

Supplementary Materials

Adolescent alcohol drinking and cannabis use – longitudinal, and cohort analysis of high school students

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Table S1

Participation status across 2019 and 2020 in the Year 12s of 2020 cohort by socio-demographic and substance use differences (N=1024).

| | Data in 2019 only (N=169) | Data in 2020 only (N=140) | Data in both 2019 and 2020 (N=715) | <i>p</i> |
|--|------------------------------|------------------------------|---------------------------------------|----------|
| Socio-demographic variables in 2019 | | | | |
| Age (mean [SD]) | 16.21 [0.50] | 16.18 [0.39] | 16.11 [0.40] | 0.006** |
| Gender | | | | |
| Male | 17.4% | 14.2% | 68.3% | 0.099 |
| Female | 13.4% | 12.1% | 74.6% | |
| Identification as Aboriginal or Torres Strait Islander | | | | |
| No | 15.70% | 13.30% | 71.00% | 0.418 |
| Yes | 22.20% | 18.50% | 59.30% | |
| Primary language spoken at home | | | | |
| English | 13.40% | 13.70% | 72.90% | <.001*** |
| English + another language | 28.40% | 13.70% | 57.80% | |
| Another language | 43.80% | 6.30% | 50.00% | |
| Parental Country of Birth | | | | |
| Both parents born in Australia | 13.60% | 14.60% | 71.80% | 0.009** |
| One parent born in Australia | 14.10% | 12.10% | 73.90% | |
| Both parents born overseas | 23.70% | 11.60% | 64.70% | |
| Parental Relationship Status | | | | |
| Living together | 15.90% | 12.50% | 71.60% | 0.26 |
| Not living together | 15.80% | 16.60% | 67.60% | |
| Truancy in the past year | | | | |
| No | 14.50% | 12.80% | 72.70% | <.001*** |
| Yes | 28.20% | 19.40% | 52.40% | |
| Academic Grade | | | | |
| A | 15.80% | 10.40% | 73.80% | .005** |
| B | 12.30% | 15% | 72.70% | |
| C or lower | 21.70% | 12.50% | 65.80% | |
| Substance use in 2020 | | | | |
| Alcohol use in past 12 months | | | | |
| Drank ~weekly or more often | -- | 47.40% | 40.70% | 0.033* |
| Had ≥6 drinks on one occasion monthly or more often | -- | 36.00% | 23.80% | <.001*** |
| Cannabis use | | | | |
| Ever tried cannabis | -- | 36.60% | 27.40% | 0.032* |

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; *p*-values were from ANOVAs for continuous variables and chi-squared tests for categorical variables

Table S2***Participant characteristics in the original data***

| | Year 12s of 2019 (N=632) | | Year 12s of 2020 (N=1024) | |
|---|-----------------------------|---------------|------------------------------|---------------|
| | % | [95%CI] | % | [95%CI] |
| Demographics | | | | |
| Age (mean [SD]) | 17.05 | [17.04-17.06] | 17.17 | [17.14-17.20] |
| Gender | | | | |
| Male | 63.0% | [58.2%-67.7%] | 60.5% | [56.3%-64.7%] |
| Female | 37.0% | [30.8%-43.2%] | 39.5% | [34.3%-44.7%] |
| Identification as Aboriginal or Torres Strait Islander | | | | |
| No | 97.0% | [95.6%-98.3%] | 96.5% | [95.2%-97.7%] |
| Yes | 3.0% | [0.0%-10.7%] | 3.5% | [0.0%-10.1%] |
| Primary language spoken at home | | | | |
| English | 88.6% | [85.9%-91.2%] | 90.2% | [88.0%-92.3%] |
| English + another language | 2.1% | [0.0%-9.8%] | 2.5% | [0.0%-9.1%] |
| Another language | 9.4% | [1.9%-16.8%] | 7.4% | [0.9%-13.8%] |
| Parental country of birth | | | | |
| Both parents born in Australia | 56.0% | [50.8%-61.2%] | 60.5% | [56.3%-64.8%] |
| One parent born in Australia | 20.7% | [13.8%-27.7%] | 20.1% | [14.1%-26.1%] |
| Both parents born overseas | 23.3% | [16.4%-30.1%] | 19.3% | [13.3%-25.3%] |
| Parental relationship status | | | | |
| Living together | 72.4% | [68.3%-76.5%] | 75.1% | [71.7%-78.4%] |
| Not living together | 27.6% | [21.0%-34.3%] | 24.9% | [19.1%-30.7%] |
| Truancy in the past year | | | | |
| No | 88.0% | [85.2%-90.7%] | 87.4% | [85.0%-89.8%] |
| Yes | 12.0% | [4.7%-19.4%] | 12.6% | [6.4%-18.9%] |
| Academic Grade | | | | |
| A | 19.8% | [12.8%-26.8%] | 21.7% | [15.8%-27.7%] |
| B | 47.0% | [41.3%-52.7%] | 51.4% | [46.7%-56.1%] |
| C or lower | 33.2% | [26.8%-39.6%] | 26.9% | [21.1%-32.6%] |
| Substance Use | | | | |
| Alcohol use in past 12 months | | | | |
| Drank ~weekly or more often | 6.1% | [-1.5%-13.6%] | 41.70% | [36.6%-46.8%] |
| Had >=6 drinks on one occasion monthly or more often | 17.4% | [10.3%-24.5%] | 25.9% | [20.1%-31.7%] |
| Cannabis use | | | | |
| Ever tried cannabis | 23.2% | [16.3%-30.1%] | 28.9% | [23.2%-34.6%] |

