

# ISPTID

INTERNATIONAL SOCIETY FOR THE PREVENTION  
OF TOBACCO INDUCED DISEASES

# 14<sup>TH</sup> ANNUAL CONFERENCE

IZMIR, TURKEY | 4 – 6 OCTOBER 2018



# TID

Tobacco Induced Diseases

ABSTRACT BOOK

Kültür,  
Okumak, anlamak, görebilmek,  
görebildiğinden anlam çıkarmak,  
uyanık davranmak, düşünmek,  
Zahayı ferbiye etmektir.

B. Çelikk





## Aims and Scope

Tobacco Induced Diseases encompasses all aspects of research related to the prevention and control of tobacco use at a global level. Preventing diseases attributable to tobacco is only one aspect of the journal, whose overall scope is to provide a forum for the publication of research articles that can contribute to reducing the burden of tobacco induced diseases globally. To address this epidemic we believe that there must be an avenue for the publication of research/policy activities on tobacco control initiatives that may be very important at a regional and national level. This approach provides a very important "hands on" service to the tobacco control community at a global scale - as common problems have common solutions. Hence, we see ourselves as "connectors" within this global community.

The journal hence encourages the submission of articles from all medical, biological and psychosocial disciplines, ranging from medical and dental clinicians, through health professionals to basic biomedical and clinical scientists.

Full Journal Title:  
Tobacco Induced Diseases

Abbreviated Title:  
Tob. Induc. Dis.

ISSN (electronic):  
1617-9625

Publishing model:  
Open Access

Society:  
The International Society for the Prevention of Tobacco Induced Diseases

Publisher:  
EUEP European Publishing

Publisher Address:  
Science and Technological Park of Crete, Greece

Peer Review:  
Double Blind

Impact factor 2017:  
1.539

Licenses:  
CC-BY

Publication Frequency:  
Continuous

Publication Medium:  
Electronic Only

Publication website:  
<http://www.tobaccoinduceddiseases.org/>

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**THURSDAY 4 OCTOBER****YOUTH AND TOBACCO 1****What is the rate of tobacco usage among dental school students?**

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**Introduction**

This survey aimed to investigate the rate of students in dental schools that use various tobacco products and possible factors affecting their attitudes towards tobacco products.

**Methods**

The survey was conducted between May 1 and June 30, 2018 and participants were from ten dental schools in Turkey. First year students and fifth year students were compared in terms of tobacco product usage and their attitudes towards tobacco. Data were tested statistically using Statistical Package for Social Sciences (SPSS) 15.0 program and chi-square test.

**Results**

A total of 1228 students from eleven different dental schools completed the online survey. Majority of the participants were females (62.1 %) and males were less (37.9 %). Mean age of the participants was 21.8±2.9 years (min-max; 18-54 years). The overall rate of current smokers was 38.11%, but 56.6% of the participants have inhaled tobacco smoke. More than half (55.3%) of the current smokers stated that they wish to quit and 36.7% of these students have attempted to quit within the last six months. More than 10% of all participants defined themselves as highly addicted to cigarette smoking. The rate of waterpipe smokers were 41.2% and 83.7% of these students were not willing to stop waterpipe smoking.

**Conclusions**

The rate of current tobacco smokers is rather high among dental school students and this finding points out the need for more effective precautions against tobacco.

**Funding**

This study has been funded solely by the institutions of the authors.

**Tob. Induc. Dis. 2018;16(Suppl 3):A1**

**DOI: 10.18332/tid/94783**

**Assessment of the joint approach of family, school and family physician in smoking and alcohol drinking behaviors of adolescents**

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**Introduction**

The environment has an important role in gaining healthy behaviors for adolescents. The interaction of family, school and health services constituting this environment should be demonstrated and a positive approach model should be displayed. In this study, knowledge and consistency of some behaviors such as smoking and alcohol in adolescents in family, school system and health services is examined.

**Methods**

The study, which was designed as a case-control type, reached 1462 students in eight schools from the middle and lower socio-economic level. Scores were calculated according to the Risk Health Behaviors Scale (RSSS) and face-to-face interviews were conducted with 78 students and 78 families with risky health behaviors (RSD), their teachers, and family physicians.

**Results**

There was a low consistency ( $p < 0,001$ ) between the answers given by the adolescents about smoking and the answers given by the family members, and low consistency ( $p < 0,001$ ) between the answers given by the teachers. There was no consistency in response to drinking alcohol. There was no statistically significant consistency between the responses of the adolescents with RSD to attitude questions and the responses of family, teachers and family physicians ( $p > 0,05$ ).

**Conclusions**

Family, school and family physicians in the adolescent social environment are poorly aware of adolescents smoking and drinking alcohol. The family, school and health services around adolescents and adolescents must be in collaboration, to improve adolescent health.

**Funding**

Hacettepe University Scientific Research Projects Coordination Unit, Project no: 013D01106001.

**Tob. Induc. Dis. 2018;16(Suppl 3):A2**

**DOI: 10.18332/tid/94794**

**Social factors should not be underestimated in smoking behaviour among adolescents: A patriarchal experience from senior high school students in Turkey**

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**Introduction**

Smoking threatening especially younger age groups is a multi-factorial phenomenon on which socio-demographic, environmental and behavioural factors are effective. We aimed to evaluate the prevalence of smoking among senior high school students in Kahramanmaraş city centre, Turkey and to determine the effect of social contributing factors in order to provide an insight to future precautionary interventions including education strategies targeting not only the adolescent population, but also their families in a patriarchal method approach in Turkey.

**Methods**

This cross-sectional study included 1,537 senior students from 47 randomly selected high schools. Smokers group consisted of daily smokers and intermittent smokers except social intermittent smokers.

**Results**

The prevalences were found as 63.7% for trying to smoke at least once in a life time and 24.5% for smoking (21.1% for daily and 3.4% for infrequent smoking). The most



frequent reason to smoke was curiosity (41.7%). Most of the participants (82.9%) did not want to quit. The mean Fagerström test for nicotine dependence score of daily smokers was 2.1±1.4. Significant odds ratios for smoking were found as being male (3.26), no talking with parents (1.85 only in males), no support from parents (2.27 only in males), self-violence (2.73 only in females), violence against others (1.87 only in males), a smoking father (1.58 in males and 2.53 in females), a smoking sibling (1.50 in males, 2.00 in females), a smoking close friend (10.69 for males and 3.78 for females). The smoking status of the mother was not found to be effective for neither the males nor the females.

### Conclusions

If we intend to prevent the use of tobacco products especially prevalent among senior high school students and to construct an approach model for quitting to smoke more emphasis should be placed on social environment including the role models especially in communities with patriarchal structure.

### Funding

Çukurova University Scientific Research Foundation No. TTU-2015-3448.

**Tob. Induc. Dis. 2018;16(Suppl 3):A3**

**DOI: 10.18332/tid/94796**

## Smoke-free Ege: An attempt for an integrative prevention strategy for tobacco control at a University setting

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### Introduction

Ege University is a pioneering university at Ege region with its 70 000 students and approximately 3000 academic staff. Tobacco control policies, parallel to the current regulations in the country, are an important issue for Ege University too, yet it bares important opportunities as well as barriers for an integrative approach for tobacco control on University Campus.

### Aim

This study aims to explain the construction of Smoke-Free Ege Working Group, its formal initiation at the World No Tobacco Day (May 31st) and its subsequent action plan structured in the light of MPOWER.

### Methods

Since 1999, smoking cessation outpatient service delivery points have been the main units of motivation for tobacco control policies at Ege University. Although Turkey is moving well about tobacco regulations, adherence to regulations is deficient and high prevalence of smoking among university staff and students remains as a major concern throughout the years. In March 2018, the administrative bodies of Medical School, have dealt their concerns to the units serving care for cessation and have gathered them at a first meeting. The Dean and Medical Manager of Medical Faculty, with a non-smoker administrative team, mentored and facilitated these efforts. Starting at this point, with regular meetings, the representatives determined their objectives, current barriers and opportunities. The construction of Smoke-Free Ege Working Group has rooted from these consecutive meetings. In the light of MPOWER, specific objectives at University Campus were listed. The major

aim of the group was recognized as “changing the norms and culture for smoking”. This needed a good promotion strategy as well as collaboration with staff, students and administrative units. The efforts were collaborated with the Communications Unit of the University. A logo was created, brochures to raise awareness for the Smoke Free issue and the Working group, were prepared. The formal presentation of the Working Group was planned as a colorful activity on World No Tobacco Day, May 31st. To gather more visibility at the social media and press, representatives from three major opponent sports teams of Izmir city were invited.

### Results

The Working Group was introduced to the media in the presence of the Rector, Dean, Medical manager and all administrative units of the Medical School. Staff who succeeded to stop smoking, at the cessation service of the University, were awarded with certificates. The media showed great interest in the activity as it was put as “the famous sportsmen are supporting the efforts for a Smoke-free university”. Students and staff attended and shared the activity in social media as the entrance of the meeting was also colorfully designed for such promotion.

### Conclusions

The Working Group has achieved to attract attention of staff, students and responsible bodies of the University and now moving forward for Smoke –Free Councils with students and staff representatives. Barriers and opportunities will be discussed, actions in the light of MPOWER, will be planned at these Councils. Smoke –Free Unit certifications and awards, designing smoking points outside of education and hospital settings and changing the “norm” are targeted.

**Tob. Induc. Dis. 2018;16(Suppl 3):A4**

**DOI: 10.18332/tid/94807**

## Influencing factors of university students' smoking status according to gender

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### Background and aim

Despite the strict anti-tobacco policies, smoking is still a major preventable public health problem in Turkey. We aimed to evaluate the smoking status of university students and the influencing factors of their smoking according to both gender.

### Methods

This cross-sectional study conducted between March 2017 and June 2017 at an university located in the Eastern Black Sea region of Turkey. Among all students who had been reached and agreed to participate the study were included. A self-administered questionnaire was used to collect information.

### Results

Totally 2505 students' data were evaluated with a mean age of 20.8±2.5 and female dominance (58.9%). Overall current smoking rate of the students was 27.9%; 15.3% among females and 46.0% among males, additionally, the rate of ever smokers was 60.7%; 51.9% among females, 73.4% among males (p<0.05). The smoking rate of students who have at least one smoker family member (mother or father or sibling) was 61.4%, 63.3% among females and 58.6% among males (p<0.05) and also 40.1% of the students were exposed to tobacco in their residence. Among current smokers (n:699), compared to males, female students had lower mean Fagerström nicotine dependence level

and higher mean age of beginning smoking ( $p < 0.05$ ). Multivariate logistic regression analysis of male students and female students separately revealed that; studying in a 2 year faculty, having at least one smoker family member, having smoker close friends and presence of alcohol consumption were positively associated with current smoking for both gender.

#### Conclusions

This study showed that overall smoking rate of male students are higher than female students. However the influencing factors on their smoking status were similar.

**Tob. Induc. Dis. 2018;16(Suppl 3):A5**

**DOI: 10.18332/tid/94764**

### Factors affecting smoking initiation among the youth in Bangladesh – An empirical analysis

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#### Introduction

Tobacco is the single greatest preventable cause of death in the world today. Prevalence of tobacco use among youth has always been a critical issue in tobacco control. This paper examines factors that can contribute to smoking initiation among the youth in Bangladesh.

#### Methods

The 2013 Bangladesh Global Youth Tobacco Survey (GYTS) is used in this study. Logistic regression models are carried out to explore various factors that affect initiation of cigarette smoking among the youth in Bangladesh.

#### Results

Results reveal that the youth who has more money to spend are more than twice as likely to initiate smoking, however the youth who thinks cigarettes are expensive are less likely to smoke. Results also show that the youth who witness smoking inside their homes and school premises has a higher probability to initiate smoking compared to their respective counterparts. Among the young population who initiates smoking also believes that it would be easy to quit smoking relative to the beliefs of the non-smokers. Moreover, the youth who are not taught about the dangers of smoking in classes has a higher chance to initiate smoking.

#### Conclusions

Results of this paper hold strong policy implications. Findings of this paper demonstrate that imposing higher taxes on cigarettes as well as smoking ban at home and schools can reduce smoking initiation rates among the young population of Bangladesh. Furthermore, in the academic curriculum it is essential to include the harmful effects of tobacco use to discourage the youth from initiation.

**Tob. Induc. Dis. 2018;16(Suppl 3):A6**

**DOI: 10.18332/tid/94761**

## POLICY AND TAXATION 1

### The effectiveness of text and graphic warnings on cigarette packages on the intention to quit smoking: Comparing punishment and reward based images in a Turkish university student sample

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#### Objective

Text and graphic warnings on cigarette packs focus on the negative consequences of smoking. Although some studies have shown that warning labels on cigarette packets to be effective for smoking cessation, smoker adolescents in Turkey have generally find ineffective these messages or have changed their assessments according to the content. In this study, the impact of both punishment-based (e.g. 'Smoking causes lung cancer') and reward-based (e.g. 'If you do not smoke, you will have a beautiful smile') warnings on the intention to quit smoking was examined.

#### Methods

The sample of the study consisted of 22 undergraduate students from Istanbul University who have been smoking for the past 6 months. Participants filled out a brief information form about their smoking habits, followed by displayed a PowerPoint presentation with 20 images (10 punishment-based/10 reward-based) which they have never seen before randomly arranged on the computer screen. After each images, students were asked to respond the question of 'Did you think that you should stop smoking?' with a 5-point scale.

#### Results

The mean duration of smoking was  $5.1 \pm 3.3$  years and the average number of cigarettes per day was  $9.6 \pm 7.8$ . Participants who smoke  $\leq 10$  cigarettes per day found punishment-based images more effective ( $p = .042$ ) however participants who wanted to quit smoking within 6 months rated reward-based images more effective ( $p = .017$ ). In addition, 90.9% of the participants reported that current warnings on cigarette packages had no effect on thinking of stopping smoking.

#### Conclusions

These results showed that in addition to punishment-based warnings some reward-based images can be used on cigarette packages in order to more motivate smokers to quit smoking.

**Tob. Induc. Dis. 2018;16(Suppl 3):A7**

**DOI: 10.18332/tid/94758**

### Tobacco control in Africa: Case of Tunisia

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#### Introduction

The aim of the study is to describe the main challenges of tobacco control in Tunisia.

#### Results

Tunisia has the top 10 worldwide tobacco use prevalence among men and the highest one in Africa. Furthermore, the tobacco use prevalence is more and more common among female and adolescents. In 2010, about quarter of deaths among men is caused by tobacco. More men die in Tunisia than on average in middle-income countries. The Tobacco-related Cancer Incident Cases will increase by 80% by 2030. While Tunisia adopted anti-tobacco law on 1998 and ratified the FCTC on 2010, effective action of tobacco control was not implemented. Socio cultural factors favoring smoking initiation, lack of awareness among the public about the smoking hazards, weak support of governments and strong resistance of the tobacco industry are major reasons for the lack of effectiveness of current tobacco control measures. Effective intervention efforts are urgently required. Firm actions would be taken. These actions include accelerating the adoption of a new proposed law, enforcing actual law and the new one once adopted, developing an advocacy and argument about

the positive impact on state budget balance, increasing taxes, combating smuggling and illicit manufacturing and counterfeiting, increased education, increased smoking cessation support and implementing periodic surveillance.

#### Conclusion

Effective tobacco control should be implemented urgently in Tunisia. Commitments from government are crucial for this tobacco control actions. The international support is also needed.

**Tob. Induc. Dis. 2018;16(Suppl 3):A8**  
DOI: 10.18332/tid/94527

### Trends of tobacco cultivation in India: Boon or bane for supply reduction?

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#### Introduction

Flue-cured Virginia Tobacco is an important commercial crop grown in India. It occupies the third position in the world with an annual production of about 800 Million Kgs and 5th in exports. Tobacco contributes to over Rupees 340 Billion astax revenue to the national exchequer and approximately Rs.50 Billion by foreign exchange every year.

#### Objective of the study

To determine the trends of tobacco cultivation and tobacco revenue in India.

Data sources: Data on tobacco production, crop target, crop price etc were collected for the years 2012-2016 from Annual reports of Tobacco Board, Ministry of Trade and Commerce, India.

Study method: Secondary data-based Cross-Sectional Study

Data analysis: Data were analyzed using percentage, proportion and Pearson's Correlation Coefficient on SPSS version 16. Results were considered significant at 95% level of significance.

#### Results

The mean Flue-cured virginia production between 2012 and 2016 was 270.35 million kg ( $\pm 51.52$ ) with a percentage reduction of 27% from the baseline year. Flue-cured virginia had a mean target of 259.5 million kg ( $\pm 26.55$ ) during this period which showed 18% reduction in the target between base and end year. As FCV crop target increased, production also increased with a strong positive correlation ( $r = 0.96$ ;  $p \leq 0.05$ ) which was statistically significant. Excise duty and foreign exchange in million rupees between 2012 and 2016 showed a percentage increase of 8% and 22% respectively.

#### Conclusions

The study depicts that FCV crop target is correlated to the production positively. Hence, reducing crop target is an effective supply reduction measure.

**Tob. Induc. Dis. 2018;16(Suppl 3):A9**  
DOI: 10.18332/tid/94800

### The demand for cigarettes: new evidence from South Africa

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This paper estimates the price elasticity of demand for cigarettes in South Africa, a country that has currently experienced a transition in the cigarette market, from a near monopoly to a more competitive market structure. Based on longitudinal data drawn from the South Africa

National Income and Dynamic Study (NIDS: 2008 - 2014), we compare the results of the conditional elasticity (random and fixed effect panel estimates) and total elasticity of demand (two-part model). Like previous evidence into cigarette prices, we obtain negative price elasticity of demand for cigarettes, with the total price elasticity significantly larger than the conditional elasticity. For the total elasticity, a 10% increase in price reduces cigarette consumption by 4.3% for the economy brands and 6.9% for the mid-price brands. However, we find that over the same period, estimates from the fixed effect model are statistically insignificant. This is probably due to the limited within variation in both cigarette consumption and cigarette prices. Thus, with evidence from between variation models, increased tobacco taxes can, in the presence of the changing market structure, remain a desirable policy tool for reducing cigarette consumption.

**Tob. Induc. Dis. 2018;16(Suppl 3):A10**  
DOI: 10.18332/tid/94551

### Passing FCTC compliant tobacco control legislation amid conspicuous industry interference: the case of Senegal

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#### Background and context

Senegal achieved significant legislative advances with the adoption of a Tobacco Control (TC) Act in 1981. However, since 1985, increasingly powerful industry lobbying resulted in important aspects of the Act being made less effective or reversed. In 2004 Senegal ratified the WHO Framework Convention on Tobacco Control (FCTC), but once again tobacco industry interference delayed preparation of a draft bill implementing the provisions of the FCTC until 2011.

#### Aim

To use civil society advocacy to catalyze a public health movement and reduce prevalence of tobacco use through adoption and implementation of new FCTC-compliant legislation in Senegal.

#### Strategy / tactics

LISTAB conducted a program of advocacy activities in parallel to the three year legislative development process, from initial drafting by Ministry of Health, through parliamentary amendment and approval, and finally promulgation by the President.

#### Programme / Policy process

Our activities included:

- Setting up a watchdog body called Tobacco Industry Monitoring Team
- Sensitizing and training decision makers, politicians and journalists on the FCTC, particularly Article 5.3
- Lobbying religious leaders and Members of Parliament, and identifying among them TC champions
- Running a national media campaign to gain exposure for TC issues and counter tobacco industry interference

Outcomes / What was learned

In March 2014, the TC bill was approved by the Senegalese parliament and promulgated by the President. In supporting this achievement, the work conducted by LISTAB highlights the importance of:

- Capacity building of tobacco control actors in both FCTC content and advocacy techniques to create a sustainable movement for policy change
- Engagement with MPs at all stages of policy design and implementation to create a favorable political

environment for adoption of the bill in Parliament and countering industry interference

- Integrating media coverage to enhance outreach and help raise the profile of education campaigns, accelerating public understanding and galvanizing support for policy change.

**Tob. Induc. Dis. 2018;16(Suppl 3):A11**  
**DOI: 10.18332/tid/94552**

## IMPLEMENTING THE TOBACCO PRODUCT DIRECTIVE IN EUROPE – THE JOINT ACTION ON TOBACCO CONTROL (JATC)

### Ensuring sustainability and dissemination of TPD and JATC activities in Europe

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The Tobacco Products Directive (TPD) is a complex binding European Union (EU) legislative document. The aim of the TPD is to preserve a high level of European public health and support the functioning of the internal market of tobacco products in the EU. The European Commission concluded that the European Union Member states need additional assistance in this daunting task. Over the 3 years period (2017-2020) the TPD will come into full swing and the wealth of information that will be available to regulators will be unprecedented.

The Joint Action for Tobacco Control (JATC) presents action oriented, evidence-based initiative that should provide support the implementation of the TPD. This collaboration between 30 partners from 23 European countries is funded through the European Commission's 3rd Health program. The aim of the JATC is to harmonize the regulation of tobacco products in all EU Member States, through the analysis of data submitted by the tobacco industry to EU regulators and development of actions needed to take place in tobacco product licensing and regulation.

Objective of the symposium is to provide information on the TPD and JATC and to foster communication and collaboration between relevant stakeholders. The symposium target audiences are EU Regulators and Policymakers, International and National Tobacco Control Stakeholders and researchers who will benefit from the findings and the project's broader policy implications – as the largest current European Public Health Policy in implementation.

The nine work packages of the JATC are Coordination, Dissemination, Evaluation, Integration into National Policies and Sustainability, EU Common Entry Gate (EU-CEG) data, Extraction and Handling, Tobacco Product Evaluation, E-cigarette Product Evaluation, Laboratory Verification, Collaboration and Analyses and Additives Subject to Enhanced Reporting Obligations.

Under the TPD (2014/40/EU), manufacturers and importers of tobacco products, have to submit key information to the authorities in the Member States in which they plan to market the products. This submission of information is performed through the EU Common Entry Gate (EU-CEG). While the EU-CEG IT-system is owned by the European Commission, each EU MS own their data in the EU-CEG. TPD states that EU MS should share data with other EU MS and with the Commission. Furthermore, this data is, to the

extent possible, to be released to the public. Actions within this package bring significant added value as it addresses the issue of tobacco product monitoring at an EU wide level – an activity that would be impossible to be done by one, or a few, EU MS by themselves.

One of the specific aims of the JATC is dissemination of information and project's results to the public, regulators and researchers. Dissemination of information relevant to Tobacco Products Directive and tobacco control in general is essential for maximizing the impact of the JATC. Finding the most appropriate way of dissemination with protection of sensitive data is of great importance. However, despite the numerous available communication tools, dissemination of information is challenging.

### Funding

JATC has received funding from the European Union's Health Programme (2014-2020).

**Tob. Induc. Dis. 2018;16(Suppl 3):A12**  
**DOI: 10.18332/tid/95251**

## CESSATION 1

### Characteristics of smokers and outcomes of short term smoking cessation interventions according to cessation medication choice: Experience of an outpatient smoking cessation clinic

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### Background and aim

There are three forms of stop smoking medications (SSMs) in Turkey; bupropion SR, varenicline and nicotine replacement therapy (NRT) that are nicotine patches and nicotine gums. The aim of this study is to make a comparison between the SSM choices.

### Methods

Patients applied to the local SCC in a secondary health care unit between June 2014 and June 2017 were retrospectively evaluated. Among them the ones who had records of phone visits at third month were included. Patients were grouped according to the started SSM and comparisons were made by using appropriate statistical methods.

### Results

Totally 417 patients' data were evaluated with a mean age of 44.0±13.7 and male dominance (65.0%). Bupropion started group was consisted of 218 (52.2%) smokers, that number was 134 (32.1%) for varenicline started group and 65 (15.5%) for NRT started group. Between groups; mean ages, education levels, jobs, comorbid disease, Fagerström test score level, mean treatment usage period, mean control visit number, presence of adverse reactions and coverage status of the treatment had significant differences ( $p<0.05$ ), however, difference according to gender and quit rate were not significantly different ( $p>0.05$ ). Varenicline started group has the lower mean age, higher education level, higher rate of patients with actively working, lower rate of comorbid disease, higher mean medication usage duration, higher control visit number, lower rate at the paid medication period than both groups (bupropion SR and NRT), while presence of adverse reaction rate was only significantly higher than NRT ( $p<0.05$ ).

### Conclusion

This study showed that not only the demographical characteristics but also the clinical outcomes as well as

the coverage status of health insurances affect the SSM choice. Therefore at the time of evaluating the results of the smoking cessation interventions all these factors should be considered and each medication's outcomes should be evaluated separately.

**Tob. Induc. Dis. 2018;16(Suppl 3):A13**

**DOI: 10.18332/tid/94532**

### Developing message content sent via WhatsApp for improving quitting success rate

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#### Aim

To present the content development study of support messages to be sent via WhatsApp embedded to smoking cessation healthcare service to increase the individuals' success rate.

#### Methods

After the literature review, 178 key messages were gathered supporting smoking cessation. Similar messages related to "preparation" and "action" phases of the Transtheoretical Model were combined and a total of 60 key messages were obtained. Messages have been transformed into graphic images and sending period has also been determined for each message. Graphic messages were sent to field experts and individuals with quitting experience via an online questionnaire. Participants were asked to rate each graphic message in terms of content and appropriateness of sending period on a Likert-type scale (1: Absolutely no - 5: Absolutely yes). Messages with 4.0 and higher average scores were decided appropriate and, others were revised. After the revision, messages were sent back to the both participant groups again and, they were asked to evaluate with the same scale.

#### Results

A total of 60 messages were developed (seven for pre-quitting and, 53 for quitting phase). All (n=14) participants (seven from expert and seven from quitters group) were responded in the first round and 10 (71.4%) in the second round. The average score of the messages in the first round;  $4.4 \pm 1.0$  in the expert group,  $4.6 \pm 0.8$  in the quitters group and  $4.5 \pm 0.9$  for all participants. The number of messages below the cutoff point were five (8.3%) in the expert and two (3.3%) in the quitters group. The average score of messages in the second round;  $4.9 \pm 0.3$  in the expert group,  $4.7 \pm 0.6$  in the quitters group and  $4.8 \pm 0.4$  for all participants. In this round, all messages' average scores were found above (> 4.0) the cut-off point.

