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**Lifecourse socioeconomic position and alcohol use in young adulthood: results from the French
TEMPO cohort study.**

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ABSTRACT

Aims. To examine the relationship between lifetime socioeconomic position and alcohol use in young adults.

Methods. Study participants (n=1,103, age 22-35 years in 2009) belong to the French TEMPO cohort study and are all offspring of participants of the GAZEL cohort study. Alcohol use was assessed by the WHO AUDIT questionnaire (none, low or intermediate alcohol use, alcohol abuse). Childhood socioeconomic position was measured using parental income through the GAZEL cohort study in 1989 (low: ≤2592€/month vs. Intermediate/high: >2592€/month). Adult socioeconomic position was measured by participants' educational level (≤high school degree vs. > high school degree). Combining family income and educational attainment, we ascertained participants' social trajectory (stable high, upward, downward and stable low). Data were analyzed using multinomial regression analyses controlled for demographic, social, psychological and family characteristics.

Results. Participants' social trajectory was associated with alcohol abstinence: compared to participants with a stable high social trajectory, those with an upward, downward or low social trajectory were more likely to abstain from alcohol (compared to a stable high social trajectory, sex and age-adjusted ORs: OR=2.22, 95%CI 1.35-3.65 for an upward social trajectory; OR=3.20, 95%CI 1.78-5.73 for a downward social trajectory; OR= 3.27, 95%CI 1.75-6.12 for a stable low social trajectory). Additionally, participants with a downward social trajectory were disproportionately likely to abuse alcohol (sex and age-adjusted OR: 1.48, 95%CI 0.89-2.48). In multivariate analyses, social trajectory remained associated with alcohol abstinence.

Conclusions. Lifelong socioeconomic position may shape patterns of alcohol use early in life.

Keywords: Lifecourse socioeconomic position; Alcohol use patterns; Emerging adulthood; Longitudinal cohort.

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INTRODUCTION

Alcohol abuse is a major public health problem worldwide (Rehm et al., 2006). Patterns of alcohol use vary across countries and time periods, yet overall, chronic high use or frequent episodic drinking bear the highest health consequences (Rehm et al., 2006).

Most individuals first experiment with alcohol in adolescence, when episodic and sometimes high consumption is frequent (Kuntsche et al., 2004). During the transition to adulthood, excessive alcohol use often decreases and more stable and heterogeneous patterns of alcohol use emerge (Windle et al., 2005; Windle and Windle, 2005). Research suggests that multiple factors, including social determinants, are associated with alcohol use in that key period of life. To date, evidence regarding the influence of childhood and adult socioeconomic position on alcohol use patterns is mixed (Stone et al., 2012). While some studies have suggested that low childhood socioeconomic position is associated with high levels of alcohol use disorders (Jackson et al., 2000), others suggest the opposite (McMorris and Uggen, 2000). This lack of coherence may reflect methodological differences between prior studies in a) measures of childhood socio-economic position which have included father's occupation (Dubow et al., 2008; Isohanni et al., 1994), parental occupation (Droomers et al., 1999) or education level (Poulton et al., 2002) and b) in measures of alcohol use which have included average use (Casswell et al., 2003), high use (Dubow et al., 2008), intoxication (Isohanni et al., 1994), or alcohol dependence (Poulton et al., 2002). They may also be partly due to different levels and predictors of alcohol use in different cultural settings.

To date, few studies have examined the association between socioeconomic position and alcohol use in young adulthood, even though this is a critical period both in terms of socioeconomic development and substance use (Stone et al., 2012). Most prior investigations examined heavy alcohol use (Batty et al., 2008), finding a more frequent pattern of use among individuals who have low socioeconomic position. What is not yet clear is whether alcohol use in young adulthood is influenced by family socioeconomic background early in life, contemporary socioeconomic position, or individuals'

socioeconomic trajectory from childhood to adulthood. In one of few studies that compared the association between lifetime income and alcohol use in the United States, individuals with low or middle income from childhood to adulthood had higher odds of abstinence and heavy drinking than individuals with high income (Cerdeira et al., 2011). This association decreased and became statistically non-significant after controlling for contemporary socioeconomic factors such as past year income, education and occupation. One of the limitations of this study was that it failed to account for factors that can influence alcohol use such as parental alcohol use (Kuntsche et al., 2004; Kushner and Sher, 1993); individuals' own psychological characteristics (Kuntsche et al., 2004; Stone et al., 2012; Walton et al., 2009; Whitaker et al., 2006) or recent childbirth (Bailey et al., 2008; Stone et al., 2012).

