

Thursday 28th November

- ▶ **9 - 10am** Introduction to drug and alcohol use in adolescents including current research
- ▶ **10 - 11.30am** Presentations from each country on their drug and alcohol provision for adolescents (15 minutes each)
- ▶ **11.30am - 1pm** Using motivational interviewing with young people - introduction and workshop to practice skills
- ▶ **1- 2pm** LUNCH
- ▶ **2 - 4.30 pm** Workshops to explore cultural comparisons of drug and alcohol health provision in each country - what is different and why? What could we do differently in our country? Opportunity to see stands with information from staff regarding projects, research, information, etc...
- ▶ **4.30 - 5 pm** Reflect on the day and complete Youthpass Journal (Rachael Mason)
- ▶ **5pm onwards** Time to explore City of Lincoln and get evening meal

Drug and alcohol use in adolescents - current research

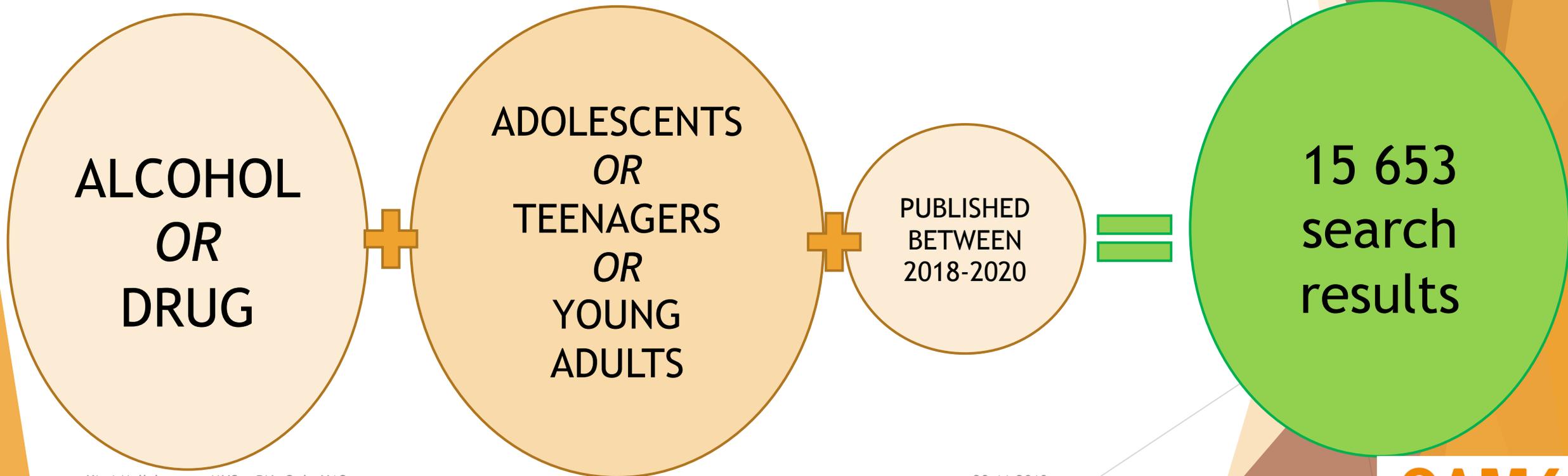
Kirsi Myllykangas RN, MHSc, Oulu UAS

ADOLESCENT WELLBEING: CROSS CULTURAL COMPARISONS

Lincoln, UK, 25th-30th November 2019

Literature search...