Supplement 3. Full model results for cohort comparison and longitudinal regressions

All models included school, age, gender, Aboriginal or Torres Strait Islander status, primary language at home, parental country of birth, parental relationship status, truancy in past year, academic grade, and days to the end of the year at time of survey, all entered into the analyses together.

Table S3.1

Full model results of longitudinal analysis on alcohol use, weekly or more often

| Outcome: Alcohol use, Drank ~weekly or more often | Longitudinal analysis - Logistic regression Estimates by time (within-subject comparison of Year 12 of 2020 vs themselves when they were in Year 11 in 2019) | |
|--|---|----------|
| | OR [95%CI] | <i>p</i> |
| Time (2020 vs 2019) | 1.09 [0.62, 1.94] | 0.757 |
| Gender (ref: male) | | |
| Female | 1.30 [0.73, 2.30] | 0.369 |
| Aboriginal or Torres Strait Islander (ref: yes) | | |
| No | 0.51 [0.20, 1.30] | 0.159 |
| Primary language spoken at home (ref: another language) | | |
| English | 1.79 [0.69, 4.61] | 0.228 |
| English + another language | 0.96 [0.15, 6.01] | 0.965 |
| Parental country of birth (Both parents born overseas) | | |
| Both parents born in Australia | 1.25 [0.64, 2.44] | 0.514 |
| One parent born in Australia | 1.70 [0.82, 3.50] | 0.151 |
| Parents living together (ref: no) | | |
| Yes | 0.83 [0.55, 1.26] | 0.381 |
| Truancy in the past year (no) | | |
| Yes | 2.56 [1.44, 4.53] | 0.001 |
| Academic grade (A) | | |
| C or lower | 2.76 [1.48, 5.16] | 0.001 |
| B | 1.92 [1.05, 3.52] | 0.035 |
| Covariates | | |
| Age | 2.20 [1.41, 3.44] | 0.001 |
| Days to the end of the year | 1.00 [0.99, 1.01] | 0.490 |

Table S3.2***Full model results of longitudinal analysis on alcohol use, ≥ 6 drinks on one occasion monthly or more often***

| Outcome: Had ≥ 6 drinks on one occasion monthly or more often | Longitudinal analysis - Logistic regression | |
|--|---|----------|
| | OR [95% CI] | <i>p</i> |
| Time (2020 vs 2019) | 3.09 [1.89, 5.05] | <0.001 |
| Gender (ref: male) | | |
| Female | 1.97 [1.24, 3.11] | 0.004 |
| Aboriginal or Torres Strait Islander (ref: yes) | | |
| No | 0.63 [0.33, 1.21] | 0.170 |
| Primary language spoken at home (ref: another language) | | |
| English | 2.60 [1.18, 5.69] | 0.017 |
| English + another language | 1.10 [0.30, 4.06] | 0.885 |
| Parental country of birth (Both parents born overseas) | | |
| Both parents born in Australia | 1.37 [0.83, 2.27] | 0.224 |
| One parent born in Australia | 1.06 [0.60, 1.88] | 0.840 |
| Parents living together (ref: no) | | |
| Yes | 0.71 [0.51, 0.99] | 0.041 |
| Truancy in the past year (no) | | |
| Yes | 2.25 [1.38, 3.69] | 0.001 |
| Academic grade (A) | | |
| C or lower | 1.73 [1.14, 2.64] | 0.010 |
| B | 1.21 [0.83, 1.76] | 0.331 |
| Covariates | | |
| Age | 1.20 [0.85, 1.71] | 0.304 |
| Days to the end of the year | 1.00 [0.99, 1.00] | 0.599 |

