and smoking experimentation in secondary school students: Evidence from Romania

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Background: The effectiveness of school-based anti-tobacco policies in preventing smoking uptake in adolescents is unclear. The aim of this analysis is to evaluate, based on students' reports, the enforcement of the Romanian school anti-tobacco policy and assess whether it influences students' experimentation with smoking.

Methods: Data was collected cross-sectionally in January 2014 from a convenience sample of 307 secondary school students from Cluj-Napoca, Romania, using a paper-based, self-administered questionnaire. Descriptive statistics were used to characterize the sample and evaluate the enforcement of the anti-tobacco policy. Logistic regression was used to assess the impact of unenforced anti-tobacco policy on students' experimentation with smoking while controlling for their smoking status, their family and peer smoking behavior, and exposure to tobacco advertising.

Results: The sample's mean age was 11.49 years (SD=0.58). In terms of smoking behavior, 10% of the students have experimented with smoking and 8% have the intention to use tobacco products in the future. Adolescents reported seeing students (75%) and school staff or other adults (38%) smoking on the school property. The results of the multivariate regression model ($R^2=.27$) showed that unenforced smoking bans do not influence students' experimentation with smoking. However, students who reported receiving promotional materials for tobacco products were five times more likely to have experimented with

smoking (OR=5.2, CI95%: 1.51-17.75, $p=.006$).

Conclusion: The poor enforcement of the school anti-tobacco policy did not influence experimentation with smoking in our sample. Experimental studies are needed to draw conclusions about the role of school-based anti-tobacco policies in preventing smoking uptake.

Topic: 37 - Smoking cessation, Abstract Nr: 7

A randomized controlled trial of stage-matched tailored intervention for smoking cessation in outpatient clinics

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Background: Since 2012, the Ministry of Health and Welfare has funded a second-generation, nationwide smoking cessation program that provides financial support for quitters in hospitals. However, the cessation intervention based on the patients' levels of readiness to quit is lack in Taiwan.

Objective: The aims of this study were to evaluate the effectiveness of stage-matched tailored intervention for smoking cessation in outpatient clinics.

Method: The study design was a randomized controlled trial. All participants were recruited at outpatient clinics of a regional hospital. Participant assignment was randomized by a coin toss determined to intervention group (IG) ($N=108$), and usual care group (UG) ($N=92$). The IG received 4 counseling sessions by 20-30-minutes face-to-face and 3 sessions by telephone counseling in 3 months. UG received basic information and telephone follow up in 3 months. Both group received telephone follow-up for 6 months. The outcome criteria included: (1) 30-day point-prevalent quit rates; (2) progress to ulterior stages of change; (3) decreased daily cigarette consumption³ 50%.

Results: The 30-daypoint-prevalent quit rate of IG was higher than UG (22.4% vs. 10.1%; $p<.05$). The rate of progress to ulterior stages for IG was significantly higher than UG (31.8% vs. 12.4%; $p<.01$). Decreased daily cigarette consumption³ 50% of IG was significantly higher than UG (32.7% vs. 19.1%; $p<.05$).

Conclusions: The results showed that stage-matched tailored smoking cessation intervention might be effective in Taiwan. Further studies are needed to increase multiple sites to promote the generalization of the study results.

Topic: 37 - Smoking cessation, Abstract Nr: 19

Smoking cessation efforts in Brno, Czech Republic from the Kardioviz cross-sectional survey

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Smoking cessation decreases smoking-related harm at the individual and societal levels. The purpose of this study was to explore the smoking cessation behavior and attitudes in a cross-sectional survey in Brno, Czech Republic.

A population-based survey in 2013-2014 assessed cardiovascular risk factors in a stratified random sample of residents of the city of Brno, Czech Republic, aged 25-64. The study collected data on demographics and the smoking status using a physician-administered questionnaire. The analysis included descriptive statistics, chi-square and Wilcoxon rank-sum tests.