CINAHL

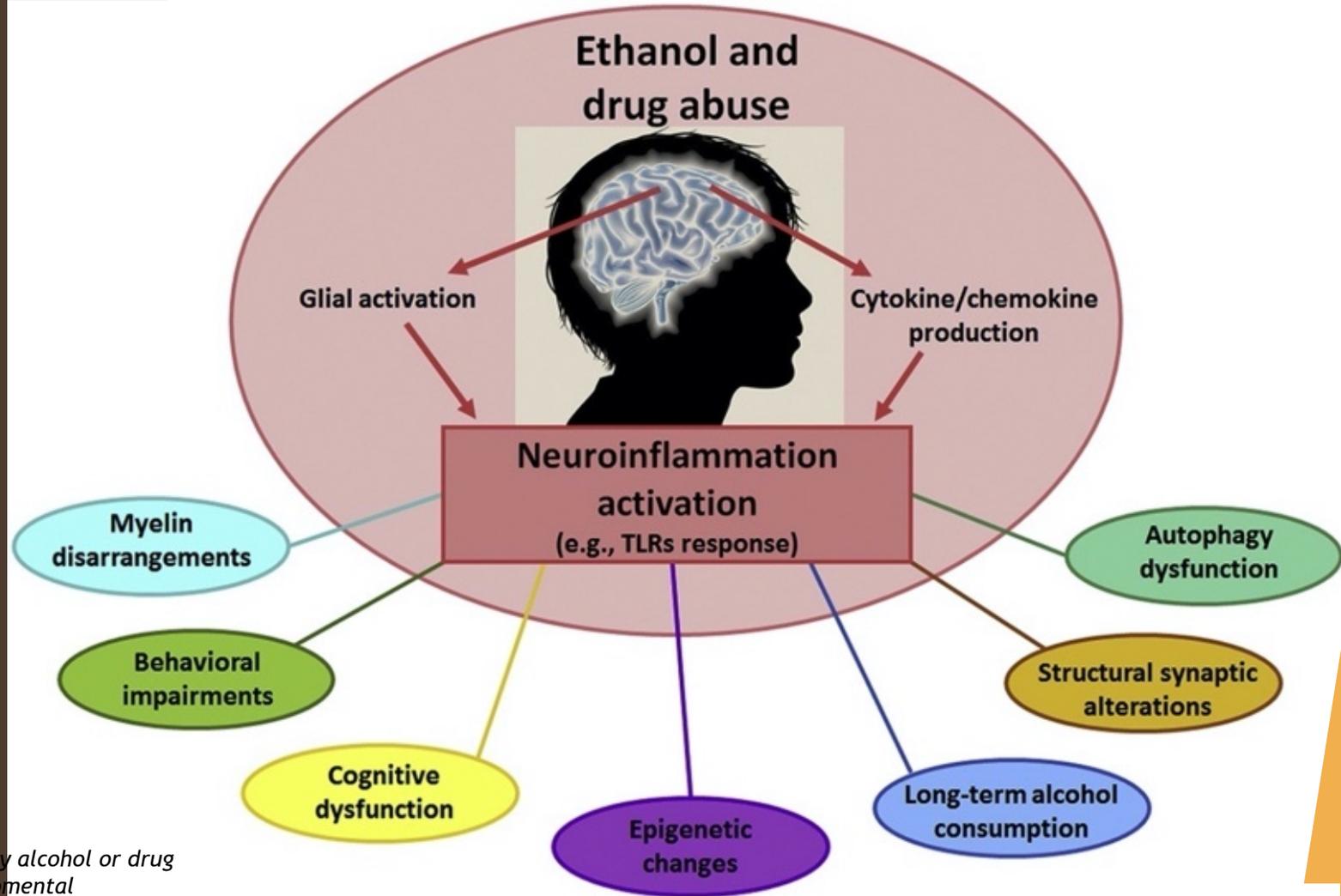


Kysymyksiä:

- ▶ Do you think this could be true in your country?
- ▶ Can we use this information somehow?

Impact of neuroimmune activation induced by alcohol or drug abuse on adolescent brain development

- ▶ Evidence demonstrates that alcohol or drug abuse in adolescence can alter normal physiological processes, which leads to long-lasting cognitive and behavioral dysfunction, including predisposition to substance use disorders



Guerra C & Pascual M (2019) Impact of neuroimmune activation induced by alcohol or drug abuse on adolescent brain development. *International Journal of Developmental Neuroscience*, 77, 80-88.

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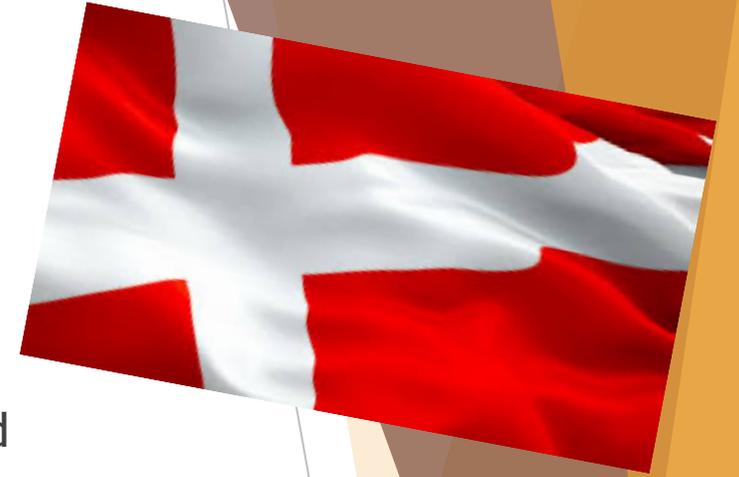
Heavy alcohol use in adolescence is associated with altered cortical activity: a combined TMS-EEG study.



