

## Epidemiology

# Excessive substance use among young people consulting family doctors: a cross-sectional study

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## Abstract

**Background.** Family doctors can only play a role in the prevention of excessive substance use in young people if those affected are seen in the practice.

**Objective.** To describe the prevalence of excessive substance use among young people consulting family doctors in a European context.

**Methods.** As part of a trial of an intervention addressing substance use we collected data from young people consulting 32 family doctors in the French-speaking part of Switzerland. Before the consultation, consecutive patients aged 15–24 years completed a self-administered questionnaire on their general health and substance use. Outcomes were excessive alcohol (defined as  $\geq 1$  episode of binge drinking), excessive cannabis (use  $\geq 1$ /week), regular tobacco ( $\geq 1$  cigarettes a day) and/or any other substance use in the past 30 days. Prevalence data were computed with 95% confidence intervals (CIs) adjusted for clustering within practices, stratified by age and gender.

**Results.** Between February 2009 and November 2010, 636 patients were eligible. Participation rate was 93.4% ( $n = 594$ , 53% female). The prevalence of excessive use in the past 30 days was alcohol 44.9% (95% CI: 37.8–52.1), cannabis 11.1% (95% CI: 8.0–14.1), tobacco 23.4% (95% CI: 19.0–28.1) and any other drug 2.6 (95% CI: 1.4–4.2). Excessive use was higher in males than in females. Except for tobacco prevalence of excessive use was only slightly higher in young adults compared to adolescents.

**Conclusion.** Excessive substance use is frequent among young people consulting family doctors in a European context. Future research should provide guidance about how to best seize this window of opportunity for prevention and early intervention.

**Key words:** Adolescent, binge drinking, family practice, marijuana smoking, prevalence, tobacco use.

## Introduction

Adolescence and young adulthood are periods of exploration during which young people often initiate substance use. For many young

people use is only brief but for others this exploration leads to substance misuse with consequences that affect adolescents' development and their entire adult life (1). Because interventions have been shown

to be effective in the clinical setting, the US preventive task force recommends screening and brief intervention for alcohol misuse in adults as from the age of 18 years seen in primary care (2). Some say these recommendations should extend to adolescents but in the absence of evidence in favour of effective interventions in this age group no clear recommendation has been issued (1–3). Similarly, due to a lack of studies in this context, the value of screening for illicit substance use in primary care, both in adolescents and in adults, remains debated (2). In addition to having doubts in relation to the effectiveness of screening and interventions to address excessive substance use in this patient group, and facing other barriers such as time constraints and lack of expertise in this field, family doctors may also believe that harmful substance use is less common among their younger patients (4,5). Screening for alcohol and illicit drug use may therefore not be high on their priority list (6). Yet population-based studies suggest that excessive alcohol (i.e. in this age group mainly binge drinking) and/or cannabis use is not uncommon among adolescents and young adults in Europe and the USA. Thirty to 50% of them report binge drinking and ~10% use cannabis on a regular basis (7–11). Tobacco use remains frequent in Europe with prevalence rates ranging between 20% and 40% among young adults (10–13). Analysing data from a population-based study in Switzerland, we have shown that young people engaging in health compromising behaviours were as likely as others to visit a family doctor at least once a year (14). Thus the proportion of young people engaging in excessive substance use is likely to be high among young people in family practice. Yet we found no studies reporting the prevalence of excessive substance use among young people consulting family doctors in Europe. The extent to which family doctors have opportunities to address this problem is therefore unknown. To date many studies in relation to substance use in young people have been conducted in the USA, a country in which alcohol and substance use are totally prohibited in adolescence (15). In addition, these studies often focus on the identification of problem or dependant users who may need specialized care, rather than on excessive users who could benefit from early primary care interventions to modify their behaviour (1,16,17). Family doctors working in countries in which underage drinking is not illegal and occasional cannabis use tolerated may struggle to differentiate occasional users from excessive users among their young patients (18). A clearer definition of excessive use and an estimate of the expected prevalence of such use among young people seen in family practice could guide primary care providers in their screening task.

Comparatively fewer doubts surround screening for tobacco use in young people in primary care: daily use is a common threshold to define unhealthy tobacco use, and both interventions to prevent initiation and those addressing regular use appear to be effective in this context (2). Tobacco use often begins in adolescence and population-based studies show that regular tobacco use remains frequent in the European context.

The aim of this study was to measure the prevalence of excessive alcohol and illicit drug use and of tobacco use in young people consulting family doctors in Switzerland in order to provide guidance about opportunities for prevention and early intervention in a European context.

