

# AGE AT INITIATION OF DRUG USE AS AN INDICATOR FOR PROBLEMATIC USE

Teresa Hernández López, Jesús Roldán Fernández, Anunciación Jiménez Frutos, Carlos Mora Rodríguez,  
Dolores Escarpa Sánchez-Garnica and María Teresa Pérez Álvarez  
*Madrid Salud, City Council of Madrid*

*The aim of our research was to study the relationship between early initiation of tobacco, alcohol and drug use and problematic use in a sample of 6280 young people from Madrid with an age range of 15-24. Early experimentation with tobacco, alcohol (prior to age 14) or cannabis (prior to age 15) is related to higher prevalence of daily tobacco smoking and cannabis use, to daily-average abusive drinking patterns and to either regular polyconsumption or concurrent consumption of 2 or more drugs in the last month. An association was also found with negative consequences of alcohol and drug use for financial, academic and family aspects. This research reveals that the strength of the associations increases as the number of substances with early first use increases. Since this is the case for almost all the associations studied, it would seem relevant in future studies to consider analyzing early initiation of use based on groups of substances.*

**Key words:** early initiation of use, tobacco, alcohol, drugs, problematic use, adolescence.

*En este trabajo se estudia la relación entre el inicio precoz de consumo de tabaco, alcohol y cannabis y los consumos problemáticos, en una muestra de 6280 jóvenes madrileños, entre 15 y 24 años. La experimentación temprana con tabaco, alcohol (antes de los 14 años) o cannabis (antes de los 15 años) se asocia a prevalencias más elevadas de consumo diario de tabaco y de cannabis, a patrones de alcohol abusivo en promedio diario y a policonsumo regular o consumo concurrente de 2 o más drogas en el último mes. También se asocia con consecuencias negativas provocadas por el consumo de alcohol o drogas en el ámbito académico, económico, familiar y social. Se observa que la fuerza de las asociaciones encontradas aumenta a medida que aumenta el número de sustancias de inicio precoz, resultando esto una constante en la práctica totalidad de las asociaciones estudiadas, lo que sugiere que sería interesante incorporar en estudios futuros el análisis de inicios precoces de consumos agrupados.*

**Palabras clave:** Inicio precoz, tabaco, alcohol, drogas, consumo problemático, adolescencia.

The use of tobacco, alcohol and illegal drugs is responsible for a considerable burden of general morbimortality (Ezzati et al., 2002). Deaths due to alcohol, tobacco and other drugs account for a substantial component of mortality due to all causes, and especially of premature mortality (Britton et al., 2003; Rehm, Giesbrecht, Patra & Roerecke, 2006; Single, Robson, Rehm & Xie, 1999), with the resulting economic and social costs (Fenoglio, Parel & Kopp, 2003; Rehm et al., 2007). In the USA it is estimated that 70% of deaths in the population aged 10 to 24 are due to accidents, injuries, homicide and suicide (Eaton et al., 2006). Drug use is often related to such causes.

Worldwide, an estimated 5% of deaths in adolescents and young adults aged 15 to 29 are attributable to alcohol (Jeringan, 2001). A recent study on health in the city of Madrid concluded that the mortality attributable to alcohol in the year 2003 was 3%, with substantial differences by age, so that those aged 20 to 34 presented the greatest mortality attributable to alcohol, with a rate of 16%. Accidents were the first direct cause of death associated with alcohol use in this group, followed by murder and suicide (Madrid Salud, 2005).