- ▶ Long-term alcohol use affects cognitive and neurophysiological functioning as well as structural brain development. Combining simultaneous electroencephalogram (EEG) recording with transcranial magnetic stimulation (TMS) enables direct, in vivo exploration of cortical excitability and assessment of effective and functional connectivity.
- ▶ There was a marked increase in the GABAergic N45 amplitude in alcohol users. These findings suggest that long-term alcohol use in adolescence, even when not meeting the diagnostic criteria for a disorder, is associated with changes in connectivity and cortical excitability.

Kaarre et al (2018) Heavy alcohol use in adolescence is associated with altered cortical activity: a combined TMS-EEG study. Addiction Biology. Jan2018, Vol. 23 Issue 1, p268-280.

Low-level alcohol consumption during adolescence and its impact on cognitive control development.



- ▶ Adolescence is a critical period for maturation of cognitive control and most adolescents start experimenting with alcohol around that time.
- ▶ On the one hand, recent studies indicate that low control abilities predict future problematic alcohol use.
- ▶ **On the other hand, binge drinking during young adulthood can (further) impair cognitive control.**
- ▶ **In the present longitudinal fMRI study, we therefore investigated the development of cognitive control in a community-based sample of 92 adolescents at ages 14, 16 and 18**
- ▶ **We conclude that low-level alcohol use during adolescence does not severely impair ongoing maturation of cognitive control abilities and networks**

Are The Times A-Changin'? Trends in adolescent substance use in Europe

- ▶ Participants: A total of 223 814 male and 211 712 female 15-16-year-old students.
- ▶ Measurements: Daily cigarette use, weekly alcohol use, monthly heavy episodic drinking (HED) and monthly cannabis use
- ▶ Conclusions: Despite regional differences in prevalence of substance use among European adolescents from 1999 to 2015, trends showed remarkable similarities, with strong decreasing trends in cigarette use and moderate decreasing trends in alcohol use.
- ▶ Trends of cannabis use only increased in southern Europe and the Balkans.

Are The Times A-Changin'? Trends in adolescent substance use in Europe. By: Kraus, Ludwig, Seitz, Nicki-Nils, Piontek, Daniela, Molinaro, Sabrina, Siciliano, Valeria, Guttormsson, Ulf, Arpa, Sharon, Monshouwer, Karin, Leifman, Håkan, Vicente, Julian, Griffiths, Paul, Clancy, Luke, Feijão, Fernanda, Florescu, Silvia, Lambrecht, Patrick, Nociar, Alojz, Raitasalo, Kirsimarja, Spilka, Stanislas, Vyshinskiy, Konstantin, Hibell, Björn, Addiction, 09652140, Jul2018, Vol. 113, Issue 7

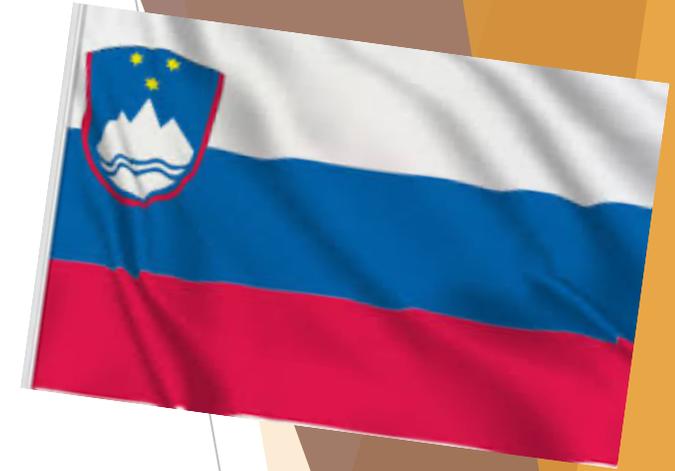
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Smoking, alcohol consumption, and illicit substances use among adolescents in Poland.



- ▶ The purpose of this study was to examine alcohol, cigarette, and illicit substance use among adolescents in Poland, including the age of initiation, frequency of use, methods of access, location of use, and parental knowledge and attitude
- ▶ An author-derived questionnaire was used to cross-sectionally survey 541 participants aged 13-17 years old.
- ▶ **Results:** The average age of initiation was 13-14 years old. Parents were aware of alcohol, cigarette, and illicit substance use 22.4-49,5% of the time, and the rate of acceptance was 5.7 and 6.7% for alcohol and cigarettes. More than 28% of participants smoked in school, and 32.7% accessed illicit substances in the school's neighborhood.
- ▶ **Conclusions:** The rate of alcohol, cigarette, and illicit substance use in Poland is high and increasing, despite globally designed preventative actions. Parents' awareness of children's alcohol, cigarette, or illicit substance use is low, and schools hardly fulfil their educational and protective role. Preventative actions are necessary, and local challenges should be considered.