The total sample (n=2160) comprised 51.3% of never smokers, 21.9% current smokers, of which 18.9% daily smoking, and 26.8% ex-smokers. Only 36.7% of daily smokers acknowledged thinking about quitting or being ready to quit as compared to 54.5% of occasional smokers (p=0.006). However, 70.8% of daily smokers reported past quit attempts as compared to 54.9% of occasional smokers (p<0.01), with a mean of 7.9 ± 18.4 (n= 279) and 4.7 ± 6.6 (n=39), respectively (p=0.8). Current smokers reported higher number of past attempts (7.6 ± 17.6) than did ex-smokers (3.5 ± 11.4 , p<0.001). The number of attempts did not differ across gender and age. Only one participant was using the NRT at time of the survey. No current use of varenicline or bupropion was reported. A large proportion of smokers in our study population were not considering or attempting smoking cessation, suggesting a large potential for smoking cessation efforts among daily and occasional smokers. The high number of attempts to quit among current smokers indicated the need for professional assistance for smoking cessation.

Topic: 37 - Smoking cessation, Abstract Nr: 79

Testing a new tool to motivate smokers to stop at the primary care attention in Mexico

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Background: Most smokers are not advised and assisted with cessation in a given visit with a clinician. The aim of this study was to evaluate the use of a Tablet with information to motivate smokers to quit at the primary care attention.

Design/Methods: We performed a software containing information and videos

about the benefits of stop smoking, tobacco cessation medications and questionnaires to evaluate physical and psychological dependence on smoking, in an interactive interface with a Tablet. Two Tablets were set at the main entrance of a primary care clinic, smokers were invited to use them, each Tablet was connected with a printer and after each session two sheets were printed: one for the smoker and one for the clinician, containing diagnostic information useful to begin with the cessation treatment.

Results: In this pilot study we included 164 smokers, with a mean age of 49.6 ± 15.13 years. 137 (83.54%) were daily smokers. The mean number of cigarettes smoked per day was 9.59 ± 6.46 . Most of them (104 vs 60) were willing to stop in the next 12 months; only 22 (13.41%) had received some professional help to quit and the number of attempts was 2.48 ± 3.74 . The main motivations to stop were health (71.95%) and family (14.6%). Psychological and physical dependence were low: 2.95 ± 2.49 (Fagerström questionnaire). **Conclusions:** The implementation of a Tablet with an interactive software was very successful in the smokers studied, after using it most of them: 92.68% (152) were interested in attending to a professional cessation treatment.

Topic: 37 - Smoking cessation, Abstract Nr: 90

Training child healthcare practices to address family tobacco use: a qualitative analysis of training call data

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Background: Few child healthcare providers address family tobacco use and exposure. CEASE (Clinical Effort Against Secondhand Smoke) trains clinicians to routinely address family tobacco use within existing office systems. Centralized distance training used a train-the-trainer model where one clinician leader at each practice participated in a peer-to-peer call with CEASE staff. The clinician leader then conducted a whole office training call with limited input from CEASE staff.

Objective: To identify the concerns and potential barriers that clinicians and staff expressed about implementing CEASE.

Methods: This data was collected as part of a cluster randomized clinical trial conducted in ten pediatric practices within five US states; training calls were conducted in five intervention practices. They were recorded and transcribed. The data was coded and analyzed qualitatively to uncover concerns.

Main results: During these calls, the main themes that emerged were how to prescribe NRT, how to encourage NRT use in low-income/uninsured populations, and the potential increase in patient wait times resulting from

time devoted to screening every family for tobacco.

Conclusion: The training calls taught all clinicians and practice staff to conduct the CEASE intervention. The concerns raised were potential barriers to full implementation. The calls facilitated shared decision making between clinicians, office staff, and CEASE staff to develop practice-specific solutions.

Policy recommendations: Training practices to implement family tobacco control interventions should allow for shared decision making to effectively find ways to minimize practice disruption and should include detailed training about NRT.

Topic: 37 - Smoking cessation, Abstract Nr: 101

Exploring Stop Smoking Advisers Experiences of Helping Clients with Depression to Quit Smoking - What are adviser's perceived Barriers and Facilitating Factors to Smoking Cessation with this group of patients?

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The present study aimed to explore stop smoking advisors' (SSAs) experiences in aiding clients suffering from depression to quit smoking. Exploratory analysis aimed to identify and understand perceived barriers and facilitating factors to smoking cessation within this client group. Understanding such barriers or facilitators aimed to recommend best practice and inform future research direction.