The use of drugs in Western societies is a phenomenon that is particularly widespread among young people, and especially males. However, a tendency has been observed, consistently and in various countries, toward a reduction of the classic gender-based discrepancy in drug use in the youngest cohorts, which also present higher levels of the use of illegal drugs (OED, 2005; Madrid Salud, 2006; Degenhardt et al., 2008). In general, the risk period for the initiation of drug use is mid- to late-adolescence, beginning with experimentation with legal drugs, moving

The original Spanish version of this paper has been previously published in *Intervención Psicosocial*, 2009, Vol. 18, No 3, 199-212

.....  
Correspondence concerning this article should be addressed to Teresa Hernández López, Departamento de Evaluación y Calidad, Madrid Salud, c/ Juan Esplandiu 11, bajo, 28007 Madrid, Spain.  
E-mail: hernandezlt@munimadrid.es

on to illegal substances and with a high incidence of transition to regular use patterns in the first three years after initial experimentation (Wittchen et al., 2008). A study which looked at cannabis use in six European countries found that age at initiation of cannabis use is lower in countries with the highest prevalence of its use in the adolescent population (Kokkevi, Nic Gabhainn & Spyropoulou, 2006).

Age at initiation of various drugs is a variable classically explored in population-based studies on use, basically involving adolescent and young adult populations, since it directly indicates target ages in which effective preventive intervention should take place, including both universal primary preventive programmes and those aimed more specifically at the prevention of abuse- and dependence-related disorders. Today, more evidence is available about the effectiveness of school-based programmes for the prevention of alcohol, tobacco and illegal drug use (Fernández, Nebot & Jané, 2002; Faggiano, Vigna-Taglianti, Versino, Zambon, Borraccino & Lemma, 2007; Thomas & Perera 2007), as well as of preventive interventions in the family and community contexts (Foxcroft, Ireland, Lister-Sharp, Lowe & Breen, 2007; Grimshaw & Stanton, 2007; Otead & Lancaster, 2007), which facilitates the planning of effective and timely responses.

Likewise, research has identified numerous risk factors related to the initiation of the use of legal substances and cannabis. Prospective research, twin studies and a wide range of reviews have identified individual (sex, age, school performance) and family factors (use by parents or siblings, family problems, parents' vigilance and relationship with one's parents) as associated with the initiation of use, in addition to factors related to social influence and environment, such as use by peers and substance availability (Hayatbakhsh, Mamun, Najman, O'Callaghan, Bor & Alati, 2008; Kendler, Schmitt, Aggen, & Prescott, 2008; Khuder, Price, Jordan, Khuder & Silvestri, 2008; Orwin, 2009). Further aspects found to be related to initiation of use include stressful events in childhood (Andersen & Teicher, 2008) and lower socioeconomic class in childhood and adolescence, though the influence of this latter factor is somewhat more controversial (Degenhardt et al., 2008; Lemstra et al., 2008; Daniel et al., 2009).

Fowler et al. (2007) carried out a study with pairs of twins exploring the relationship between the initiation of use and the progression to problematic use of tobacco, alcohol and cannabis and the influence of environmental and genetic factors. They found a higher incidence of

progression to more intensive or regular use in tobacco and cannabis than in the case of alcohol. They highlighted the greater weight of environmental factors than genetic factors in the initiation of alcohol use, while genetic factors would explain a large part of intensive use. In tobacco and cannabis, genetic and environmental factors account for similar proportions of initiation and the transition to problematic use, and though cautiously, these authors conclude that interventions aimed at the avoidance of early initiation would be indicated in tobacco and cannabis, whilst in the case of alcohol, research and intervention should focus on identifying and acting on the factors that underlie more intensive or problematic use.

Early initiation of drug use is associated with problematic use and other risk behaviours. Early use of tobacco (smoking) has been found to be linked to habitual use in adulthood and to less interest in quitting or in one's confidence about being able to do so; moreover, it has been associated with the initiation of alcohol use and problematic drinking (Lando et al., 1999; Mathers, Toumbourou, Catalano, Williams & Patton, 2006). A study which analyzed age at first tobacco use in pregnant women and giving up smoking in pregnancy found that initiation prior to age 15 was associated with a lower tendency for abstinence during pregnancy (Chen, Stanton, Shankaran & Li, 2006).

Early initiation of alcohol use has also been associated with more intensive drinking, greater frequency of drunkenness, more prevalent use of other drugs (Vieira, Ribeiro & Laranjeira, 2007) and alcohol abuse/dependence disorders in adulthood (Grant et al., 2006; Warner, White & Johnson, 2007).