In the present study based in France where overall levels of alcohol use are high and where binge drinking among young people may have increased in recent years according to "Observatoire Français des Drogues et de la Toxicomanie (OFDT)" (OFDT, Juin 2011), we examined the relationship between social trajectory from childhood to adulthood and alcohol use in 1,103 22-35 year olds, participating in the TEMPO study. Our analyses control for childhood and adult factors potentially associated with alcohol use in young adults, such as sex (Sanchez et al., 2011), age (Kuntsche et al., 2004), family situation (Sher and Gotham, 1999), employment status (Casswell et al., 2003), social support (Maggs et al., 1997; Trim et al., 2006), health characteristics including childbirth and pregnancy (Bailey et al., 2008; Stone et al., 2012), psychological difficulties (Walton et al., 2009; Whitaker et al., 2006), chronic illness and parental history of alcohol use (Kuntsche et al., 2004).

METHODS

Study population

The study was based on data from the TEMPO cohort study which included 1,103 participants aged 22 to 35 years in 2009 (Redonnet et al., 2012). TEMPO study participants all have a parent who participates in the GAZEL cohort study since 1989 (Goldberg et al., 2007) and took part in an

investigation of factors associated with children's mental health in 1991 (Fombonne and Vermeersch, 1997). In 2009, parents of eligible youths received a letter asking them to forward the TEMPO study to their offspring (Bowes et al., 2012). Of the 2,498 youths whose parents were alive and who could be contacted, 16 had died since 1991 and 4 were too ill or disabled to answer. The overall response rate to the 2009 TEMPO mailed questionnaire was 44.5% (n=1,103), which is comparable to other mental health surveys in France (Alonso et al., 2004; Bowes et al., 2012). TEMPO and GAZEL cohorts received approval from the national commissions overseeing ethical data collection in France [« Comité Consultatif sur le Traitement de l'Information en matière de Recherche dans le domaine de la Santé (CCTIRS) » and « Commission Nationale de l'Informatique et des Libertés (CNIL) »].

Measures

Measures of socioeconomic circumstances as well as alcohol use studied in this investigation come from the TEMPO study questionnaires (Fombonne and Vermeersch, 1997) completed by participants' parents (1991) or by participants themselves (2009). Additionally, data on family characteristics are available from parents' self-reports in the GAZEL study (Goldberg et al., 2007).

Alcohol use: Participants' alcohol use was assessed in 2009 by the World Health Organization Alcohol Use Disorders Identification Test questionnaire (AUDIT) (Rumpf et al., 2012). We studied 3 patterns of alcohol use in young adulthood: Abstinence (no alcoholic drink in the preceding 12 months); low/intermediate alcohol use (AUDIT score <7 in women; <8 in men); alcohol abuse, referred to as alcohol abuse throughout the manuscript (AUDIT score ≥7 in women; ≥8 in men).

Socioeconomic position: Participants' childhood socioeconomic position was measured using family income (low: ≤2592€/month vs. Intermediate/high: >2592€/month), as reported by parents in the GAZEL cohort study in 1989 (Melchior et al., 2010). Adult socioeconomic position was ascertained by participants' level of education which was self-reported in 2009 (≤high school degree; >high school degree). Participants' social trajectory was defined based on family income and educational level.

Combining these two indicators we distinguished four trajectories: Stable high (High childhood and adult socioeconomic position); Upward (Low childhood and high adult socioeconomic position); Downward (High childhood and low adult socioeconomic position); Stable low (Low childhood and adult socioeconomic position).