#### Conclusions

Study was conducted with a multidisciplinary participation. Sixty messages were created to support quitters according to stages of Transtheoretical model. A consensus developed on these graphic messages among field experts and individuals with quitting experience in terms of content and sending period.

**Tob. Induc. Dis. 2018;16(Suppl 3):A14**

**DOI: 10.18332/tid/94550**

### "Clean Air for Babies" App: A smoking cessation mobile app based on Cognitive Behavioral Therapy combined with personal counseling to help expectant mothers quit smoking.

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#### Introduction

Approximately 5%-10% of pregnant women smoke

worldwide, placing their unborn babies under risk of complicated medical conditions.

To date, common smoking cessation treatments have shown to be less adequate for smoking expectant mothers since the safety of anti-smoking medications during pregnancy has not yet been clearly proven, and current behavioral interventions available today fail to meet the intense emotional needs of this population.

Our company, Mind Innovations, develops and integrates digital health solutions. Our aim is to reduce perinatal smoking by developing a clinical-based solution tailored specifically to the expectant mother that consists of three modules: (1) CBT-based mobile app, (2) 6-week personal counseling program, and (3) Patient Relationship Management (PRM) tool. We expect this will fill the gap where other solutions fall short by better addressing this population's unique needs.

#### Methods

Mind Innovations collaborated with Meuhedet Health Provider, Israel to develop, implement, and recruit patients for this program.

We created an 18-hour clinical training course designed to qualify experienced counselors for running a 6-week personal counseling program that prepares the perinatal smoker towards her quit date aided by our PRM.

We developed a CBT-based app that provides motivation, knowledge, and training for preparing patients to succeed in meeting their quit date and preventing relapses

#### Results

We used questionnaires to evaluate our counselor training course. Results show satisfaction was very high (Mean=9.81/10 ;sd=0.48), and knowledge and skills increased from 5.93 to 8.86 (on a scale of 1-10, paired t-test ; p<0.001). The intervention program's results will be published soon.

#### Conclusions

Counselor training has proved successful. Our mobile intervention program is undergoing research.

#### Funding

The project was funded by Global Bridges organization for Meuhedet Health provider, Israel, and developed by Mind Innovations, a company specializing in developing digital health solutions.

**Tob. Induc. Dis. 2018;16(Suppl 3):A15**

**DOI: 10.18332/tid/94792**

### Change in the effect of pharmacotherapy additional to behavioral counseling using inverse probability treatment weighting in Balçova Heart Study

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#### Aim and objective

In 2007 Balçova Heart Study cohort was started to determine cardiovascular disease risk in 35 years and older people in Balçova district, İzmir, Turkey. Among participants who were willing to quit smoking were invited to smoking cessation clinic. This study aims to analyze the effect of inverse probability treatment weighting (IPTW) against no weighting to predict relapse in smoking cessation.

#### Methods

Smokers who were screened in Balçova Heart Study for ischemic heart disease risk factors and declared the will to quit smoking were invited to the outpatient smoking

cessation clinic. All patients were given behavioural counseling and a proportion of the smokers received pharmacotherapy (varenicline or bupropion) by clinical decision. After one year all patients were called to estimate the success rate of the intervention (n=359). The results of pharmacotherapy and behavioural counseling versus only behavioural counseling were compared in generalized estimating of effects model with and without IPTW weighting. The fully adjusted model included age and education category, gender, marital and working status, Fagerström Test for Nicotine Dependence category.

#### Results

Relapse rate was 51.3% (n=184). Additional to the behavioural counselling pharmacotherapy lowered relapse rate by 20.0% [relative risk=0.80, 95% confidence interval (CI): 0.64-0.99] relative to only behavioural counselling in crude analysis. In the fully adjusted model without IPTW beta regression coefficient of pharmacotherapy was -0.548 [odds ratio (OR)=0.58, 95% CI: 0.37-0.90, p=0.016]. After IPTW weighting the coefficient was -0.545 (OR=0.58, 95% CI: 0.37-0.90)p=0.016).

#### Conclusions

Additional to behavioural counseling pharmacotherapy is effective to prevent relapse in smoking cessation follow-up and IPTW weighting reveals only a slight change in beta regression coefficient.

#### Funding

Balçova Municipality funded Balçova Heart Study.

**Tob. Induc. Dis. 2018;16(Suppl 3):A16**

**DOI: 10.18332/tid/94877**

### DEUMF Pulmonary Diseases Department Smoking Cessation Clinic data

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#### Summary

Nicotine dependence is the most prevalent disease of our society, with smoking rates of 37%. Pharmacotherapy and behavioral therapy play an important role in reducing smoking. In this context, it is suggested that the daily behavioral models should be questioned and the methods of combating them by determining the factors that trigger the desire for smoking.

#### Methods

The data of 326 patients who were followed-up between 2016-2018 in the DEUMS Pulmonary Diseases Department Smoking Cessation clinic were screened. Demographic data, Fagerström Nicotine Dependence Test (FBNT), treatments and responses were questioned.

#### Findings

It's have been given to %71 patients varenicline, %11 bupropion, %4 nicotine replacement therapy. %14 patients were followed up without pharmacotherapy. %27 of the patients have quit the smoking, %22 not, %8 have reduction at daily smoking. %43 of the patients still in the process of treatment. For this reason it was considered as an unknown group. Trigger factors for relaps; 31.4% stress, 23.3% post-meal, tea 19.8% coffee 17.4% alcohol 8%. According to FBNT, 26.7% of patients had low, 25.6% had moderate and 47.7% had high level of addiction.

#### Conclusions

Nicotine dependence is a disease that not too easy to treat. It is observed that the rate of tobacco use in early ages is increasing and the abstinence rate is very low at all ages. The first thing to do is to prevent tobacco using and to

optimize the policies, to recommend the release it to every smoking patient and to direct the patients to the relevant centers.

**Tob. Induc. Dis. 2018;16(Suppl 3):A17**

**DOI: 10.18332/tid/94878**

### Tobacco use and rates of 4As delivery for treating tobacco dependence among Albanian students. A cross-sectional study

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#### Background:

Tobacco dependence treatment in clinical settings is of prime public health importance, especially in the Albanian population, as more than 23% (41% male and 5.6% female) are daily smokers. This study sought to examine the characteristics of tobacco users among university students and document rates of tobacco treatment delivery in Vlora, Albania.

#### Design/Methods:

A cross-sectional study was conducted (May-July 2017) among students of University of Vlora, Albania. Students who agreed to participate in the study, completed a self-reported questionnaire, part of which was based on the Global Adult Tobacco Survey (GATS). Students from all Faculties and all semesters were randomly selected before each course. Statistical analyses were conducted with SAS 9.1.

#### Results:

In total 1360 students participated (73% female) with 18% (n=234) of them being daily smokers. The majority of the smoker participants (81.0%) reported living with their family or a roommate, 45.5% of which are also smokers. Most of the smokers (62.7%) were willing to quit smoking within the next 6 months while the 62.0% had made at least one attempt to quit smoking during the last 12 months. Doctor's advice appears to be an important motivation to quit for the majority of smokers (73.0%), yet of those visited a doctor (39.0%) within the same year, 70.9% were Asked about their smoking behaviour, 53.3% were Advised to quit, 33.8% were offered Assistance with quitting, 21.1% were offered help to set a quit date and 22.4% Arranged a follow-up meeting with the doctor.

#### Conclusions:

Our study showed that although the advice of a doctor is a strong influence for young adults in quitting smoking, not all of them are asked about their smoking status or advised to quit as it is strongly recommended by all international guidelines for treating tobacco dependence. New interventions targeted on evaluating the effectiveness of well-designed training programmes in influencing tobacco treatment outcomes in healthcare settings in Albania are necessary.

**Tob. Induc. Dis. 2018;16(Suppl 3):A18**

**DOI: 10.18332/tid/95113**

### Effectiveness of Tobacco Cessation Training Program for primary health care physicians of a South Indian district

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### Introduction

Tobacco Cessation is one of the least attended components of Tobacco Control strategies worldwide. Although there is a felt need by tobacco users to quit the use and Tobacco Cessation Services can be provided in low-resource healthcare settings, lack of adequate training in tobacco cessation among health care physicians acts as a major deterrent to provide the services.

### Objective

To determine the effectiveness of training medical officers in providing tobacco cessation services.

### Methods

Study design: Cross Sectional Study.

Study method: Self-scored questionnaire, self-administered pre and post one-day training on tobacco cessation.

Study area: Dakshina Kannada, Karnataka, India.

Sample size: Universal sample of 55 Medical Officers.

Study period: 1 month.

### Results

None of the Medical Officers were earlier trained in tobacco cessation services. Among the 55 medical officers, 23 were females. Mean number of years of experience of respondents was 8.2±6.99 years. Mean pre-test score for overall ability to provide tobacco cessation services was 46.31±9.41 and post-test score was 54.40±8.67 which showed a statistically significant difference ( $t = -7.58$ ;  $p < 0.05$ ). The overall mean of pre and post test scores for ability to counsel the respondents using 5A's were 19.73±3.47 and 21.87±3.37 respectively which showed a statistically significant difference ( $t = -5.29$ ;  $p < 0.0005$ ). A moderate positive correlation was observed between the overall pre and post test scores ( $r = 0.62$ ;  $p < 0.01$ ).

### Conclusions

The study revealed that there was a significant improvement in the perceived ability to provide tobacco cessation services after the conduct of the Workshop.

### Funding

District Tobacco Control Cell, Dakshina Kannada, Karnataka, India.

**Tob. Induc. Dis. 2018;16(Suppl 3):A19**

**DOI: 10.18332/tid/94767**

## TOBACCO HEALTH EFFECTS 1

### Evaluation of sleep apnea and smoking in drivers

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### Aim and objective

Smoking is a potential risk factor for sleep apnea, which increases the risk of health problems and accidents in drivers. The aim of this study was to determine relationship between smoking and sleep apnea.

### Methods

This cross-sectional study was performed on 196 minibus drivers in the city of Aydın. Data were collected with a questionnaire. STOP-Bang questionnaire, adapted to Turkish by Acar et al., was utilized to evaluate sleep apnea.

The questionnaire is composed of eight questions. The responders are asked to mark either yes or no. The scores 5-8, 3-4 and 0-2 for yes are considered high, moderate and low respectively.

### Results

All the drivers were male, and their mean age was 41,00±9,49 years. Seventy-four percent of the drivers were smokers and 40.3% of the drivers were taking alcohol. The mean duration of smoking was 19.46±8.41 years. Forty-point three percent of the drivers were working in shifts, the mean duration of working per day was 7,02±1,47 hours. Twenty-six-point seven percent of the drivers had a health problem. Based on the analysis of data collected with STOP-bang questionnaire, 9.8% of the drivers had a high score for sleep apnea, 46.1% of the drivers had a moderate score for sleep apnea and 44.1% of the drivers had a low score for sleep apnea. The sleep apnea score was higher in the drivers aged over 50 years, the smoking drivers and the drivers with a health problem.

### Conclusions

Smoking was found to be common in the drivers and to be related to high sleep apnea scores. It can be recommended that drivers should be provided counseling to help them quit smoking and that sleep apnea should be treated. They should also be informed about the risk of accidents due to sleep apnea.

**Tob. Induc. Dis. 2018;16(Suppl 3):A20**

**DOI: 10.18332/tid/94563**

### Smoking is associated with walking, fatigue, depression, and health-related quality of life in persons with multiple sclerosis

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### Aim and objective

Recent studies have reported that smoking is associated with increased multiple sclerosis (MS) risk. Additionally, non-smokers have lower self-reported disability and smoking cessation resulted in the decreased risk of reaching disability milestones. Although some studies have reported that smoking is associated with anxiety and depression, little is known about other common symptoms in persons with MS (pwMS). Thus, the aim was to investigate the association between smoking and walking, fatigue, depression, and health-related quality of life in pwMS.

### Methods

This study included 279 (199 female) pwMS. The current smoking status and pack-years of smoking were evaluated. Walking was assessed using Timed 25-Foot Walk (T25FW), Six-Minute Walk Test (6MWT), and 12-Item MS Walking Scale (MSWS-12). Fatigue, depression and health-related quality of life were assessed using Modified Fatigue Impact Scale (MFIS), Beck Depression Inventory (BDI), and MS International Quality of Life questionnaire (MusiQoL), respectively. Disability level was assessed using Expanded Disability Status Scale (EDSS).

### Results

There were 95 (34.1%) current smokers (mean pack-years of smoking was 9.2 (SD 7.1) years). Current smokers had significantly worse MFIS ( $p = 0.003$ ,  $\eta^2 = 0.031$ ), BDI ( $p = 0.044$ ,  $\eta^2 = 0.015$ ), and MusiQoL ( $p = 0.003$ ,  $\eta^2 = 0.031$ ) scores adjusting for age, gender, EDSS and disease duration

compared to non-smokers. No significant difference was observed between smokers and non-smokers in walking and physical activity measures ( $p > 0.05$ ). Pack-years of smoking was significantly correlated with T25FW ( $r = 0.574$ ,  $p < 0.001$ ), 6MWT ( $r = -0.461$ ,  $p < 0.001$ ), MSWS-12 ( $r = 0.684$ ,  $p < 0.001$ ), MFIS ( $r = 0.370$ ,  $p < 0.001$ ), MusiQoL ( $r = -0.259$ ,  $p = 0.012$ ), and BDI ( $r = 0.269$ ,  $p < 0.001$ ) in smokers.

#### Conclusions

Smokers have significantly more fatigue and depression levels and less health-related quality of life compared to non-smoker pwMS. Increased pack-years of smoking is associated worse walking ability, depression, fatigue and health-related quality of life levels. Smoking cessation may reduce walking impairment as well as fatigue and depression, additionally increase health-related quality of life in pwMS.

**Tob. Induc. Dis. 2018;16(Suppl 3):A21**

**DOI: 10.18332/tid/94759**

### Assessment of carotid calcifications on panoramic radiographs and its relationship with periodontal condition and smoking status

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#### Objectives

The aim of this study is to determine retrospectively the presence of carotid artery calcifications (CACs) detected on panoramic radiographs and to correlate the finding of such calcifications with gender, smoking status, medical history and periodontal status were evaluated.

#### Methods

Periodontal conditions of 1100 patients were assessed. According to periodontal clinical measurements, the patient was diagnosed with gingivitis or periodontitis. Each of the subjects had one digital panoramic radiograph. CAC findings were defined as radiopaque masses adjacent to the cervical vertebrae at or below the intervertebral space between C3 and C4 on the panoramic radiograph. Panoramic radiographs were evaluated for CAC presence.

#### Results

Of 1100 patients, 34 patients (3.1%; 21 female, 13 male) had one or more radiopaque mass detected on digital images. There was no statistically significant difference in smoking status, gender, systemic health status between CAC (+) and CAC (-) groups. As a result of multivariate logistic regression analysis, age was found to be an independent risk factor for differentiating CAC (+) and CAC (-) groups. There were 16 and 17 patients with smoking history in CAC(+) and CAC(-) groups, respectively. The distributions of the patients in terms of smoking history were statistically similar. Compared to patient under 40 years of age, the risk of CACs increases 4.49 fold in patients aged 40-55 years and 4.40 fold in patients over 55 years.

#### Conclusions

Digital panoramic images may have some diagnostic value for detecting CACs and this early diagnosis could potentially increase the length and quality of life for people with CACs. It was demonstrated that the detection of CACs are increased with age.

**Tob. Induc. Dis. 2018;16(Suppl 3):A22**

**DOI: 10.18332/tid/94765**

### The relationship between smoking history, functional exercise capacity and airway obstruction severity in patients with chronic obstructive pulmonary disease

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#### Aim and objective

The aim of the study was to investigate the relationship between smoking history, functional exercise capacity and airway obstruction severity in patients with chronic obstructive pulmonary disease (COPD).

#### Methods

Thirty patients with stable COPD participated in this study. Demographic value and smoking history (pack-years) were recorded. Pulmonary function tests were performed. Functional exercise capacity was evaluated with six minute walking test (6MWT). The Pearson correlation coefficient was calculated to examine the correlation between the variables.

#### Results

The mean of age (years), smoking history (pack-years), forced expiratory volume in 1 second (FEV1 %), 6MWT distance (m) were 74.60, 47.30, 55.03, 382.70 respectively. The smoking history had significant negative correlation with FEV1 % ( $r = -0.374$ ,  $p = 0.042$ ) and 6MWT distance ( $r = -0.426$ ,  $p = 0.019$ ).

#### Conclusions

The study showed that smoking history had significant negative correlation with functional exercise capacity and airway obstruction severity in patients with COPD. By reducing cigarette consumption, functional exercise capacity can be increased and the severity of airway obstruction can be decreased.

**Tob. Induc. Dis. 2018;16(Suppl 3):A23**

**DOI: 10.18332/tid/94786**

### Frequency of smoking in subgroups of ischemic stroke and relation between smoking and various complications of ischemic stroke

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#### Aim

To find out the frequency of smoking in subgroups of ischemic stroke and to search for relation between smoking and asymptomatic ischemic lesions (AILs) in cranial magnetic resonance imaging (MRI), recurrence of ischemic stroke, hemorrhagic transformation, seizure, pneumonia, pulmonary embolism, myocardial infarction and deep vein thrombosis.

#### Methods

The stroke database of the Neurology Clinic in Istanbul Faculty of Medicine were retrospectively screened and patients with ischemic stroke admitted between 1995-2014 were included in this study.

#### Results

There were 3615 patients. The lowest frequency of smoking was found in patients with cardioembolism (348/1160, 30%) ( $p < 0.001$ ). But we found significantly more patients with AILs ( $p = 0.022$ ) and higher rate of pneumonia ( $p = 0.016$ ) in smokers compared with non-smokers in patients with



cardioembolism. We looked for relation between AILs and other potential risk factors such as hypertension, alcohol consumption, diabetes mellitus and hyperlipidemia. Only hypertension was found to be related with AILs ( $p < 0,001$ ). Logistic regression analysis showed that both smoking ( $p = 0,013$ , OR: 0,61 %95 CI: [0,41-0,9]) and hypertension ( $p = 0,01$  OR: 0,39 %95 CI [0,23-0,66]) were independent risk factors for AILs. We also looked for relation between pneumonia and other potential risk factors such as hypertension, alcohol consumption, diabetes mellitus and higher modified Rankin Scale (mRS) score at admission. Only higher mRS score at admission was found to be related with pneumonia (4,54 vs. 4,37,  $p = 0,027$ ). Logistic regression analysis showed that both smoking ( $p = 0,012$  OR: 0,52 %95 CI [0,32-0,87], and higher mRS score at admission ( $p = 0,017$  OR: 0,73 %95 CI [0,56-0,94]) were independent risk factors for pneumonia.

#### Conclusions

The lowest frequency of smoking is found in patients with cardioembolic stroke but smoking in those patients is an independent risk factor for development of AILs and pneumonia.

**Tob. Induc. Dis. 2018;16(Suppl 3):A24**

**DOI: 10.18332/tid/94861**

### The increased cardiovascular mortality among hypertensive smokers

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#### Introduction

Nearly half of all smokers are hypertensive based on new guidelines issued in 2017. The objective of this study is to assess the excess risk and shortened life expectancy of smokers with 1) elevated blood pressure (120-129/<80), 2) stage 1 hypertension (130-139/80-89), and 3) stage 2 hypertension ( $\geq 140/\geq 90$ ) compared to non-smokers with normal blood pressure <120/80 mmHg.

#### Methods

A cohort, consisting of 422,771 adults, was recruited successively during routine health surveillance visits between 1996 and 2008 in Taiwan. Lifestyle information indicated on a questionnaire and results from fasting blood and other screening tests, including blood pressure measured while sitting, were repeatedly collected. Hazard ratios (HRs) were determined by the Cox regression method, and life expectancy was determined using the life table method.

#### Results

One-quarter of the cohort participants were current smokers. Nearly half of the smokers (48%) were classified as hypertensive, with 14% having elevated blood pressure, 19% stage 1 and 16% stage 2 hypertension. The HR for cardiovascular disease (CVD) mortality was 1.41 for smokers with normal blood pressure, 1.45 for smokers with elevated blood pressure, 2.11 for smokers with stage 1 hypertension, and 4.92 for smokers with stage 2 hypertension, representing an average threefold increase compared to non-smokers with normal blood pressure. The HR for heart disease mortality was 1.43 for smokers with elevated blood pressure, 1.85 for smokers with stage 1 hypertension, and 3.56 for smokers with stage 2 hypertension. The HR for stroke mortality was 1.54 for smokers with elevated blood pressure, 2.98 for smokers with stage 1 hypertension, and 8.82 for smokers with stage 2 hypertension, representing a five-fold increase.

Smoking shortened the life span by six years, and stage 2 hypertension shortened it by four years, representing a combined loss of life of 10 years. Elevated blood pressure alone did not increase mortality, when compared with normotensive (non)smokers (normal subjects).

#### Conclusions

Smokers with hypertension have a three- to five-fold increase in CVD mortality, including mortality due to heart diseases and stroke. Life span shortened by five to six years for smokers and by 10 years for hypertensive smokers. Unfortunately, most smokers were unaware of their hypertension status, which could triple or quintuple their CVD mortality risks.

**Tob. Induc. Dis. 2018;16(Suppl 3):A25**

**DOI: 10.18332/tid/94793**

## FRIDAY 5 OCTOBER

### Tobacco-induced suppression of the vascular response to dental plaque

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#### Aim and objective

Cigarette smoking presents oral health professionals with a clinical conundrum: reduced vascular responsiveness in response to the oral biofilm (often incongruously equated to decreased gingival inflammation per se), accompanied by increased susceptibility to destructive periodontal diseases. The aim of this review was to summarize contemporary hypotheses that help explain the suppressed bleeding response in the oral cavity of smokers.

#### Methods

The core of this review was informed by a PubMed search for "[smok\* OR cigar\* OR nicotine OR tobacco] AND (periodont\* OR gingiv\* ) AND (blood OR vascul\*)" generating  $n = 958$  hits on March 17, 2018.

#### Results and conclusions

Smoke exposure influences angiogenesis, innate cell function, the production of inflammatory mediators including cytokines and proteases and tobacco-bacterial interactions, while concomitant smoking and specific genetic traits predispose to destructive periodontal diseases.

#### Funding

The tobacco-related research in D.A. Scott's lab is currently funded by the U.S. Department of Health and Human Services via the National Institute for Dental and Craniofacial Research [R01DE026963 [DAS]; R01DE017680 [DAS]; and R01DE026963 [P.I., H. Wang]]; and via the National Institute for General Medical Sciences [P20GM125504 [P.I., R.J. Lamont]].

**Tob. Induc. Dis. 2018;16(Suppl 3):A26**

**DOI: 10.18332/tid/94524**

### Toward full involvement of oral healthcare providers in tobacco dependence treatment in Japan

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Several numbers regarding nationally representative activity of oral healthcare professionals (OHP) indicate importance of the involvement of OHP in tobacco dependence treatment. OHP are ideally placed to promote

quitting. Global tobacco control should involve OHP to increase capacity for tobacco control. Then, 2011 United Nation political declaration for NCDs included oral diseases in article 19 as: Renal, oral and eye diseases pose a major health burden for many countries and that these diseases share common risk factors and can benefit from common responses to non-communicable diseases. Again, OHP are in the unique position in helping tobacco users to quit in tobacco control and for prevention and control of NCDs.

However, this opportunity has been not fully achieved even in developed countries, and in Japan, the developing country with respect to tobacco control, where no national data is currently available regarding smoking and dental care. I believe that dentistry in the US, UK, and Japan and Turkey share various information toward full involvement of OHP in tobacco dependence treatment. I will present evidence for the dental involvement in national and global tobacco control, results from trials for training of the WHO recommendation of integrating brief tobacco intervention into dental program, and dissemination of the WHO recommendation in Japan in addition to heat-not-burn tobacco epidemic in Japan.

#### **Funding**

This study was supported by Pfizer Global Medical Grant #35621681.

**Tob. Induc. Dis. 2018;16(Suppl 3):A27**

**DOI: 10.18332/tid/94913**

### **A model of pancreatitis and pancreatic oncogenesis following exposure to Nicotine**

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Cigarette Smoking is a known risk factor for pancreatic cancer. In smokers, increased exposure causes a marked increase in the incidence of these diseases. The mechanism of this effect is yet to be fully understood. We hypothesize that nicotine, a major component of cigarette smoking will have the greatest impact of developing these diseases in smokers. Currently an established animal model is lacking to conduct detailed studies of the etiology of these diseases in smokers. Aim and objective: The aim of our study is to establish a rodent model of pancreatic cancer and to determine the relationships between the development of pancreatitis and pancreatic cancer in response to nicotine exposure. Methods: Adult Male Rats were randomly allocated into treatment groups and acclimatized for at least two weeks with monitored body weight, food and water freely available. Rats were exposed to nicotine in the aerosol chamber designed to deliver aerosol vapor for fixed intervals. At term, rats were fasted, anesthetized and sacrificed. Blood and pancreatic tissues were collected and processed for physiologic studies and for histopathological evaluation. A segment of the pancreas was used for isolation of acinar cells for determination of pancreatic function and for determination of expression and mutation of oncogenes. Alterations of cellular, subcellular and/or genetic mechanisms were studied in isolated pancreatic primary cells applying classical signal transduction pathways. Results showed that nicotine inhaled rats have decreased exocrine pancreatic function and altered pancreatic morphology. These changes are associated and correlated with isolated cell culture data. Conclusions/implications: Data from these studies appear closely related to that reported in patients with pancreatitis.

Making rodent as a plausible animal model of pancreatitis and pancreatic cancer will allow us to examine and assess the evolution of this disease process in smokers.

#### **Funding**

UAMS Research Foundation 117-1002531: AWD00050842;

**Tob. Induc. Dis. 2018;16(Suppl 3):A28**

**DOI: 10.18332/tid/94526**

## **ORAL HEALTH AND TOBACCO 1**

### **Tobacco use, nicotine, and oral microorganisms**

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Evidence to infer the causal association between tobacco use and health consequences have been investigated recently for oral diseases. The aim of present review is to clarify underlying mechanisms regarding effects of tobacco use on oral microorganisms comprehensively.