A longitudinal study concluded that early initiation of tobacco, alcohol and cannabis use is related to higher rates of transition to abuse and dependence disorders, especially in tobacco, though the most rapid transition to abuse was observed for cannabis (Behrendt, Wittchen, Höfler, Lieb & Beesdo, 2009).

DuRant et al. (1999) analyzed the relationship between early initiation (age 11 or under) of drug use and health risk behaviours in adolescents (including indicators of violence and suicide, travelling with a driver under the effects of alcohol and riding a motorcycle without a helmet), finding the strongest correlation with problematic behaviours for early initiation of smoking, though early use of alcohol, cannabis and cocaine were also linked to a set of risk behaviours.

A recent review on cannabis concluded that early initiation of its use and its regular use in adolescence are

associated with problematic use of cannabis and of other drugs, with poorer school performance, deterioration of mental health, sexual risk behaviours and delinquency (Copeland & Swift, 2009). Furthermore, studies with twins have found early first use of cannabis to be associated with higher risk of illegal drug use and problems of abuse and/or dependence (Lynskey et al., 2003; Agrawal, Neale, Prescott & Kendler, 2004), whilst other research on the early use of this drug have found it to be linked to poor school performance (Hall, 2006). Cannabis use constitutes a risk factor for the development of psychosis, with a time-based and dose-response relationship; moreover, various studies have shown the substantial influence of early first use for the development of psychotic symptoms (Arseneault, Cannon, Poulton, Murray, Caspi & Moffitt, 2002; Hall, 2006; Roncero, Collazos, Valero & Casas, 2007; Stefanis, Delespaul, Herquet, Bakoula, Stefanis & van Os, 2004).

Research on the initiation of other illegal drug use has found associations similar to those described so far; one in particular on inhalants (the substances typically first used by adolescents in certain social contexts) found an association between their use prior to age 14 and subsequent heroin use (Storr, Westergaard & Anthony, 2005).

As research has shown, then, early first use of substances is considered one of the best predictors of abuse or dependency disorders. Nevertheless, few studies have analyzed early use of the mostly widely used drugs (alcohol, tobacco and cannabis) as a group, and the implications of that grouping. In one of these few studies, Agrawal (2006), in research with a sample of women, found an association between early first use of tobacco, alcohol and cannabis and experimentation with other illegal drugs, suggesting that early initiation of the use of more than one substance contributes to increasing the risk of experimenting with other drugs.

The actual situation in particular contexts – which will depend on the extent of drug use in adolescence, age of its initiation and factors such as social permissiveness with regard to certain substance use – may differ considerably. Hence, there is a need for local studies that provide the necessary information for better preventive planning.

The aim of the present work is to explore the relationship between early initiation of alcohol, tobacco and cannabis use and problematic use in the adolescent and young adult population of the city of Madrid. The 2005 Madrid City Council survey database on drug use

in the population aged 12 to 24 permits an approach to these aspects from the perspective of gender and age.

## OBJECTIVE

To identify age at first use of different substances and its association with problematic use.

## MATERIAL AND METHOD

### *Type of design*

Cross-sectional study.

### *Study context*

Universe: Population aged 12 to 24 in the municipal district of Madrid.

Sample: We carried out multi-stage sampling with disproportionate stratification by age and district, so as to lend representativeness to each of Madrid's 21 districts. A total of 7500 interviews took place, with a margin of error of  $\pm 1.13\%$ , at a confidence level of 95.5%  $p=q=0.5$ .