Semi-structured interviews with 7 community based SSA's from a private smoking cessation service operating in the West Midlands region of England were carried out and analysed qualitatively through Interpretative Phenomenological Analysis (IPA).

One master theme was identified; 'Key components to the process of quitting smoking successfully'. This contained and discussed SSAs perceived facilitating factors to quitting smoking successfully. A further 6 themes were identified; How we see depression and mental health

Depression affects quitting smoking?

There is a relationship between smoking stress and mental health

Discussing and disclosing depression

Advisors need more training and support in treating clients with mental health issues and depression

Advisor's key skills.

Advisors accounts of helping depressed smokers to stop smoking revealed the majority of advisors believe clients suffering with depression can find quitting smoking more difficult than other client groups. Whist advisors highlighted several barriers to smoking cessation in depressed clients, facilitating factors such as a client being 'motivated' and 'ready to stop smoking' not being present in a client attempting to quit smoking were considered as detrimental to quitting. Advisors placed high importance on the presence of facilitating factors with advisors conveying that a client having depression presents some barriers to quitting smoking, however if facilitating factors are present, these

barriers become less important / destructive to the process of quitting smoking successfully.

In conclusion, SSAs felt clients suffering from depression do have difficulty when quitting smoking. Stress was considered detrimental to quitting along with patients not openly discussing (or disclosing) any depression that they are suffering from. Several implications for practice were identified by SSAs. Firstly advisors felt that more training was necessary in the field of mental health. Advisors also suggested the role of a specialist mental health SSA as beneficial to appropriate clients. The present study presents further research question; what components of a mental health training program do SSAs feel are needed? Further qualitative research within this population would help to identify these needs and could inform the development of a tailored mental health training program for SSAs.

Topic: 37 - Smoking cessation, Abstract Nr: 106

Referrers into UK NHS Stop Smoking Services - Which Health Care Professionals Refer the most, and which Health Professionals' Referrals Convert into the Most Successful Quitters?

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Previous research has concluded that GPs, practice nurses, and other health professionals are routinely offering advice to their patients on stopping smoking and also refer into their local / central stop smoking services (McEwen & West, 2000). Guidelines for health professionals emphasise the importance of 'making every (patient) contact count', to assess whether a patient is a smoker, offer advice and encourage smoking cessation support / medication use (Raw, McNeill, & West, 1998). Brief advice for smoking cessation training is routinely offered to health care professionals to encourage them to engage patients in thinking about giving up smoking (NCSCT, 2015). Much has been invested in the importance of arming health professionals with the knowledge to help patients find a route to smoking cessation, it would be interesting to examine which health professionals have the most success in referring patients through to smoking cessation services. This presentation will examine the impact of health professional referrer on quit rate. It will address the following: (1) what proportion of patients registered with stop smoking services have been referred by various health care professionals, which refer the most/least? (2) Which health professionals' referrals are most likely to result in their patients becoming successful / unsuccessful quitters? And (3) are there any regional / local differences in any relationships between referrer and quit rates observed? Data set containing over 80,000 spanning from 2002-2015 of 'real' patient records across 10 NHS stop smoking services across the UK will be used to conduct analyses. This presentation will discuss the findings of these analyses.

Topic: 38 - Smoking onset / initiation, Abstract Nr: 32

Is use of smokeless tobacco in adolescence a risk factor for daily cigarette smoking in early adulthood?

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Background: It is under debate whether the use of smokeless tobacco products, such as snus, constitutes a risk factor for later cigarette smoking. **Aim:** To investigate the association between snus use in adolescence and daily cigarette smoking in early adulthood.

Methods: Data were obtained from two waves of the population-based FinnTwin12 cohort, including 2937 participants with information in both waves. At baseline (mean age 17), participants were categorized according to their lifetime use of snus and cigarettes. Other potential predictors of cigarette smoking (alcohol use, parental and acquaintances smoking) were also assessed. At follow-up (mean age 24), participants were categorized according to their current smoking status.