Table S3.3***Full model results of longitudinal analysis on cannabis use, ever tried***

| | Longitudinal analysis - Logistic regression | |
|---|--|----------|
| | Estimates by time (within-subject comparison of Year 12 of 2020 vs themselves when they were in Year 11 in 2019) | |
| Outcome: Ever tried cannabis | OR [95%CI] | <i>p</i> |
| Time (2020 vs 2019) | 2.06 [1.36, 3.11] | 0.001 |
| Gender (ref: male) | | |
| Female | 1.23 [0.84, 1.81] | 0.283 |
| Aboriginal or Torres Strait Islander (ref: yes) | | |
| No | 0.48 [0.26, 0.89] | 0.020 |
| Primary language spoken at home (ref: another language) | | |
| English | 0.96 [0.54, 1.70] | 0.884 |
| English + another language | 0.31 [0.09, 1.12] | 0.072 |
| Parental country of birth (Both parents born overseas) | | |
| Both parents born in Australia | 1.01 [0.65, 1.56] | 0.975 |
| One parent born in Australia | 1.06 [0.67, 1.69] | 0.806 |
| Parents living together (ref: no) | | |
| Yes | 0.59 [0.44, 0.80] | 0.001 |
| Truancy in the past year (no) | | |
| Yes | 2.77 [1.80, 4.28] | <0.001 |
| Academic grade (A) | | |
| C or lower | 1.40 [0.94, 2.07] | 0.099 |
| B | 1.47 [1.03, 2.10] | 0.035 |
| Covariates | | |
| Age | 0.83 [0.59, 1.17] | 0.297 |
| Days to the end of the year | 1.00 [0.99, 1.00] | 0.128 |

Table S3.4***Full model results of cohort comparison on alcohol use, weekly or more often***

| | Cohort comparison analysis - Logistic regression | |
|---|--|----------|
| | Estimates by time (within-subject comparison of Year 12 of 2020 vs themselves when they were in Year 11 in 2019) | |
| Outcome: Alcohol use, Drank ~weekly or more often | OR [95%CI] | <i>p</i> |
| Cohort (2020 vs 2019) | 1.87 [1.09, 3.19] | 0.023 |
| Gender (ref: male) | | |
| Female | 1.18 [0.65, 2.15] | 0.588 |
| Aboriginal or Torres Strait Islander (ref: yes) | | |
| No | 0.72 [0.22, 2.30] | 0.572 |
| Primary language spoken at home (ref: another language) | | |
| English | 1.77 [0.68, 4.62] | 0.241 |
| English + another language | 0.72 [0.10, 5.36] | 0.748 |
| Parental country of birth (Both parents born overseas) | | |
| Both parents born in Australia | 1.19 [0.63, 2.25] | 0.599 |
| One parent born in Australia | 1.86 [0.94, 3.68] | 0.076 |
| Parents living together (ref: no) | | |
| Yes | 0.43 [0.02, 8.12] | 0.473 |
| Truancy in the past year (no) | | |
| Yes | 1.70 [0.89, 3.23] | 0.105 |
| Academic grade (A) | | |
| C or lower | 1.84 [0.95, 3.53] | 0.069 |
| B | 5.90 [1.38, 25.23] | 0.017 |
| Covariates | | |
| Age | 2.81 [1.76, 4.48] | <0.001 |
| Days to the end of the year | 1.00 [0.99, 1.01] | 0.674 |

Table S3.5***Full model results of cohort comparison on alcohol use, ≥ 6 drinks on one occasion monthly or more often***