### *Variables:*

- ✓ Sociodemographic: age and sex.
- ✓ Drug use:
  - Substances: Tobacco, alcohol, cannabis, cocaine, ecstasy and designer drugs, amphetamines, hallucinogens, inhalants, heroin and tranquillizers (either prescription or non-prescription).
  - For all substances, participants were asked whether or not they had ever used them; for the illegal substances, they were asked about their use in the last 12 months; and for all substances, their use and its frequency in the last month.
- ✓ Age at first use for each drug.
- ✓ Consequences of alcohol or drug use:
  - Skipping school (truancy), poorer school performance, family conflict, problems at work, financial problems, conflicts with friends, illness, and others. Being absent from work applies only to those aged 18 and over.
- ✓ Circumstances related to alcohol and/or drug use:
  - Having accidents after using alcohol or drugs, getting involved in fights or arguments after using alcohol or drugs, and driving after having drunk alcohol or taken drugs (only for those aged 18 and over).
- ✓ Early initiation of tobacco, alcohol and cannabis use:
  - To define the cut-off point for "early age at initiation of use" we considered the age at first use situated in percentile 30-35 for each substance. Thus, for tobacco and alcohol early initiation is that which takes

place before age 14, and for cannabis, that which occurs prior to age 15.

- ✓ Abusive or risk drinker: average alcohol use 50cc per day in males and 30cc in females.
- ✓ Regular polyconsumption in the last month. The criteria were set at the concurrent use of two or more substances in the 30 days prior to the survey, “use” in this context being considered as daily in the case of tobacco, abusive drinking pattern in the case of alcohol, and a frequency of 2 or more days per week in the cases of illegal drugs and tranquilizers.

**Data collection and analysis**

Data were obtained from the database of the 2005 survey of the young and adolescent population (aged 12-24) of the city of Madrid. For the present study we used the population aged 15 to 24 (n: 6280).

The mean and standard deviation are indicated for the quantitative variables. For the qualitative variables we present the score estimation and the interval, with a confidence level of 95%. The analyses were carried out using the SPSS statistics package.

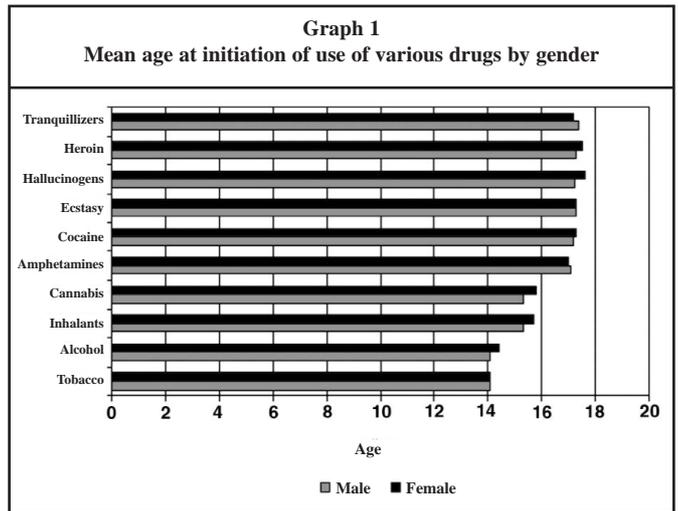
**RESULTS**

Drug use is widespread among adolescents and young adults living in Madrid. Legal substances, such as alcohol and tobacco, present higher prevalence: 92.5% of this population report experimentation with alcohol,

and 63.7% with tobacco. Cannabis is the illegal substance most widely used among the young people of the city, 59% having used it on at least one occasion. In total, 94% of the young people in the sample had tried one or more of these substances.

Initiation of legal drug use in Madrid is currently early. Tobacco (smoking) and alcohol present the earliest ages of first use, tobacco with a mean of 14.1 years (Sx=2.39) and alcohol with a mean of 14.3 (Sx=2.08).