Results: At baseline, 913 participants had never tried cigarettes. Of them, 21 (2.3%) had tried snus. Among never smokers at baseline, a logistic regression model adjusted for sex and age showed that the risk of becoming a daily smoker at follow-up among those who had used snus at baseline was five-fold (OR= 5.33, 95% CI 1.77-16.1, $p=0.003$) compared with those who had never used snus. Maternal smoking and monthly alcohol intoxication were also significant predictors of daily smoking. The association between snus use and later daily smoking was attenuated when these predictors were included in the model but remained significant (OR= 4.00, 95% CI 1.28-12.6, $p=0.017$).

Conclusions: Snus use during adolescence predicts daily cigarette smoking in early adulthood, even when other predictors are taken into account.

Recommendations for policy: Use of smokeless tobacco products during adolescence should be discouraged.

Topic: 38 - Smoking onset / initiation, Abstract Nr: 77

'Who doesn't start before 18, doesn't start at all': Smoking initiation rate in a longitudinal sample of young adults from German vocational schools

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Data from German epidemiological surveys suggest that there is significant tobacco use initiation after age 18. However, identifying initiation is difficult in cross-sectional assessments due to cohort effects. We present explorative data from a first longitudinal study on smoking in young adults in Germany (study

interval 18 months). The analytic sample consisted of 2,646 students aged 18 years or older from 49 vocational schools (mean age = 21.0; SD=4.2). The proportion of never smokers at baseline was 22%. Of these, 20% tried cigarettes during the study interval. The baseline rate of students that did not smoke cigarettes within the last 30 days was 52%. Of these, 9% reported smoking within the last 30 days at follow-up. Conclusion: Even in a biased sample with already high smoking rates, there is a considerable amount of students that start smoking after 18.

Topic: 38 - Smoking onset / initiation, Abstract Nr: 121

Leisure time activities and tobacco exposure in relation to smoking, snus and e-cigarettes initiation

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Source of funding: Norwegian Institute for Alcohol and Drug Research (self-funded)

Conflicts of interests: None declared

Background: Smoking and snus use are still widespread in Norway, while vaping of e-cigarettes is increasing. It is central to identify predictors of initiation of these habits among adolescents. The main objective was to investigate how leisure time activities and internet use as well as tobacco and e-cigarette exposure affects uptake of cigarette smoking, snus and vaping of electronic cigarettes (e-cigarettes).

Method: The sample contains 737 respondents from 13 to 17 years of age (8th through 12th grade) responding to an electronic questionnaire at school in October 2014 and again six months later. The adolescents responded to a series of questions, addressing, among other, tobacco habits and exposure, leisure time activities and internet use. This study represents the first phase of a large-scale longitudinal study starting in autumn 2015. Logistic regression was used in the analyses.

Results: During six months, 32 students tried cigarettes for the first time (six in secondary school and 26 in high school), 32 students tried snus (15/17 in secondary/high school, respectively), while 33 students (11/22 in secondary/high school, respectively) tried to use e-cigarettes. Participation in organized sports, spending time with friends and family members or spending time on the Internet did not affect the initiation of tobacco or e-cigarette use. Exposure to parental and friends snus use was predictive of e-cigarette use six months later.

Conclusion: Only snus use exposure seemed to be important for e-cigarette uptake.

Recommendation for practice: Parents should be involved in prevention programs aiming at reducing vaping uptake among adolescents.

Topic: 40 - Tobacco additives / constituents, Abstract Nr: 111

Mainstream smoke (MS) composition from cigarillo (CG) smoking using mimicked puff profiles