## Methods

This cross-sectional study used baseline data collected as part of the Primary care Intervention Addressing Substance Misuse in Adolescents (PRISM-Ado) trial, a cluster randomized trial of the effectiveness of training primary care physicians to use a brief intervention to address excessive substance use in young people (19).

The study protocol was approved by the Ethics Committee for Studies in Outpatient Care (protocol 08–28).

## Participants and procedure

Young people between the ages of 15 and 24 years were recruited in the practices of 32 family doctors (general internists and general paediatricians) in the French-speaking part of Switzerland. Patients with any problem affecting their ability to consent (such as trauma or acute illness requiring immediate attention, inability to read and understand French, severe mental illness) were excluded, as were those currently or recently undergoing treatment for substance dependence. The physicians were volunteers participating in the PRISM-Ado trial. Most had experience in addressing excessive alcohol use in adults, but were not used to discussing substance use issues with young people in their practice (19). Consecutive young people consulting for any motive were invited to complete a confidential questionnaire about their health and substance use in the waiting room before the consultation. Completed questionnaires were placed in a sealed envelope and forwarded directly to the research team. They were not made available to the primary care physician in the consultation.

The choice of the age range 15–24 years ('youth' according to the United Nations definition) was based on two considerations: (i) young people in this age group share a similar burden of disease throughout this developmental phase from adolescence into adulthood (20) and (ii) from the age of 15 years they can participate in low-risk studies such as this one without asking for parental consent (21).

## Measures

Questions about substance use were taken from the Dep-Ado clinical questionnaire, a validated substance use screening tool in French (22). Patients were asked about the frequency of various substance uses over the past 30 days, age of initiation, frequency of binge drinking and psychosocial consequences.

We defined excessive alcohol use as at least one episode of binge drinking in the past 30 days, based on a 2- to 6-fold increased risk of adult dependence and adverse psychosocial outcomes in young people with such levels of use in cohort studies (23,24). As in other previous European studies, a binge drinking episode was defined as the consumption of five drinks (four for females) or more on one occasion (10,24,25). Similarly, as this level of use in adolescence has been associated with a 2- to 10-fold increase in adverse outcomes in adulthood, we set the threshold for excessive cannabis use at once a week or more frequently in the past 30 days (26). The questions were 'In the past 30 days, how many times did you have 5 (4 drinks for females) drinks of alcohol or more on the same occasion?' and 'In the past 30 days, did you use cannabis? If so, how often?' Response options were approximately once; on weekends or once or twice during the week; three times or more a week but not every day; or every day. The young people were instructed to consider as a drink 'what is usually served in a restaurant if you order this type of alcohol'.

Socio-demographic variables were also measured: patient's age, gender, country of birth, school or professional activity and rural or urban doctor's practice.

## Statistical analysis

Binary or categorical variables were described using proportions and 95% confidence intervals adjusted for clustering within practices, stratified by gender and by age group (minors of less than 18 years old versus young adults of 18 years and over, since recommendations for screening and intervention are different in these two age groups).

Logistic regression adjusted for clustering was used to explore the association between socio-demographic characteristics and excessive alcohol, cannabis or tobacco use. We used Stata software to analyse the data.

## Results

Between February 2009 and November 2010, 636 patients were eligible for the study. 40 (6.3%) declined and two did not complete the baseline survey. Thus participation rate was 93.4% ( $n = 594$ ). Most patients reported consulting for general reasons (check-up or immunization), common respiratory or skin disorders, or depressive symptoms. Only four patients reported substance use as their main reason for encounter (19).

Table 1 summarizes participants' main socio-demographic characteristics, stratified by gender. There were missing substance (mainly binge drinking) use data for 24 patients, whose characteristics were slightly different from the others: they were more likely to be migrants to Switzerland and less likely to be students.

Most patients (75%) had drunk alcohol, 45% had smoked at least one cigarette and nearly 20% had used cannabis at least once in the past 30 days. Excessive alcohol use was common, particularly in males. Approximately 10% of patients reported smoking cannabis at least once a week and ~25% smoked at least one cigarette a day (Table 2). Binge drinking was significantly less frequent

among patients consulting in urban compared to non-urban practices (37.6% versus 56.9%, odds ratio [OR] = 0.5,  $P = 0.006$ ). Multivariate logistic regression adjusting for socio-demographic variables and clustering within practices also showed that binge drinking behaviour was significantly less frequent in females (OR = 0.43,  $P < 0.001$ ) and in students (OR = 0.67,  $P = 0.03$ ). Excessive cannabis use was more common in the urban context (13.0% versus 8.0%, OR = 2.2,  $P = 0.005$ ), but was, as binge drinking, less frequent in females (OR = 0.29,  $P < 0.001$ ) and in students (OR = 0.52,  $P = 0.003$ ). Daily smoking was less frequent in adolescents than young adults (OR = 0.6,  $P = 0.01$ ) and in students (OR = 0.36,  $P < 0.001$ ). These associations remained similar when additionally adjusting for maternal education, as a (imperfect) proxy measure of socio-economic status (27). Less than 3% of participants reported other drug use (cocaine, ecstasy etc.) in the past month.