Inhalants and cannabis are the illegal drugs first taken by most young inhabitants of Madrid – at a mean age of 15.4 years (Sx=2.68) in the case of inhalants and 15.6 years (Sx=2.15) in that of cannabis. For the remainder of



**Table 1**  
Percentage distribution of initiation (early and non-early) of one, two and three substances\* by age and sex

	N***		Non-early initiation		Early initiation 1 drug		Early initiation 2 drugs		Early initiation 3 drugs	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Age 15-16</b>	357	387	41.2 (±5.1)**	41.6 (±4.9)	26.1 (±4.6)	27.6 (±4.5)	16.5 (±3.9)	15.2 (±3.6)	16.2 (±3.8)	15.5 (±3.6)
<b>Age 17-19</b>	892	885	49.9 (±3.3)	56.9 (±3.3)	24.1 (±2.8)	20.8 (±2.7)	12.2 (±2.1)	11.0 (±2.1)	13.8 (±2.3)	11.3 (±2.1)
<b>Age 20-22</b>	1017	963	58.5 (±3)	63.8 (±3)	20.8 (±2.5)	17.2 (±2.4)	11.1 (±1.9)	10.7 (±2)	9.5 (±1.8)	8.3 (±1.7)
<b>Age 23-24</b>	702	709	62.8 (±3.6)	73.8 (±3.2)	18.8 (±2.9)	16.1 (±2.7)	10.7 (±2.3)	6.3 (±1.8)	7.7 (±2)	3.8 (±1.4)

\*Substances with early initiation of use: tobacco and alcohol prior to age 14 and cannabis prior to age 15  
 \*\* Confidence level 95%  
 \*\*\* The population selected for this analysis is young people who have used tobacco, alcohol or cannabis at some time

drugs the mean age at first use is around 17. No differences are observed by gender in the mean age at first use of the different substances (see Graph 1).

Forty-two percent of the population that have tried tobacco, alcohol or cannabis at least once present “early initiation” of use of one or more of these substances, according to the criteria employed in this study. Early first use occurs in a higher proportion in males than in females (45.1% for males and 38.7% for females). Significant differences by gender are found in the early initiation of alcohol use (32.3% males; 26.4% females) and cannabis use (22.8% males and 15% females), with

no differences being observed in the case of tobacco (smoking).

Early initiation of the use of tobacco, alcohol and cannabis are associated with age. The youngest members of the sample present a higher proportion of early initiation than the older ones, and both in the case of males and in that of females early first use of one or more substances decreases significantly with age (see Graph 2 and Table 1).

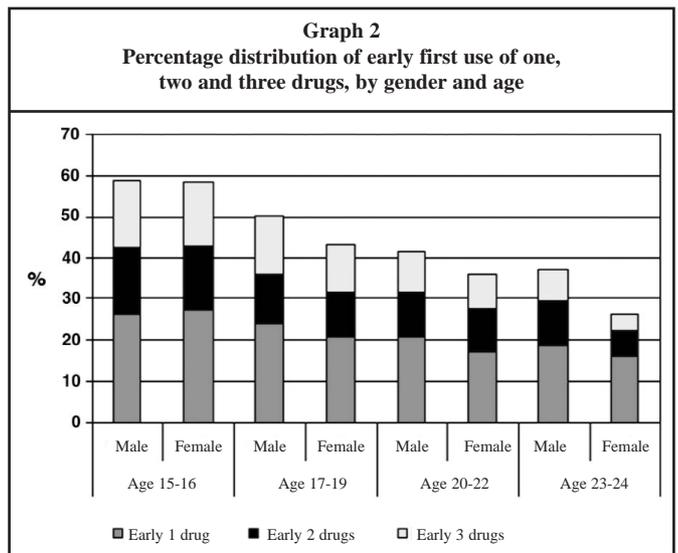
The patterns of early first use of one, two and three drugs in the youngest participants are the same for both sexes, but as age increases the patterns diverge, with significant differences between the men and women aged 23 to 24 in early use of two and of three drugs (see Table 1).

Having experimented at an early age with tobacco, alcohol or cannabis is associated with higher prevalence of recent use (last 12 months) of all illegal drugs, with the exception of heroin (see Graphs 3 and 4 and Table 2). It is also related to higher prevalence of daily use of tobacco and cannabis and to abusive drinking patterns, daily on average. The association becomes stronger as the number of substances first used at an early age increases (see Graph 3 and Table 2).