Electronic searches of relevant articles were conducted with a standardized search strategy in the last 10 years. Overall, 1099 papers were extracted. The studies that addressed the relationship between tobacco and oral microorganisms were included. After reading the titles and abstracts, 121 papers were deemed appropriate for the present review.

These studies addressed periodontal pathogens, and other microorganisms included HPV, Candida species, Streptococcus mutans, and peri-implant microorganisms. Dysbiosis of periodontal microbiome in smokers has been demonstrated by observational and intervention studies. Smoking cessation is shown to be beneficial in terms of compositional changes of subgingival and peri-implant microbiomes. Studies utilizing cigarette smoke extract and indicators of virulence have suggested a benefit regarding the functional changes of subgingival microbiomes for quitters. The effects of nicotine exposure on growth and metabolism of S. mutans were observed in a dose dependent manner. The potential role of tobacco use on HPV infection requires clarification with large sample studies. Potential effects of exposure to tobacco smoking were reported on accumulation of pathogenic bacteria on oral apparatus for orthodontic treatment, denture, and titanium for oral implant.

In conclusion, further studies are warranted to examine impact of tobacco intervention for healthier mouth ecosystem on the full achievement of the interventions in dental settings.

#### **Funding**

This study was supported by Pfizer Global Medical Grant #35621681.

**Tob. Induc. Dis. 2018;16(Suppl 3):A29**

**DOI: 10.18332/tid/94880**

### **Effects of smoking on non-surgical periodontal therapy in generalized aggressive periodontitis**

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#### Aim

To evaluate possible effects of smoking on the clinical, biochemical and microbiological outcomes of non-surgical periodontal treatment in GAgP patients.

#### Methods

At baseline, whole mouth clinical periodontal measurements consisting probing depth, clinical attachment level, bleeding on probing and plaque index were recorded and these measurements were repeated 1, 3 and 6 months after completion of non-surgical periodontal treatment. Saliva, gingival crevicular fluid (GCF) and blood samples were obtained at the same time points. Interleukin- (IL)-17A, IL-17E, IL-1B, IL-6 and tumor necrosis factor-alpha levels were determined in all samples. Moreover, subgingival plaque samples were obtained and presence, as well as quantities of 11 different bacterial species, were determined.

#### Results

Fourteen smoker and 13 non-smoker GAgP patients were included in the present study. There were no significant differences in clinical parameters between the study groups except the higher plaque scores in the non-smoker group at 6-month control ( $p < 0.05$ ). Some differences in the biochemical parameters were found between the study groups ( $p < 0.05$ ). The microbiological analyses indicated more Gram-negative bacteria in the smoker group than the non-smoker group ( $p < 0.05$ ). Moreover, Gram-positive bacteria were more frequent in the non-smoker group than the smoker group at baseline ( $p < 0.05$ ). Gram-negative bacteria repopulated in the smoker group much faster than the non-smoker group ( $p < 0.05$ ).

#### Conclusion

Although clinical periodontal parameters revealed no significant differences between the smoker and non-smoker GAgP patients after the non-surgical periodontal treatment, it can be suggested that smoking has negative effects on the biochemical and microbiological outcomes.

#### Funding

This study was supported by a grant from the Ege University Research Foundation (Project No: 2014 DIS 013) and funds from the University of Glasgow.

**Tob. Induc. Dis. 2018;16(Suppl 3):A30**

**DOI: 10.18332/tid/94529**

### Dimensional changes of recipient site following free gingival graft around dental implants in smokers and non-smokers: A prospective controlled clinical study

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#### Aim

The aim of the present study is to investigate the effect of smoking on healing of free gingival graft around dental implants.

#### Methods

Twelve non-smoker and eight smoker patients presenting inadequate keratinized mucosa around dental implants in posterior area were included in the present study. Clinical parameters including probing depth, modified sulcus bleeding index and modified plaque index were determined. Individual stents were prepared for all patients. All patients received FGG of same dimensions (5.0 mm x 10.0 mm). Vertical dimension of keratinized mucosa (KM) was measured using individual stent. All

measurements were performed at baseline, 30 and 90 and 180 days. Parametric and non-parametric statistical analyses were performed.

#### Results

There were no significant differences in demographics between smokers and non-smokers ( $p > 0,05$ ). Vertical dimension of keratinized mucosa was significantly increased in both study groups at sixth month compared to baseline ( $p < 0,05$ ). There was no significant difference between smokers and non-smokers in vertical dimension of keratinized mucosa changes ( $p > 0,05$ ). The total area of FGG significantly decreased at first, third and sixth months compared to baseline in both study groups ( $p < 0,05$ ). The shrinkage of FGG significantly higher in smokers than non-smokers at sixth months ( $p < 0,05$ ).

#### Conclusion

Within the limitation of the present study, dimensional changes of recipient site following free gingival graft around dental implants seems to be affected from smoking.

#### Funding

Scientific Research Commission of Ege University.

**Tob. Induc. Dis. 2018;16(Suppl 3):A31**

**DOI: 10.18332/tid/94533**

### The effect of synbiotic tablet usage on the clinical and biochemical parameters in smokers and nonsmokers with gingivitis: a randomized placebo-controlled clinical trial

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#### Introduction

The aim of this study is to evaluate the efficacy of oral administration of synbiotic tablets on the clinical parameters and the levels of selected inflammatory mediators in gingival crevicular fluid (GCF) in smokers and non-smokers with gingivitis.

#### Methods

Eighty patients with gingivitis (40 smoker (+), 40 non-smoker (-)), randomly assigned to test (T) or control (C) groups. Each subject was instructed to chew one tablet per day, during 30 days. Clinical parameters including plaque and gingival indices and GCF samples obtained from all subjects on baseline, 1st month, and 2nd month. The GCF levels of interleukin (IL)-6, IL-8 and IL-10 were determined.

#### Results

All clinical and biochemical parameters for all groups were significantly reduced compared to baseline ( $p < 0.05$ ). GCF volume didn't show a significant intergroup difference at any time whereas Plaque Index (PI) was significantly higher in both smoker groups compared with the T(-) group in the 2nd month follow-up ( $p < 0.05$ ). GCF levels of IL-8 in C(-) group, IL-6 in both control groups were significantly higher compared to T(+) group and IL-10 in both control groups were significantly higher compared to T(-) group at the 2nd month follow up ( $p < 0.05$ ).

#### Conclusions

Adjunctive synbiotic tablets enhance subclinical therapeutic outcomes regardless of smoking compared with placebo according to the levels of IL-6, IL-8 and IL-10 variables.

**Tob. Induc. Dis. 2018;16(Suppl 3):A32**

**DOI: 10.18332/tid/94756**

### Impact of smoking on marginal bone loss in implant supported removable prosthesis

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#### Aim and objective

For permanently replacing missing teeth, dental implant placement is a common treatment procedure in dentistry. The success rates of implants depend on the presence of healthy surrounding tissue and finally amount of marginal bone levels. In this study we aimed to compare marginal bone loss around implants in implant supported removable prosthesis in smokers and non smokers.

#### Methods

Records of 64 non-smoker, and 19 smoker patients were collected from 166 implants in routine recall sessions 6, 12, and 24 months after loading. The collected data consisted of gender, age, implant diameter, implant length and periodontal parameters (plaque index, gingival index and pocket probing depth). Marginal bone measurements was analyzed using digitized periapical dental images. Statistical analysis was performed using the SPSS 22.0 version. The results were assessed at 95% confidence interval, at a significance level of 0.05.

#### Results

Marginal bone loss was affected by the smoking and severity of loss was increased significantly from 6 to 24 months ( $p < 0.05$ ) in smokers. Age was also significantly related to marginal bone loss, while, there was no significant relationship between marginal bone loss and gender or implant length or diameter ( $p > 0.05$ ). Plaque index and probing depth was higher in smokers, while gingival index was higher in non-smokers.

#### Conclusions

Implants used for removable prosthesis in the elderly smokers may be at higher risk to present marginal bone loss leading to loss of implants.

**Tob. Induc. Dis. 2018;16(Suppl 3):A33**

**DOI: 10.18332/tid/94781**

### Effect of smoking on salivary free amino acid levels

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#### Objective

The aim of this study was to identify probable intermediate biomarkers of disturbed pathways and their link between smoking.

#### Methods

Un-stimulated whole saliva and serum samples were collected from a total of 30 systemically healthy participants with periodontally healthy smokers (S) (n=15) and non-smokers (n=15). Periodontal indices (plaque index, gingival index, probing depth, bleeding on probing, clinical attachment level) were recorded to confirm periodontal health. Saliva was purified, and a total of 28 amino acids and metabolites were analyzed by liquid chromatography-mass spectrometry (LC-MS/MS). Smoking status was validated measuring serum cotinine levels. Intergroup comparisons were assessed using the Mann Whitney U test.

#### Results

When 28 amino acids were evaluated, smokers had

statistically significantly higher cystathionine levels than non-smokers ( $p < 0.05$ ).

#### Conclusions

Saliva cystathionine is associated with smoking in periodontally healthy individuals, and is possibly related to altered sulfuration pathway.

**Tob. Induc. Dis. 2018;16(Suppl 3):A34**

**DOI: 10.18332/tid/94833**

## WATERPIPE AND NOVEL PRODUCTS

### Direct effects of waterpipe tobacco smoking on cardiovascular health

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#### Introduction

Waterpipe smoking is characterized by long sessions of smoking, deep inhalation of tobacco smoke, and longer puffs compared to cigarette smoking. Clearly, waterpipe smokers are exposed to high levels of tobacco smoke. Waterpipe smoke contains carcinogens and toxicants, such as tobacco-specific nitrosamines, benzene, nitric oxide and heavy metals. Nicotine impact on hemodynamic responses is evident by increase in heart rate, constriction in blood vessels, and increase in myocardial contraction which contribute to acute cardiovascular events.

#### Methods

This secondary analysis was completed using data from a randomized clinical trial to investigate the direct effects of nicotine (published elsewhere). Twenty-four young adults smoked waterpipe tobacco for 45 minutes in a controlled environment once a week for 4 weeks. Carbon Monoxide was measured pre and post smoking. Heart rate was measured continuously during smoking. The two nicotine conditions were placebo and nicotine tobacco.

#### Results

Heart rate increased significantly over time while smoking nicotine containing waterpipe tobacco. The mean heart rate increased from  $78 \pm 12$  (at baseline) to  $86 \pm 13$  (post smoking) in the nicotine condition and from  $72 \pm 11$  (baseline) to  $77 \pm 9$  (post smoking) in the non-nicotine condition. CO levels increased significantly from pre smoking ( $1.18 \pm 1.05$ ) to post smoking ( $16.83 \pm 12.45$ ) in the nicotine condition and the increase was significant ( $t = 6.18, p < .00$ ). Also, CO levels increased from pre smoking ( $1.27 \pm .93$ ) to post smoking ( $19.62 \pm 12.64$ ) in the non-nicotine condition and the increase was significant ( $t = 6.89, p < .00$ ).

#### Funding

Washington State University Alcohol and Drug Abuse Research Program.

**Tob. Induc. Dis. 2018;16(Suppl 3):A35**

**DOI: 10.18332/tid/94534**

### Rise of popularity of electronic cigarettes and correlates with marketing and regulations trajectory

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#### Introduction

Electronic nicotine delivery systems (ENDS) were introduced and advertised since five years in Tunisia (The developing African Country), but Public interest in this product is undocumented.

**Purpose**

By monitoring search queries, e-cigarettes popularity and correlates were assessed in Tunisia.

**Methods**

French-language and Arabic-language Google searches were conducted from Mai 2013 through Mai 2018.

Google engine was used to search data related to electronic cigarettes marketing and regulations using terms: electronic cigarettes, e-liquid, vape. The corresponding Arabic terms were also used.

We analyzed trends in Google search queries related to ENDS. Searches for each week were scaled to the highest weekly search proportion (100), with lower values indicating the relative search proportion compared to the highest-proportion week (e.g., 5050% of the highest observed proportion). Analyses were performed in Mai 2018. Methods—Google trend were correlates of e-cigarettes marketing and regulations trajectory.

**Results**

Searches increased from Mai 2013 through to March 2018. After that, the ENDS search fell and remained stable until the beginning of August 2017. After this date the search for ENDS increased rapidly with a maximum in March 2018. This fall and rising is contemporary to the establishment and easing of the monopoly of the ENDS import and distribution by the national tobacco board and to occurrence of aggressive marketing activities.

**Conclusions**

It is necessary to put an end of uncertainty on ENDS regulations and policies in Tunisia. The ratification of the new proposed law classifying ENDS as a tobacco product is a crucial.

**Tob. Induc. Dis. 2018;16(Suppl 3):A36**

**DOI: 10.18332/tid/94556**

### Impact of water-pipe smoking on testosterone levels in Qatari males

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**Introduction**

Water-pipe (WP) smoking is the most widespread tobacco use in the Middle-East, and is rapidly spreading globally. Meanwhile, changes in testosterone levels have been linked to various diseases including type 2 diabetes and erectile dysfunction. This investigation addresses an important gap in the outcome of WP smoking on testosterone levels.

**Aim**

To explore the outcome of WP smoke on serum levels of total testosterone (TT), free testosterone (FT), bioavailable testosterone (bioT) and sex hormone-binding globulin (SHBG) among men in Qatar.

**Methods**

This is a cross-sectional cohort study based on data gathered from a total of 1000 volunteer men from Qatar BioBank (QBB). To determine the WP and Cigarette smoking status, a self-reported questionnaire was used. TT and SHBG were measured clinically, whereas FT and BioT were calculated using Vermeulen's equation. Hormone values were compared using multiple regression analysis based on WP smoking status after adjusting for appropriate confounding factors.

**Results**

Once exclusion criteria were applied, 541 males (277 WP smokers and 264 non-smokers) were included in the analysis. After adjustment for confounding factors, no

statistical significant difference was observed in TT, FT, SHBG, and BioT between WP smokers and non-smokers (all  $P > 0.05$ ). Furthermore, Similar results were found in non-adjusted regression model, while only age was shown to significantly affect androgens level ( $P = 0.014$ ).

**Conclusions**

In this study we report, for the first time, that there was no significant change in TT, FT, BioT and SHBG in WP smokers when compared to non-WP smokers.

**Funding**

This study was supported by a Qatar University Student Grant.

**Tob. Induc. Dis. 2018;16(Suppl 3):A37**

**DOI: 10.18332/tid/94721**

### Role of water-pipe smoking in breast cancer progression

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**Aim and objective**

With the increasing popularity of water-pipe smoking (WPS), it is critical to comprehend how WPS may affect women's health. The main goal of this study is to identify the potential outcome of WPS on human breast cancer progression.

**Methods**

Two breast cancer cell lines, MCF7 and BT20, were used in this investigation. We explored the outcome of WPS on cell morphology and cell invasion using inverted microscope and invasion chambers. On the other hand, Western blot was employed to study the expression patterns of key control genes of cell adhesion and invasion.

**Results**

Our data reveal that WPS induces epithelial-mesenchymal transition (EMT) of MCF7 and BT20 breast cancer cell lines; thus, WPS enhances cell invasion ability of both cell lines in comparison with their matched controls. More significantly, WPS provokes a down- and up-regulation of E-cadherin and focal adhesion kinase (FAK), respectively, which are important key regulators of cancer progression genes. Finally, our data point out that WPS incites the activation of Erk1/Erk2, which could be behind the stimulation of EMT and invasion as well as the deregulation of E-cadherin and FAK expression.

**Conclusions**

Our data show, for the first time, that WPS initiates EMT and stimulates cell invasion of breast cancer cells, which could incite metastatic development in breast cancer patients. Thus, we believe that further studies, both in vitro and in vivo, are required to elucidate the pathogenic outcome of WPS on cancer progression of several human carcinomas including breast, lung and oral.

**Funding**

Results from this report display for the first time that WPS can induce EMT and stimulate cell invasion of human breast cancer cells, consequently deregulating E-cadherin and FAK expression patterns in these cell models. Moreover, the study reveals that this effect can occur via the activation of Erk1/Erk2 pathways.

**Tob. Induc. Dis. 2018;16(Suppl 3):A38**

**DOI: 10.18332/tid/94757**

### Hookah use among adolescent school students from urban slums of Mumbai, India

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#### Introduction

“Hookah” or waterpipe smoking is becoming popular among youth. It is addictive and associated with multiple, long-term, adverse health outcomes. Availability of flavored hookah, increasing social acceptability, influence of tobacco industry and misconceptions about hookah have contributed to its increasing use among youth. Many adolescents from urban slums of Mumbai do not know that hookah contains tobacco. The aim of the study was to assess the prevalence of hookah and factors associated with its cessation among adolescents from slums of Mumbai.

#### Methods

LifeFirst is a tobacco/areca-nut dependence treatment program implemented in 40 schools in slum areas of Mumbai in 2017-18. 4302 students of 7th-9th grades attended orientation sessions about tobacco products including hookah and their harmful effects. Students were informed about the availability of a cessation service and encouraged to register voluntarily for six theme-based group sessions conducted over six months. At the end of the six sessions, cessation outcomes were recorded.

#### Results

Of the 1441 students registered for tobacco/areca-nut cessation, 6% were current hookah users (3% of boys and 7% of girls). 65% of them initiated hookah use because of curiosity and 25% due to peer influence. Of the current hookah users, 8% smoked hookah daily. At the end of six sessions, 54% of the hookah users reported stopping smoking hookah while the abstinence was 72% among the rest of the students.

#### Conclusions

Hookah smoking is prevalent among school-going adolescents from slums of Mumbai and school-based cessation programs are required to increase awareness and support them to quit.

**Tob. Induc. Dis. 2018;16(Suppl 3):A39**

**DOI: 10.18332/tid/94864**

### Prevalence, harm perception, correlates of favourable harm perception and predictors of waterpipe smoking among University of Ibadan undergraduate students

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Tobacco kills half of its users, and despite the achievement of public health policies in plummeting cigarette smoking worldwide, waterpipe smoking (WPS) is emerging to sustain tobacco consumption. Hence, this study sought to determine the prevalence, harm perception, correlates of favourable harm perception and predictors of WPS among undergraduate students in University of Ibadan.

A cross sectional descriptive study was conducted among 390 undergraduate students residing in the halls at the University of Ibadan. Data were obtained using a semi-structured questionnaire and analysed with SPSS 21. A Likert scale was used to determine the harm perception of WPS by current smokers. A Bi-variate analysis was used

to test for associations and correlates of favourable harm perception while logistic regression was carried out to determine predictors of WPS.

The study revealed that mean age of initiation of WPS was 18.5 ± 2.7years, 3.9% were current users. 33% of current WP users had favourable harm perception. Health warnings on shisha smoking packages and considering shisha use as smoking were significant correlates of favourable harm perception. Ever cigarette smoking [p=0.013; 95% CI; 1.7-84.4], smoking of other products aside cigarette [p=0.012; 95% CI; 1.7-94.0], having all close friends as smokers [p=0.016; 95% CI; 3.3-129.4], having divorced parents [p=0.002; 95% CI; 3.5-216.0] and shisha smoking among siblings [p=0.001; 95% CI; 2.0-124.1] were predictors of current WPS.

There is less awareness on WPS health consequences among the University's undergraduate students. Hence, advocacy strategies on the harms of WPS and specific laws regulating WPS should be established.

#### Funding

This study was self financed.

**Tob. Induc. Dis. 2018;16(Suppl 3):A40**

**DOI: 10.18332/tid/94876**

### The role of socio-demographic factors associated with water pipe smoking among male adolescents, in western Iran: A cross-sectional study

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#### Aim and objective

Water pipe (WP) smoking is a significant leisure activity among young people in Iran that is on the rise. The purpose of this study was to identify the role of socio-demographic factors associated with WP smoking among male adolescents in Iran.

#### Methods

The study used a cross-sectional design. It included 730 high school male students (grades 10-12) recruited through multi-stage random sampling conducted in 2017 in the Hamadan city of western Iran. The self-administered questionnaires included information on demographic variables and behavioral risk factors related to WP smoking. Statistical analyses were executed using SPSS version 22 summarizing descriptive statistics and conducting inferential statistics through multi nominal logistic regression modeling.

#### Results

The mean (SD) ages of the students and at WP smoking initiation were 16.41(0.84) and 13.31 (2.43), respectively. The distribution of never, ever and current WP smoking were 37.3 %, 35.3% and 27.4%, respectively. We found that ever cigarette smoking (OR=5.34; 95% CI [2.66, 10.73]) and WP smoking family (OR=2.41; 95% CI [1.32, 4.40]) were significantly associated with ever WP smoking. WP smoking friends (OR= 0.50; 95% CI [0.35, 0.72]) had protective role on ever WP smoking. Also, the variables 18 years of age, studying in technical fields, ever and current smoking of cigarettes and family usage of WP smoking were significantly

associated with the current usage of WP smoking.

### Conclusion

The results indicated that the prevalence of ever and current WP smoking were high in Hamadan city. Thus, designing and implementing interventions for increasing students', friends' and family's awareness regarding the harms of WP smoking and cigarette smoking facilitating behavior change in this direction is necessary.

### Funding

This study was supported by Hamadan University of Medical Sciences, Hamadan, Iran.

**Tob. Induc. Dis. 2018;16(Suppl 3):A41**

**DOI: 10.18332/tid/94548**

## EUREST-PLUS: TOBACCO CONTROL POLICY IMPLEMENTATION TO REDUCE LUNG DISEASE

### Evaluating the European Union (EU) Tobacco Products Directive: Findings from the EUREST-PLUS ITC cohort study among six EU Member States (MS)

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Efforts to mitigate the devastation of tobacco-attributable morbidity and mortality in the European Union (EU) consist of its newly adopted Tobacco Products Directive (TPD) along with the first-ever health treaty, the WHO Framework Convention on Tobacco Control (FCTC). The aim of this Horizon 2020 project entitled European Regulatory Science on Tobacco: Policy Implementation to Reduce Lung Disease (EUREST-PLUS) is to monitor and evaluate the impact of the implementation of the TPD across the EU, within the context of WHO FCTC ratification. The EUREST-PLUS ITC cohort study of adult smokers in six EU MS (Germany, Greece, Hungary, Poland, Romania, Spain), uses a pre- vs. post-TPD implementation study design, evaluating the impact of several tobacco control policy provisions, including but not limited to health warning labels, smoke free areas and electronic cigarettes. The study is designed to generate strong inferences about the effectiveness of tobacco control policies, as well as

to elucidate the mechanisms and factors by which policy implementation translates to population impact. Findings from EUREST-PLUS have potential global implications for implementation of innovative tobacco control policies and its impact on the prevention of lung diseases.

### Funding

The EUREST-PLUS Project takes place with the financial support of the European Commission, Horizon 2020 HCO-6-2015 program (EUREST-PLUS: 681109; C. I. Vardavas) and the University of Waterloo (GT. Fong). Additional support was provided to the University of Waterloo by the Canadian Institutes of Health Research (FDN-148477). GT. Fong was supported by a Senior Investigator Grant from the Ontario Institute for Cancer Research. E. Fernández is partly supported by Ministry of Universities and Research, Government of Catalonia (2017SGR139) and by the Instituto Carlos III and co-funded by the European Regional Development Fund (FEDER) (INT16/00211 and INT17/00103), Government of Spain.

**Tob. Induc. Dis. 2018;16(Suppl 3):A42**

**DOI: 10.18332/tid/95140**

### Chemical analysis and hazard identification of the most common electronic cigarette liquids in nine European countries

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### Background

We aimed to detect the composition and reported chemical health hazards of the most common electronic cigarette liquids (e-liquids) in nine European Union (EU) Member States (MS) prior to adoption of the Tobacco Product Directive (TPD).

### Materials and methods

Within the Horizon2020, EUREST-PLUS study, 122 of the most commonly used e-liquids were purchased from 9 EU MS. Chromatography - mass spectrometry and liquid chromatography - mass spectrometry methods were used to analyze the samples. Among the most frequently detected compounds (detected  $\geq 4$  times), Danger Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and Warning GHS codes were identified.

### Results

During the samples analysis, several discrepancies in nicotine concentration were detected among the samples from the 9 EU MS. French samples contained an average of 21.9% more nicotine than labelled, while Romanian samples contained an average of 22.5% less nicotine than labelled. In addition, in the 9.8% of the samples, the nicotine concentration exceeded the limit of 20 mg/ml. With regards to the samples' composition, 171 different compounds were identified and detected 750 times in total while we did not identify samples positive for PAHs or nitrosamines. Finally from the 171 substances, only 5 (10.4%), [Oxime-, methoxy-phenyl, +/--.alpha.-Methylbenzyl acetate, 1,3-Dioxolane, 2-butyl-4-methyl-, Melonal and l-Menthyl acetate) were not associated with a Danger GHS and Warning GHS codes.

### Conclusions

As large number of potential harmful compounds was

identified, the systematic monitoring and chemical evaluation of e-liquids is necessary in order to protect the consumers' health.

#### Funding

The EUREST-PLUS Project takes place with the financial support of the European Commission, Horizon 2020 HCO-6-2015 program (EUREST-PLUS: 681109; C. I. Vardavas) and the University of Waterloo (GT. Fong). Additional support was provided to the University of Waterloo by the Canadian Institutes of Health Research (FDN-148477). GT. Fong was supported by a Senior Investigator Grant from the Ontario Institute for Cancer Research. E. Fernández is partly supported by Ministry of Universities and Research, Government of Catalonia (2017SGR139) and by the Instituto Carlos III and co-funded by the European Regional Development Fund (FEDER) (INT16/00211 and INT17/00103), Government of Spain.