Covariates.Analyses were adjusted for a range of factors which can be associated with socioeconomic position and alcohol use.

Sociodemographic characteristics in 2009 measured included sex (Male vs. Female), age (>30 vs. ≤ 30 years), family situation (has a partner but no children, does not have a partner, vs. has a partner and children) (Jukkala et al., 2008), current unemployment (Yes vs. No), financial difficulties in the preceding 12 months (Yes vs. No); social support (Low vs. Intermediate/High), ascertained based on participants' contacts with family, friends, and participation in voluntary organizations (Berkman et al., 2004).

Substance use characteristics in 2009 included regular tobacco smoking (≥ 1 cigarette per day in the preceding 12 months: yes vs. no), regular cannabis use defined as ≥10 times in the preceding 12 months (yes vs. no) (Kuntsche et al., 2004).

Health characteristics in 2009 included obstetrical events such as pregnancy, childbirth, miscarriage or abortion in the preceding 12 months (yes vs. no) (Bailey et al., 2008; Stone et al., 2012), psychological difficulties in the preceding 6 months assessed by internalizing symptoms (i.e. depression/anxiety, somatic complaints or withdrawal) and externalizing symptoms (i.e. aggression) on the Adult Self-Report (ASR). Participants with a score ≥85th percentile on either scale were considered to have psychological difficulties (Achenbach and Dumenci, 2001). Chronic illness was defined as the lifetime occurrence of epilepsy, heart disease, diabetes, cancer, or other health problems leading to a hospitalization of at least one month.

Childhood and family characteristics: Childhood psychological difficulties (internalizing or externalizing symptoms) were assessed in 1991 using the Child Behavioral Checklist (Achenbach,

1991; Achenbach and Dumenci, 2001; Fombonne and Vermeersch, 1997). Children scoring above the 85th percentile on either scale were considered to have psychological difficulties. Family characteristics included parental tobacco smoking assessed yearly between 1989 and 2009 (yes vs. no) (Galera et al., 2005; Redonnet et al., 2012), parental alcohol use ascertained by parents' self-reports between 1992 and 2009 (abstinence: <0 unit of alcohol/week; heavy alcohol use: ≥ 28 units of alcohol/week in men and ≥ 21 units of alcohol/week in women) and by TEMPO participants' reports of parental alcohol dependence; these two measures were combined to compare participants whose parents abstained from alcohol or had an excessive alcohol use to those who had an intermediate level of alcohol use; parental depression assessed yearly from 1989 to 2009 by parental reports of depression symptoms or depression treatment combined with offspring reports of parental depression in the TEMPO study questionnaire (Touchette et al., 2012; Yaogo et al., 2012); parental divorce (Hope et al., 1998) ascertained yearly by parental reports of separation or divorce between 1991 to 2008.

Statistical analysis

First, we tested unadjusted associations between participants' social trajectory and alcohol use in multinomial regression analyses. Second, we conducted multivariate regression analyses adjusted for all covariates associated with alcohol use with a p-value ≤ 0.10 in univariate models. We found no statistically significant interactions between social trajectory and sex or age, therefore men and women as well as all age groups were studied simultaneously. All analyses were carried out using the SAS statistical software, version 9.3 (SAS Institute Inc, North Caroline).

RESULTS

Table 1 presents study participants' social, demographic, behavioral, health and family characteristics. For example, 52.5% of participants had a stable high social trajectory vs. 24.7% who had an upward social trajectory, 12.9% who had a downward social trajectory and 9.9% who had a

persistently low social trajectory. Overall, 11.1% of study participants abstained from alcohol, 74.7% had a low/intermediate use and 14.3% abused alcohol. Table 2 presents univariate associations between participants' characteristics and their alcohol use patterns. We observed a relationship between participants' social trajectory and alcohol use: participants who were in an upward, downward or low social trajectory were more likely to abstain from alcohol (compared to participants who had a stable high social trajectory, univariate ORs as follows: upward social trajectory: OR=2.26, 95%CI 1.38-3.71; downward social trajectory: OR=3.02, 95%CI 1.69-5.39; low social trajectory: OR= 3.12, 95%CI 1.68-5.79).