Health behaviour of adolescents in Slovenia: major results from 2010 and trends from 2002 to 2010



- ▶ The study is based on a quantitative research method. The survey was conducted on a representative sample of Slovenian 11-, 13- and 15-year-old adolescents, using a standardised international questionnaire
- ▶ **Results:** There are some favourable trends, e.g. eating breakfast, tooth brushing, lower proportion of individuals who rate their health as poor and experience several psychosomatic symptoms, **but also unfavourable trends, e.g. decrease in physical activity, increase in early alcohol consumption, and dissatisfaction with school and bullying others.**

Health behaviour of adolescents in Slovenia: major results from 2010 and trends from 2002 to 2010
Helena Jeriček Klansček, Helena Koprivnikar, Maja Zorko, Tina Zupanič
2014. *Obzornik zdravstvene nege*, 48(1), pp. 21-29.

Predicting hazardous drinking in late adolescence/young adulthood from early and excessive adolescent drinking - a longitudinal cross-national study of Norwegian and Australian adolescents.

- ▶ “Research has consistently shown that early onset of drinking (EOD) is associated with alcohol-related problems in adulthood.”
- ▶ Two population-based longitudinal studies; the Norwegian Tracking Opportunities and Problems Study (n = 329) and the Australian International Youth Development Study (n = 786).
- ▶ Data were collected prospectively from mid adolescence (14-16 years) to late adolescence/young adulthood (18-25 years)
- ▶ Hazardous drinking was identified in 46.8 and 38.9% of young adults in Norway and Australia, respectively.
- ▶ Both EOD and early onset of excessive drinking (EOE) in adolescence were significantly related to an increased risk of alcohol-related problems in late adolescence/young adulthood in both studies, even when adjusting for possible confounders.



Predicting hazardous drinking in late adolescence/young adulthood from early and excessive adolescent drinking - a longitudinal cross-national study of Norwegian and Australian adolescents.

- ▶ Findings indicate that adolescent drinking behaviour is an indicator of alcohol-related problems in late adolescence/young adulthood, even when controlling for a variety of covariates.
- ▶ This finding is in contrast to previous research on older adults, where no association between adolescent drinking and later alcohol-related problems were found when controlling for covariates.
- ▶ The divergence in findings may suggest that the impact of EOD/EOE is limited to the late adolescent and young adult period.
- ▶ Preventing drinking in early adolescence may thus have some impact on the drinking patterns in late adolescence/young adulthood.



Adolescents' alcohol use and strength of policy relating to youth access, trading hours and driving under the influence: findings from Australia



- ▶ Outcome measures were: **past month drinking and risky drinking** (5+ drinks on a day) in the past 7 days. **Policy strength in each of three domains** (youth access, trading hours, drink-driving) were the key predictor variables. Covariates included: past 3-month television alcohol and alcohol-control advertising, alcohol outlet density, alcohol price change, negatively framed newspaper alcohol articles, adult drinking prevalence and student demographic characteristics
- ▶ Findings: During the study period, the strength of youth access policies increased by 10%, trading hours policies by 14% and drink-driving policies by 58%. Past-month and risky drinking prevalence decreased
- ▶ Conclusions: Population-directed policies designed to reduce alcohol availability and promotion may reduce adolescents' alcohol use.

State alcohol policies, taxes, and availability as predictors of adolescent binge drinking trajectories into early adulthood.



- ▶ Lower overall alcohol policy strength was associated with increased risk of binge-drinking
- ▶ Higher beer excise taxes were associated with a reduced risk of binge-drinking
- ▶ The number of liquor stores was not significantly associated with any binge-drinking trajectory.
- ▶ Conclusions: In the United States, stronger state alcohol policies and higher beer excise taxes appear to be associated with lower risk of escalating alcohol consumption trajectories among underage youth.

Prescription opioid use and misuse among adolescents and young adults in the United States



- ▶ “Prescription opioid misuse has become a leading cause of unintentional injury and death among adolescents and young adults in the United States. However, there is limited information on how adolescents and young adults obtain prescription opioids.”
- ▶ **Retrospective analysis** of the National Survey on Drug Use and Health (NSDUH) for the years 2015 and 2016.
- ▶ 27,857 adolescents (12-17 years of age) and 28,213 young adults (18-25 years of age)
- ▶ **Significantly more females than males reported using any prescription opioid (30.3% versus 24.8%)**

Prescription opioid use and misuse among adolescents and young adults in the United States



Among those misusing opioids:

- ▶ 55.7% obtained them from **friends or relatives**
- ▶ 25.4% from the **healthcare system**
- ▶ 18.9% through **other means**
- ▶ Obtaining opioids free from friends or relatives was the most common source for both adolescents (33.5%) and young adults (41.4%).
- ▶ Those with opioid misuse reported high prevalence of prior cocaine (35.5%), hallucinogen (49.4%), heroin (8.7%), and inhalant (30.4%) use
- ▶ In addition, at least half had used **tobacco (55.5%), alcohol (66.9%), or cannabis (49.9%)** in the past month