**Tob. Induc. Dis. 2018;16(Suppl 3):A43**

**DOI: 10.18332/tid/95141**

### Undesirable events during electronic cigarette use prior to the implementation of Article 20 of the European Union Tobacco Products Directive: Findings from the EUREST-PLUS ITC Europe Surveys

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#### Introduction

Article 20 of the European Union (EU) Tobacco Products Directive (TPD) sets forth provisions on electronic cigarette (e-cigarette) product regulation, such as child-proof packaging and protection against e-liquid refilling without leakage. The aim of the current study was to examine frequencies and correlates of experiencing undesirable events during e-cigarette use related to e-cigarette product design parameters prior to the implementation of the EU TPD.

#### Methods

The EUREST-PLUS ITC Europe Wave 1 survey was conducted with adult cigarette smokers from June to September 2016 across Germany, Greece, Hungary, Poland, Romania, Spain.

#### Results

Among our sample of adult cigarette smokers, one in five reported having ever used e-cigarettes. Prevalence of current

e-cigarette use (daily or weekly) was very low (1.5%). Major undesirable events, such as battery exploding or catching fire (1.9%) or overheating (11%) were uncommon. Among those reporting at least monthly use and whose usual/current brand has a tank that you fill with liquids, 18.8% experienced spilling during refill and 18.5% experienced e-liquid leaking during use. Nearly one-quarter reported that the e-liquid cap was easy for a child to open.

#### Conclusions

In light of the EU TPD establishing standards around e-cigarette design parameters to mitigate undesirable events and risks during e-cigarette use, these findings further support the need for its implementation, as well as for monitoring undesirable events experienced during e-cigarette use once Article 20 is fully implemented.

#### Funding

The EUREST-PLUS Project takes place with the financial support of the European Commission, Horizon 2020 HCO-6-2015 program (EUREST-PLUS: 681109; C. I. Vardavas) and the University of Waterloo (GT. Fong). Additional support was provided to the University of Waterloo by the Canadian Institutes of Health Research (FDN-148477). GT. Fong was supported by a Senior Investigator Grant from the Ontario Institute for Cancer Research. E. Fernández is partly supported by Ministry of Universities and Research, Government of Catalonia (2017SGR139) and by the Instituto Carlos III and co-funded by the European Regional Development Fund (FEDER) (INT16/00211 and INT17/00103), Government of Spain.

**Tob. Induc. Dis. 2018;16(Suppl 3):A44**

**DOI: 10.18332/tid/95144**

### Quitting behaviors and cessation assistance used among smokers with anxiety or depression: Findings among six countries of the EUREST-PLUS ITC Europe Surveys

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#### Introduction

The current study explores quitting behaviours and use of cessation assistance among adult tobacco users with



probable anxiety or depression (PAD) and in six European (EU) Member States (MS).

#### Methods

The EUREST-PLUS ITC Wave 1 Europe Survey was conducted with a nationally representative cross-sectional sample of 6,011 adult cigarette smokers from six European Union (EU) Member States (MS) (Germany, Greece, Hungary, Poland, Romania, Spain) in 2016.

#### Results

Our study found that one in five smokers sampled from six EU MS had a diagnosis, treatment or positive screen for anxiety or depression, with rates of PAD varying between EU MS. Results of the multivariable logistic regression analysis showed that respondents with PAD were more likely to have made a quit attempt in the last 12 months (AOR 1.75; 95%CI 1.45-2.11), compared to respondents without PAD. Among those respondents with PAD who used support the most frequently reported quit method was prescription-based quit smoking pharmacotherapy (15.4%) followed by e-cigarettes (13.7%) and NRT (11.3%). Person-to-person behavioral support (i.e. local quit services, face-to-face advice from a doctor or other health care professional, telephone or quitline services) was reported significantly more frequently among respondents with PAD compared to those without PAD.

#### Conclusions

Given both pharmacological and non-pharmacological quit smoking aids have been shown to be safe, acceptable and effective for people with and without mental illness it is important that their use be promoted among smokers with anxiety and depression alongside behavioral counseling. Our findings support the need for interventions targeting health care professionals in providing smoking cessation assistance among this population of smokers.

#### Funding

The EUREST-PLUS Project takes place with the financial support of the European Commission, Horizon 2020 HCO-6-2015 program (EUREST-PLUS: 681109; C. I. Vardavas) and the University of Waterloo (GT. Fong). Additional support was provided to the University of Waterloo by the Canadian Institutes of Health Research (FDN-148477). GT. Fong was supported by a Senior Investigator Grant from the Ontario Institute for Cancer Research. E. Fernández is partly supported by Ministry of Universities and Research, Government of Catalonia (2017SGR139) and by the Instituto Carlos III and co-funded by the European Regional Development Fund (FEDER) (INT16/00211 and INT17/00103), Government of Spain.

**Tob. Induc. Dis. 2018;16(Suppl 3):A45**

**DOI: 10.18332/tid/95145**

## SECONDHAND SMOKE EXPOSURE

### Validity and reliability study of the Turkish version of beliefs about third hand smoke (BATHS) scale

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#### Objective

The aim of this study is to examine the reliability and validity of the Turkish version of the Beliefs about Third Hand Smoke (BATHS) scale.

#### Methods

This methodological study was carried out in a family health

center in Izmir between March 1st and May 1st, 2018. The research sample was selected by simple random sampling method among individuals over the age of 18 who applied to the family health center for any reason and who agreed to participate in the study. Data was collected by the "BATHS questionnaire and scale". "Internal consistency analysis, item-total correlation analysis, test-retest and Pearson Moment Correlation analyzes" were used for the reliability analyzes of the scale and " Exploratory Factor Analysis " was applied for factor structure validity. The suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Okin (KMO) value and the Barlett's test.

#### Results

The mean age of the participants was 38.1 ± 11.1, 51.9% were female, 50% had high school graduates, 71.2% were married. In the reliability analyzes, the Cronbach alpha value was 0.88. The item-total correlations ranged from 0.46 to 0.84. In the validity analyzes, KMO value was 0.766 and Barlett value was p < .000, which supported that the sample was adequate and suitable for factor analysis. After factor analysis for the construct validity of the scale, 9 items describing 71.2% of the total variance were collected in 2 sub-dimensions as in the original scale. The mean score of the BATHS scale was 4.3 ± 0.7 and it was concluded that the individuals in the research group had a positive belief and attitude regarding the effects of third-hand smoke and health effects.

#### Conclusions

As a result of the analyzes, it was seen that the Turkish version of the BATHS scale was a measurement tool with sufficient reliability and validity indicators to measure the belief and attitude towards third-hand smoke exposure.

**Tob. Induc. Dis. 2018;16(Suppl 3):A46**

**DOI: 10.18332/tid/94768**

### Exposure to secondhand smoke in Armenia: STEPS survey

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#### Objective

The goal of the survey was to evaluate the prevalence of the main non-communicable disease risk factors in 18-69 age groups in order to ensure more efficient planning of noncommunicable disease control and prevention activities and policies and to provide baseline data to assist national health policies on control of tobacco use among the population. Survey includes the rates of the exposure of secondhand smoke among population of Armenia.

#### Methods

Based on multistage cluster sampling methodology for non-communicable disease surveillance, a total of 2380 participants aged 18-69 years participated in the survey and ensured representational data for this age group. Data was collected using the standardized stepwise approach for NCD risk factor surveillance and was conducted with financial and technical assistance of the WHO.

#### Results

The habit of smoking at home, at work or when being a guest is quite popular in our society because the majority of the population is passive smokers. More than half (56.4%) of the respondents were revealed to be exposed to secondhand smoking at their homes and 26.6% in closed areas at their workplace. Thus, it can be concluded that every second person in our country is a passive smoker.

**Conclusions**

STEPS aims also at understanding the prevalence of exposure to secondhand smoke; assessing the levels of awareness of the dangers of secondhand smoke, as well as drafting a new regulation on tobacco prevention based on best practices and approaches from worldwide. The survey results may also serve as the basis for coordination of measures to prevent exposure to secondary smoke and to reduce the consumption of tobacco products and their substitutes.

**Tob. Induc. Dis. 2018;16(Suppl 3):A47**

**DOI: 10.18332/tid/94871**

### Evaluating the association between breast cancer and second hand smoking in Tekirdag

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**Aim and objective**

The aim of the study was to determine if there any possible relationship between breast cancer and second hand smoking, with considering other potential factors.

**Methods**

Thirty cancer patients and sixty controls were selected among the women in the database of Cancer Early Diagnosis and Education Centers at Corlu and Suleymanpasa, Tekirdag. Controls were matched by age and location. After their verbal approval, they were questioned on the phone with a questionnaire. Crude odds ratios and adjusted odds ratios were calculated via SPSS.

**Results**

With 29 cancer patients (96.7%) and 52 controls (86.7%), in total there were 81 women enrolled. Smoking regularly at a point in lifetime rates were 40.4% for controls and 41.4% for cases. For controls and cases; their parents' smoking rates at childhood were 67.3% and 65.5% respectively, and their partner's smoking rates were 57.7% and 68.9%. Exposure to smoking at home rates were 73.1% and 62.1% in childhood and 59.6% and 75.8% in adult life, respectively. In analysis there were no significant association between breast cancer and smoking or second hand smoking. Breast cancer rates were high in those who had family history of breast cancer, not had any chronic disease, not had any abortus (induced or spontaneous), used oral contraceptives and hormone replacement therapy.

**Conclusions**

Possibly because of the high smoking and second hand smoking rates of both groups, we were not able to determine any significant relationship. This and our other results need to be further researched among Turkish women.

**Tob. Induc. Dis. 2018;16(Suppl 3):A48**

**DOI: 10.18332/tid/94873**

### Impact of smoke free law on smoking status of Serbian adults

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**Aim and objective**

Smoke free law came into effect in Serbia on December 2010. Law bans smoking in enclosed public places with exemption to hospitality sector. The aim of the study is to present changes in smoking status after the adoption of the smoking ban.

**Methods**

We used data of nine surveys which are conducted since

the adoption of the law. First survey was conducted at the time of adoption, followed by surveys three and nine months after adoption of the law and afterwards on annual basis. These surveys were conducted on representative samples of the ca 1000 of Serbian adults.

**Results**

Three months after adoption of the law 22.9% smokers stated that smoke free law had influence on their smoking status in the way they stopped smoking or reduced number of smoked cigarettes. Percentage of smokers that reduced or stopped smoking reached 29.2% in the fourth year after adoption of the law (2014), followed by the decrease. In 2017, less smokers stopped or reduced number of cigarettes (21.6%) compared to the first year. The changes in smoking status by years were statistically significant ( $p=0.000$ ).

One of the factors contributing to the reversed trend might be lower compliance with the Law. Same surveys showed that also that in the fourth year after adoption of the law, percentage of people estimating compliance with the current smoke free law as not good, started to increase and reached 22,8% in 2017.

**Conclusions**

The smoke free law contributed to changes in smoking status and patterns of smoking in Serbia. However, the influence of the smoke free law started to weaken in the fourth year after the implementation. Contributing factor might be lower compliance with the law.

**Tob. Induc. Dis. 2018;16(Suppl 3):A49**

**DOI: 10.18332/tid/94909**

### Association of second hand smoke exposure and depression: A systematic review and meta-analysis

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**Aim & Objective**

Impact of exposure of smoking on mental health conditions is well studied, but not of second hand smoke exposure. This is an attempt to find the association between second hand smoke exposure and depression.

**Methods**

A systematic search was conducted for published studies in English till June 2017. Independent two electronic searches were carried out in Medline, IndMED using key words "second hand smoking", "passive smoking", "environmental tobacco smoke" & "depression". We have included articles reporting adjusted relative risk (RR) or odds ratio. References of the selected articles were also traced. Meta-analysis was performed to calculate pooled estimate using random effects model.

**Results**

We have got 165 records from searched databases. Of which, 20 records were included for full text review after screening abstract and removing duplicates. Finally, fifteen articles were included for meta-analysis. Second hand smoke exposure was found to be associated with depression (RR=1.37, 95 CI: 1.26, 1.48) with heterogeneity, I<sup>2</sup>: 83%.

**Conclusions**

We have found modest strength of association for second hand smoke exposure and depression. Unknown confounders might have reduced the pooled estimate in the longitudinal studies.

**Tob. Induc. Dis. 2018;16(Suppl 3):A50**

**DOI: 10.18332/tid/94862**

## TOBACCO HEALTH EFFECTS 2

### Population attributable fractions of tobacco related cancers in Turkey and seven geographical regions

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#### Introduction

Anti-tobacco interventions have been effective in many developed countries where lung and other tobacco-related cancers are declining. In Turkey, the first tobacco legislation put into practice in 1996 and strengthened in 2008. Aim of this work was to quantify the size of the problem in each of the seven geographical regions and in the whole of Turkey.

#### Methods

We followed the methods proposed by Peto et al. (Lancet 339, 1992) and Parkin et al. (Int. J Cancer 59, 1994). Incidence rates of lung and other tobacco-related cancers were obtained from C15C vol.XI for 8 provinces and projected to the regions. Estimates of the incidence of lung cancer in non-smokers and relative risks for the other cancer sites were obtained from the large CPS II cohort of the American Cancer Society. By combining these parameters in the usual formula due to Cole&MacMahon we obtained estimates of the fraction of tobacco-related cancer attributable to smoking (PAF).

#### Results

For Turkey, in total, 59.4% of the 351591 TRC cases can be attributed to tobacco smoking; 74.5% in males, 6.8% in females. PAFs by cancer sites are as follow: 89.6%, 38.4% of lung; 86.4%, 5.1% of laryngeal; 70.3%, 4.3% of oesophageal; 70.5%, 3.1% of oral-cavity&pharyngeal; 54.4%, 0.4 % of kidney; 53.2%, 1.7% of bladder; 38.4%, 1.1% of stomach, 39.1%, 1.1% of liver, 41.3%, 1.5 % of the pancreas cancers and 30.4%, 0.5% of myeloid leukemias in men and women respectively; 1.03 % of cervical cancers in women. The highest PAF for all TRCs is in Marmara (81.9%) where the lowest in Eastern and Southeastern Anatolia region (58.0%) in men, and in Mediterranean (10.4%), in Western Black Sea region (0.0%) respectively in women .

#### Conclusions

More than half of all TRCs in Turkey is due to tobacco smoking. Implemented tobacco control programs should be strengthened.

**Tob. Induc. Dis. 2018;16(Suppl 3):A51**

**DOI: 10.18332/tid/94797**

### An evaluation of the relation between atrial fibrillation and smoking in patients undergoing stroke

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#### Aim and objective

Atrial fibrillation (AF) occupies an important place among the etiological agents in ischemic cerebrovascular disease. Smoking is thought to be a predisposing factor for AF. The probable relation between smoking and AF can be explained in terms of oxidant mechanisms and inflammation. This study investigated the probable link between smoking and AF against a background of stroke.

#### Methods

Three centers were included in the study. Cases diagnosed with stroke and transient ischemic attack (TIA) arriving at these centers were evaluated in terms of demographic, clinical, and radiological characteristics. The Modified Rankin Score (MRS) and National Institutes of Health Stroke Scale (NIHSS) scores were used to assess severity of stroke.

#### Results

Three hundred forty-one patients with a mean age of 73.73±11.40 were enrolled; 282 were evaluated as ischemic stroke, 50 as hemorrhagic stroke, and 9 as TIA. Mean MRS was 2.92±1.63, and mean NIHSS was 10.12±8.01. Of the study group, 65.7% had never smoked, 23.2% were active smokers, and 11% had quit. The relation between etiological factors and smoking was investigated based on the TOAST classification in the ischemic subgroup. Stroke associated with large or small vessel disease and the AF-related stroke group were compared in terms of smoking status, and smoking status was significantly higher in the AF group (p=0,04). A significant difference was observed in mean EF values at echocardiography performed on patients in the ischemic subgroup between the smoking and non-smoking groups (57.71±14.37, and 60.83±8.92, respectively, p=0,002).

#### Conclusions

Our study determined no relation between smoking and stroke subtypes, severity, or other risk factors, while smoking emerged as a risk factor in AF-related stroke. This once again shows that smoking, in other words nicotine, lays the foundation for AF through inflammation, catecholamine-mediated effects, and oxidative stress, constitutes a risk factor for stroke, together with advanced age.

**Tob. Induc. Dis. 2018;16(Suppl 3):A52**

**DOI: 10.18332/tid/94849**

### Smoking and oral contraceptive use in women in rural areas

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#### Aims and Objectives

At present, women are the target clients of tobacco companies. Female smokers using combined oral contraceptives are at higher risk of coronary heart disease and peripheral vascular disease than non-smokers. The aim of this study was to determine smoking status and oral contraceptive use in women in a rural area of the province of Aydın.

#### Methods

This descriptive study was performed in a rural area of Aydın. It was performed in 120 women aged 20-60 years, living in a village and accepting to participate. Data were gathered with a questionnaire prepared by the researchers and composed of questions about socio-demographic features including age, gender, education, marital status and income and presence of a health problem, height, weight, smoking status and use of contraceptives.

#### Results

The mean age of the women was 34.83±11.65 years. Of all the women, 30,8% were primary school graduates, 64,8% were married, 29,2% had a child, 66,4% had a sufficient income, 65,6% did not have a check-up, 30,3% had a chronic disease and 33,6% were smokers. Twenty-eight-point two percent of the women had a high body mass

index; i.e. overweight. Eleven-point five percent and 11.5% of the women were using an IUD and oral contraceptives respectively. Sixty-nine percent of the women were not using any contraceptives. Of all the women using oral contraceptives, 57,1% were smokers, 7,1% were obese, 7.1% were aged over 35 years and 21.4% had a chronic disease (hypertension and diabetes).

#### Conclusions

About one third of the women in the rural area where the study was performed were smokers and the incidence of smoking was higher among the women using oral contraceptives. It is important that women in rural areas should be offered counseling so that they can stop smoking. Individual characteristics should be taken into account in counseling for contraceptives.

**Tob. Induc. Dis. 2018;16(Suppl 3):A53**

**DOI: 10.18332/tid/94720**

### Effect of smoking on disability progression in patients with multiple sclerosis

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#### Aim and objective

In general, cigarette smoking is linked to increased risk of occurrence of MS and rate of progression. Extended disability status scale (EDSS) is used for measuring disability status of MS patients. Higher EDSS score indicates a worse neurological dysfunction. In our study, we aimed to reveal the effect of smoking on disability progression in Turkish patients with MS.

#### Methods

Patients were divided into two groups according to smoking status (smokers and non-smokers). Demographic characteristics and clinical parameters of disease progression including time to reach EDSS 3 and EDSS 6 were compared between both groups using chi-square, student's t-test, log-rank test, and ANOVA.

#### Results

Overall, 280 smokers (108 males, 172 females) and 685 non-smokers (171 males, 514 females) were included in the study. There was no difference between the two groups in terms of gender, age at onset, the duration between first two relapses, and MS subtypes ( $p > 0.05$ ). As expected, women smoked less than men ( $p < 0.001$ ). Interestingly, as education level increased, there was a tendency to smoking ( $p = 0.001$ ). We found no difference in the time to reach EDSS 3 and EDSS 6 for smokers and non-smokers (log-rank test;  $p = 0.48$  and  $p = 0.93$ ).

#### Conclusions

Our study suggests that, unlike general notion, cigarette smoking does not affect the rate of progression in MS patients negatively. The lack of effect of smoking in Turkish patients with MS suggests that the relationship between smoking and MS may be affected by complex genetic factors.

**Tob. Induc. Dis. 2018;16(Suppl 3):A54**

**DOI: 10.18332/tid/94763**

### Smokers with diabetes: Twice as deadly and shortened life by 15 years

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#### Introduction

Both smoking and diabetes are known to have health risks,

but the extent of the risks when both co-existed are little known.

#### Methods

A cohort, consisting of 422,771 adults, was recruited successively during health surveillance between 1996 and 2008. Data from questionnaire, and results from fasting blood and other screening tests were collected. Hazard ratios (HR) came from Cox model and life expectancy from life table method.

#### Results

One quarter of the cohort were current smokers (23.2%), but only 7% had pre-diabetes and 6% diabetes. HR for all-cause mortality for smoking, 1.51, for diabetes, 2.02, but when co-existed, 3.38. Life span shortened 6 years for smokers, 9 years for diabetes, but 15 years for combined. HR for all cancer increased from 1.77 (smoking) or 1.42 (diabetes) to 2.87 (combined), for heart disease, from 1.43 (smoking) or 2.24 (diabetes) to 4.05 (combined), and for stroke, from 1.54 (smoking) or 1.82 (diabetes) to 2.69 (combined).

#### Conclusions

Smokers with diabetes became doubly deadly for all cause (1.51 to 3.38), all cancer (1.77 to 2.87) and heart disease (1.43 to 4.09) and shortened life expectancy by 15 years, from 6 years of smoking and 9 years of diabetes. Overwhelming majority of smokers were not aware of such a large risk. The large life expectancy risk could be leveraged to motivate smokers into smoking cessation.

**Tob. Induc. Dis. 2018;16(Suppl 3):A55**

**DOI: 10.18332/tid/94795**

### Tobacco use, determinants and effects on treatment among persons living with HIV/AIDS at a Military Hospital in Makurdi, Benue State, Nigeria

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#### Aim and objective

To assess the prevalence, determinants and effects on treatment among persons living with HIV/AIDS at a Military Hospital in Makurdi, Benue State, Nigeria.

#### Methods

Study was at a military Hospital, in Benue State. The centre cares for both military and civilian population, with over 98% being civilian clients. Analytical cross-sectional design was used. Patients  $\geq 18$  years on care for  $\geq 12$  months were studied excluding those with frank psychosis, poor record of CD4 count or viral load, chronic health condition known to interfere with CD4 count. Patient's folder records, Questionnaire and DAST-10 tool were tools used. Ethical clearance and written informed consent were obtained.

#### Results

Majority of the patients were aged 31-60 years 61(8.3%) and females 441(63.0%). Prevalence of Tobacco use were 138(19.7%) for ever used and 66(9.4%) for use in past 3 months. Also 114(16.3%) used Tobacco and other substances; 90(12.9%) Alcohol, 73(10.4%) Kola nut, 8(1.1%) Cannabis and 5(0.7%) Cocaine with Tobacco. No statistical significant associations between ever used, use in past 3 months or degree of Tobacco use with Viral load CD4 count. Predictors of use includes; males sex (AOR 0.23; 95% CI 0.15-0.35) and earning  $< 18,000$  (AOR 2.23; 95% CI 1.05-4.70).

#### Conclusions

Use of Tobacco was high as well as use with other

substances. Tobacco use had no effect on CD4 count and viral load. Sex and Family income predicts use of substance. There is serious and urgent need for improved tobacco prevention and control interventions in the country especially among PLWHA.

**Tob. Induc. Dis. 2018;16(Suppl 3):A56**  
DOI: 10.18332/tid/94555

## PREVALENCE STUDIES

### Trends in tobacco product use in Turkey by gender and age-group between 2010 and 2016

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#### Aim and objective

Turkey has a tobacco control law since 1996 and the law was amended to cover Framework Convention on Tobacco Control in 2008. We aimed to present trends in self-reported smoking in Turkey between 2010 and 2016 by gender and age-groups.

#### Methods

Turkey Health Survey is based on a multi-stage, stratified sample of the general population and includes data on self-reported health conditions including tobacco product use behaviour since 2010. Tobacco use was defined as daily or occasional use of tobacco product. Age group and gender-specific prevalence of tobacco use was presented.

#### Results

In 2010 tobacco product use in men was 31.7% and in women was 11.9% while in 2016 44.1% and 17.4% in both gender, respectively. Tobacco use prevalence was highest in 2014 in both genders (men: 47.6%, women: 18.1%) and lowest in 2010. In men except 2016 highest tobacco product use prevalence was in 25-34 age-group and was always over fifty percent. In 2016 highest prevalence was in 35-44 age-group and was 55.7%. In women highest tobacco use prevalence was among 35-44 age-group in all years and was about 25%. Age-group 75 and over has the lowest tobacco product use prevalence while in women between 2012 and 2014 prevalence of tobacco product was almost doubled (from 1.9% to 3.4%) and stayed nearly stable in 2016 (3.0%).

#### Conclusions

Tobacco product use prevalence is high in Turkey despite comprehensive tobacco control law. There are minor shifts in the smoking behaviour of different age-groups by survey year.

#### Funding

Erdem Erkoyun applied to Turkish Statistical Institute to do the analysis based on the institution's regulations. By law, public institutions can obtain relevant data without additional charges.

**Tob. Induc. Dis. 2018;16(Suppl 3):A57**  
DOI: 10.18332/tid/94775

### Prevalence of tobacco smoking in Armenia, STEPs survey

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#### Introduction

To assess the prevalence of tobacco use in 18-69 population of Armenia the survey participants were asked about their current smoking status, previous smoking experience,

types of tobacco products used, and their exposure to second-hand smoke at home, workplace and public places.

#### Methods

The sample was based on a multi-stage cluster sampling method using demographic data on adult population of Armenia. A sample size of 2380 households was selected and one questionnaire for adults was filled out per household. The survey was conducted with financial and technical assistance of the World Health Organization.

#### Results

Every 4th (27,9 %) respondent in the 18-69 age group and every second men (51.5%) were considered smokers. Smoking tobacco in men is one of the most prevalent risk factors of NCD development. Tobacco use was more prevalent in residents of Yerevan (30.2%), than in other cities (21.3%) and villages (23.3%). Nine out of ten smokers were daily smokers. The mean age of starting to smoke was 18.1. Three (32.7%) out of ten smokers smoked 25 and more cigarettes per day, thus putting them at risk of malignancies and cardiovascular diseases. Every five (56.4%) out of ten respondents were found to be exposed to secondhand smoke at home and every fourth (26.6%) in the workplace.

#### Conclusions

STEPS survey will enable implementing the tobacco strategy introduced in 2017. The main objective and goal of the strategy and of the RA Government is to implement measures and activities aimed at reducing the prevalence and consumption rates, maintaining the health of the population and also reducing the incidence of NCD by cutting the use of tobacco products and other tobacco substitutes.

**Tob. Induc. Dis. 2018;16(Suppl 3):A58**  
DOI: 10.18332/tid/94872

### Smoking prevalence and related factors among workers of Bornova Municipality in Izmir, Turkey

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#### Aim and objective

The aim of this study was to determine the prevalence of smoking and factors related to smoking among the workers of a district municipality in Izmir.