Compared with participants with a stable high social trajectory, those with a downward trajectory were more likely to abuse alcohol (univariate OR=1.69, 95%CI 1.02-2.79).

Table 3 presents results of multivariate regression models examining the relationship between participants' social trajectory and their alcohol use. After adjusting for all covariates associated with alcohol use in univariate analyses, the ORs associated with social trajectory were slightly reduced but remained elevated and statistically significant for abstinence. Compared with participants in a stable high social trajectory, those in an upward, downward or low social trajectory remained more likely to abstain from alcohol (fully adjusted ORs respectively: upward social trajectory: 1.89, 95%CI 1.05-3.40; downward social trajectory: OR=2.10, 95%CI 1.00-4.44; persistently low social trajectory: OR=3.01, 95%CI 1.38-6.56). The association between a downward social trajectory and alcohol abuse decreased and lost statistical significance (fully-adjusted OR=1.30, 95%CI 0.69-2.44).

In additional analyses, childhood and adult socioeconomic position predicted abstinence from alcohol to a similar extent (respectively: OR=1.85, 95%CI 1.13-3.04; 1.87, 95%CI 1.07-3.28). After excluding participants with obstetrical events or chronic illness in the preceding 12 months, ORs associated with socioeconomic position in childhood or in adulthood, or with participants' social trajectory slightly decreased but remained consistent with the main findings we report.

DISCUSSION

Using data from a large, prospective, community-based cohort study of young adults, we found that young adults' social trajectory from childhood is associated with alcohol abstinence in young adulthood. Compared to participants with a stable high social trajectory, those with an upward, downward or low social trajectory were two to three times more likely to abstain from alcohol even after accounting for multiple factors which were associated with alcohol use. Our findings suggest that alcohol use patterns in young adulthood are shaped by social determinants over the lifecourse.

Lifecourse socioeconomic position and alcohol use in young adulthood

Our study is one of few showing that lifecourse socioeconomic position is significantly associated with alcohol abstinence even after controlling for sex, age, family situation, employment status, social support, obstetrical events, chronic illness, psychological difficulties and parental alcohol use (Cerdeira et al., 2011; Stone et al., 2012). Risk factors of alcohol use are different at different stages of the lifecourse (Lang et al., 2009), and social trajectories inequalities can be explained both by "social selection" and "social causation" phenomena. The "social causation" hypothesis states that different socioeconomic trajectories lead to different patterns of alcohol use, through deleterious exposures and experiences that are associated with disadvantaged social trajectories. Consistent with this hypothesis, our finding may be explained by differences in individuals' peer supports (Kovess et al., 1999); individuals with disadvantaged lifecourse socioeconomic trajectories being more isolated and therefore less likely to be influenced in alcohol drinking by their peers. Even though we accounted for social support, some residual confounding may subsist (Jukkala et al., 2008; Llorens et al., 2011; Sanchez et al., 2011). Additionally, individuals with a descending social trajectory may suffer from poor health (Melchior et al., 2007) leading them to abstain from alcohol. Even though we accounted for the presence of chronic illness, some residual confounding cannot be excluded. Our finding may also be explained by differences in norms surrounding alcohol use according to social context. Prior studies have found that social occupational grade differentiated alcohol use patterns, perhaps reflecting a

culture of polarized drinking behaviors, characterized by either abstinence or excessive among subjects with low occupational grade (Cerdeira et al., 2011). The “social selection” hypothesis suggests that alcohol use affects individuals’ socioeconomic attainment (Dohrenwend et al., 1992). In fact, alcohol use can predict lower education attainment and then affect social trajectory. A previous study based on the GAZEL cohort showed that compared to participants with low or intermediate alcohol use, those with high alcohol use levels were less likely to experience upward career mobility (Leclerc et al., 1994). Most individuals first experiment with alcohol in adolescence and, our study was not designed to assess the causative role of substance use on school achievement. Future research should examine the contribution of alcohol use patterns in adolescence in inducing changes in socioeconomic trajectories in emerging adulthood. Overall, our finding probably reflects an accumulation of a broad range of adversities from childhood to emerging adulthood leading to specific alcohol use patterns.