The interdependence of cigarette, alcohol, and marijuana use in the context of school-based social networks



- ▶ The purpose of this study was to examine the co-evolution of cigarette smoking, alcohol, and marijuana use within the ever-changing landscape of adolescent friendship networks, which are a primary socialization context for adolescent substance use.
- ▶ These results are consistent with theoretical insights from the Dynamic Social Impact Theory, which would predict that:
- ▶ Youth in friendship networks would adopt the same substance use behaviors through peer influence pathways, likely through social proximity and consolidation of youths' attitudes and behaviors in adolescent networks.
- ▶ This highlights that the presumption that influence effects will always increase behavior is not necessarily accurate.
- ▶ In fact, we might expect that the dominant norms in a context will drive the direction of influence effects: in a school with little substance use, the greater number of non-users will push adolescents towards non-use, whereas in a school with high levels of substance adolescents are more likely pushed towards greater use.

More drugs, more problems? Simultaneous use of alcohol and marijuana at parties among youth and young adults

- ▶ Simultaneous alcohol and marijuana (SAM) use by youth and young adults often occurs at parties and may result in an **increased risk of experiencing adverse consequences compared to use of either substance alone.**



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More drugs, more problems? Simultaneous use of alcohol and marijuana at parties among youth and young adults

- ▶ Cross-sectional survey of 15 to 20-year-olds residing in 24 communities across seven states within the United States in 2015 and 2016 (n = 2681).
- ▶ **72.3%** consumed alcohol exclusively
- ▶ **5.2%** used marijuana exclusively
- ▶ **22.5%** engaged in SAM use



More drugs, more problems? Simultaneous use of alcohol and marijuana at parties among youth and young adults

- ▶ Of those who reported SAM use had significantly greater odds of experiencing any and 2 or more of the following consequences compared to those who used only alcohol:
- ▶ **HANGOVER**
- ▶ **SEX WITHOUT CONDOM**
- ▶ **FIGHTS**



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Factors Associated with Poly Drug Use in Adolescents.



- ▶ Adolescents aged 15 to 17 years (n = 1661; 50.9% male) completed a survey on their use of alcohol, tobacco, and cannabis over the last 30 days. Various psychological, environmental, and demographic factors were also assessed. In total, 20.3% of respondents had used at least one substance, 6.7% reported using two substances, and 3.3% reported using all three substances.
- ▶ The most common combined pattern of use was alcohol and tobacco, followed by alcohol and cannabis. Several factors emerged as significant, with conduct problems, depression, and the school environment accounting for the most variance
- ▶ Specific psychological and environmental factors appear to be particularly important domains to target in adolescent substance use prevention programs.
- ▶ Early identification of adolescent depression and conduct problems and the development of programs that address these symptoms in youth may be effective approaches to delaying or preventing poly drug use in this population.

Perceived harmfulness of various alcohol- and cannabis use modes: Secular trends, differences, and associations with actual substance use behaviors among Norwegian adolescents, 2007-2015



- ▶ Nationally-representative repeated cross-sectional samples of 16-year olds in Norway were examined, assessed in 2007, 2011, and 2015 ($N_{Total} = 9296$) as part of the European School Survey Project on Alcohol and Other Drugs (ESPAD).
- ▶ Adolescents reported their: 1) lifetime alcohol- and cannabis use, and 2) perceived harmfulness of various alcohol- and cannabis use modes.
- ▶ **Results**
- ▶ Prevalence estimates for perceived harmfulness: 1) remained high and stable, or increased for alcohol use modes, and 2) declined for all cannabis use modes (i.e., using 1-2 times, occasionally, and regularly) since 2007-cohort. High quantity daily drinking was more commonly perceived as harmful than minimal or occasional cannabis use. Even though culturally-relevant use modes (i.e., weekend heavy drinking and experimental cannabis use) were not most commonly endorsed as harmful, only perceptions of those use modes as harmful were inversely associated with actual substance use.
- ▶ **Conclusions**
- ▶ How adolescents from Norway perceived harmfulness of alcohol- and cannabis use depended on the specific substance, its use modes, and secular cohort. Perceived harmfulness was associated with measures of actual substance use predominantly along the culturally- and adolescent-relevant modes of use.