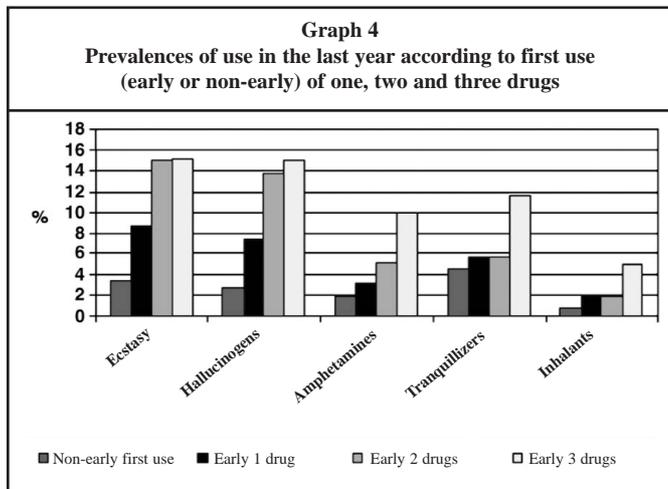
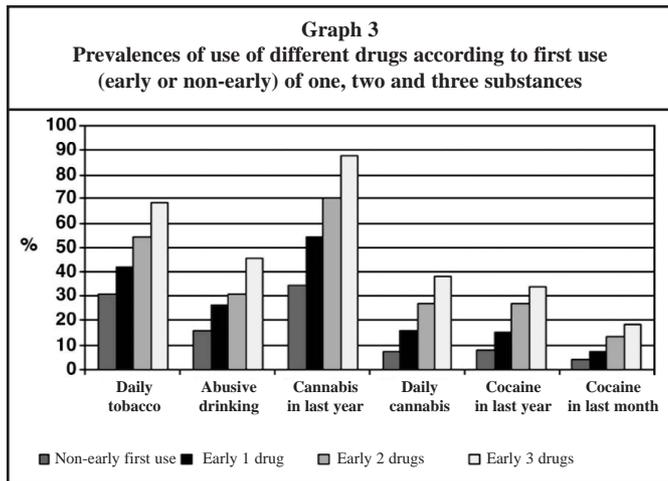
Regular polyconsumption or the concurrent use of 2 or more drugs in the last month (daily tobacco use, abusive drinking and use on 2 or more days per week in the remaining substances) is also associated significantly with having first used any of these three drugs at an early age; moreover, the strength of this association increases as the number of drugs first used at an early age rises, so that it is present in over half (55.7%) of the early experimenters with the three drugs (see Table 2).

	Non-early initiation	Early initiation of one substance	Early initiation of two substances	Early initiation of three substances
Daily tobacco	30.9 (±1.5)**	41.7 (±2.8)	53.8 (±3.8)	68.3 (±3.7)
Abusive drinking	16 (±1.2)	26.3 (±2.5)	31 (±3.5)	45.4 (±4)
Cannabis in last year	34.4 (±1.6)	54.1 (±2.8)	69.9 (±3.5)	87.8 (±2.6)
Daily cannabis	7.7 (±0.9)	15.9 (±2)	27.1 (±3.4)	38.1 (±3.9)
Cocaine in last year	8.2 (±0.9)	14.7 (±2)	26.8 (±3.4)	33.9 (±3.8)
Cocaine in last month	4.1 (±0.7)	7.2 (±1.4)	13.2 (±2.6)	18.2 (±3.1)
Ecstasy in last year	3.4 (±0.6)	8.7 (±1.6)	15 (±2.7)	15.3 (±2.9)
Amphetamines in last year	1.9 (±0.5)	3.2 (±1)	5.1 (±1.7)	10 (±2.4)
Hallucinogens in last year	2.8 (±0.5)	7.4 (±1.5)	13.8 (±2.6)	15 (±2.9)
Inhalants in last year	0.8 (±0.3)	1.8 (±0.8)	1.9 (±1.1)	5 (±1.7)
Tranquillizers in last year	4.6 (±0.7)	5.7 (±1.3)	5.6 (±1.8)	11.7 (±2.6)
Heroin in last year	0.0 (±0.1)	0.4 (±0.4)	1.6 (±1)	0.6 (±0.7)
Regular polyconsumption in last month	21.3 (±1.4)	38.3 (±2.7)	54.5 (±3.8)	71.4 (±3.6)
N***	3.430	1.222	659	600