Strengths and limitations

Our study has several strengths: 1) a large community sample of youths followed prospectively from childhood to young adulthood; 2) assessment of parental characteristics directly by parents, that is independently of youths’ assessments of alcohol use; 3) the possibility to account for psychological characteristics measured prospectively; 4) although women were more likely to be in less favorable trajectories and abstinent, the association between social trajectory and alcohol use was not entirely explained by sex or pregnancy. However, our study has limitations that need to be acknowledged before interpreting the results: 1) our sample included youths whose parents participate in an ongoing epidemiological study (GAZEL) and who were all employed by a large national company. Additionally, as in many longitudinal studies, youths from lower socioeconomic background were less likely to participate. Thus, we could not study individuals who suffered from especially harsh socioeconomic circumstances. Nevertheless, GAZEL participants hold a variety of occupations – from manual workers to managers- and live throughout France, and prior studies reported large socioeconomic inequalities in mortality and morbidity in this sample (Bowes et al., 2012; Redonnet et al., 2012); 2) among GAZEL and

TEMPO study participants, there is little ethnic and religious diversity; so we were not able to account for the impact of ethnicity or religion on alcohol use patterns. Ethnicity or religious background may be related to both socioeconomic transitions, as well as attitudes to alcohol. Indeed, these associations were found by a study conducted in France (Legleye et al., 2008). However, this study indicated that in France, alcohol abstainers are almost Muslim. Moreover, according to “Institut National des Etudes Démographiques” (Régnier-Loilier and Prioux, 2008), Muslims are mostly immigrant and make up 7-8% of the French population. Although ethnicity and religious background were not measured in our study, TEMPO study participants are most likely all and French (GAZEL study participants, TEMPO study participants’ parents, were all civil servants, that is of French citizenship). There are very few French-born individuals who are converted to Islam, so we can assume that there are very few Muslims who do not drink alcohol for religious reasons in our study sample. Overall, the rate of alcohol abstinence in our study was slightly inferior to rates reported in the general population in France but this difference was not statistically significant (11.1% of abstainers among TEMPO participants vs. 12.5% of abstainers in general population; $p=0.12$) (Observatoire Français des Drogues et des Toxicomanies, Juin 2011). Associations between lifecourse socioeconomic position and alcohol use patterns in the general population may be stronger than we report.

CONCLUSION AND POLICY IMPLICATIONS

Lifecourse socioeconomic position, as measured by social trajectory from childhood to adulthood, appears to predict alcohol abstinence in young adulthood, even after accounting for numerous factors associated with alcohol use. This suggests that alcohol use is shaped by early and contemporary social determinants.

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Conflict of interest: All authors declare that they have no conflict of interest to report.

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Table1- Socio demographic and individual characteristics of TEMPO study participants in 2009 (n=1,103).