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Burdovics Andreas J (2019) *Perceived harmfulness of various alcohol- and cannabis use modes: Secular trends, differences, and associations with actual substance use behaviors among Norwegian adolescents, 2007-2015*. *Drug and alcohol dependence* 197:280-287

Engaging Parents to Prevent Adolescent Substance Use: A Randomized Controlled Trial



- ▶ 318 seventh graders and their parents
- ▶ Half of the participants had parents with income less than \$15 000, and 81% were Latino.
- ▶ During this intervention, *Linking Information and Families Together*, parents were sent **weekly text messages, telephone calls, or e-mails about missed assignments, grades, and behavior.**
- ▶ Parents reported their **monitoring and parenting self-efficacy**; students reported their **use and intentions to use alcohol, marijuana, and other drugs**

Engaging Parents to Prevent Adolescent Substance Use: A Randomized Controlled Trial



- ▶ By the end of eighth grade, lifetime use of alcohol or marijuana was 18.2% in the control group and 10.2% in the intervention group
- ▶ Parenting self-efficacy, parent-child relationship, and student's grades were similar between groups.
- ▶ Conclusions: the intervention successfully reduced adolescent alcohol and marijuana initiation between grades 7 and 8.
- ▶ The intervention holds promise as a scalable and innovative approach to reducing substance use

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Bergman, Peter, Dudovitz, Rebecca N., Dosanjh, Kulwant K., Wong, Mitchell D. (2019) Engaging Parents to Prevent Adolescent Substance Use: A Randomized Controlled Trial. *American Journal of Public Health*, 00900036, Oct2019, Vol. 109, Issue 10

Do teenagers' and parents' alcohol-related views meet? - Analysing focus group data from Finland and Norway.

- ▶ This study analyses how Finnish and Norwegian teenagers and parents of teenagers perceive the appropriateness, desirability or harmfulness of different drinking situations. The focus is on whether teenagers and parents perceive the situations similarly or differently.
- ▶ Three pictures portraying different drinking situations were presented to the participants, who were asked to describe (1) what kind of situation the picture depicts, (2) whether the way of drinking in the picture was acceptable or not and (3) whether they identified with the situation or not.
- ▶ Teenagers and parents defined the situations similarly and applied rather similar criteria.
- ▶ Regarding the identification with the situations, **teenagers seemed to have somewhat stricter attitudes towards intoxication than adults, which can be perceived as a sign of an ongoing trend of decreasing youth drinking.**
- ▶ **Conclusions:** Overall, our analysis suggests that the alcohol worlds of parents and teenagers resembled each other, supporting the notion that the generational gap between parents and teenagers is diminishing.



Which parenting style is more protective against adolescent substance use? Evidence within the European context.

- ▶ This study examines whether:
- ▶ **authoritative parenting style** (characterized by warmth and strictness) is more protective against adolescent substances use than
- ▶ **authoritarian** (strictness but not warmth),
- ▶ **indulgent** (warmth but not strictness) and
- ▶ **neglectful** (neither warmth nor strictness) parenting styles.
- ▶ Overall, our results support the idea that in Europe the **indulgent parenting style performs as well as the authoritative one since adolescents' scores in the youth outcomes were equal (on substance use and personal disturbances) or even better (on self esteem and school performance) than for authoritative parenting style.**

A sample of 7718 adolescents, 3774 males (48.9%), 11-19 year-olds (M =14.63 year-olds, SD=1.9 years) from Sweden, United Kingdom, Spain, Portugal, Slovenia, and the Czech Republic.

Alcohol policy and fatal alcohol-related crashes in Finland 2000-2016.