#### Methods

The study consists of a secondary analysis of data collected during a cross-sectional survey on physical activity among municipal workers. Ethical approval and permission from Bornova Municipality were obtained. The data were collected during August-November 2016. Among a total of 2137 municipal workers, the sample size was determined as 352 workers according to 33% prevalence of physical activity (Turkey Nutrition and Health Survey 2010), 5% error, 95% confidence interval, 20% non-response 352. The response rate of the survey was 81.53%.

#### Results

The mean age of the participants was 38,91±8,49. Among the study participants, 36.2% were female and 68.3% were married. Among them, 24.0% were graduated from secondary school or lower, 32.1% from high school and 43.9% from university. The mean income per capita of workers was 1676.43 ± 1078.16 TL. Their mean duration of employment at the municipality was 9.55±7.30 years

and they worked  $171.71 \pm 10.91$  hours per months, 80.5% were physically active, 36.2% had a disease diagnosed by a doctor and 27.5% were on medication.

The prevalence of smoking was 48.8% among these municipal workers. There was no significant difference between the ages ( $p=0.138$ ) and gender of smokers and non-smokers. Among women, 49.0% were smoking and 48.6% among men ( $p=0.947$ ). There was a significant difference of smoking prevalence according to education ( $p=0.006$ ), with 58.0% among secondary school or lower, 56.5% among high school and 38.1% among university graduates (42.9% among women and 32.1% among men). There was no significant difference in the marital status ( $p=0.242$ ), duration of employment at the municipality ( $p=0.477$ ), physically active work ( $p=0.297$ ), monthly working hours ( $p=0.754$ ), presence of a chronic disease ( $p=0.755$ ), medication ( $p=0.887$ ), presence of hobby ( $p=0.898$ ), body mass index ( $p=0.123$ ), income per capita ( $p=0.395$ ) and physical activity level ( $p=0.695$ ) among smokers and non-smokers.

### Conclusions

The prevalence of smoking is much higher among municipal workers compared to national adult survey data (27% overall, 41.4% among men and 13.1% among women), with a much higher prevalence among women. The reasons underlying this high prevalence, especially some possible local or workplace-related dynamics, should be investigated. The lower prevalence among university graduates is consistent with the literature. Educational interventions could be offered.

**Tob. Induc. Dis. 2018;16(Suppl 3):A59**

**DOI: 10.18332/tid/94907**

## A Study on Nicotine Dependency Levels of Smoking University Students Depending On Socio-Demographic Features, and Smoking Habits

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Smoking is a common addictive behavior found among young people particularly university students. In the case of smoking addiction the substance nicotine has the most important influence. Therefore, in the fight against smoking addiction it is considered to be important to know the smoking habits of university students and the factors that might affect these students' nicotine addiction. In this regard, in this study it is aimed to investigate the nicotine addiction levels of smoking university students depending on their socio-demographic features and smoking habits. 460 smoking students enrolled in a public university in Turkey in the academic year of 2015-2016 participated in this study. The data were collected via personal information forms and Fagerstron Nicotine Addiction Scale. T-test for independent groups and one-way variance analysis were used in the analysis of the data. The results of the analysis revealed that nicotine addiction scores of cigar smoking university students did not differentiate significantly depending on the gender, faculty, grade level, place of residency, income, parents' level of education, smoking state of mother, father, sibling, friend and the reason of beginning to smoke. Moreover, it was found that students older than 24 had higher scores of nicotine addiction compared to students aging around 18-20 and 21-23 respectively. Additionally, students beginning to smoke at the age range of 10-13 have had higher scores of nicotine addiction compared to students beginning to smoke at the

age ranges of 14-17 and 18-21. Also, students smoking for 1-3 years have had lower scores of nicotine addiction compared to students smoking at the ranges of 4-6 years, 7-9 years, and more than 10 years of consuming. Besides, students smoking between the range of 1-10 cigars per day have had lower scores of nicotine addiction compared to student groups using 11-20, 21-30, and more than 31 respectively. The results of this study may provide insights for academicians and shed light to the studies discussing preventive works on addiction.

**Tob. Induc. Dis. 2018;16(Suppl 3):A60**

**DOI: 10.18332/tid/94832**

## Tobacco smoking prevalence and risk factors among youth attending medical male circumcision clinics

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### Objectives

The use of tobacco by youth constitutes a major public health problem globally as well as in South Africa. Early onset of smoking increases the risk of contracting a wide range of potentially fatal diseases. Therefore, the aim was to assess the prevalence and risk factors of tobacco smoking in youth.

### Methods

Cross-sectional study across five medical male circumcision (MMC) sites in three provinces in South Africa among young healthy men aged 10-18 years. Data were collected on demographics, tobacco (positive urine cotinine test) and dagga smoking, risky behaviour, and alcohol consumption. A CO breathalyser test was done to categorise smokers as either mild, moderate or severe. Multivariable logistic regression was used to determine risk factors of tobacco smoking.

### Results

Of the 1109 participants, 68.9% were aged 10-14 years, 93.3% were in school/studying, 17.7% and 41.0% had mothers and fathers who smoke, 10% (105/1088) of participants were tobacco smokers with 51.7% being severe smokers. Participants aged 15-18 years were more likely to have anyone smoking indoors in the past 30 days (32.0% vs. 19.8%,  $p<0.0001$ ), to smoke tobacco (86.7% vs. 13.3%,  $p<0.0001$ ) and to have smoked marijuana (25.6% vs. 0.4%,  $p<0.0001$ ). In the multivariate analysis, the odds for tobacco smoking were higher for age [OR: 1.360; CI: 1.186-1.558], those not in school [OR: 2.408; CI: 1.117-5.192], often have anyone smoking inside their home [OR: 2.047; CI: 1.103-3.798], have smoked marijuana [OR: 8.789; CI: 4.551-16.97] and drink alcohol [OR: 4.368; CI: 2.261-8.439].

### Conclusions

The prevalence of tobacco smoking increased with age. Participants who were not in school, have smoked marijuana and drink alcohol had higher odds of smoking tobacco. Therefore, it is vital to develop interventions that will help prevent initiation of smoking among youth. This will be helpful in decreasing future tobacco associated mortality rates.

**Funding**

Perinatal and HIV Research Unit for internally funding the study as well as Soweto Matlosana SAMRC Collaborating Centre for HIV/AIDS and TB (SoMCHAT).

**Tob. Induc. Dis. 2018;16(Suppl 3):A61**

**DOI: 10.18332/tid/94777**

### Comparison of tobacco use prevalence between Panama nationwide and the Guna Yala Indigenous Territory

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**Aims**

According to the Global Adult Tobacco Survey (GATS), Panama has the lowest prevalence of tobacco products consumption in the Americas (6.4%). The top subnational prevalence of tobacco products use, according to GATS, corresponds to the Guna Yala Indigenous territories (GYIT) (16.2%). In 2017, the Global Youth Tobacco Survey (GYTS) took place in Panama with national and with GYIT representativeness. We aim comparing the national tobacco products consumption with the consumption at GYIT.

**Methods**

GYTS was applied to teens aged 13-15 years attending public and private high schools. GYTS follows a standard protocol. The nationwide representative sample included 51 schools, and 2,084 respondents with 83.0% response rate. The GYIT sample included 27 schools, and 1,083 pupils with 80.3% response rate.

**Results**

National current tobacco smoking prevalence was 5.9% (p value for sex: > 0.05), and the GYIT figure was 10.7% (boys: 14.2%; girls: 7.3%, p value for sex: < 0.05). The national current smokeless tobacco consumption prevalence was 2.3% (p value for sex differences: > 0.05), and the GYIT figure was 5.7% (boys: 7.1%; girls: 4.1%, p value for sex differences: < 0.05). National prevalence of current e-cigarettes consumption was 6.4% (p value for sex differences: > 0.05), the figure in GYIT was 5.1% (p value for sex differences: > 0.05).

**Conclusions**

GYIT tended to have a higher prevalence of tobacco products consumption compared to the national consumption. The MPOWER elements assessed in the GYTS will guide tobacco control policies to decrease the consumption of tobacco products in the youth.

**Funding**

This study is financed by public funds. Some of these public funds come from the Selective Tax on the Consumption of Cigarettes and other Tobacco Products. This tax discourages the use of tobacco products. However, the funds coming from this tax are used in activities to improve the primary and secondary prevention of tobacco-associated diseases, such as this study.

**Tob. Induc. Dis. 2018;16(Suppl 3):A62**

**DOI: 10.18332/tid/94865**

### Intention and quitting pattern of smokeless tobacco in a rural community of Anambra state of Nigeria

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**Introduction**

In Nigeria, prevalence studies have consistently reported

higher rates of tobacco use in the South-Eastern parts of Nigeria but little is known about the intention and quitting pattern of smokeless tobacco in these parts of the country. The aim of this study was to determine the intention and quitting pattern of smokeless tobacco, among residents of Ukpo community of Anambra state Nigeria.

**Methods**

A cross-sectional descriptive study was carried out among 210 ever users of smokeless tobacco and residents of Ukpo community. Data was collected using anonymous pre-tested interviewer administered questionnaires adapted from Global Adult tobacco Survey. Odd ratios and 95% confidence intervals were computed and P values of < 0.05 were considered statistically significant.

**Results**

Out of the 210 who have ever used smokeless tobacco, 129 people (61.4%) were current daily users, 59 (28.1%) less than daily users while 22 (10.5%) were not current users. The most common form of smokeless tobacco use was snuff 92 (71%) comprising 49 (38%) by nose which was the commonest mode of smokeless tobacco used, 43 people (33%) snuff by mouth. Majority using smokeless tobacco 84 (40%) were due to health concern. Out of the 216 people, (41.1%) who visited Health facility only 52 people (24.1%) were asked by the doctor if they used smokeless tobacco and 39 (18.6%) were advised to quit. Of the 210 respondents, 60 (28.6%) had intention to quit use of smokeless tobacco. Majority of people who tried to quit smokeless tobacco did so without assistance 52 (24.1%). Others were through counseling at a cessation clinic 50 (23.1%), followed by nicotine replacement therapy 26 (12.0%).

**Conclusions**

Efforts should be targeted at establishing smokeless tobacco cessation programs in rural communities where smokeless tobacco use is disproportionately high. Programs should be directed at younger males with lower levels of education.

**Tob. Induc. Dis. 2018;16(Suppl 3):A63**

**DOI: 10.18332/tid/94539**

## SATURDAY 6 OCTOBER

### CESSATION 2

#### Opinions toward e-learning for the WHO tobacco cessation and oral health integration

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Integrating the brief tobacco interventions (3-5 min) into oral health programs in primary care is recommended by WHO. Although a sample agenda for training workshop of 2.5 days is provided for primary care providers, 1-day workshop was conducted for oral health professionals as pilot training course at three locations in Japan. The training was totally effective regarding the training objectives for dentists and dental hygienists. This study aims to clarify potential factors for dissemination of the program in Japan.

After the pilot training, we conducted 1-day workshops for oral health professionals for full modules including a module of addressing non-smokers' exposure to second-hand smoke in Tokyo, Japan. In total, 104 dentists and dental hygienists participated. A questionnaire regarding nine learning objectives was provided after training. Participants then were asked to mark the level of perceived competence on a straight line (0%-100% scale) regarding five counseling skills. Finally, they were asked about opinions toward development of e-learning for the WHO tobacco cessation and oral health integration: improvement, emphasis, specific recommendation in Japan, and others.

Perceived achievement of the training objectives and confidence in intervention skill were favorable overall. Various opinions regarding four items were obtained from most participants (68%, 77%, 63%, and 40%, respectively). In conclusion, improvement of the training workshop is necessary for dissemination of the program by careful consideration of opinions of the participants of workshops.

#### **Funding**

This study was supported by Pfizer Global Medical Grant #35621681.

**Tob. Induc. Dis. 2018;16(Suppl 3):A64**

**DOI: 10.18332/tid/94904**

### **Smoking cessation services for health staff: Experiences of a university hospital in Izmir, Turkey**

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#### **Aim and objective**

Our aim was to explore possible changes in the ratio of a university hospital's health professionals among patients applying to the smoking cessation clinic situated inside the same hospital and to compare the characteristics and procedure of these applicants with other cessation service users.

#### **Methods**

The smoking cessation clinic of the department of public health is situated among the outpatient clinics of Ege University Hospital and it is in operation since January 2016. In July 2017, the health and safety of health care workers unit of the hospital, which is another unit of the same department, has moved to the same location in the hospital. In August 2017, a public health specialist started working at the health and safety of health care workers unit and started to motivate health staff coming for periodic examinations to quit. Data on whether the applicants to the smoking cessation clinic were hospital staff has been recorded systematically from May 2017 on. The ratio of hospital staff among smoking cessation service users was compared in three-month intervals with the Chi square for trend analysis. The characteristics of hospital staff and other service users were compared with Chi square and Student t tests.

#### **Results**

Between May 2017 and June 2018, a total of 398 cessation service users' data were evaluated, among whom 76 (19.1%) were the hospital's own staff. Only 5.8% of service users were hospital staff in May-June 2017 compared to 20.5% in July 2017-June 2018 ( $p=0.011$ ), which gradually increased as 13.5%, 14.9%, 25.6% and finally reaching

28.4% in April-June 2018 in three-month intervals, with a significantly increasing trend ( $p<0.001$ ).

The ratio of women was 59.5% among hospital staff using cessation services, as compared to 38.0% among others ( $p=0.001$ ). The mean age of the hospital staff using cessation services was  $39.8\pm 8.5$  and  $40.1\pm 13.9$  for others ( $p=0.837$ ).

The mean duration of the first appointment was  $43.2\pm 9.2$  minutes for hospital staff and  $45.4\pm 12.6$  minutes for other applicants ( $p=0.186$ ). Among the hospital staff, the mean duration of the first cessation interview was  $44.3\pm 9.8$  minutes for health staff and  $41.4\pm 8.4$  minutes for other staff ( $p=0.241$ ).

#### **Conclusions**

Offering help to quit during periodic examinations and spatial vicinity to quit services seem to have significantly increased smoking cessation service use among health staff.

**Tob. Induc. Dis. 2018;16(Suppl 3):A65**

**DOI: 10.18332/tid/94911**

### **The status of smoking cessation according to anxiety, depression and addiction level of patients**

Vildan Mevsim, Leyla Doğan, Aylin Demirci, Çiğdem Alkan, Ceren Akkol

#### **Introduction**

Smoking addiction is an important and preventable health problem. 16 million people are smokers in Turkey and 100,000 people die annually due to smoking-related health problems. In smoking cessation programs, assessment of addiction, motivational therapy, pharmacological, nonpharmacologic therapies and regular follow-up are recommended.

The aim of this study was to investigate the anxiety, depression and addiction level of patients who applied to the smoking cessation polyclinic of our university family medicine department.

#### **Methods**

Socio-demographic information, cigarette use cases, abstinence experience, depression, anxiety and addiction level were evaluated by 128 cigarette patients aged 18 years or older who applied to the Smoking Cessation Polyclinic of the Medical Faculty of Dokuz Eylül University Medical Faculty between 1 March 2014 and 1 March 2015.

#### **Conclusions**

Nicotine dependence level was very low in 7.8%, low in 18.0%, moderate in 14.1%, high in 26.6% and very high in 32.8% of the participants. Depression was detected in 33.6% of the participants and anxiety was present in 36.7%. The proportion of non-smokers was 21.9% a year after the participants started treatment. When depression, anxiety and addiction levels were compared with smoking cessation status; there was no statistically significant difference between depression, anxiety and addiction level and smoking cessation rate.

**Tob. Induc. Dis. 2018;16(Suppl 3):A66**

**DOI: 10.18332/tid/94912**

### **Do the features of smoking cessation service users change during governmental drug donation period?**

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**Aim and objective**

The Ministry of Health of Turkey have led different smoking cessation drug delivery programs throughout different years. The last donation program provides Varenicline and nicotine patch. The aim of this study was to compare the features of service users attending to Ege University Public Health Department's smoking cessation outpatient clinic during the Ministry of Health's drug donation period and the period without donation.

**Methods**

All attendees (n=353) to Ege University Public Health Department's smoking cessation outpatient clinic during January-June 2017 (period of no donation) and January-June 2018 (the latest period with governmental drug donation) were included in this cross-sectional study. The socio-demographic characteristics (age, gender, marital status, education, social class), smoking parameters (daily consumption, pack-years, nicotine-dependency level, previous quitting experience and number), health status (depression score, a physician's advice, presence of a chronic disease) and their treatment (drug choice, counselling duration) were compared in these two different periods. The chi-square and independent samples Student t tests were used for analyses.

**Results**

Among all attendees, 140 (39.7%) were women and their mean age was 39.6 ( $\pm$ 12.6), with 76.2% graduated from high school.

Among participants, 167 (47.3%) had applied during the period without donation, versus 186 (52.7%) during the donation period. During the donation period, 83.5% of attendees had high school and over educational attainment versus 72.2% in the period with no donation ( $p=0.011$ ). Among women, regarding social class, white collar patients have admitted more during the drug donation period ( $p=0.026$ ). The prescription of varenicline had significantly increase during the donation period (21.0% versus 61.8%,  $p<0.001$ ).

There was no significant difference for other socio-demographic variables (age, gender, marital status), smoking parameters (daily consumption, pack-years, nicotine-dependency level, previous quitting experience and number), health status (depression score, a physician's advice, presence of a chronic disease) and duration of counselling ( $p>0.05$ ).

**Conclusions**

Free-of-charge delivery of smoking cessation drugs through the ministry has successfully reached the more-educated and better social class smokers with a tendency to quit. More efforts should be made to reach disadvantaged groups in the community.

**Tob. Induc. Dis. 2018;16(Suppl 3):A67**

**DOI: 10.18332/tid/94779**

### Stopping smoking prior to elective hip and knee surgery: the impact of visiting a community pharmacist for tobacco management

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**Aim**

To have patients quit smoking prior to elective total joint arthroplasty surgery.

**Objective**

Smokers have twice the rate of deep surgical site infections

and three times the rate of readmission to hospital after arthroplasty than non-smokers. We assessed the impact of patients obtaining counselling and medical management for their nicotine addiction by visiting a pharmacist in their community on short and long term quit rates.

**Methods**

After ethics approval and written informed consent patients attending a pre-surgical assessment clinic were recruited to participate in a pharmacy delivered smoking cessation program. Patients watched a surgery specific video education about the program and smoking status was validated by exhaled CO determination at 30 days after program participation and by self-reported smoking status at 6 months obtained by telephone follow up.

**Results**

103 out of 286 (36%) patients approached agreed to participate in the community pharmacist program. 52% were female with a mean age (SD) of 59 (8.4) years. Mean (SD) Fagerstrom score was 4.0 (2.2) and years smoked 36.9 (11.3). 79% had tried to quit previously. Despite all participants agreeing to see a pharmacist only 58% attended for a visit. The validated 30-day and 6-month continuous abstinence rate was 16% and 18%, respectively for those who saw a pharmacist vs. 2% for non-participants.

**Conclusion**

Participation in this study and the pharmacy visit was voluntary. The participation rate was low but for those motivated to participate and to visit the pharmacist and receive treatment and counselling the short and long terms outcomes were significant. Mandating at least a single visit to a pharmacy-driven smoking cessation program for all patients undergoing joint arthroplasty seems worth exploring to enhance smoking cessation prior to surgery.

**Funding**

Global Research Award for Tobacco Dependence - (GRAND) - Pfizer.

**Tob. Induc. Dis. 2018;16(Suppl 3):A68**

**DOI: 10.18332/tid/94559**

### Ethiopian health care delivery system's responsiveness to smoking cessation therapy and its predictors: A mixed method study in Ethiopia

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**Introduction**

Tobacco is one of the leading public health burdens, killing six million people globally each year. The health system and health care providers can play a major role in tobacco cessation interventions to their patients. But Ethiopian health systems responsiveness level and care providers knowledge, attitude and practice level were not well understood.

**Objective**

To assess health care delivery system's responsiveness to smoking cessation services and its associated factors in Ethiopia.

**Methods**

A cross sectional study was employed both quantitative and qualitative methods. The quantitative study was used to determine knowledge, attitude, and practice of health workers with a sample of 323. SPSS software was used for analysis. Qualitative data that was collected from key informants and transcribed translated and thematized.

**Results**

Majority of the health care providers had poor knowledge

and negative attitude and below average level of practice towards providing cessation intervention.

In the multivariate analysis; being female, receiving training, having good knowledge score, and having positive attitude were associated with the above average practice. Data from the key informants indicated that no well-organized and established system in Ethiopia.

#### Conclusions

Ethiopian health care providers were with poor knowledge, negative attitude and below average level of practice and medications are not in the essential drug lists of the country. Therefore, ministry of health should introduce tobacco dependence treatments in the health care system and strengthen existing weak behavioral counseling intervention.

#### Funding

Funding source was center for Tobacco Control in Africa and International Development Research Centre.

**Tob. Induc. Dis. 2018;16(Suppl 3):A69**

**DOI: 10.18332/tid/94774**

## ORAL HEALTH AND TOBACCO 2

### Smoking alters the normal transcriptome of healthy human gingiva

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#### Aim

Smoking is a major risk factor for periodontitis and has been shown to impact the oral microbiome, as well as the host. However, studies on the effect of smoking on the transcriptome of healthy normal gingiva are lacking. The purpose of this study was to analyze the effects of smoking on the normal healthy human gingiva transcriptome.

#### Methods

Palatal biopsies, in the form of a harvested connective tissue graft, were obtained from periodontally healthy smokers and non-smokers in a prospective, experimental study. Smoking status was determined by self-reporting ( $\geq 10$  cigarettes/day for  $\geq 5$  years; never smoker) and verified biochemically (exhaled air CO and serum cotinine levels). Tissue samples were stored frozen until processed for RNA isolation. Following RNA preparation, gene expression was analyzed by next generation sequencing (RNASeq) and real-time PCR. Gene set enrichment/pathway analysis was also performed.

#### Results

Tissue specimens were obtained from 24 consented participants. Two smokers were found to have consistently low biochemical values (CO and cotinine) and their samples were excluded. Therefore, transcriptome data were based on samples from 10 smokers and 12 non-smokers.

830 significantly ( $p < 0.05$ ) differentially expressed genes were identified. Of those genes with  $> 2$  fold-change (FC) in expression, 98 genes were up-regulated and 151 were down-regulated. CYP1A1 was the most highly up-regulated gene (17.8 FC) and IL36A, DEFB4A, DEFB4B, and SPRR2F were the most highly down-regulated ( $\geq 8$  FC) genes. Several among the significantly down-regulated genes (e.g., DEFB4A, DEFB4B, CCL20, s100A7A) are reportedly involved in innate immune responses and/or antimicrobial activity.

#### Conclusions

Smoking has a significant effect on the gingival

transcriptome of normal human gingiva and it seems to negatively impact the ability of the tissues to defend against bacteria; this could partly explain the reported changes in the gingival microbiome of periodontally healthy patients.

#### Funding

This study was supported by the authors' institution.

**Tob. Induc. Dis. 2018;16(Suppl 3):A70**

**DOI: 10.18332/tid/94762**

### Effects of smoking on periodontal health status: A retrospective study

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#### Introduction

Smoking, damages directly the periodontal tissues by the harmful substances it contains and indirectly by changing the host response against them. Although it is not yet a separate disease in the classification, smoking-related periodontal health status has its own clinical character. Our aim in this study was to investigate the relationship between smoking intensity and periodontal tissues by clinical measurements.

#### Methods

In this retrospective study, 300 patients were selected randomly. These patients were divided into 3 groups according to smoking status: non- smokers  $n=150$ , light smokers  $n=75$ , high smokers  $n=75$ . Smoking status, bleeding on probing (BOP), plaque index (PI), calculus index (CI), probing depth, gender, age, education and oral hygiene habit had determined for each individual at their first application to our clinic. ANOVA analysis of variance ( $p < 0.002$ ) and chi-square test were used in the statistical evaluations.

#### Results

The relationship between high smoking status and increased probing depth was statistically significant in our results ( $p < 0.002$ ). The relationship between smoking and plaque index is also statistically significant. However, the relationship between smoking and BOP, smoking and calculus index was not statistically significant.

#### Conclusions

Smoking has been shown to be a major risk for periodontal disease. The fact that smoking is not associated with BOP is evidence of reduction of tobacco in the gingival vascular inflammatory reaction. The effects of smoking on periodontal tissues depend on the number of cigarettes smoked daily. Lack of relationship between smoking and CI may be relevant age and oral hygiene habit of individuals.

**Tob. Induc. Dis. 2018;16(Suppl 3):A71**

**DOI: 10.18332/tid/94787**

### The effect of smoking on peri-implant marginal bone loss in periodontally compromised patients

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#### Aim and objective

Using dental implants has become an established and widely used treatment option for fully and partially edentulous patients. Success in implant dentistry relies on the initial osseointegration and long-term implant stability. Smoking is one of the essential factors that may

affect the success of implant stability. The aim of our study is to evaluate the effects of smoking on the success of dental implants in generalized aggressive periodontitis patients.

#### Methods

Totally, 32 implants were inserted in 13 generalized aggressive periodontitis patients, 7 were smoker and 6 were non-smoker. Demographic data was collected. Peri-implant plaque index (PI), bleeding on probing (BOP), and probing depth (PD) were recorded. Marginal bone loss (MBL) was measured using standardized digital radiographs at baseline, 1 and 6-months. Data were tested statistically using Kruskal-Wallis and Mann-Whitney U tests.

#### Results

In initial osseointegration period, totally 2 implants were failed in the smoker group. 17 implants in non-smoker and the 13 implants in smoker group were evaluated. MBL was higher in the smoker group than nonsmoker both follow up periods, but the differences were not statistically significant at 1 and 6- months ( $p=0.784$  and  $p=0.996$ , respectively).

#### Conclusions

Our short term findings emphasize that there is a relation in smoking and peri-implant marginal bone loss in periodontally compromised patients. Smoking is not a contraindication for dental implant therapy, however, dentists should provide detailed information on the addiction-related risk of implant failure. Especially, patients should be informed that implant success is very much related to their compliance about smoking habits and a strict recall protocol.