| | Total (n=1103) | Alcohol Abstinence: 11.1%(n=12 0) | Low or intermediate alcohol use: 74.7% (n=811) | Alcohol abuse: 14.3% (n=155) | p |
|--|-------------------|--|--|---------------------------------------|---------|
| | % | % | % | % | |
| <u>Socioeconomic position</u> | | | | | |
| Family income in 1989: Intermediate/High | 65.2 | 8.8 | 76.1 | 15.1 | 0.01 |
| Low | 34.8 | 14.8 | 72.3 | 12.9 | |
| Level of education in 2009: | | | | | |
| > high school degree | 77.1 | 8.9 | 77.4 | 13.7 | 0.0004 |
| <= high school degree | 22.9 | 16.9 | 66.1 | 16.9 | |
| Social trajectory: High | | | | | |
| Upward | 52.5 | 6.6 | 79.3 | 14.0 | 0.0002 |
| Downward | 24.7 | 13.8 | 72.8 | 13.4 | |
| Low | 12.9 | 16.3 | 64.4 | 19.3 | |
| 9.9 | 18.0 | 69.0 | 13.0 | | |
| <u>Covariates</u> | | | | | |
| <u>Socio demographic characteristics in 2009</u> | | | | | |
| Sex: Female | | | | | |
| Male | 58.8 | 13.8 | 77.0 | 9.3 | <0.0001 |
| Age: ≤30 | 41.2 | 7.1 | 71.4 | 21.4 | |
| >30 | 62.9 | 10.4 | 73.0 | 16.6 | 0.01 |
| 37.1 | 12.3 | 77.5 | 10.3 | | |
| Family situation: | | | | | |
| Has a partner and children | 29.2 | 16.0 | 77.8 | 6.2 | <0.0001 |
| Does not have a partner | 41.4 | 10.8 | 67.3 | 21.9 | |
| Has a partner but no children | 29.4 | 6.1 | 82.7 | 11.2 | |
| Unemployment: No | | | | | |
| Yes | 92.5 | 10.0 | 76.1 | 13.9 | 0.009 |
| 7.5 | 18.8 | 61.3 | 20.0 | | |
| Financial difficulties: No | | | | | |
| Yes | 77.6 | 10.2 | 77.7 | 12.1 | <0.0001 |
| 22.4 | 12.9 | 64.3 | 22.8 | | |
| Social support: Intermediate/High | | | | | |
| Low | 75.6 | 10.0 | 74.7 | 15.3 | 0.03 |
| 24.4 | 14.9 | 74.0 | 11.1 | | |
| <u>Substance use characteristics in 2009</u> | | | | | |
| Regular Tobacco smoking: No | | | | | |
| Yes | 64.2 | 14.0 | 77.9 | 8.0 | <0.0001 |
| 35.8 | 5.5 | 69.5 | 25.1 | | |
| Regular cannabis use: No | | | | | |
| Yes | 89.7 | 11.6 | 77.5 | 11.0 | <0.0001 |
| 10.3 | 1.9 | 53.7 | 44.4 | | |
| <u>Health characteristics in 2009</u> | | | | | |
| Obstetrical events: No | | | | | |
| Yes | 78.0 | 8.2 | 75.5 | 16.3 | <0.0001 |
| 22.0 | 21.0 | 70.8 | 8.2 | | |
| Psychological difficulties: No | | | | | |
| Yes | 81.5 | 10.5 | 76.7 | 12.8 | 0.0036 |
| 18.6 | 13.1 | 65.8 | 21.1 | | |
| Chronic illness: No | | | | | |
| Yes | 95.3 | 10.3 | 75.6 | 14.1 | 0.015 |
| 4.7 | 23.9 | 65.2 | 10.9 | | |
| <u>Childhood/Family characteristics</u> | | | | | |
| Psychological difficulties in 1991: No | | | | | |
| Yes | 92.5 | 10.8 | 74.5 | 14.8 | 0.2 |
| 7.5 | 15.0 | 76.3 | 8.8 | | |
| Parental tobacco smoking : No | | | | | |
| Yes | 84.0 | 11.4 | 74.8 | 13.8 | 0.48 |
| 16.1 | 9.2 | 74.1 | 16.7 | | |
| Parental alcohol use: | | | | | |
| Low or intermediate | 80.1 | 11.0 | 75.9 | 13.1 | 0.0038 |
| Heavy alcohol use | 17.0 | 8.2 | 72.4 | 19.4 | |
| Abstinance | 2.9 | 27.6 | 51.7 | 20.7 | |
| Parental depression: No | | | | | |
| Yes | 85.8 | 9.9 | 75.1 | 15.0 | 0.03 |
| 14.2 | 17.4 | 71.2 | 11.4 | | |
| Parental divorce: No | | | | | |
| Yes | 85.2 | 10.9 | 74.9 | 14.2 | 0.97 |
| 14.8 | 10.5 | 75.8 | 13.7 | | |