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In the United States, there has been a dramatic increase in CG use especially among minority youth. CG differ from cigarettes in size (CG are heavier and longer), packaging (CG are sold as singles or packs of <6 articles) and design (CG are usually un-filtered, sometimes tipped). Because their wrapper contains tobacco, CG are defined as cigars and are not regulated like cigarettes. In the present study, the MS composition from a popular brand CG (Black & Mild, unflavored) was examined in 23 subjects (21 male). Human puff-by-puff topography profiles from laboratory smoking were replicated in a multiple port linear smoking machine. The machine-generated MS was analyzed (triplicate) for volatiles (acetaldehyde, acetonitrile, acrylonitrile, 1,3-butadiene, 2,5-dimethylfuran, benzene) and semi-volatiles (benzo-a-pyrene, nicotine, NNN, and NNK). Like cigarettes, the CG delivered nicotine, CO and other components of tobacco smoke. There was a significant correlation between CG machine smoking (puff volume) and tobacco consumed ($r=0.81$); and a significant correlation between the nicotine delivery and the delivery of volatile (r range: 0.65 - 0.79) and semi-volatile components (r range: 0.79 - 0.80) from machine smoking. Furthermore, the relationship held when comparing the nicotine delivery measured in plasma after human smoking with the delivery of volatiles and semi-volatiles in MS after machine smoking. Although CG are legally distinguished from cigarettes, they deliver nicotine and other components of tobacco smoke similar to cigarettes. These data indicate that CG smoking is not a safe alternative and add to the discussion of the public health risk imposed by CG.

Topic: 40 - Tobacco additives / constituents, Abstract Nr: 112

Mainstream smoke (MS) composition from little cigar (LC) smoking using mimicked puff profiles

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In the United States, there has been a dramatic increase in the use of LC. LC are similar in size (85 or 100 mm), packaging (20/pack) and design (usually filtered sometimes with ventilation) to conventional cigarettes. Because the LC wrapper contains tobacco, they are defined as a cigar and are not regulated like cigarettes. In the present study, the MS composition from a popular LC (Winchester, unflavored) was examined in 21 subjects (15 males). Human puff-by-puff topography profiles from laboratory smoking were replicated in a multiple port linear smoking machine. The machine-generated MS was analyzed (triplicate) for volatiles (acetaldehyde, acetonitrile, acrylonitrile, 1,3-butadiene,

2,5-dimethylfuran and benzene) and semi-volatiles (benzo-a-pyrene, nicotine, NNN, NNK). Like cigarettes, the LC delivered nicotine, CO and other components of tobacco smoke. There was a significant correlation between LC machine smoking (puff volume) and weight of tobacco consumed ($r = 0.83$). There was a consistent and significant correlation between the nicotine delivery and the delivery of volatile (r range: 0.63-0.85) and semi volatile components (r range: 0.81 - 0.92) from machine smoking. Furthermore the relationship held when comparing the nicotine plasma levels and puff volume with machine smoking yields. LC smoke qualitatively appears similar to cigarette smoke. Although LC are legally distinguished from cigarettes, they never the less deliver nicotine and other components of tobacco smoke similar to cigarettes. These data add to the discussion of the public health risk imposed by LC use and their regulation.

Topic: 43 - Tobacco taxes, Abstract Nr: 59

Price minimising behaviours in response to increasing tobacco price: A cross-sectional study of students

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Background: The public health benefits of tobacco taxation policies are potentially undermined when smokers engage in price-minimising behaviours other than quitting in response to rising prices. These include switching from smoking manufactured cigarettes to cheaper alternatives such as roll-your-own (RYO) and illicit tobacco. Young adults are known to be particularly sensitive to tobacco prices.

Objective: To investigate the price-minimising behaviours engaged in by young adult smokers to offset the rising cost of tobacco.

Methods: A cross-sectional online survey was delivered to a sample of 314 student smokers at the University of Nottingham, UK. Participants were asked about their current smoking behaviour and their likely responses to a series of hypothetical increases in the price of tobacco.

Results: Respondents' cessation intent was strongly linked to price, as was the likelihood of switching to cheaper tobacco products. RYO was the most likely substitute for manufactured cigarettes. 28% of respondents indicated they would buy illicit tobacco if duty-paid tobacco became too expensive. 44% stated they would use electronic cigarettes if combustible cigarettes became unaffordable. No significant trends were detected in price minimising behaviours by gender or age.

Conclusions: The public health benefits of tobacco taxation are likely to be undermined by young adult smokers accessing cheaper alternatives to manufactured cigarettes. Measures are still needed to reduce price differentials between factory-made cigarettes and loose tobacco. The apparent viability of using electronic cigarettes as a price-minimising strategy is encouraging from a public health perspective.

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