#### Funding

This study was supported by Oral Reconstruction Foundation.

**Tob. Induc. Dis. 2018;16(Suppl 3):A72**

**DOI: 10.18332/tid/94863**

### The ordering of smokers' criteria in choosing toothpaste with fuzzy dematel model

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#### Aim

Smokers give more harm to tooth and mouth flora than non-smokers. These conditions can affect the decision of smokers when buying toothpaste. Unlike non-smokers, expectations of toothpaste can vary. Regarding these, the aim of this study is to show which criteria are important to smokers in choosing toothpaste for dental health or related problems. These criteria are sorted according to their importance with the model to be applied.

#### Methods

The model applied in this study is Fuzzy DEMATEL (Fuzzy Decision-Making Trial and Evaluation Laboratory) model. The model was used to determine the importance values of the criteria for toothpaste selection. The data were obtained from patients who smoked and who applied to outpatient clinic of Dokuz Eylül University Family Medicine Department.

#### Results

To put the toothpaste criteria in order of importance, the criterion selection results of smokers were taken from individual patients. With the data, the criteria in choosing toothpaste were sorted from the most to the least important

with the Fuzzy DEMATEL model.

#### Conclusions

Today's personal care products directly affect the health of the individual. When providing these products, users consider not only the criteria for being healthy but also many other criteria. This effect is also observed in toothpaste, which is a specific product. The most important criterion in choosing toothpaste is that people have important data about dental care. Finding people's most important criteria in choosing toothpaste, important data about people's dental care are obtained.

**Tob. Induc. Dis. 2018;16(Suppl 3):A73**

**DOI: 10.18332/tid/94773**

### Effect of smoking on long-term stability of coronally advanced flap: 6-year follow-up

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#### Aim

Smoking is the strongest modifiable risk factor for periodontal diseases that also deteriorates the response to periodontal treatment. Mucogingival operations may also provide less successful outcomes in smokers. The aim of this study was to evaluate possible effects of smoking on long-term stability of root coverage using coronally advanced flap procedures in localized gingival recessions.

#### Methods

Six recession defects in each of the smoker and non-smoker groups were evaluated in this study. Coronally advanced flap was performed with microsurgery technique. Probing depth, clinical attachment level, keratinized gingival width, plaque index, papilla bleeding index, recession depth, recession width, and root surface area were evaluated at baseline, and then postoperative 6-month, and 6-year follow-up sessions. Percentage of root coverage and complete root coverage were also calculated at postoperative controls. Data were analysed with appropriate statistical tests.

#### Results

All patients included in this study provided efficient plaque control and good oral hygiene level was maintained throughout the study protocol. Baseline clinical attachment level measurements revealed significantly higher values in the smoker group ( $p<0.05$ ). All other clinical measurements were similar in the smoker and non-smoker groups at baseline and also at 6-month and 6-year control evaluations ( $p>0.05$ ).

#### Conclusions

This 6-year follow-up study suggests that smoking does not have a significant adverse effect on the long-term stability of root coverage as long as the patients maintained efficient plaque control.

#### Funding

This study was supported by a grant from the Ege University Research Foundation (Project No: 2010 DIS 004).

**Tob. Induc. Dis. 2018;16(Suppl 3):A74**

**DOI: 10.18332/tid/94549**

## YOUTH AND TOBACCO 2

### Smoking status of students of medical school and factors affecting their smoking

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#### Aim and objective

Tobacco epidemic among young people is defined as an important public health problem in developed and under-developing countries. Besides, the health problems brought by the cigarettes are not perceived enough by the adolescents and young people and they are ignored. The purpose of the study is to examine the smoking situation and the factors influencing students in a medical faculty.

#### Methods

This descriptive study covers a total of 126 students studying at a medical school between April and May 2018. 92.86% of the universe was reached. The data was collected by a questionnaire. Descriptive data are presented with percent, number, median. For further analysis, chi-square analysis was used.

#### Results

It was determined that those who participated in the study had a median age of 19.00 (min: 18.00, max: 24.00). 12.0% of the participants stated that they used cigarettes, 31.6% said they tried but did not use it for a long time. 17.0% stated that they use hookahs. It was found that 22.3% of smokers started smoking cigarettes at the median age of 17.00 (min: 9, max: 19), 31.3% of them started stress and 21.9% of them started out of curiosity they said. Most of the smokers had fathers who smoked cigarettes. This was statistically significant ( $p = 0.048$ ).

#### Conclusions

Smoking rate increases in medical faculty students. It is suggested that medical students who will be role models as a medical doctor should be followed up in order to reduce the consumption of tobacco and get solved the reasons people start smoking.

**Tob. Induc. Dis. 2018;16(Suppl 3):A75**

**DOI: 10.18332/tid/94908**

### Change in smoking frequency and affecting factors among the students of a medical faculty in Ankara – Turkey: 2013-2016

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#### Aims

Tobacco use of healthcare professionals is a major problem in combating tobacco in Turkey. As being the physicians of the future, smoking behaviors of medical students are also important. The aim of this study is to determine the smoking prevalence and affecting factors of medical students as well as the change occurring during the study period at medical school.

#### Methods

This cross-sectional study was conducted among medical students at the XXX University, Ankara, Turkey in March 2013 and a similar study was repeated in March 2016. An anonymous, self-administered questionnaire was developed and used for data collection. In addition, Fagerström Test for Nicotine Dependence was applied to the current smokers. In 2013 106 students, in 2016 125 students participated to the study with enrollment rates of 84.8% and 100% respectively.

#### Results

In 2016, 59.2% of the students attempted to smoke at least one puff, 34.4% had been regular smokers, 31.2% were current smokers. There was no statistically significant change in the smoking behavior of students during the period of 2013-2016. When all risk factors were evaluated together, it was determined that being a regular smoker was only affected by permission to smoke in the place of residence and the risk of being a current smoker is influenced by male sex and by permission to smoke in the place of residence.

#### Conclusions

More than half of medical students started smoking in their university lives. A need for effective preventive and ameliorative interventions during the medical school years is clear.

#### Funding

The study was supported by Başkent University Research Fund.

**Tob. Induc. Dis. 2018;16(Suppl 3):A76**

**DOI: 10.18332/tid/94778**

### Smoking status of medical students at Ege University: A cross-sectional survey of 1040 students in 2018

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#### Introduction

We aimed to determine the smoking prevalence and related factors among 1,2,3 and 6th grade students at Ege University Faculty of Medicine.

#### Methods

This cross-sectional survey was a part of a multi-centre study throughout Turkey and the data were collected in May-June 2018. The target group of this study was 1537 medical students studying in the first, second, third and sixth grades. Questionnaires were applied to 1040 students (67.7%) who agreed to participate in the study. The coverage was 94.5%, 78.6%, 57.4%, 36.7% for the first, second, third and sixth grades, respectively.

#### Results

The overall prevalence of smoking was 18.4%, with 18.1%, 18.6%, 17.0% and 22.1% in the first, second, third and sixth grades, respectively. The mean age at starting to smoke was 16.5±2.3 yrs (min.8, max.23). Current smoking was more prevalent in males compared to females (24.3% vs. 11.7%,  $p<0.001$ ). Among current smokers, 27.4% had started smoking during medical school. The most common reasons for starting to smoke were the effects of close friends (37.1%) and stress (19.2%). Current smokers spend 201±139 Turkish Liras (min.0, max.800) monthly for cigarettes. Among smokers, 60.4% have tried to quit smoking at least once, and 78% of them thought of smoking cessation. Among e-cigarette users, 93.6% were ever-smokers.

According to univariate analyses; male students, students whose parents, partners or best friends were ever-smokers, students living alone and the ones who have smoked hookah at least once have significantly higher prevalence of being ever-smokers compared to their

counter-parts. In multivariate analyses; having the hookah use (OR:12.4), living alone at home (OR:3.4), partner (OR:2.3) or best friend (OR:1.9) smoking, and were found to be independent risk factors related to being an ever-smoker.

#### Conclusions

The present study shows that the prevalence of smoking in especially male medical students was high (24.3%) in Turkey, and nearly one third of the students started smoking during medical faculty. Therefore, there is a need to include intensive education programs regarding smoking-related health problems and smoking cessation at an early stage in the medical curriculum.

**Tob. Induc. Dis. 2018;16(Suppl 3):A77**

**DOI: 10.18332/tid/94780**

### Parent smoking behavior and children's future development: evidence from Indonesia Family Life Survey (IFLS)

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Indonesia is the real champions of smoking with nearly 32% of the adult populations are smokers. The prevalence of youth smoking has jumped more than fourfold during last two decades. This calls for serious effort on tobacco controlling. A high prevalence of tobacco consumption may have an adverse consequence for the future socioeconomic condition of household especially for children development. Since tobacco is addictive consumption, household often reduce other consumption to fulfil the elderly's consumption of tobacco. As many cases that children are likely powerless in the household decision making, elderly who over controlled consumption's decision might prioritize their tobacco consumption instead of investing on children development such as education, health, quantity and quality of food. This study utilize a longitudinal dataset of Indonesia Family Life Survey (IFLS) aims at evaluating the impacts of parent smoking behavior on stunting indicated by children's weight and height growth. An increase in tobacco consumption around two percentage point (1997-2014) has been compensated by a decrease in expenditure share of rice, protein and fat sources of food and education. These kinds of expenditure will significantly influence the children's future development in terms of weight, height and cognitive ability. Based on our observation of children (<=5 years old) of IFLS 2007 & 2014, we found that children living in household with chronic smoker as well as with transient smoker tend to have slower growth in weight and height compared to those living in household without smoker. Our study statistically confirmed that children living with non-smoking parent will grow 1.5 kg heavier than those living with chronic smoker parent. Active/chronic smoker tends to have a high probability of stunted kids. This finding provides valuable evidence that controlling tobacco consumption will not only reduce the prevalence of smoking but also will make a better future of Indonesia.

#### Funding

Campaign Tobacco-Free Kids.

**Tob. Induc. Dis. 2018;16(Suppl 3):A78**

**DOI: 10.18332/tid/94561**

### Tobacco smoking imagery in Nigerian musical videos; A four year retrospective review

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#### Aim

Tobacco advertisement has been banned in mainstream media, however, contents endorsing smoking are still accessible to people, mostly adolescents, through uncensored online media platforms. This research aimed at evaluating tobacco content in Nigerian musical videos.

#### Methods

Top 50 videos of each year from 2014 to 2017 were reviewed independently by two researchers who checked for parameters including: antimoking message, imagery of male, female or group smoking, and imagery of soft core sexual content associated with cigarette smoking. A total of 200 videos were reviewed. The videos were sourced from Youtube according to ratings by AfricaCharts. AfricaCharts rates videos based on TV and radio airplay, record sales, streaming platforms, social media, song and video downloads from top African entertainment sites, as well as YouTube and Dailymotion views.

#### Results

About 22 (11%) and 7 (3.5%) videos, with 322 million combined views had imagery of male and female smoking respectively. Videos containing male smoking imagery increased by 150% between 2014 and 2017. Three (1.5%) videos had imagery of smoking associated with sex appeal while 5 (2.5%) videos contained people smoking in groups. Only 1 video (0.5%) with about 5.6 million views contained antitobacco smoking message. A female artiste featured smoking imagery the most.

#### Conclusions

Smoking imagery is contained in few Nigerian musical videos; however, its appearance is on the increase. Given the wide acceptance of Nigerian music among African youths, it may be necessary to regulate smoking imagery content of the musical videos to contain its influence on the youths.

#### Funding

The study was funded by the authors.

**Tob. Induc. Dis. 2018;16(Suppl 3):A79**

**DOI: 10.18332/tid/94874**

### Marginal effects of determinants of smoking participation among young adults in Kenya: A by gender logistic regression analysis

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Smoking causes a huge health and economic burden to society; this effect is even more pronounced for a developing country like Kenya. Despite the fact that tobacco use is preventable, the number of tobacco related deaths in Kenya is still a health challenge. Every year, more than 6,000 Kenyans die of tobacco induced diseases, while approximately 220,000 children and almost 2.7 million adults continue to smoke each day. Objectively, this study focused on the analysis of marginal effects of determinants of smoking participation among young adults in Kenya. It employed data from Kenya GATS 2014. Specifically, Logistic regression analysis was done on both young male and female adults smoking participation.

The study revealed cigarette prices had a marginally and reducing significant effect on the likelihood of young male ( $\beta = -0.00383$ ,  $p < 0.001$ ) and female ( $\beta = -0.00003$ ,  $p < 0.050$ ) adults participation in smoking while tax on cigarette, evidently, had a significant ( $p < 0.001$ ) and reducing marginal ( $\beta = -0.1198$ ) effect on the young male decision to smoke as compared to young female decision to smoke. Education also had a significant and decreasing marginal influence on the tendency of young male ( $\beta = -0.03986$ ,  $p < 0.001$ ) and female ( $\beta = -0.00003$ ,  $p < 0.050$ ) adults decision to smoke. Employed young adults showed to have a declining and significant ( $p < 0.000$ ) marginal effect on their smoking participation. Therefore, price and tax on cigarette are very effective measures in reducing smoking participation among young male and female adults in Kenya.

#### Funding

This research was funded by the Center for Tobacco Control In Africa in collaboration with International Development and Research Center as Tobacco Control Project Grant.

**Tob. Induc. Dis. 2018;16(Suppl 3):A80**

**DOI: 10.18332/tid/94860**

## POLICY AND TAXATION 2

### Tobacco control and prevention from the point of civil society

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#### Introduction

This study assessed the correlation between tobacco control media campaigns and tobacco control violations reporting by people.

#### Methods

Study data derived from the user and violation reporting numbers gathered from Green Detector Mobile Application which is has been designed in such a way that enables the users to report a violation without having to use his/her name. Weakly changes in these figures are compared with media campaigns aiming at rising awareness on tobacco control.

#### Results

Change in the number of downloads and users is in positive correlation with the broadcasting of the public ads on the tobacco control.

#### Conclusions

Tobacco control legislation in Turkey is aligned with international standards. However, rights of non-smokers are violated at public places such as restaurants and cafes. The ban on smoking indoors is stretched by such businesses in practice. Therefore, the non-smokers are still subjected to second-hand smoke at those places. In that regard, public awareness must be improved on and non-smokers must be reminded of the harms of second-hand smoke.

#### Funding

Turkish Green Crescent Society.

**Tob. Induc. Dis. 2018;16(Suppl 3):A81**

**DOI: 10.18332/tid/94867**

### EUREST-FLAVOURS: European Regulatory Science on Tobacco to support the assessment of characterising flavours in tobacco products

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#### Aim and objective

The European Union (EU) Tobacco Product Directive (TPD) concerning the manufacture, presentation and sale of tobacco and related products states in Article 7.1 that Member States (MS) shall prohibit the placing on the market of tobacco products with characterising flavours. The objective of the EUREST-FLAVOURS project is provide services to the European Commission (EC) to support the assessment of characterising flavours in tobacco products.

#### Methods

Using a comprehensive approach for tobacco product testing, the proposed methodology will be based on a comparison of the smelling properties of the test products with those of reference products, complemented, as appropriate, by a chemical assessment of the product composition through chemical analyses.

#### Results

The results of the EUREST-FLAVOURS project will culminate in a clear science-based decision criteria to support the EC in the development of uniform rules for the procedures to determine whether a tobacco product imparts a characterising flavour.

#### Conclusions

The EUREST-FLAVOURS project, through the specification of the methodology for sensory analyses and setting up a sensory 'Technical group', which will assist an 'Independent advisory panel', will ultimately support the EC and MS in the implementation of legislation and policies in the area of tobacco and related products, in particular in relation to the provisions regarding the prohibition of products with characterising flavours foreseen in Article 7 of the TPD.

#### Funding

The EUREST-FLAVOURS Project takes place with the financial support of the European Commission Single framework Contract Chafea/2016/Health/36. The content represents the views of the EUREST-FLAVOURS Consortium and is its sole responsibility; it can in no way be taken to reflect the views of the European Commission and/or Chafea or any other body of the European Union.

**Tob. Induc. Dis. 2018;16(Suppl 3):A82**

**DOI: 10.18332/tid/94776**

### Tobacco control South South Cooperation as a powerful tool to achieve health related issues in the 2030 Agenda

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#### Introduction

Tobacco use is one the four main behavioral risk factors for Non Communicable diseases (NCDs). Addressing other risk factors requires many of the same approaches, as does addressing tobacco control. NCDs and tobacco share persistent lack of development assistance and financing shortages. Thus, SSTC on tobacco control could be applied to help countries prevent and control NCDs.

#### Intervention

Highlight results from SSTC for tobacco control and position it as a high-value means of implementation for the Sustainable Development Goals (SDG). Raise awareness and strengthened support and partnerships for SSTC work on tobacco control and NCDs, and better understand of how best to leverage SSTC for other global health challenges.

Methodology: Examine the potential to scale up initial

work to support tobacco control and to advance health, health equity and sustainable development more broadly.

#### Results

The 2030 Agenda sends a message that current tobacco use trends and sustainable development cannot coexist. Target 3.a., commits all countries to implement the World Health Organization Framework Convention on Tobacco Control (WHO FCTC). Effective implementation of the WHO FCTC is crucial for reducing premature mortality from NCDs (target 3.4), and can deliver shared gains across the agenda, given the multidirectional relationship between tobacco, poverty (SDG 1), food security (SDG 2), gender equality (SDG 5), decent work and economic growth (SDG 8), inequalities (SDG 10) and other goals.

#### Conclusions

SSTC cooperation and WHO FCTC implementation offer possibilities of utilizing the existing United Nations institutional framework for SSTC, including under the 'One United Nations' initiative and 'Delivering as One' at the country level.

**Tob. Induc. Dis. 2018;16(Suppl 3):A83**

**DOI: 10.18332/tid/94802**

### Awareness campaign on tobacco misdeeds and the anti-smoking law in schools and universities: the case of Senegal

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#### Background and context

Smoking is one of the leading preventable causes of death in the world and more particularly in populations of adolescents and young people, the main targets of the tobacco industry.

In Senegal according to the 2013 GYTS surveys "Survey of Youth Smoking"

Surveys revealed that youth use of tobacco is 11.2% overall, 14.9% of boys and 6.2% of girls currently use tobacco products. So, aware of the disastrous misdeeds that result from smoking, the National Tobacco Control Program has taken important measures to combat this scourge including the adoption of the law 2014-14 of March 28.

For this, an action plan to raise awareness about the harmful effects of tobacco and the adoption of the anti-smoking law in schools and universities is done.

#### Purpose

"Make schools and universities smoke-free".

#### General objectif

Raise awareness among students about the ban on smoking in public places (schools and universities) to fight against early initiation of smoking, the harmful effects of smoking and the law 2014-14 of March 28, 2014 (anti-smoking law).

#### Method

To carry out this awareness campaign we proceed as follows:

- Design communication media
- Organize conferences followed by debates in targeted schools and universities
- Organize activities to implement the anti-smoking law:
  - Display setting up smoke-free signage signs;
  - Establishment of anti-tobacco clubs.

#### Results

- Strengthening the capacity of high school students and academics both in the content of the FCTC and in advocacy techniques to create a sustainable movement

for policy change

- Integrate media coverage to enhance public awareness and understanding.

**Tob. Induc. Dis. 2018;16(Suppl 3):A84**

**DOI: 10.18332/tid/94553**

### Challenging tobacco promotions in Tamil media through community responses

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#### Introduction to challenges

Most Tamil speaking people in Sri Lanka engage with electronic media for entertainment. Five Tamil TV channels and eight Radio stations are currently functioning. These stations operate on a commercial basis. It has been shown that Tamil media outlets positively portray tobacco use compared to media outlets operating on other languages in Sri Lanka. Community responses was one strategy to address such portrayals of tobacco use in media. To address this, Media clubs were established in schools, starting from January 2017. Now there are 15 Media clubs setup in 15 schools in districts of Colombo and Nuwara Eliya.

#### Intervention and response

Awareness programmes on tobacco promotions was conducted in 15 selected schools. Following these, the students volunteered themselves to the media clubs depending on their interest and capacity. Next, an orientation programme was conducted to the Media Clubs. Finally 15 students who were interested to observe media as their hobby were selected for the clubs in each school. Next, the media clubs monitored the media (both television and radio) and noted the positive portrayals of tobacco use. Every month, the club members conducted a session on how tobacco is promoted through media. More sessions were conducted for the members of the clubs with the support of media persons. Finally club members could identify the tobacco promotions via media and were motivated to work to change such portrayals. Able to achieve above changes during one year.

#### Results and lessons learnt

According to the post evaluation, students have increased knowledge on tobacco promotions. They have sent individual letters to media, and organized 4 special campaigns to stop a film containing tobacco promotions which was scheduled for telecast. They were able to stop the telecast of this particular film. Also, media persons have made action to reduce tobacco promotions.

#### Conclusions

Community response can be used as powerful tool to reduce and prevent tobacco promotions.

#### Funding

Alcohol and drug information center.

**Tob. Induc. Dis. 2018;16(Suppl 3):A85**

**DOI: 10.18332/tid/94771**

## POSTERS

### Marlboro is the only smuggled cigarette which was used in Tehran. An experience from third cigarette pack surveys in Tehran, 2018

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#### Background

Iran and Iraq are the two main target markets for tobacco

smuggling in the Eastern Mediterranean Region. Two cigarette pack surveys in Tehran, were done in 2009 and 2015 which were showed that illicit cigarettes used rate were 20.9% and 15.4% respectively. We designed this study to update trends in the illicit cigarette trade in Tehran.

#### Methods

A cross-sectional study of 2331 smokers aged 15 years and over was conducted in Tehran in January 2018. The sampling method was the same as previous studies. Smokers were asked to show the interviewers their current pack of cigarettes, which was categorised as either: (1) legal cigarettes: displaying governmental pictorial warning and hologram or (2) illegal cigarettes: with no governmental labeling. The packs were also categorised as either domestic (a Persian brand name) or foreign (a foreign brand name).

#### Results

The sample included 1827 males (78.3%) and had a mean age of 40.3±12.1 years. In total, 1427 smokers (61.2%) had foreign and 904 (38.8%) had domestic cigarettes; 2072 (88.9%) had legal cigarettes and 259 (11.1%) had smuggled cigarettes. There was a statistically significant difference in the use of smuggled cigarettes and foreign cigarette by younger smokers (36.8±3.1 vs 42.9±5.3 years) ( $p < 0.001$ ). Marlboro was the only smuggled cigarette brand (259 packs; 100%).

#### Discussion

The lower prevalence of illicit cigarettes in Tehran in 2018 compared to previous studies may be due to the control and monitoring on legal cigarettes distribution. All other foreign cigarette brands except Marlboro were imported legally or had legal joint production.

**Tob. Induc. Dis. 2018;16(Suppl 3):A86**

**DOI: 10.18332/tid/94528**

### The factor structure and factorial invariance of short form of smoking temptation for TTM framework in Iranian smoker population: Golestan Province

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#### Purpose

TTM pattern has widely been used in smoking cessation interventions. This study was aimed to investigate the compatibility of a hierarchical factor structure of short form questionnaire developed by Velicer et al regarding situational temptation construct among smokers in Golestan province.

#### Methods

A cross-sectional study was conducted on 387 smokers that were included using inconvenient sampling method. At first, internal validity and reliability of the short-form questionnaire were examined. At second, invariance of hierarchical structure was tested in sub-groups of ethnicity, residence, education, stage of quit, starting age, and income. Measurement invariance (including five invariances) and structural invariance (including three invariances) were explored in each sub-group.

#### Results

Chi-square test for confirmatory factor analysis of hierarchical factor structure was statistically significant for all samples [ $\chi^2 (24) = 66.3, p < 0.001$ ]; while, other indicators revealed the good compatibility of factor structure (CFI=0.944, TLI=0.915, RMSEA=0.067 [(0.048, 0.087)] and SRMR =0.042). Values of the first order of factor loading were between 0.5 and 0.84. There was strong correlation between first order factors and second order factor such that it was 0.9 for positive and habitual social situations factors and 0.82 for negative effects factor. Cronbach's alpha coefficient for the whole model was also 0.803.

#### Conclusions

Given the findings, hierarchical factor structure of short-form inventory about temptation to cigarette smoking was confirmed by three factors that were in line with Velicer et al model. The fitting indices of the model presented that construct validity was observed in all samples and sub-groups, and can be likely used in smoking cessation programs.

#### Funding

Golestan University of Medical Sciences, Gorgan, Iran

**Tob. Induc. Dis. 2018;16(Suppl 3):A87**

**DOI: 10.18332/tid/94530**

### Hukah smoking and lung cancer in Kashmir

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#### Background

The literature about the causal relationship between lung cancer and tobacco smoking mostly concerns cigarettes. Hookah smoking is popular in the Kashmir valley, and is generally believed to be innocuous because of the passage of the smoke through water before inhalation. Hookah smoking is widely practiced in Kashmir and was found to be the commonest form of smoking amongst the patients with lung cancer. An earlier study from Kashmir also reported hookah smoking as the dominant form of smoking in a small cohort of 25 lung cancer patients.

#### Methods

The study was conducted in the Sheri Kashmir Institute of Medical Sciences, Kashmir (India), a 650 bedded tertiary care university hospital that serves as the main referral center for the Pulmonary and Oncology cases of the Kashmir valley of the Indian subcontinent. Predesigned questionnaire in locally understandable language was tested and validated in a cohort of 10 cases of lung cancer and 20 controls and subsequently administered to the study cases and controls.

#### Results

Study provides evidence that hookah smoking is associated with an increased risk of lung cancer in ethnic Kashmiri population with the risk being 6 times more as compared to non smokers. The study reaffirms the previous report by Nafae et al in the sixties who found hookah smoking as the commonest form of smoking in a cohort of 25 patients of lung cancer, seen in 20 of the 25, being exclusive in 17. Hookah smoking has since the olden times been the major form of smoking in Kashmir and is nearly the exclusive form of smoking in women (all of our female smokers had a history of hookah smoking).