| Outcome: Had ≥ 6 drinks on one occasion monthly or more often | Cohort comparison analysis - Logistic regression | |
|--|---|----------|
| | OR [95%CI] | <i>p</i> |
| Cohort (2020 vs 2019) | 1.77 [1.19, 2.62] | 0.004 |
| Gender (ref: male) | | |
| Female | 1.26 [0.81, 1.95] | 0.300 |
| Aboriginal or Torres Strait Islander (ref: yes) | | |
| No | 1.38 [0.57, 3.33] | 0.475 |
| Primary language spoken at home (ref: another language) | | |
| English | 2.05 [1.06, 3.98] | 0.033 |
| English + another language | 0.29 [0.03, 2.55] | 0.252 |
| Parental country of birth (Both parents born overseas) | | |
| Both parents born in Australia | 1.08 [0.71, 1.67] | 0.709 |
| One parent born in Australia | 1.32 [0.82, 2.11] | 0.249 |
| Parents living together (ref: no) | | |
| Yes | 0.21 [0.02, 2.43] | 0.210 |
| Truancy in the past year (no) | | |
| Yes | 2.33 [1.45, 3.75] | 0.000 |
| Academic grade (A) | | |
| C or lower | 1.01 [0.69, 1.48] | 0.953 |
| B | 1.53 [0.54, 4.34] | 0.428 |
| Covariates | | |
| Age | 1.69 [1.18, 2.42] | 0.004 |
| Days to the end of the year | 1.00 [1.00, 1.01] | 0.510 |

Table S3.6***Full model results of cohort comparison on cannabis use, ever tried***

| | Cohort comparison analysis - Logistic regression | |
|---|--|----------|
| | Estimates by time (within-subject comparison of Year 12 of 2020 vs themselves when they were in Year 11 in 2019) | |
| Outcome: Ever tried cannabis | OR [95%CI] | <i>p</i> |
| Cohort (2020 vs 2019) | 1.46 [1.05, 2.02] | 0.024 |
| Gender (ref: male) | | |
| Female | 0.88 [0.61, 1.27] | 0.508 |
| Aboriginal or Torres Strait Islander (ref: yes) | | |
| No | 0.86 [0.42, 1.79] | 0.691 |
| Primary language spoken at home (ref: another language) | | |
| English | 1.17 [0.68, 2.01] | 0.576 |
| English + another language | 0.15 [0.02, 1.10] | 0.061 |
| Parental country of birth (Both parents born overseas) | | |
| Both parents born in Australia | 1.14 [0.78, 1.67] | 0.505 |
| One parent born in Australia | 0.94 [0.61, 1.46] | 0.785 |
| Parents living together (ref: no) | | |
| Yes | 0.19 [0.02, 1.54] | 0.119 |
| Truancy in the past year (no) | | |
| Yes | 2.84 [1.83, 4.43] | <0.001 |
| Academic grade (A) | | |
| C or lower | 1.35 [0.95, 1.91] | 0.089 |
| B | 2.61 [1.11, 6.17] | 0.028 |
| Covariates | | |
| Age | 0.85 [0.60, 1.20] | 0.366 |
| Days to the end of the year | 1.00 [0.99, 1.00] | 0.490 |

Table S4***Estimated marginal means of mental health and substance use from longitudinal and cohort comparison regression analyses***

| | Longitudinal analysis | | | | | |
|---------------------------------------|----------------------------|-------|-------|--------------|-------|-------|
| | Year 11 2019 | | | Year 12 2020 | | |
| | EM Mean | lower | upper | EM Mean | lower | upper |
| Substance Use | | | | | | |
| Alcohol use in past 12 months | | | | | | |
| Drank ~weekly or more often | 0.04 | 0.01 | 0.07 | 0.09 | 0.03 | 0.14 |
| Had >=6 drinks monthly or more often* | 0.08 | 0.03 | 0.13 | 0.21 | 0.10 | 0.32 |
| Cannabis use | | | | | | |
| Ever tried cannabis* | 0.25 | 0.14 | 0.36 | 0.41 | 0.25 | 0.56 |
| | Cohort comparison analysis | | | | | |
| | Year 12 2019 | | | Year 12 2020 | | |
| | EM Mean | lower | upper | EM Mean | lower | upper |
| Substance Use | | | | | | |
| Alcohol use in past 12 months | | | | | | |
| Drank ~weekly or more often* | 0.34 | 0.45 | 0.87 | 0.26 | 0.56 | 0.92 |
| Had >=6 drinks monthly or more often* | 0.12 | 0.00 | 0.25 | 0.20 | 0.02 | 0.38 |
| Cannabis use | | | | | | |
| Ever tried cannabis* | 0.30 | 0.09 | 0.50 | 0.38 | 0.14 | 0.61 |

Note: *p<0.05; EM Mean, estimated marginal means from regression models; covariates adjusted for included: school, age, gender, Aboriginal or Torres Strait Islander status, primary language at home, parental country of birth, parental relationship status, truancy in past year, academic grade, and days to the end of the year at time of survey (full model results are available in Table S3).