## Discussion

### Summary of main findings

This study reports on the prevalence of excessive substance use among young people aged 15–24 years old consulting family doctors in a European context. Binge drinking behaviour was frequent with nearly half of the patients reporting at least one episode of binge drinking in the past 30 days. One in 4 patients smoked cigarettes daily and

**Table 1.** Characteristics of 594 patients aged between 15 and 24 years recruited before their consultation with one of 32 family doctors involved in the study (numbers are percentages unless indicated otherwise)

Characteristic	Patients without missing substance use data ( $n = 570$ )		Patients with missing substance use data ( $n = 24$ )		Total sample ( $n = 594$ )
	Male ( $n = 265$ )	Female ( $n = 305$ )	Male ( $n = 13$ )	Female ( $n = 11$ )	
Mean age, years (SD)	18.4 (2.5)	18.6 (2.7)	17.7 (1.7)	18.2 (2.2)	18.5 (2.6)
Born in Switzerland	87.5	82.6	53.8	81.8	84.2
Student	47.9	63.3	23.1	45.5	55.2
Self-assessed health good, very good or excellent	98.9	95.2	100	90.9	96.9
Doctor in urban area	57.0	66.6	38.5	45.5	61.3

SD, standard deviation.

**Table 2.** Prevalence of substance use in patients aged 15–24 years consulting in primary care practice in the French-speaking part of Switzerland, by gender and age-group (adolescents versus young adults)<sup>a</sup>

Substance use in past 30 days	Total sample <sup>b</sup>		Male <sup>b</sup>		Female <sup>b</sup>		15–17 years old <sup>b</sup>		18–24 years old <sup>b</sup>	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
<b>Alcohol</b>										
No alcohol use	25.0	(19.9–30.0)	18.5	(12.4–24.5)	30.6	(24.5–36.8)	36.1	(29.0–43.1)	16.9	(12.3–21.5)
Binge drinking at least once	44.9	(37.8–52.1)	57.4	(48.2–66.4)	34.1	(28.0–40.2)	42.1	(34.6–49.5)	47.0	(37.7–56.3)
<b>Cannabis</b>										
No cannabis use	81.1	(77.3–84.5)	73.5	(67.6–79.5)	87.6	(84.1–91.2)	84.5	(79.2–89.9)	78.6	(73.7–83.5)
Cannabis use at least once a week	11.1	(8.0–14.1)	17.2	(12.3–22.2)	5.7	(2.8–8.7)	8.5	(4.7–12.3)	12.9	(8.9–16.9)
<b>Other illegal substance<sup>a</sup></b>										
Any use	2.6	(1.4–4.2)	3.8	(1.8–6.8)	1.6	(0.5–3.8)	2.1	(0.7–4.8)	3.0	(1.5–5.5)
<b>Tobacco</b>										
No tobacco use	56.3	(52.1–60.5)	51.5	(45.3–57.7)	60.4	(55.1–65.8)	62.3	(56.1–68.6)	51.8	(47.6–56.0)
Daily tobacco use	23.4	(19.0–28.1)	26.7	(20.1–33.2)	20.9	(15.4–26.4)	15.8	(10.8–20.8)	29.3	(24.2–34.5)

CI, confidence interval.

<sup>a</sup>Ecstasy, cocaine, heroin, lysergic acid diethylamide (LSD), amphetamins.

<sup>b</sup>N varied due to missing values. Total sample: 570–587; males: 265–272; females: 305–316; 15–17 years old: 240–247; 18–24 years old: 330–341.

approximately 1 in 10 were regular cannabis users. Substance use was more common in males but prevalence rates were also high in females, particularly for binge drinking (34%). Binge drinking was more common in non-urban areas and cannabis use more prevalent in urban areas. Students (in secondary school or university) were less likely to report excessive substance use or regular smoking. Differences between adolescents and young adults were modest, except for smoking.