#### Conclusions

Hookah smoking in Kashmir is associated with increased risk of lung cancer and the commonly held belief that passage through water renders the smoke harmless seems ill founded and potentially dangerous. Further



studies in this regard are warranted so as to fully analyze the various variables associated with the habit of hookah smoking and associated development of lung cancer.

**Tob. Induc. Dis. 2018;16(Suppl 3):A88**  
**DOI: 10.18332/tid/94535**

### Children and youth exposure to tobacco products in Ghana

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#### Background and Challenges to Implementation

Ghana Global Tobacco Youth Survey (2009) showed that 8.9% of students had ever smoked cigarettes and 12.5% currently use any tobacco product. Public Health Act 2012 bans tobacco advertisement close to school and children playing ground and sales to and by minors. The law has been violated. Cigarettes are sold closed to schools, children play ground and children buy and sell. Retailers are not aware of the laws. SDGs will not be achieved if children are not protected.

The project sought to draw attention to the violations of the law and to ensure that children are protected from tobacco.

#### Intervention/response

Data were collected in some selected communities in Greater Accra targeting aged 15-18 years to ascertain the level of compliance to cigarette sales to and by minor and sales close to schools as enshrined in the law. Retailers and community members were interviewed. The findings of this exercise was shared with stakeholders.

#### Results/Outcomes

Out of 10 retail shops, 7 indicated were not aware of the laws banning sales to and by minors and 3 knew about the law. 5 out of the 10 shops sells to children but enquires who sent them, 3 sell to children without enquiring and 2 do not sell to children. 7 out of the 10 shops sell close to schools and 3 do not. 6 out of 10 displays cigarette on the counter visible to children.

#### Conclusion/Recommendation

Community members were not aware of the law on tobacco control. School going children are exposed to tobacco. Retailers and community member have been sensitized on the tobacco law.

Effort must be made to intensify awareness on the provisions of the law. Set-up taskforce to monitor compliance of the law. Conduct further research and findings on the children exposure to tobacco.

**Tob. Induc. Dis. 2018;16(Suppl 3):A89**

**DOI: 10.18332/tid/94536**

### Factors associated with the initiation of hookah smoking among women

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#### Introduction

Currently, smoking hookah is the most common method of tobacco smoking among Iranian women and its rate has significantly increased over the past few decades. Many factors influence the start of hookah smoking among women. Therefore, this study aimed to determine the factors associated with the start of hookah smoking among women in the city of Gorgan, Iran.

#### Methods

This cross sectional study was conducted from March to June 2016 in the city of Gorgan. The participants consisted of 206 hookah smoking women who were selected by convenience and snowball sampling methods. The tool used in this study was the Bahiraei et al (2014) questionnaire to determine the factors that facilitate the start of hookah consumption among women.

#### Results

Positive attitudes towards hookah and its availability accounted for the most frequency (9/87%). Curiosity to experience hookah (80.1%), and hookah smoking among family members and relatives (78.5%) were among important cause of hookah smoking among women. Among different factors, the highest amount was related to "the availability of hookah" and the lowest amount was related to "attracting other's attention and cooperation".

#### Conclusions

Positive attitude, availability, curiosity and hookah smoking among family members and relatives were the most important factors that facilitated the start of hookah smoking among women. Initiating intervention to change the attitude of women towards hookah and reducing the access to hookah in family and friend gatherings are recommended to prevent the initiation of hookah smoking among women.

#### Funding

Golestan University of Medical Sciences, Gorgan, Iran.

**Tob. Induc. Dis. 2018;16(Suppl 3):A90**

**DOI: 10.18332/tid/94538**

### Violence and power in the absence of tobacco control in prison environments

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It discusses the policy of controlling smoking in prisons, specifically regarding the legal gap that implies in the absence of public policies aimed at controlling tobacco and other drugs in these environments, on the grounds that these spaces are already under the norms of the Law No. 7,210, which establishes the Criminal Enforcement Act (LEP). Aims to reflect on the absence of tobacco control policies in prison institutions, specifically, those who are under the authority of the State. The methodological procedure is applied from a conceptual review of the effects of violence and power that allow the construction of this absence of smoking control in prisons, in addition to analyzing interviews of prisoners and security inspectors offered through projects already completed and news made available in the Observatory on the strategies of the Brazilian tobacco industry. In addition, we will use the process of analysis in which cases are seen as representation of the social, that is, the cases that will be discussed represent all the reports of the subjects that are in this intramural environment. The present communication offers some data: there is a consonance on the part of the individuals who inhabit the prison institutions regarding the problem of second-hand smoke, the consumption of cigarettes and other drugs proliferates or is potentialized within the prison and the disciplinary focus prevails, disregarding the issues in prisons.

#### Funding

The Union.

**Tob. Induc. Dis. 2018;16(Suppl 3):A91**

**DOI: 10.18332/tid/94540**

### Smoking habits and effects in a pulmonary outpatient clinic in Ağrı

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#### Aim and objective

The aim of this study was to determine the prevalence of cigarette smoking and its relation with diseases in patients from outpatient clinics of chest diseases in Ağrı.

#### Methods

In our study, 741 patients included from outpatient clinics of chest diseases coming for any reason. Data collected from digital patients' file retrospectively including demographics, pulmonary function tests (PFT), comorbidities, primary diagnosis, smoking habits and body mass index (BMI). Statistical analysis done with MedCalc Statistical Software version 12.7.7 (MedCalc Software bvba, Ostend, Belgium; <http://www.medcalc.org>; 2013).

#### Results

There was a significant difference between gender and smoking status ( $p < 0.001$ ), smoking was significantly higher in male sex than in female. There was a significant difference between accompanying diseases and smoking ( $p < 0.001$ ), and the rate of smoking was higher in those with internal non-respiratory problems (Graph 1). According to BMI, 23.2% of smokers were obese, 33.7% were overweight; 35.7% of the non-smokers were obese and 32.9% were overweight ( $p < 0.05$ ). However, BMI levels are also higher in smokers than normal. As a result, smoking does not mean that individuals will have normal weight.

#### Conclusions

Cigarette smoking is a serious problem that threatens the health of the community for Ağrı and it is important for physicians to develop anti-smoking awareness.

**Tob. Induc. Dis. 2018;16(Suppl 3):A92**

**DOI: 10.18332/tid/94541**

### Tobacco industry interference in price and tax policies in Kenya: Analysis of tobacco industry internal communication documents

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Tobacco use is the leading preventable cause of death, disease and disability resulting in 7 million deaths yearly with approximately 890,000 deaths occurring as result of exposure to second hand tobacco smoke. The six leading tobacco companies are experiencing tremendous growth, with a combined gross profit of USD 44.1 Billion. Driven by their main objective of profit maximization, the Tobacco Industry (TI), has sought to manipulate government agents to safeguard or at times expand market for their products. The overall goal of this study was to provide insight into their activities in undermining Tobacco control policies in Kenya. The objectives of the study were to document the history of tobacco industry interference in Kenya, create awareness on tobacco industry tactics to policy makers, decision makers and the public and to stimulate action against tobacco industry interference in public health policies. A database compiled by the University of California in San Francisco since 2002, served as the primary source of information for the study and supplemented with information from key searches in online and offline media, newspaper articles, journal articles, websites and Key Informant Interviews. The study established that the Tobacco Industry over time interfered with policy therefore

the findings will guide policymakers now and in the future, to counteract Tobacco industry tactics and strategies in Tobacco control policy making.

#### Funding

The study was co funded by Centre for Tobacco Control (CTCA) in Africa and Makerere University School of Public Health.

**Tob. Induc. Dis. 2018;16(Suppl 3):A93**

**DOI: 10.18332/tid/94542**

### Attitude and perception towards secondhand smoke among general public in Nigeria

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#### Background

Secondhand smoke is no longer a personal problem but a community problem as there is a perpetual increase in the rate of public smoking in prohibited places, even in places that are meant for children such as parks. Secondhand smoke has not been taken with much seriousness by nonsmokers as most of them do not know its consequences on their health, thus they believe they are safe as long as they do not smoke.

#### Aims and Objectives

This research sought to know the level of awareness as well as the attitude and knowledge displayed towards secondhand smoke in public places by nonsmokers, the perception of nonsmokers towards secondhand smoke as well as the coping strategies they adopt when exposed to tobacco smoke.

#### Method

A cross sectional survey was used in selecting houses, campuses, hospitality venues as well as offices. Structured questionnaire were administered to 300 respondents in these places in measuring their knowledge, attitude and perception towards secondhand smoke as well as their coping strategies. This was however voluntary.

#### Result

A total number of 300 respondents participated in the research, 31.5% were smokers and 20.3% of them smoke in public places. About 19.4% of them know the harmful effect of secondhand smoke to the health, 38.5% are not aware of the effect associated to secondhand smoke, 21.2% were less concerned about the effect of secondhand smoke as they do not smoke, hence they are not affected.

#### Conclusion

Our study demonstrated a low level in the awareness and knowledge of the effect of secondhand smoke to the health as most respondents who are nonsmokers do not see secondhand smoke as a threat to their health. More awareness has to be done in enlightening the general public on the effect of secondhand smoke to the body as well as the need to protect oneself from the harmful smokers.

**Tob. Induc. Dis. 2018;16(Suppl 3):A94**

**DOI: 10.18332/tid/94543**

### Changes in perception of smoking over time among the youth in Nepal

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#### Background

Smoking habit is often picked up at early ages. Therefore, studying the pattern of smoking prevalence among the youth is critical for tobacco control. This paper explores

how perception of smoking changes over time among the youth in Nepal. The paper also analyzes how youth's perception of smoking and the surrounding environment influences youth's initiation of smoking.

#### Methods

The 2001, 2007 and 2011 Nepal Global Youth Tobacco Survey (GYTS) is used in this study. Logistic regression models are performed to examine various factors that affect initiation of cigarette smoking among the youth in Nepal.

#### Results

The three Nepal GYTS surveys demonstrate increasing trends in percentages of youth who find boys and girls that smoke more attractive and have more friends. In the same group, belief that smoking helps people feel comfortable in social gatherings has also gone up. Although an increasing proportion of youth believes smoking is harmful for smokers' health, a decreasing trend is observed regarding the harmful effects of second hand smoking. Results from logistic regression models reveal that any form of positive perception of smoking increases youth's chance of smoking initiation.

#### Conclusions

Findings of this paper demonstrate that over the years the perception of smoking has become more positive among the youth in Nepal. This is extremely alarming as positive perception of smoking leads to smoking initiation and eventually they become regular smokers at early ages. Awareness programs on harmful effects of smoking need to be designed to target the youth in order to educate them.

**Tob. Induc. Dis. 2018;16(Suppl 3):A95**

**DOI: 10.18332/tid/94544**

### Effective use of Food Safety and Standards Act, 2006 to prevent the sale of tobacco products along with food items in supermarkets: A case study from Punjab

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<sup>1</sup>National Tobacco Control Programme, Punjab, India, <sup>2</sup>Food and Drug Administration, Punjab, India

#### Background

In India, Tobacco products have been openly sold along with the food item such as candies, chips, biscuits and soft drinks etc., which are frequently used by children. Under Food Safety and Standards Act, 2006, a licensed food vendor can't sell the tobacco products along with food items to prevent children exposure to Tobacco products.

#### Methods

Based on the advisory issued by Commissioner-Food Administration regarding sale of tobacco products along with food items, a complaint was received by the District Tobacco Control cell, Punjab citing violation being done by the supermarkets in one district of state on 28th June 2017. On 29th June 2017, a meeting was held to constitute a special act enforcement team.

#### Results

After conducting the investigation, the enforcement team found the owner of the supermarket guilty of violation under Food Safety and Standards Act, 2006, thus Food License of the supermarket was suspended. Following this tobacco products were removed from all the supermarkets in the state of Punjab.

#### Conclusions

Strong interdepartmental co-ordination, regular enforcements drives have been the reinforcers in preventing the sale of tobacco products along with food

items, thus reducing the probability child exposure to tobacco products.

#### Funding

National Tobacco Control Programme, Punjab.

**Tob. Induc. Dis. 2018;16(Suppl 3):A96**

**DOI: 10.18332/tid/94545**

### Strengthening the effectiveness of Indian Penal Code (1860) regarding spitting of tobacco at public places - A case study from North region of Indian subcontinent

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<sup>1</sup>National Tobacco Control Programme, Punjab, India

#### Background

Smokeless tobacco use is on the upswing in many parts of the India. A high prevalence of smokeless tobacco use leads to a high prevalence of spitting, creating an unaesthetic and unhygienic environment. This may lead to the spread of diseases, including tuberculosis, thus posing a threat to the health of public. The study aimed to develop a mechanism to ban spitting Tobacco at Public places.

#### Methods

During the State level co-ordination Committee meeting of all the stakeholders, brainstorming was done to tackle the issue of public spitting of tobacco. The methodology was developed following a consensus-based decision was made by the expert panel to ban spitting under IPC, 1860.

#### Results

A circular was issued by Additional Chief Secretary, Home affairs to all the Deputy Commissioners and Police Officials to implement ban on spitting tobacco at public places under sections 268, 269 and 278 of IPC, 1860. The monetary penalty was included for the violators. Total 28 Police officers were appointed as Nodal Officers in all the 22 districts of the state to implement the ban.

#### Conclusions

Banning spitting of tobacco at public places would thus have a double benefit – it would aid in Swachh Bharat Abhiyan & discourage the use of chewable tobacco, thus reducing the prevalence of Oral cancer.

#### Funding

National Tobacco Control Programme, Punjab.

**Tob. Induc. Dis. 2018;16(Suppl 3):A97**

**DOI: 10.18332/tid/94546**

### Is ban on Hookah bars under Code of Criminal Procedure (CrPC) effective in controlling the menace: A case study from Punjab, India

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#### Background

Hookah is a waterpipe used for smoking Tobacco. Hookah smoking usually delivers a relatively huge amount Nicotine, a highly addictive and cancer-causing chemical. Till date there is no National level legal provision to ban Hookah bars running in various states of country. Section 144 of CrPC, Which gives power to District authorities to issue order in urgent cases of nuisance of apprehended danger to human life, health or safety can impose a ban on hookah bars if promulgated. The objective of the study was to assess the effectiveness of CrPC for shutting down of Hookah bars in the state of Punjab.

#### Methods

This legal intervention approach was conducted during the period of April 2013 to May 2018. In 2013, Punjab Government instructed the Deputy Commissioners of state

to promulgate section 144 of CrPC against the hookah bars. Health Advisory in public interest was also issued regarding ill effects of Hookah use. Permanent Task force was constituted to ensure strict enforcement of Law.

#### Results

Total 25 Hookah bars have been shut down in the State. FIRs have been lodged against Hookah bar owners by the Police department under section 144 of CrPC. Since then, no complaint regarding a functional Hookah/Sheesha bar has been received anywhere in Punjab.

#### Conclusions

Orders of Section 144 of CrPC are subject to renewal every 2 months which is a short-term solutions thus, Tobacco control Act of India should be amended to include permanent on ban Hookah Bars in the State.

#### Funding

National Tobacco Control Programme, Punjab.

**Tob. Induc. Dis. 2018;16(Suppl 3):A98**

**DOI: 10.18332/tid/94547**

### Should Ministry of Health ban manufacturing and sale of Electronic Nicotine Delivery Systems (ENDS) popularly called E-cigarettes - result of an online poll

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#### Aim and objective

E-cigarettes are highly addicting products. It is mostly being used by children and youth because these are glamorised by the tobacco industry. They are widely promoted and sold through E commerce. Sales are increasing sharply all over the world. These products are unapproved under Drugs and Cosmetics Act of India. Punjab, Maharashtra, Karnataka, Kerala, Bihar, J&K, Mizoram etc. have already declared these products as unapproved for sale.

#### Methods

An online poll to facilitate line of action by Government of India to deal with E-Cigarettes was conducted from 21/3/18 to 30/3/18. National and International public health specialists, State Nodal Officers National Tobacco Control Programme, health administrators, psychiatrists and eminent doctors were requested to participate in the online poll.

#### Results

571 persons participated in the online poll. Out of these 364 people (63.75%) were in favour of banning the manufacturing and sale, 94 (16.46 %) in favour of regulating under Anti-Tobacco/ Nicotine Laws, 59 (10.33%) in favour of providing guidelines to manufactures for self-regulation and the rest 54(9.46 %) wanted it's sale to be regulated under Drugs and Cosmetics Act for Cessation purpose.

#### Conclusions

An overwhelming majority of Public health specialists and others who participated in the online poll are of the opinion that Ministry of health should deal with growing menace of E-Cigarettes by banning the manufacturing and its sale. This line of action by the Government of India will open the way for other countries to declare these products as unapproved.

**Tob. Induc. Dis. 2018;16(Suppl 3):A99**

**DOI: 10.18332/tid/94557**

### Tobacco use of the healthy aging individuals

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#### Aim

Cigarette smoking is major cause of diseases as heart

disease, stroke, chronic lung disease and lung cancer, which causes of death in elderly. But, regardless of the age of the patients, the likelihood of these illnesses declining in the period following the release of cigarette.

#### Methods

35 patients were included to study older than 65 age and independent in daily life activities were admitted to Kackar State Hospital with nonspecific complaints and unknown chronic illnesses. Vital signs, saturation, ECG findings, smoking and alcohol dependence, sleep quality, BMI, bone densitometry, minimal test and geriatric depression scales were evaluated. Data analysis was performed with SPSS.

#### Results

Of patients were 48.5% male, 51.5% female, mean age was 82 and mean BMI was 19.5. Additional diseases diagnosed after the examination of our patients were 45% HT, 8% COPD and 28% osteoporosis disease. The average saturation was 94 and the heart rate was 75. When smoking status was assessed, 68% of patients never smoked in their life and there were no patients currently ongoing. 95% of COPD patients had previous history of smoking.

#### Conclusions

When the concepts of healthy and super aging are considered, smoking is seen an important risk for additional diseases in old ages. In our country, significant progress has been made in smoking cessation policlinics in recently. To raise awareness about healthy old age and especially to question the situation of smoking in patients 65 aged and to inform smokers to encourage them to quit smoking.

**Tob. Induc. Dis. 2018;16(Suppl 3):A100**

**DOI: 10.18332/tid/94558**

### What is necessary to fight against tobacco vaporizers in Japan?

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#### Introduction

In Japan, recently not only smoking rates but also the consumptions of cigarettes are decreasing. Raising problem about tobacco is increasing users of tobacco vaporizers. To clarify points of problems, present situation of tobacco vaporizers was investigated.

#### Subjects and Methods

Data of tobacco vaporizers are collected from internet, newspapers and so forth.

#### Results

Tobacco vaporizers are a kind of e-cigarettes. Three vaporizers are available in Japan. They are IQOS, ploom TECh and glo. Most popular vaporizer is IQOS in Japan. One of the reasons that cigarette smokers change to IQOS is that it is allowed to use in some non-smoking places and restaurants. And it is advertised that negative health effect for the circumstance is smaller than that of cigarette smoking. As there are small evidences about negative health effects, regulations are depend on the local governments. The Ministry of Health, Labour and Welfare has not yet presented any policy for the vaporizers because of almost no evidence for their negative health effects.

#### Discussion

IQOS began to be sold since 2016 all over Japan. 80 % of its users all over the world is Japanese. The number of its user are rapidly increasing in Japan.

Some of the users believe that using vaporizers is not

smoking. But the vapor of it contains tars and other harmful materials like cigarettes. To diffuse facts of the vaporizers is necessary and regulations should be made by the precautional principles.

#### Conclusion

To disseminate the knowledge about the vaporizers is necessary in Japan.

**Tob. Induc. Dis. 2018;16(Suppl 3):A101**

**DOI: 10.18332/tid/94560**

### Public librarians expand their roles of responsibilities towards community change

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#### Objective

To reduce tobacco consumption in communities through public librarians.

#### Methods

Sri Lanka holds more than 1000 libraries and per day 100 – 200 readers visit library. Main responsibility of librarians is to facilitate these readers and they spend most of their duty time in and around libraries. In 2010, Alcohol and Drug Information Centre (ADIC) identified library network as the most appropriate and effective way to disseminate scientific tobacco prevention information. Since 2014 ADIC started training librarians and empower them to make a community pressure to reduce tobacco in their respective areas. ADIC developed a distance-mode module to empower librarians and gave the theoretical knowledge through the module on organizing a campaign and its objectives. In Sri Lanka, most of librarians actively organize and conduct town campaigns, school programs and labor programs for tobacco reduction.

#### Results

Average 29,000 people are able see tobacco prevention messages and facts which are displayed around 290 libraries. From 2014, 35 town campaigns have been conducted by librarians. 30 librarians organized stop selling cigarette campaigns and 302 shop owners have agreed to stop selling cigarettes. 12 librarians were developed to conduct tobacco prevention programmes in the communities by themselves. In 2016, government was pressurized to implement the policies on pictorial health warnings and tobacco tax; organizing 05 petition campaigns. In March 2018 librarian of Kegalle library organized award ceremony to appreciate shop owners who stopped selling cigarettes and people who stopped smoking.

#### Conclusions

Public library is an appropriate place to display effective tobacco prevention messages and expose industry interference on people to achieve increased knowledge, attitudes and practices among the public. Public librarians can make a community pressure to reduce tobacco consumption.

#### Funding

Alcohol and Drug Information Centre (ADIC Sri Lanka) is the funding organization of this programme.

**Tob. Induc. Dis. 2018;16(Suppl 3):A102**

**DOI: 10.18332/tid/94562**

### Media advocacy on alternative crops, a tool for tobacco control; Experience from Tanzania, East Africa

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#### Introduction

Statistics show that Tanzania holds second position in Africa in tobacco production after Malawi. About 10 out of 26 regions in Mainland Tanzania are practicing tobacco farming.

The survey carried in 2011 by Tanzania Tobacco Control Forum (TTCF), reported that about 70 percent of tobacco farmers had adopted alternative crops.

The recent data from Namtumbo district, between 2006 and 2014, there has been an increased tonnage in both food and cash crops and decrease of tobacco production.

This was due to the sensitization programs on Tobacco Control advocated by various stakeholders, media in particular under the umbrella of TTCF, the key message being, gain the social economic benefits from alternative crops.

Meanwhile, in Tabora region located central zone of the country, Miombo woodland project facilitated tobacco farmers to shift to alternative crops.

Apart from alternative crops, the initiators of Miombo project established Income Generating Activities (IGAs) like bee keeping, garden, and soap production etc which increased the trend of farmers to shift from tobacco farming.

#### Objective

The objective of the media study was to measure the extent of alternative crop and use it as a tool to advocacy for tobacco control.

#### Results

Alternative crops have shown good results in tobacco control particularly to the farmers in Ruvuma and Tabora regions.

- Media advocacy played a central role to influence tobacco farmers to shift to alternative crops and IGAs
- Advocacy for tobacco control should involve different approaches and stakeholders.
- Tobacco farmers still need sensitization program to change their mindset and belief that nothing will change their lives expects tobacco.

#### Conclusions

- There is great need for both public and private sector to invest a lot in helping tobacco farmers to shift to alternative crops and IGAs.
- Increased farmers' sensitization coupled with sustainable and viable markets, could enable total replacement of tobacco with alternative crops.

**Tob. Induc. Dis. 2018;16(Suppl 3):A103**

**DOI: 10.18332/tid/94564**

### Injunctive norms and associations with smoking susceptibility in Hong Kong adolescents

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#### Aim and objective

Injunctive norms about smoking, the perceived approval or acceptability of smoking from friends or wider peer group, have rarely been studied outside the Western world. We investigated injunctive norms and the associations with smoking susceptibility in adolescents in Hong Kong, where most adolescents are negative towards smoking.

#### Methods

In 2017/18, 7031 Secondary 1-5 (US grade 7-11) students (48.9% boys; mean age 14.3, SD 1.7) were surveyed.

Students reported the perceived approval of smoking from good friends (disapprove/neutral/approve) and the perception of whether most secondary school students accepted smoking (no/yes). Smoking susceptibility referred to the lack of a firm intention not to smoke in the next 12 months, when good friends smoked in front, or when a good friend offered a cigarette. Logistic regression yielded adjusted odds ratios (AORs) of smoking susceptibility for injunctive norms in never smokers, adjusting for socio-demographic characteristics and school clustering effect.

#### Results

Overall, 1.3%, 21.1% and 77.5% of students perceived approval, neutral response and disapproval of smoking from good friends, respectively. Some (5.8%) perceived that most students accepted smoking. In never smokers (n=6472, 92.5%), compared with perceived disapproval from good friends, perceived neutral response [AOR 3.58, 95% CI 2.86-4.50] and approval [5.41, 2.93-9.97] were associated with smoking susceptibility. The perception that most students accepted smoking was also associated with smoking susceptibility [2.73, 2.02-3.71].

#### Conclusions

Injunctive norms were associated with smoking susceptibility in Hong Kong never smoking adolescents. Addressing misperceptions of others' approval or acceptability of smoking may help prevent adolescent smoking.

#### Funding

General Research Fund (17629016), Research Grants Council of Hong Kong Special Administrative Region, China.

**Tob. Induc. Dis. 2018;16(Suppl 3):A104**

**DOI: 10.18332/tid/94565**

### Public poll for support 100 % smoke free area regulation to protect children from secondhand smoke exposure in big city on 8 provinces in Indonesia

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#### Objective

Support Government and parliament to enact a national regulation about 100 % smoke free area for protect children from smoke exposure on all place.

#### Methods

1. The study design was cross-sectional with data collection conducted during the months of May and June 2013 2. Case study on 8 provinces in Indonesia: Jakarta, West Java, East Java, Yogyakarta, Bali, South Sulawesi, South Sumatra, West Kalimantan 3. Direct interviews conducted on 1555 respondents 4. Instruments used in the form of semi-structured questionnaires demography

#### Results

1. Respondents know that cigarette smoke other (AroI) detrimental to the health of children as much as 95.5%, and those exposed to secondhand smoke are particularly susceptible to the effects of smoking 88%. 2. Regarding exposure to cigarette smoke Respondent often expose in the workplace are 33%, Public places 63.2%, Public transport 43.9%, at home 21.6% respondent always exposed to secondhand smoke. 3. Respondent agreed regulations to ban smoking in public places and enclosed workplaces 55.9% and 55.7% agrees in all enclosed public spaces such as public transport and shopping centers

#### Conclusions

1. Secondhand smoke exposure is danger for the health of

the Children 2. Public Place are the higher place exposure to the cigarette 3. Public agreed about the regulation for 100 % smoke free area on all place 4. The government and Parliament to be more open to the voice of victims exposed to secondhand smoke by review the Health Law related to 100 % smoke Free Area.

