Changes in social environments and smoking among young adults during the first year of the COVID-19 pandemic: Evidence from the UK Millennium Cohort Study

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Background

**Social environments** are “the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact” (Barnet and Casper, 2001)

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**Changes in smoking behaviour during the pandemic**

Jackson et al. (2021) found a 25% increase in smoking prevalence among young adults during the first lockdown.

Since 2020 - more young adults tried quitting and successfully did so, but more young adults also tried cigarettes for the first time. (West et al., 2022)

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**Disruption of social environments**

The impacts of this on smoking behaviour and trajectories have likely changed and are currently unknown.

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**Inform future tobacco control policies**

Targeted towards the change in smoking behaviours in this age group.
Research aims

- To examine the role of changes in social environments in smoking among young adults during the first year of the pandemic
- To examine whether these changes had different impacts on smoking between young adults who were university students and non-university students before the outbreak

Research objectives

In those aged 19 in the UK between May 2020 and Feb 2021:

- Examine the association between changes in lockdown measures and the risk of smoking;
- Examine the association between changes in the frequency of social activities and the risk of smoking;
- Examine if the associations for the above were modified by student status before the outbreak
Dataset: Millennium Cohort Study
Analytic sample = 2254

2001-2002
Sweep 1, age 9 months
18,818 cohort members

2018
Sweep 7, age 17 years
10,757 cohort members

May-June 2020
1st lockdown

September-October 2020
Restrictions lifted

February-March 2021
3rd lockdown

2020
COVID-19 survey wave 1
2,645 cohort members

COVID-19 survey wave 2
3,274 cohort members

COVID-19 survey wave 3
4,474 cohort members
Methodology

Outcome variables
Smoking status (Y/N)

Explanatory variables
• Time
• Frequency of people you met out of your household in past week
• Frequency of people you helped out of your household in past week

Key modifier
Student status

Time-invariant covariates:
• At baseline: Ethnicity, home ownership, parents’ smoking status
• At age 17: Cohort members’ smoking status, binge drinking in the last 12 months, psychological distress, long-standing illness
• At age 19-20: Sex, country of residence,

Covariates

Time-varying covariates
• At age 19-20: Relationship status, living arrangements with parents
Modelling strategy

• Analyses were conducted using random-intercept Poisson regressions in the complete case sample of 5,595 observations from 2,254 participants

• Adjusted using non-response weights provided in Wave 3 of the COVID-19 survey

Table 1. Summary of modelling strategy

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<thead>
<tr>
<th>Model 1</th>
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<tr>
<td>Model 2</td>
<td>Time + time-varying covariates</td>
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<td>Model 3</td>
<td>No. of days participants met someone outside their household + time</td>
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<td>Model 7 (Full)</td>
<td>No. of days participants met someone outside their household + No. of days participants helped someone outside their household + time + time-varying covariates</td>
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* All models include time-invariant covariates.
Model findings

Young adults were more likely to smoke over time as COVID-19 regulations eased:

- Compared with the first national lockdown in May 2020, young adults were 74% more likely to smoke in September 2020 (95%CI 1.54-1.96) and 44% more likely in February 2021 (95%CI 1.27-1.63).

Young adults who socialised more frequently were at higher risk of smoking compared to those who did not:

- Participants who met people two or more days per week were more likely to smoke than those who did not meet people (PR = 1.43, 95%CI 1.23-1.67).
- The frequency at which participants helped others was not associated with smoking.
Figure 1: Changes in the risk of smoking among UK young adults over time, stratified by student status before the pandemic. MCS, 2020-21.
Limitations

- Low response rate limits claim of representativeness
- Having more waves at other time points may have yielded another portrait of changes over time
- We would ideally have liked to measure the places in which MCS participants were meeting and helping other people
Conclusions

• The different social environments during the first year of the pandemic have played a key role in shaping the smoking behaviour of young adults

• This study highlighted differences in the risk of smoking across educational trajectories

• The easing of restrictions in September-October 2020 and February-March 2021 were more conducive to smoking among university students than non-university students

• These findings contribute to a growing body of work that highlights the magnitude of fluctuations in the risk of smoking among young adults since the start of the pandemic, and the importance of place-based interventions where young adults may be more susceptible to smoking
References


Thank you for listening!
## Appendix

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N participants = 2,254; N obs. = 5,595

Estimates are prevalence ratios (PR) from random-intercept Poisson models representing the different relative risk of being a smoker across categories. 95%CI = 95% confidence interval. Bolded estimates are significant at the .05 level.