\*Substances with early initiation of use: tobacco and alcohol prior to age 14 and cannabis prior to age 15  
 \*\* Confidence level 95%  
 \*\*\* The population selected for this analysis is young people who have used tobacco, alcohol or cannabis at some time



The associations mentioned above between early initiation of drug use and higher prevalence of use are observed in both males and females. The prevalences observed in young people with some early drug initiation differ by gender in their relationship with daily cannabis use, regular polyconsumption in the last month and recent use (last 12 months) of cocaine, cannabis, ecstasy and hallucinogens, the stronger relationship being found in males; in the case of recent use of tranquillizers, however, the stronger relationship is found in females. No differences by gender are observed in early users for the prevalence of daily smoking, daily (on average) abusive drinking or recent use of inhalants, amphetamines and heroin. If we compare the inter-gender differences in the population without early initiation we find that they are similar to those of the population who do start drug use early, except in the cases of recent use of ecstasy and tranquillizers, in which no differences are found between males and females in the latter group (see Table 3).



Likewise, early initiation of use is associated with greater frequency of negative consequences of alcohol or drug use, consequences in the academic, financial, family and social contexts. Also, the association of such consequences with early first use is stronger as the number of substances with early initiation of use increases (see Table 4).

No differences are observed as regards consequences in the work context, except in the case of those who began use of all three substances at an early age. Also, the young people of Madrid present very low rates of illnesses caused by drug use, whether or not they started use of the studied substances early, with no differences were found among the two groups (see Table 4).

**Table 3**  
Prevalences of drug use in the last year, last month and daily, and of abusive drinking according to first use (early or non-early) of some substance\* and sex.

	Non-early initiation		Early initiation	
	Male	Female	Male	Female
<b>Regular polyconsumption in last month</b>	16.3 (±1.8)**	11.2 (±1.5)	40.4 (±2.6)	32.7 (±2.7)
<b>Daily cannabis</b>	10.7 (±1.5)	5 (±1)	30 (±2.5)	17.5 (±2.2)
<b>Cannabis in last year</b>	39.6 (±2.4)	29.8 (±2.1)	70.2 (±2.4)	61.9 (±2.2)
<b>Cocaine in last year</b>	11.4 (±1.2)	5.4 (±0.8)	26.3 (±1.9)	18.1 (±2.2)
<b>Ecstasy in last year</b>	4.2 (±1.2)	2.8 (±0.8)	15.1 (±1.9)	8.2 (±1.6)
<b>Hallucinogens in last year</b>	3.8 (±0.9)	1.8 (±0.6)	13.8 (±1.8)	7.5 (±1.5)
<b>Tranquillizers in last year</b>	3.7 (±0.9)	5.4 (±1)	4.8 (±1.1)	9.9 (±1.7)
<b>Daily tobacco</b>	29.9 (±2.2)	32 (±2.2)	49.2 (±2.7)	53.9 (±2.9)
<b>Abusive drinking, daily on average</b>	17.4 (±0.7)	14.8 (±0.6)	32.3 (±2.5)	32.2 (±2.7)
<b>Amphetamines in last year</b>	2.3 (±0.7)	1.6 (±0.6)	5.4 (±1.2)	5.3 (±1.3)
<b>Inhalants in last year</b>	1.4 (±0.6)	0.4 (±0.3)	3 (±0.9)	2.2 (±0.9)
<b>Heroin in last year</b>	0.1 (±0.2)	0.0 (±0.0)	1 (±0.5)	0.6 (±0.4)
<b>N***</b>	1.628	1.802	1.340	1.141

\*Substances with early initiation of use: tobacco and alcohol prior to age 14 and cannabis prior to age 15  
 \*\* Confidence level 95%  
 \*\*\* The population selected for this analysis is young people who have used tobacco, alcohol or cannabis at some time

Those who started drug use early present higher proportions of problematic situations or circumstances related to drug use, such as being involved in accidents (road accidents or more minor accidents) following use, getting involved in arguments or fights and driving under the effects of alcohol or drugs (see Table 5).