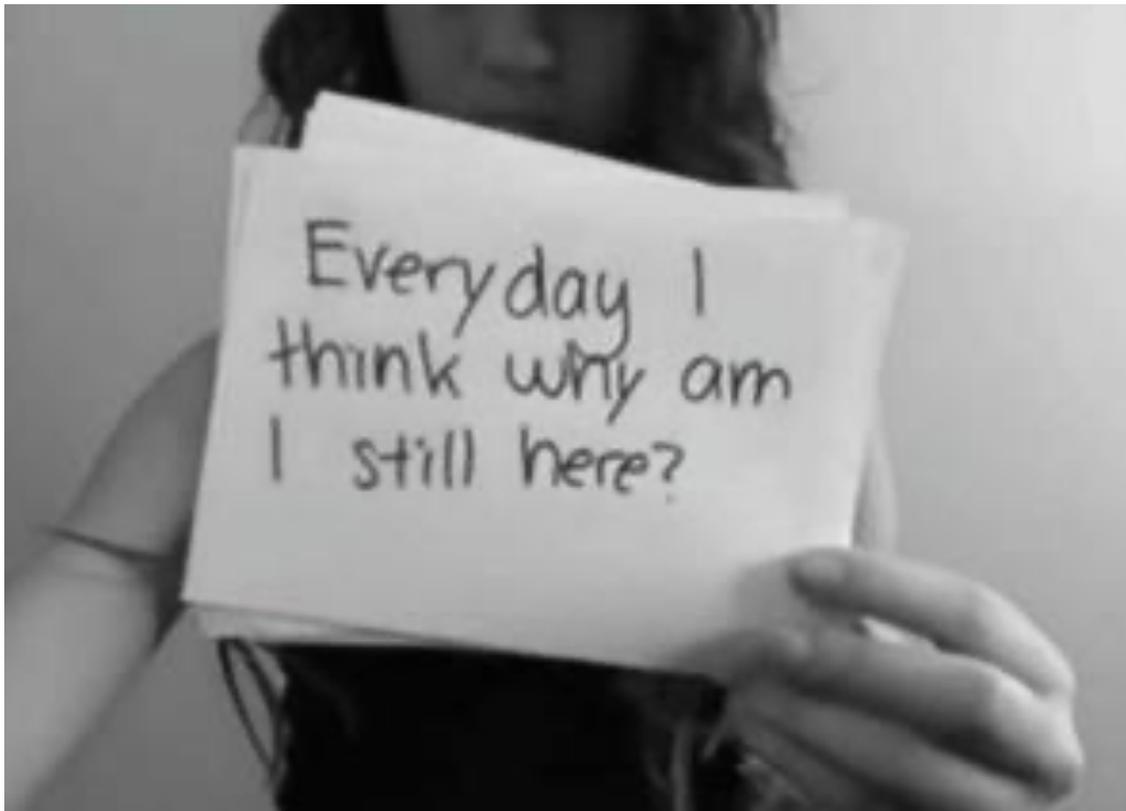
- ▶ The purpose of this study was to explore the relationship between annual alcohol consumption per capita/alcohol price index and the number of alcohol-related fatal motor vehicle accidents
- ▶ After the reduction of the **alcohol** tax in 2004:
 - ▶ the **alcohol** consumption rose 12.4% from 2003 to 2005 and
 - ▶ Fatal alcohol-related crashes rose 38%.
- ▶ There was a strong correlation ($r = 0.7000$, $P < .018$) between the recorded consumption of **alcohol** and the number of AFMVAs.

Risk-Taking Behavior and Suicidality: The Unique Role of Adolescent Drug Use

- ▶ Illicit drug use and tobacco and alcohol use had some evidence in increasing the risk of suicide among adolescents



An mobile-health Approach to Extend a Brief Intervention for Adolescent Alcohol Use and Suicidal Behavior: Qualitative Analyses of Adolescent and Parent Feedback.



- ▶ Suicidal adolescents who drink alcohol are in need of robust interventions that address the bidirectional relationship between alcohol use and suicidal thoughts and behaviors because it puts them at especially high risk for suicide upon discharge.
- ▶ The purpose of this study was to conduct qualitative interviews to gather feedback to improve a brief alcohol intervention provided to suicidal adolescents during psychiatric hospitalization, and to develop a mHealth tool to extend care after discharge

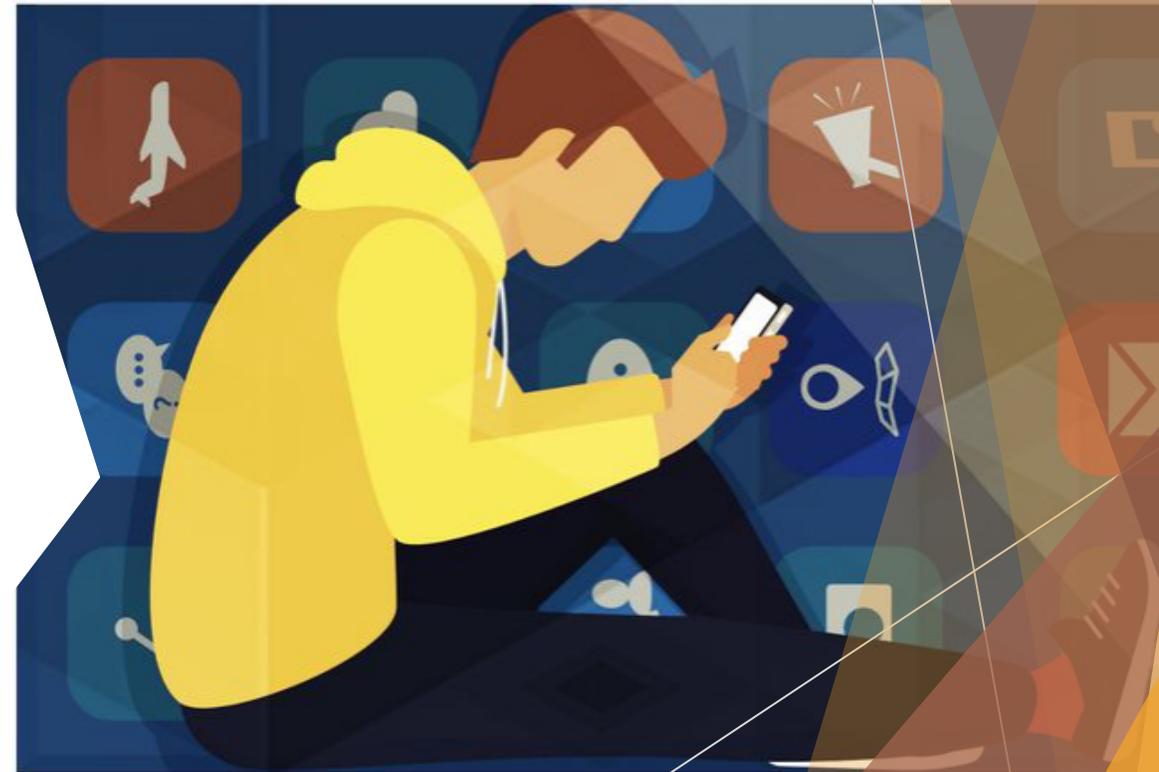
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An mobile-health Approach to Extend a Brief Intervention for Adolescent Alcohol Use and Suicidal Behavior: Qualitative Analyses of Adolescent and Parent Feedback.