Table2- Social trajectory position in relation to alcohol use: TEMPO cohort study, 2009, n=1103, univariate polynomial logistic regression analysis.

| | Abstinence vs. Low or intermediate use (n=811) | (n=120) or alcohol | Abuse (n=155) vs. Low or intermediate alcohol use (n=811) |
|--|---|---------------------------|--|
| | OR [95%CI] | | OR [95%CI] |
| <u>Socioeconomic position</u> | | | |
| Social trajectory: High | Reference | | Reference |
| Upward | 2.26[1.38-3.71] | | 1.04[0.67-1.61] |
| Downward | 3.02[1.69-5.39] | | 1.69[1.02-2.79] |
| Low | 3.12[1.68-5.79] | | 1.07[0.56-2.02] |
| <u>Covariates</u> | | | |
| <u>Socio demographic characteristics in 2009</u> | | | |
| Sex: Female | Reference | | Reference |
| Male | 0.56[0.36-0.86] | | 2.50[1.75-3.56] |
| Age: ≤30 | Reference | | Reference |
| >30 | 1.12[0.76-1.65] | | 0.58[0.40-0.85] |
| Family situation: | | | |
| Has a partner and children | Reference | | Reference |
| Does not have a partner | 0.78[0.51-1.21] | | 4.08[2.42-6.86] |
| Has a partner but no children | 0.36[0.21-0.63] | | 1.70[0.95-3.05] |
| Unemployment: No | Reference | | Reference |
| Yes | 2.32[1.26-4.30] | | 1.79[0.99-3.24] |
| Financial difficulties: No | Reference | | Reference |
| Yes | 1.53[0.98-2.39] | | 2.28[1.57-3.31] |
| Social support: Intermediate/High | Reference | | Reference |
| Low | 1.51[1.00-2.29] | | 0.73[0.48-1.14] |
| <u>Substance use characteristics in 2009</u> | | | |
| Regular tobacco smoking: No | Reference | | Reference |
| Yes | 0.44[0.27-0.72] | | 3.50[2.43-5.03] |
| Regular cannabis use: No | Reference | | Reference |
| Yes | 0.23[0.06-0.96] | | 5.85[3.79-9.03] |
| <u>Health characteristics in 2009</u> | | | |
| Obstetrical events: No | Reference | | Reference |
| Yes | 2.73[1.82-4.10] | | 0.53[0.32-0.89] |
| Psychological difficulties: No | Reference | | Reference |
| Yes | 1.45[0.90-2.33] | | 1.92[1.28-2.87] |
| Chronic illness: No | Reference | | Reference |
| Yes | 2.69[1.31-5.55] | | 0.90[0.34-2.35] |
| <u>Childhood/Family characteristics</u> | | | |
| Psychological difficulties in 1991: No | Reference | | Reference |
| Yes | 1.36[0.71-2.61] | | 0.58[0.26-1.29] |
| Parental tobacco smoking : No | Reference | | Reference |
| Yes | 0.81[0.47-1.42] | | 1.22[0.78-1.90] |
| Parental alcohol use: Low or intermediate | Reference | | Reference |
| Heavy alcohol use | 0.78[0.43-1.42] | | 1.56[1.01-2.42] |
| Abstinence | 3.67[1.51-8.92] | | 2.33[0.88-6.13] |
| Parental depression: No | Reference | | Reference |
| Yes | 1.85[1.11-3.09] | | 0.80[0.45-1.43] |
| Parental divorce: No | Reference | | Reference |
| Yes | 0.95[0.54-1.67] | | 0.96[0.58-1.58] |

Table3-Social trajectory in relation to alcohol use: TEMPO cohort study, 2009, n=1103: multivariate polynomial logistic regression analysis [2009(n=1,103)].