#### Funding

The Union.

**Tob. Induc. Dis. 2018;16(Suppl 3):A105**

**DOI: 10.18332/tid/95142**

### Correlates of quit attempts among smokers in Nigeria

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Many smokers who have tried to quit are unable to do so at the first try and many give up after multiple attempts. Behavioural theories such as the trans-theoretical model have been shown to assist in the development of targeted interventions to assist quit attempts and eventual quitting. There is little evidence about quit behaviour among adults in the Nigerian context. This study aimed to explore the correlates of quit attempts among the current tobacco smokers in Nigeria using the Transtheoretical model.

A cross-sectional secondary data analysis of the 2012 Global Adult Tobacco Survey in Nigeria was carried out using SPSS version 23 at a level of significance p<0.05. A total of 429 (22.8%) respondents were current smokers mostly males (96.0%). Most smokers were in pre-contemplation stage (64.7%), with 14.9% in preparation stage. Only a few of the respondents (20%) had access to cessation therapy, none to a quitline. Exposure to anti-tobacco media messages was associated with increased in quit attempts. Other correlates of quit attempts were male gender [OR: 9.615 (CI: 1.449-1.478)], younger age [OR: 1.126 (95% CI: 1.108-1.144)] unemployed status [OR: 2.223 (95% CI: 2.122-2.329)], and lower level of education [OR: 2.991 (95% CI: 2.930-3.053)].

While global attention in tobacco control focuses on prevention of initiation and cessation support, most smokers in Nigeria are not considering quitting. There is a need for targeted interventions to reach smokers at various stages, across the geopolitical zones as well as provision of necessary support to assist quitting among users.

**Tob. Induc. Dis. 2018;16(Suppl 3):A106**

**DOI: 10.18332/tid/94566**

### Biochemical profiling of smokeless tobacco product Kiwam at different processing steps

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#### Introduction

Kiwam (Qiwam) is a partially fermented tobacco product consumed with Betal Quid (Paan). The major constituents of this product are tobacco, saffron (Zaffrani) and some additives. It contains Tobacco-Specific Nitrosamines (TSNA) which is considered as a cancer-causing agent. To elucidate the carcinogenic property of Kiwam, biochemical profiling of its constituents at different stages of processing is needed. The major processing steps involved in the

formation of Kiwam and biochemical profiling/changes at each processing step is still unknown.

#### **Aim**

To describe the major processing steps and biochemical changes that occurs at each processing step during the preparation of Kiwam.

#### **Method**

Tobacco leaves and stems were boiled in water followed by filtering of the constituents to remove the leaves and stem residues. The filtrate is again boiled to form a thick paste residue. The resultant paste was partially fermented through sun curing, and lastly saffron along with some additives were added. The samples from each step were analyzed for biochemical profiling through Continuous Flow Autoanalyzer (CFA) using Flow View Solution 3700 Analyzer (version 1.2.2) software.

#### **Results**

The biochemical changes at TSNA levels were observed at each processing steps. The detailed chemical profiling will be presented during the meeting.

#### **Conclusions**

Processing of Kiwam involves four major steps i.e. (i) boiling of tobacco leaves and stem (ii) filtration of product (iii) re-boiling of the filtrate till the paste is formed (iv) partial fermentation through sun curing. Kiwam is rich in TSNA and hence its use should be avoided.

**Tob. Induc. Dis. 2018;16(Suppl 3):A107**

**DOI: 10.18332/tid/95190**

### **Biochemical profiling of areca nut product Dohra**

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#### **Introduction**

Dohra is a locally produced areca nut preparations used with or without tobacco in Allahabad, Jaunpur and Pratapgarh districts of Uttar Pradesh (UP), India. Different varieties of Dohra exist such as Sukha Dohra, Geela Dohra, etc. Evidence suggests that it causes Oral Potentially Malignant Disorders and Oral Cancer. It contains arecoline which is a well-known carcinogen. In order to understand the potential role of Dohra in causing cancer biochemical profiling of different varieties of Dohra is needed.

#### **Aim**

To describe the biochemical profile of different varieties of Dohra.

#### **Methods**

Different varieties of Dohra were collected from Allahabad, Jaunpur and Pratapgarh districts of UP. All the varieties of Dohra were analyzed for biochemical profiling through Continuous Flow Autoanalyzer (CFA) using Flow View Solution 3700 Analyzer (version 1.2.2) software.

#### **Results**

The biochemical changes at arecoline levels were observed in different varieties of Dohra. The detailed chemical profiling will be furnished in the meeting.

#### **Conclusions**

Different varieties of Dohra preparations are produced and each of them have a different biochemical profile. The Dohra is rich in arecoline and hence its use should be banned/avoided.

**Tob. Induc. Dis. 2018;16(Suppl 3):A108**

**DOI: 10.18332/tid/95191**

### **The globalized tobacco industry interference – The Brazilian tobacco additives ban case**

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#### **Background**

Tobacco industry (TI) interference is one of the key challenges to the creation and implementation of tobacco-reduction regulation. It continues to undermine control efforts globally. One example is the Brazilian proposal to ban additives in 2012. Recent files show how a Dutch tobacco industry were planning to bring the case to World Trade Organization (WTO) and block the Mercosur - European Union Free Trade Agreement negotiations.

#### **Intervention**

Bring awareness of how articulated the TI is, ahead of many Governments. Use the Brazilian case to show how a Cigar Company based in Netherland was planning to convince/lobby other European Governments to prosecute Brazil internationally.

#### **Methodology**

Explore the TI library, held by the University of California in San Francisco. Display the WTO fulfilled forms they pretend to use, the exchange of documents between tobacco industry CEOs and how they were planning undermine FTA negotiations.

#### **Results**

The Netherlands are the biggest exporter of tobacco to Brazil, in particular of cigars. Together, Belgium and Netherlands imports 22% of all Brazilian tobacco. There is evidence of the close relation between tobacco industry and former Dutch Interior Minister. The TI did not followed with the process because meanwhile, the Brazilian resolution was pledged in Supreme Court, where it remains. The focus swift to Australia and they used all previous legal basis, prepared to suit Brazil, in the Australian case.

#### **Conclusions**

In response to these claims from the TI, Governments may rely on their sovereign right to regulate in the interests of public health. Specifically in relation to tobacco control measures, which aim is to protect human health.

**Tob. Induc. Dis. 2018;16(Suppl 3):A109**

**DOI: 10.18332/tid/94567**

### **Sex patterns of lung cancer mortality in Russia over a 16-year period, 2000-2015**

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#### **Objective**

Much has been published about tobacco smoking consumption in Russia, though tobacco-related mortality remains unexplored. This study aims to describe national and regional sex patterns of lung cancer (LC) mortality (as a marker for tobacco-related mortality) in Russia in 2000-2015.

#### **Methods**

Age-adjusted LC mortality (AALCM) rates by gender and for eight federal districts and 83 regions were calculated based on mortality and population data extracted from the Russian Fertility and Mortality Database. Annual percentage changes in AALCM on the national and federal district levels were estimated; average AALCM rates were mapped. Two-way ANOVA was applied to assess time-district interaction effects on LC mortality.

#### **Results**

At the national level, a monotonic decline in LC mortality during the 16-year period was noted among men (annual %

change=1.9%), while among women, national LC mortality rates remained unchanged for most years. Sex differences in AALCM rates across federal districts and regions were noted. Among men, AALCM rates were consistently higher in northern, central and Far Eastern regions of Russia, while among women, AALCM rates increased moving from west to east over Russia. A strong time-district interaction for age-adjusted LC mortality male-to-female ratio ( $F=3.267, p<0.001$ ) was found.

#### Conclusions

Given the significant increase in tobacco smoking prevalence among Russian women that began in the 1990s, female LC mortality will continue to rise in the coming decades, with a disproportionate burden on those regions located far from the federal centres with insufficient health services. Additional work is needed to identify factors underlying the regional and sex differences.

#### Funding

Invariable LC mortality among Russian women follows the observation of increasing tobacco smoking consumption in the past and predicts growing challenges to the national healthcare system in coming decades.

**Tob. Induc. Dis. 2018;16(Suppl 3):A110**

**DOI: 10.18332/tid/94646**

### Use of tobacco products among a Turkish foundation university students, Izmir 2018

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#### Aim and objective

The study is conducted to obtain the use of tobacco products and its related factors among a Foundation University Students.

#### Methods

The study sample consists of 346 first and fourth year students in 2018 in Izmir University of Economics. The sample was chosen randomly. The students filled a structured self-reported questionnaire before an educational activity.

#### Results

Of the study group, 38.8% are males, 37.6% were 18-20 years old. Approximately 1 in 3 of the students (33.7%) were daily smokers while 14.1% were occasional smokers and 4.4% were quitters. Regular or occasional smoking percentages are quite similar in males and females ( $p>0.05$ , chi square test). Smoking is more prevalent in older age group (33.7% and 53.4% respectively), ( $p=0.001$ , chi square test). The use of other tobacco products such as hookah, cigars and pipe, is 27.6% while it is 3.4% for e-cigarette with a similar pattern in all tobacco products according to gender and age ( $p>0.05$  for all comparisons, chi square test). Use of tobacco products except e-cigarette are similar according to parental education. E-cigarette use is more common among students whose fathers' have an educational level of postgraduate degree (2.6% vs 13.0%,  $p=0.034$  Fisher's exact test).

#### Conclusions

We found smoking cigarettes and other tobacco products are quite common among university students. Smoking pattern of males and females in University students is similar on the contrary of Turkish adults' pattern. The study also reflects the growing use of e-cigarette among Turkish young people especially in students from upper social class.

**Tob. Induc. Dis. 2018;16(Suppl 3):A111**

**DOI: 10.18332/tid/94647**

### Breast cancer and smoking: A comparison of 955 breast cancer patients according to their smoking status

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#### Aim and objective

Smoking is among the risk factors of breast cancer. The aim of this study was to compare breast cancer patients' characteristics according to their smoking status.

#### Methods

This study is a retrospective evaluation of all breast cancer patients treated at the General Surgery Department of University of Health Sciences, Izmir Bozyaka Research and Training Hospital, between 1982 and 2018. A total of 1459 breast cancer patients' charts were reviewed and 955 contained data on smoking and were included in this study. There patients were classified as ever versus never smokers. Pack-years data was available for 32.3% or ever smokers. Chi square, t test, Spearman's correlation, Kaplan Meier and Cox Regression were used for analyses.

#### Results

Among the 955 breast cancer patients, 30.5% ( $n=291$ ) were ever- and 69.5% ( $n=664$ ) never smokers. According to years of diagnosis, the ratio of smokers was significantly increasing with 21.6% before 2000, 21.9% in 2000-2004, 31.1% in 2005-2009, 32.1% in 2010-2014 and 41.5% in 2015-2018 ( $p$  trend  $<0.001$ ). Ever smokers were diagnosed at a younger age ( $49.9\pm 11.8$  vs.  $54.1\pm 13.5$ ,  $p<0.001$ ). This was not confounded by year of diagnosis, since age at diagnosis significantly increased with increasing year of diagnosis ( $r=0.161$ ,  $p<0.001$ ). ER positivity was higher among ever smokers (70.5% vs. 63.2%,  $p=0.040$ ) and with significant changes according to pack-year groups. No difference was found in PR positivity, mean CEA, ER%, PR%, p53%, Ki67% values and number of positive sentinel or axillary lymph nodes of ever and never smokers, while the mean CA15-3 values were significantly lower among ever smokers ( $17.4\pm 10.1$  vs.  $24.5\pm 27.8$ ,  $p<0.001$ ). Never smokers had a higher ratio of metastasis overall (19.5% vs. 13.7%,  $p=0.040$ ) and among sites, of bone metastasis (12.7% vs. 6.8%,  $p=0.039$ ). After adjustment for age at diagnosis, there was no significant difference in mean overall survival of ever and never smokers.

#### Conclusions

Among breast cancer patients, ever smokers are diagnosed at a younger age compared to never smokers. More detailed evaluations could provide deeper insight in smoking-induced breast cancer.

**Tob. Induc. Dis. 2018;16(Suppl 3):A112**

**DOI: 10.18332/tid/94648**

### Association of tobacco industry denormalisation beliefs with smoking cessation and nicotine addiction in adolescent smokers

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#### Aim and objective

To investigate the associations of tobacco industry denormalisation (TID) beliefs (ie, negative perceptions of the industry) with smoking cessation and nicotine addiction in adolescent smokers.

#### Methods

In 2012/13, a cross-sectional survey was conducted in



45857 secondary school students (mean age 14.8 years, 54% boys) in Hong Kong. TID beliefs (score range: 0-6) were measured by two questions: "Do you think the tobacco industry is respectable?" and "Do you think the tobacco industry tries to get youth to smoke?" Each question had 4 options ("probably yes" to "probably no"), which were assigned scores of 0-3, with larger scores indicating stronger TID beliefs. Also measured were smoking status, smoking cessation (yes/no; defined as cessation for  $\geq 4$  months), morning smoking (yes/no), cigarettes smoked per day, etc. Associations were examined with adjustment of sociodemographic characteristics, peer smoking, and numbers of co-residing smokers.

#### Results

In ever smokers (occasional or daily smoking either now or in the past; n=4544), TID beliefs were associated with an adjusted prevalence ratio (PR) of 1.04 [95% CI 1.02, 1.07; p=0.001] for smoking cessation. In past 30-day smokers (n=3250), TID beliefs were associated with an adjusted PR of 0.98 (0.96, 1.00; p=0.04) for morning smoking and an adjusted B of -0.27 (-0.44, -0.10; p=0.002) for cigarettes smoked per day.

#### Conclusions

In Hong Kong adolescents, TID beliefs were associated with smoking cessation in ever smokers, and inversely associated with nicotine addiction in past 30-day smokers. A TID component may strengthen cessation interventions in adolescent smokers.

#### Funding

Food and Health Bureau of the Hong Kong Government.

**Tob. Induc. Dis. 2018;16(Suppl 3):A113**

**DOI: 10.18332/tid/94649**

### Outcomes of University Hospital Outpatient Smoking Cessation Clinic in İzmir

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#### Aim and objective

The aim of this study is to determine characteristics, smoking habits, therapy for quitting and smoking cessation success who applied to the university hospital, outpatient smoking cessation clinic in İzmir.

#### Methods

This descriptive study was carried out using the records in the outpatient electronic health record system of the patients who applied to Dokuz Eylül University Smoking Cessation Outpatient Clinic between January 2014 and August 2017. Demographic data, smoking habits, type of therapy and follow-up data were evaluated from these records. Later, all patients were assessed for smoking cessation by telephone interview.

SPSS 22.0 program was used for mean, standard deviation of descriptive continuous variables. It was also evaluated frequency and percentage of categorical variables.

#### Results

The mean age of participants was 41.4 $\pm$  12.8. 39% of participants were women, where 60.3% were men. 64.1% of participants was married. The cigarette consumption (package/ year) was 26.9 $\pm$  21.6. The mean score of Fagerstrom Test for Nicotine Dependence was 5.96 $\pm$  2.5. According to the Hospital Anxiety and Depression scale, 67.6% of participants had anxiety, where 56.2% had depression. As a smoking cessation therapy, 25.1% of participants treated with vareniclin, 2.5% participants treated with nicotine replacement therapy and 34.3%

with bupropion. All of the patients received cognitive behavioural therapy. 24.4% of participants quit smoking.

#### Conclusions

Pharmacotherapy was given to the majority of patients who applied to smoking cessation outpatient clinic. The cessation of smoking is also high. Smoking cessation outpatient clinic have an important role in being successful in smoking cessation.

**Tob. Induc. Dis. 2018;16(Suppl 3):A114**

**DOI: 10.18332/tid/94667**

### Prevalence of cigarette smoking and cessation among 15 years old and older people in Kayapınar district of Diyarbakır

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Smoking addiction is among the most important research areas of public health science because of its preventable nature. To prevent this addiction and to overcome its harms to public health, economy and the environment, scientists should be aware of the answers what is the prevalence of smoking and what is the cessation rates. This cross-sectional research studies the prevalence of cigarette smoking and cessation among 15 years old and older people registered at 17th Family Health Center in Kayapınar district of Diyarbakır. 309 people sampled systematically among universe of 5880 people in this region. The survey results show that 30.4 percent of the participants do smoke, while 14.6 percent are ex-smokers and the remaining 55 percent has never smoked. %62,3 of men smoked in one part of their life or still smoking while this percent is %24,6 for women(p=0,000). This study shows that education level is also associated with starting smoking. %57,3 of people who went primary school at most had smoked or still smoking; for people who went college at least this percent is %35,9 (p=0,014). Fortunately, 52.1 percent of smokers has stated that they are planning to quit smoking. Since there is expanding awareness about the dangers of cigarette among the public and most of the smokers do want to quit smoking, the researches should identify the factors affecting smoking initiation and cessation and consequently precautionary measures should be taken to protect the public from cigarette addiction.

**Tob. Induc. Dis. 2018;16(Suppl 3):A115**

**DOI: 10.18332/tid/94679**

### Smoking status of oncological patients

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Smoking is a major risk factor and main cause of many cancer types and death related cancer. It is the foremost cause of cancer mortality in the United States accounting for 98% of all tobacco related deaths. Smoking is the main preventable cause of lung cancer, it also affects the treatment.

We investigated smoking status of our oncological patients. 372 patients information obtained from their files retrospectively.

The 64.5% of patients were male (n=240), 35.5 % were female (n=132) and mean age was 60.9. 144 patients were nonsmoker (38.7%), 148 patients were (39.8%) smoker and 80 were ex-smoker (21.5%). Mean consumed tobacco amount was 40.37 packet/year. 37.5% of the group was lung cancer, 18.6% of the group was breast cancer, 9.7%

of the group was head and neck tumors . Only 9 (6.4%) patients from all lung cancer patients were nonsmoker, 60% were active smoker and 33.6% (n=47) were ex-smoker. Only 12 patients (33.3%) with head and neck cancer were nonsmoker, 22.2% were ex-smoker, 44.4 % were active smoker. 38.1% of gastric cancer patients were nonsmoker (n=8), 42.9% were smoker and 19% were ex-smoker. Colorectal tumor group had a lower smoking ratio; 55.2% were nonsmoker and 10.3 % were ex-smoker. The least tobacco using ratio was at breast cancer group, 83.8 % of the breast cancer patients were nonsmoker.

According to world health organisation, one third of cancer related death is about basic behaviours as; high body mass index, poor fruits and vegetables in nutrition, poor physical activity and using cigarette and alcohol. We can change all of these situations. Because of strong relation between many kinds of cancer (not only lung cancer as common consideration) and tobacco, firstly we must conceive awareness about this relationship.

**Tob. Induc. Dis. 2018;16(Suppl 3):A116**

**DOI: 10.18332/tid/94680**

### Tobacco consumption among high school students in Kathmandu, Nepal

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#### Introduction

Tobacco use both in smoking and non-smoking form has been the leading global cause of preventable death, contributing to seven million people deaths each year. This study aims to find the tobacco use status among students and their family members and similarly the objective of the study was to assess the tobacco use prevalence among students of public schools in a municipality of Kathmandu, Nepal.

#### Methods

The study was school based survey that used two stage cluster sampling method. 378 students participated in the study. Global Youth Tobacco Survey (GYTS) self-administered questionnaire was employed to collect the data. Descriptive analysis was performed by determining frequencies and percentages. Ethical clearance for the study was obtained from Institutional Review Board of Institute of Medicine, Nepal.

#### Results

The study revealed that students who were ever used any tobacco were 31.7%. Boys (23.3%) are three times more likely than girls (8.5%) to ever use any tobacco products.

#### Conclusions

Tobacco use was high prevalent among the high school students, so it is a public health problem among school students in Nepal. These finding alarms the need of school based interventions to reduce tobacco use behavior among students.

**Tob. Induc. Dis. 2018;16(Suppl 3):A117**

**DOI: 10.18332/tid/94681**

### Determination of cigarette drinking curriculum and investigation of some demographic effects of grade 1 students of Dicle University Faculty of Medicine

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#### Objective

Determination of cigarette drinking curriculum and investigation of some demographic effects of grade 1 students of Dicle University Faculty of Medicine.

#### Methods

Research planned by application form of survey for graduate students. 156 students received between 200 students. Analyzes were done with spss program.

#### Results and conclusions

61 (39.1%) women 95 (60.9%) male participated to study. 80 (51.3%) person lives with family. 46 (29.4%) person's economical condition is very good, 104 (66.7) person's good, 6 (3.9) person's bad. 22 (14.1%) person's mother, 65 (41.7%) person's father smokes. 66 persons never smoked, 49 persons tried but not continued, 35 persons smokes actively, 6 person quitted smoking. Average age of smoking is 16 (3 sd). 12 persons of 71 (16.9%) smoked first cigarette at faculty of medicine. 36 persons of 47 (76.6%) who smokes tried to quit smoking. 16 persons of 64 (25%) who smokes started smoke because of close friend, 15 persons (23.4%) stress, 12 persons (23.4%) curiosity. Cigarette drinking occurrence of male was higher according to women (p<0.05). Cigarette drinking occurrence was high whose mother smokes.

**Tob. Induc. Dis. 2018;16(Suppl 3):A118**

**DOI: 10.18332/tid/94682**

### Nicotine down-regulates the proliferation of the cementoblasts (OCCM.30)

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#### Aim

Smoking is a well known risk factor for periodontitis and it has definitely negative impacts on the results of periodontal therapies. Nicotine, which is the main active component of tobacco, affects cell functions including proliferation, adhesion and differentiation of the cells. The aim of this study was to explore the effects of nicotine on the proliferation of cementoblasts.

#### Methods

Immortalized mouse cementoblasts (OCCM-30) were treated with different concentrations (0.001, 0.01, 0.1, 1, 10, 100, 1000, 10,000, 100,000 nM, 1 mM, 10 mM) of nicotine and analyzed for proliferation using a real-time cell analyzer (xCelligence; RTCA-SP) for 130 hours and the cells were photographed after different concentrations of nicotine applications.

#### Results

Findings demonstrated that immediately after 10 mM nicotine application, OCCM cells were not alive. 10 mM concentration of nicotin was severely cytotoxic. Other concentrations of nicotine even when it was used picoM level, significantly inhibited proliferation of cementoblasts at 72 hrs (p<0.05). Inverted microscopy images exhibited rounded dead cells at highest concentration of nictoine parallel with the proliferation findings.

#### Conclusions

Results of this study displayed that nicotine suppressed proliferation potentials of OCCM.30 cells which is critical for new cementum formation. Further studies are warranted to understand whether nicotine affects the gene expressions profile of the cementoblasts.

**Tob. Induc. Dis. 2018;16(Suppl 3):A119**

**DOI: 10.18332/tid/94684**

## Effect of diode laser decontamination as an adjunct to nonsurgical periodontal therapy on the clinical and biochemical parameters in smokers and non-smokers with chronic periodontitis

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### Aim

The aim of this study is to investigate the effects of diode laser decontamination as an adjunct to non-surgical periodontal treatment on the clinical periodontal and biochemical parameters in smokers and non-smokers with chronic periodontitis.

### Material and Methods

The study group was consisted of 15 smokers and 15 non-smokers systemically healthy 30 volunteers who had been diagnosed with chronic periodontitis. Prior to periodontal treatment, probing depth (PD), clinical attachment level (CAL), plaque index (PI), gingival index (GI) and bleeding on probing (BOP) were recorded. After GCF sampled in split mouth design, scaling and root planing was performed and then diode laser was applied. After the treatment, clinical periodontal measurements and GCF samplings were repeated on the 1st and 3rd months. The GCF levels of IL-8 and TNF- $\alpha$  were determined by ELISA.

### Results

Statistical analysis of data revealed that clinical parameters showed statistically significant reduction in all treatment groups at the end of 3rd month ( $p < 0.05$ ). The reduction in PD, CAL and GI parameters were found to be more statistically significant in laser group than the control group in smokers and non-smokers ( $p < 0.05$ ). The changes of the biochemical parameters showed no statistically significance between test and control groups in smokers and non-smokers ( $p > 0.05$ ).

### Conclusions

It was concluded that pocket decontamination with diode laser adjunct to non-surgical periodontal treatment has additional benefits on clinical periodontal parameters; but have no additional benefit in terms of the reductions in biochemical parameters in smokers and non-smokers with chronic periodontitis patients.

**Tob. Induc. Dis. 2018;16(Suppl 3):A120**

**DOI: 10.18332/tid/95189**

## Smokers melanosis: A case report

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### Objective

Bening Pigmentation due to smoking can be seen in different regions of the oral mucosa, such as gums, palate and lips. Different treatment procedures, like surgical instruments, laser and electrosurgery, are used to remove pigmented areas. These pigmentations can be seen most commonly in the anterior regions which are aesthetic concerns for the patients. The purpose of this case report is to remove the pigmented region using hand tools and to share the clinical results of the treatment.

### Case

35 years old systematically healthy patient applied to our clinic with aesthetic complaints in maxillary anterior area because of pigmentation. The clinic and radiologic examinations revealed that the patient was using 15


cigarettes daily since 2007. Depigmentation treatment planned after finishing phase 1 therapy. Treatment has been done by using Kirkland and Urban instruments.

### Conclusion

There was no problem in healing process. Ten days after depigmentation there was no sign of pigmentation in relevant area and gingiva seemed healthy. Patient was called for control at 1st and 3rd month after surgery and photos have been taken in the beginning of the treatment and control visits. As a result of the depigmentation process applied with cessation of smoking, esthetic gingival appearance was obtained. We believe that depigmentation treatment can motivate patients to quit smoking.

**Tob. Induc. Dis. 2018;16(Suppl 3):A121**

**DOI: 10.18332/tid/95192**



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