### Interpretation of findings and comparison with previous literature

These findings are in line with results from population-based studies, thus confirming, if need be, that in a country with universal health coverage young people consulting in family practice are an unselected population (8,10–12,28). This resonates with our previous finding that young people with health-compromising behaviours were as likely as others to visit family doctors (28,29).

Our results differ from those reported by Gryczynski *et al.* (16) in a study conducted among adolescents in health centres in Baltimore, MD, USA, in which the prevalence of problem and/or dependent users was 9.4% for alcohol, 15.3% for cannabis and 6.1% for tobacco. This study included younger adolescents (from the age of 12), and used definitions of problem use based on the presence of at least one *Diagnostic and Statistical Manual of Mental Disorders*, 5th Edition criterion. Thus, it focused on adolescents who may already need addiction treatment, rather than on all those who could benefit from prevention or early intervention in a primary care context. Similarly, another study conducted in primary care practices in the USA, using the CRAFFT screening tool, reported a prevalence of 15% for at-risk substance use among adolescents between the ages of 12 and 18 years old (30). We found no previous study specifically describing the prevalence of substance use among young adults (18–24 years old) consulting in primary care.

### Strengths and limitations

Recruitment of patients occurred directly in the practices and could not be supervised by the research team. However, in order to make recruitment easier and minimize selection bias (that could occur if practice staff were asked to invite selected types of patients to participate), the study involved consecutive young people consulting their family doctor for any reason. Participation rate was high, and the young people could consent to participation without asking their parents, thus favouring participation and further limiting a potential selection bias (31). This cross-sectional study did not involve a random sample of family doctors. Participating family doctors were volunteers, with a special interest in the theme of young people and substance use. Thus the patients seen in their practices may not entirely be representative of the patients usually seen by family doctors in the French-speaking part of Switzerland. However, these doctors were not experts in addiction medicine, as illustrated by the fact that only four patients consulted specifically for a substance-use-related problem. Data were collected through self-report, and thus some level of under-reporting of substance use cannot be excluded. However, self-report of substance use has previously been shown to be a reliable measure in young people (32). We used a paper-based anonymous questionnaire to collect data about substance use, a preferred and reliable option for studies involving young people (32,33). The data they provided were not made available to the doctors. As young people previously highlighted, this is likely to have favoured honest responses from young people about substance use (33,34). However, as a consequence, our results provide no information

about the proportion of young people who would be prepared to discuss their substance use with their family doctor. We chose thresholds for excessive substance use based on data from cohort studies reporting increased risk of adverse adult outcomes for young people with that level of use (23,24,26,35). This definition was also inspired by definitions of excessive alcohol use in adults (18). However, other studies in primary care have used other definitions of excessive use, thus limiting the comparisons that can be made.

### Implications for clinical practice and future research

Our findings suggest that excessive substance use is frequent among young people consulting family doctors in a European context. Thus family doctors have opportunities for prevention and early intervention addressing substance use in this age group. Most young people did not present with a substance-related motive for encounter. This highlights the need to favour opportunistic screening in this context. Smoking was significantly more common in young adults compared to adolescents: the window of opportunity for prevention in the younger age group should not be neglected. Although brief interventions addressing excessive substance use in adults have been shown to be effective, evidence is still lacking in relation to effective preventive and early intervention strategies for adolescents and young adults consulting in primary care (2). In the PRISM-Ado trial we showed that overall there was a 28% reduction in the proportion of young patients reporting excessive alcohol and/or cannabis use 12 months after a consultation with a family doctor, regardless of whether they had been exposed to a specific intervention (19). This suggests that there might be a positive impact of screening alone, be it by just completing a survey in the waiting room or in the consultation (36). Further research should focus on the development of effective screening strategies in primary care, as well as the search for evidence in favour of effective preventive and early intervention strategies (19,37). Since the immediate consequences of substance use are particularly conspicuous in young adults (for example mortality from road traffic injuries is highest in young adults (38)), a particular emphasis should be placed on the development of interventions that are responsive to young adults' needs (39,40). The role that family and peers may play to support primary care interventions also deserves attention.

### Conclusion

Half of the adolescents and young adults visiting their family doctor in a European context reported excessive substance use, even though very few consulted for this reason. Although evidence for effective interventions is lacking, systematic screening for substance use in primary care seems justified in this age group.

In view of the important burden of disease related to these health-compromising behaviours both in young people and in adults, priority should be given to the further development and trial of effective approaches to address excessive substance use in adolescents and young adults consulting in family practice.

### Declaration

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Ethical approval: Ethics Committee for Studies in Outpatient Care (protocol 08-28).

Conflict of interest: none.

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