| | Abstinence (n=120) vs. Low or intermediate alcohol use (n=811) (Reference) | | | Abuse (n=155) vs. Low or intermediate alcohol use (n=811) (Reference) | | |
|---|---|--|---------------------|--|--|---------------------|
| | Age and sex adjusted model | Age, sex and Parental alcohol use adjusted model | Fullyadjusted model | Age and sex adjusted model | Age, sex and Parental alcohol use adjusted model | Fullyadjusted model |
| | OR [95%CI] | OR [95%CI] | OR [95%CI] | OR [95%CI] | OR [95%CI] | OR [95%CI] |
| <u>Socioeconomic position</u> | | | | | | |
| Social trajectory: | | | | | | |
| High | Reference | Reference | Reference | Reference | Reference | Reference |
| Upward | 2.22[1.35-3.65] | 1.87[1.10-3.19] | 1.89[1.05-3.40] | 1.12[0.72-1.75] | 1.16[0.73-1.84] | 1.15[0.69-1.91] |
| Downward | 3.20[1.78-5.73] | 3.15[1.71-5.82] | 2.10[1.00-4.44] | 1.48[0.89-2.48] | 1.42[0.83-2.45] | 1.30[0.69-2.44] |
| Low | 3.27[1.75-6.12] | 3.83[1.99-7.39] | 3.01[1.38-6.56] | 1.01[0.52-1.93] | 1.21[0.62-2.36] | 1.10[0.49-2.46] |
| <u>Covariates</u> | | | | | | |
| <u>Sociodemographic characteristics in 2009</u> | | | | | | |
| Sex: Female | Reference | Reference | Reference | Reference | Reference | Reference |
| Male | 0.57[0.37-0.89] | 0.50[0.31-0.81] | 0.50[0.28-0.88] | 2.47[1.72-3.56] | 2.42[1.65-3.54] | 2.55[1.65-3.95] |
| Age: ≤30 | Reference | Reference | Reference | Reference | Reference | Reference |
| >30 | 1.13[0.75-1.71] | 1.24[0.80-1.93] | 1.09[0.63-1.88] | 0.56[0.38-0.84] | 0.63[0.42-0.95] | 0.92[0.56-1.52] |
| Family situation: | | | | | | |
| Has a partner and children | - | - | Reference | - | - | Reference |
| Does not have a partner | - | - | 1.16[0.59-2.30] | - | - | 2.72[1.29-5.72] |
| Has a partner but no children | - | - | 0.75[0.35-1.60] | - | - | 1.45[0.66-3.18] |
| Unemployment: | | | | | | |
| No | - | - | Reference | - | - | Reference |
| Yes | - | - | 2.18[0.96-4.94] | - | - | 1.27[0.61-2.64] |
| Social support: | | | | | | |
| Intermediate/High | - | - | Reference | - | - | Reference |
| Low | - | - | 2.04[1.21-3.45] | - | - | 0.69[0.40-1.18] |
| <u>Health characteristics in 2009</u> | | | | | | |
| Obstetrical events: | | | | | | |
| No | - | - | Reference | - | - | Reference |
| Yes | - | - | 2.93[1.59-5.40] | - | - | 0.92[0.45-1.88] |
| Psychological difficulties: | | | | | | |
| No | - | - | Reference | - | - | Reference |
| Yes | - | - | 0.99[0.53-1.85] | - | - | 2.38[1.44-3.94] |
| Chronic illness: | | | | | | |
| No | - | - | Reference | - | - | Reference |
| Yes | - | - | 1.44[0.53-3.95] | - | - | 1.19[0.42-3.36] |
| <u>Childhood/Family characteristics</u> | | | | | | |
| Parental alcohol use: | | | | | | |
| Low or intermediate | - | Reference | Reference | - | Reference | Reference |
| Heavy alcohol use | - | 0.73[0.39-1.36] | 0.71[0.35-1.44] | - | 1.62[1.02-2.57] | 1.60[0.94-2.73] |
| Abstinence | - | 3.29[1.19-9.08] | 3.04[0.88-10.5] | - | 2.19[0.80-6.00] | 2.14[0.75-6.12] |