- ▶ Eight adolescents and their parents, identified the need for a smartphone application to deliver intervention content to adolescents and parents during the posthospitalization period.
- ▶ **Adolescents sought support in meeting alcohol- and mood-related goals**
- ▶ Parents desired **general resources as well as tips for conversations with their adolescent about mood and alcohol use**



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O'Brien K, Wyman B, Sellers C, Spirito A, Yen S, Maneta E, Ryan C & Braciszewski J (2019) An mHealth Approach to Extend a Brief Intervention for Adolescent Alcohol Behavior: Qualitative Analyses of Adolescent and Parent Feedback. *Journal of Technology in Human Services*. Oct-Dec2019, Vol. 37 Issue 4, p255-285

Mobile phone sensors and supervised machine learning to identify alcohol use events in young adults: Implications for just-in-time adaptive interventions.



BACKGROUND:

Real-time detection of drinking could improve timely delivery of interventions aimed at reducing alcohol consumption and alcohol-related injury

OBJECTIVE:

To evaluate whether phone sensor data and machine learning models are useful to detect alcohol use events

METHODS:

38 non-treatment seeking young adult heavy drinkers downloaded **AWARE app** (which continuously collected mobile phone sensor data), and reported alcohol consumption (number of drinks, start/end time of prior day's drinking) for 28 days. We tested various machine learning models using the 20 most informative sensor features to classify time periods as non-drinking, low-risk (1 to 3/4 drinks per occasion for women/men), and high-risk drinking (>4/5 drinks per occasion for women/men).

RESULTS:

Among 30 participants in the analyses, 207 non-drinking, 41 low-risk, and 45 high-risk drinking episodes were reported. A Random Forest model using 30-min windows with 1 day of historical data performed best for detecting high-risk drinking, correctly classifying high-risk drinking windows 90.9% of the time. **The most informative sensor features were related to time (i.e., day of week, time of day), movement (e.g., change in activities), device usage (e.g., screen duration), and communication (e.g., call duration, typing speed).**

CONCLUSIONS:

Preliminary evidence suggests that **sensor data captured from mobile phones of young adults is useful in building accurate models to detect periods of high-risk drinking.** Interventions using mobile phone sensor features could trigger delivery of a range of interventions to potentially improve effectiveness.

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Bae et al (2018) Mobile phone sensors and supervised machine learning to identify alcohol use events in young adults: Implications for just-in-time adaptive interventions. Addictive Behaviors. Aug2018, Vol. 83, p42-47.

Young people and alcohol abstention: youth cultural practices and being a non-drinker in Finland and Australia.

- ▶ Internationally, there has been a significant increase in the numbers of young people choosing not to drink alcohol. This is counter to the weight of opinion that positions young people as irresponsible and as engaging in 'risky' behaviour. In this context, our article seeks to understand why young people choose not to drink alcohol.
- ▶ interviews conducted with young people between the ages of 18 and 29 in Finland and Australia
- ▶ **Six key ways in which participants managed the potential stigma and isolation of being a young person who does not drink:**
 - 1) Selecting the right response and crowd;
 - 2) Taking the focus away from alcohol;
 - 3) Having a group or scene of non-drinkers;
 - 4) Being active and having fun;
 - 5) Understanding non-drinking as an individual choice and control; and
 - 6) Moralising alcohol consumption





YOU ARE NOW SCIENTISTS!

*Pair up, or form a
scientific society:*

What bothers you, as in to
what question(s) you
don't yet have answers to?

- ▶ IF YOU DID RESEARCH,
WHAT WOULD YOU LIKE
TO STUDY?