Simon Moore
&
The ELASTiC Team
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Public Health Wales
Showcase Event

Electronic Longitudinal Alcohol Study in Communities

Simon Moore
Violence Research Group, School of Dentistry
Crime & Security Research Group
DECIPHer
ESRC, MRC, Alcohol Research UK - ES/L015471/1
ELASTiC

Electronic Longitudinal Alcohol Study in Communities

To determine the life-course effects of alcohol misuse and hazardous use on health and well-being - including injury, mental health, emotional and cognitive development and on educational attainment and health service utilisation.

January 2015 to June 2018

<table>
<thead>
<tr>
<th>Simon Moore</th>
<th>Cardiff University</th>
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<tbody>
<tr>
<td><strong>Mark Bellis</strong></td>
<td>Public Health Wales</td>
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<tr>
<td><strong>John MacLeod</strong></td>
<td>Bristol University</td>
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<td><strong>Matt Hickman</strong></td>
<td>Bristol University</td>
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<td><strong>Ronan Lyons</strong></td>
<td>Swansea University</td>
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<td><strong>Frank Dunstan</strong></td>
<td>Cardiff University</td>
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<td><strong>David Fone</strong></td>
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<td><strong>Shantini Paranjthy</strong></td>
<td>Cardiff University</td>
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<td><strong>John Gallacher</strong></td>
<td>Cardiff University</td>
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<tr>
<td><strong>Damon Berridge</strong></td>
<td>Swansea University</td>
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<tr>
<td><strong>Daniel Farewell</strong></td>
<td>Cardiff University</td>
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Cohorts

- Avon Longitudinal Study of Parents and Children (ALSPAC)
- British Household Panel Survey (BHPS) and Understanding Society (USoc)
- UK BioBank (UKB)
- Millennium Cohort Study (MCS)
- Caerphilly Health and Social Needs Electronic Cohort Study (E_CATALyST)
- Change in Alcohol Outlet Density and Alcohol-Related Harm to Population Health (CHALICE)

Routine Data

- Welsh Electronic Cohort for Children (WECC)
- Patient Episode Database for Wales (PEDW)
- Office for National Statistics (ONS) Mortality Data
- ONS Births table
- Emergency Department Data Set
Work Packages

WP1 – Methodological Innovations

WP2 - Pathways into Harm

WP3 - Secondary Harms

WP4 - Mental Health & Well-Being
Outputs to date


Aresi G, Moore S, Berridge D, Marta E. (2019). A Longitudinal Study of European Students’ Alcohol Use and Related Behaviors as They Travel Abroad to Study. *Substance Use & Misuse*

Edwards AC, Heron J, Vadimirov V, Wolen AR, Adkins DE, Aliev F, ... Kendler KS. (2017). The Rate of Change in Alcohol Misuse Across Adolescence is Heritable. *Alcoholism, clinical and experimental research*, 42(1), pp. 57-64


Highlights

Effects of Excessive Alcohol Use on Antisocial Behavior Across Adolescence and Early Adulthood

- Young people who drink alcohol excessively are also more anti-social

Parental Alcohol Use and Risk of Behavioral And Emotional Problems In Offspring

- Little evidence to support a dose response association between parental alcohol use and offspring outcomes: maternal alcohol use at age four years and childhood conduct problems, adolescent depressive symptoms.

Risk of Emergency Hospital Admission in Children Associated with Mental Disorders and Alcohol Misuse in the Household: An Electronic Birth Cohort Study

- Data for 253,717 children with 1,015,614 child-years of follow-up. Living with an adult with a mental disorder increases risk of emergency admission. Children living with a household member who had an alcohol-related hospital admission had a significantly higher risk of emergency admissions for injuries and external causes.
Alcohol and Cognitive Function
The True Cost of Alcohol

- There is a causal relationship between alcohol and depression

- A consistent relationship between depression and alcohol consumption; and neuroticism and alcohol consumption.

- Significant associations were found between household income and depression and household income and neuroticism.

- The value of reducing alcohol consumption by one gram/day was pooled and estimated to be £209.06 (95% CI £171.84 to £246.27).

- The affective benefit of reducing alcohol consumption by one bottle of wine each week is equivalent to an increase in annual household income of £2,389.

- Reducing consumption by one pint of beer each week is equivalent to an increase in annual household income of £610.69
### Forthcoming: Parental Consumption

**Random-effects model**

<table>
<thead>
<tr>
<th>Overall effect size</th>
<th>n Studies</th>
<th>n ES</th>
<th>Effect Size</th>
<th>Test Statistic</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>56</td>
<td>220</td>
<td>.15</td>
<td>t(219) = 12.94, p &lt; .001</td>
</tr>
</tbody>
</table>

**Mixed-effects models**

**Substantive Moderators**

<table>
<thead>
<tr>
<th>Parental substance abuse</th>
<th>n</th>
<th>n ES</th>
<th>Effect Size</th>
<th>95% CI</th>
<th>Test Statistic</th>
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</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>21</td>
<td>83</td>
<td>.13</td>
<td>[.09, .16]</td>
<td>F(3, 205) = 50.15, p = .002</td>
</tr>
<tr>
<td>Tobacco</td>
<td>25</td>
<td>70</td>
<td>.13</td>
<td>[.10, .16]</td>
<td></td>
</tr>
<tr>
<td>Drug use (cannabis = 0.23)</td>
<td>8</td>
<td>14</td>
<td>.25</td>
<td>[.19, .31]</td>
<td></td>
</tr>
<tr>
<td>Alcohol use disorder</td>
<td>11</td>
<td>42</td>
<td>.14</td>
<td>[.09, .19]</td>
<td></td>
</tr>
</tbody>
</table>

**Child wellbeing dimension**

<table>
<thead>
<tr>
<th>Child wellbeing dimension</th>
<th>n</th>
<th>n ES</th>
<th>Effect Size</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>38</td>
<td>162</td>
<td>.15</td>
<td>[.12, .17]</td>
</tr>
<tr>
<td>Psychological</td>
<td>16</td>
<td>42</td>
<td>.15</td>
<td>[.11, .19]</td>
</tr>
<tr>
<td>Cognitive</td>
<td>4</td>
<td>13</td>
<td>.06</td>
<td>[-.02, .14]</td>
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</tbody>
</table>
Barriers

- MCS data not linked to NHS data due to consent issues
- MoJ data not linked to ALSPAC
- NHS data linkage to ALSPAC under Section 251 delayed
- BHPS data not linked to NHS data due to delays at ISER
Opportunities

• The problem is not that people drink too much. The problem is that their causes harm, to themselves and others.

• Small changes in consumption may have little bearing on the individual at moderate doses. But across the 40M drinkers in the UK a small change aggregates up to a significant effect on the £3.5B cost of alcohol the NHS, and additional costs in respect of productivity and childhood outcomes.

• Many of these costs are hidden, as ELASiC evolves we can better inform drinkers of the true costs and understand the broader damage on society.