## CONCLUSIONS

While it must be borne in mind that the associations observed in this study do not imply causality, they are undoubtedly of relevance to our understanding and decision-making in this field, and suggest the need for increasing research on these matters.

There is an evident need to study the coexistence of psychosocial risk factors or variables for the initiation of use and the progression to problematic use, which will permit the detailed analysis of such factors; to this end, it would certainly be more appropriate to use prospective designs of cohorts than cross-sectional studies such as the present one.

	Non-early initiation	Early initiation of 1 drug	Early initiation of 2 drug	Early initiation of 3 drug
Playing truant from school	5.6 (±0.8)**	9.8 (±1.8)	18.5 (±3)	23.9 (±3.4)
Poor school performance	3.9 (±0.7)	7.7 (±1.6)	13.7 (±2.7)	23 (±3.4)
Family conflict	2.3 (±0.6)	5 (±1.3)	7.4 (±2)	17.8 (±3.1)
Conflicts with friends	1.8 (±0.5)	3.3 (±1.1)	6.1 (±1.9)	8.8 (±2.3)
Financial problems	2.2 (±0.5)	4.6 (±1.2)	9.2 (±2.3)	15.8 (±2.9)
Missing work****	0.8 (±0.3)	0.4 (±0.4)	2.1 (±1.1)	4 (±1.6)
Problems at work****	0.5 (±0.3)	0 (±0.0)	0.8 (±0.7)	1.2 (±0.9)
Illnesses	0.3 (±0.2)	0.9 (±0.6)	1.1 (±0.8)	1.3 (±0.9)
N***	2.837	1.095	626	599

\*Substances with early initiation of use: tobacco and alcohol prior to age 14 and cannabis prior to age 15  
 \*\* Confidence level 95%  
 \*\*\* The population selected for this analysis is young people who have used tobacco, alcohol or cannabis at some time  
 \*\*\*\*Only age 18 and over, and having been in work. Percentages refer to the population selected for the global analysis

Another limitation of the present work resides in the impossibility of exploring the prevalence of disorders induced by substance use, since the survey does not include a screening test (presumptive diagnosis of abuse or dependence) for alcohol, tobacco and cannabis, so that we studied the association of early initiation with daily use in tobacco and cannabis. It is difficult to explore risk use of alcohol in population-based studies, though research usually employs, in addition to alcohol abuse daily on average, variables such as frequency of drunkenness and binge drinking and other alcohol-related risk behaviours.

Furthermore, “problematic use” is a broad term in this context. The consensual definition used in Europe does not include either alcohol or tobacco, and is out of step with the types of polyconsumption that constitutes the reality among today’s adolescents. Indeed, another term in need of clarification is polyconsumption itself. In spite of these considerations, however, in the present study the variable “regular polyconsumption in the last month” (concurrent use of two or more drugs according to the criteria: daily for tobacco, daily on average for abusive drinking, and 2 or more days per week for the remaining substances) constitutes the best approximation to problematic use, given the limitations.

Neither the study of age at first use nor the identification of a starting age considered as “early” can take place without taking into account geographical and sociocultural context and local tendencies for drug and alcohol use. The differences observed in the reviewed

	Non-early initiation	Early initiation of 1 drug	Early initiation of 2 drug	Early initiation of 3 drug
Accidents following use	7.6 (±0.9)**	11.1 (±1.8)	17 (±2.9)	26.7 (±3.5)
Driving under the effects of alcohol or drugs****	5.8 (±0.9)	8.6 (±1.8)	12.9 (±3)	29.4 (±4.4)
Involved in arguments/fights	144.7 (±1.2)	19.9 (±2.2)	22.3 (±3.2)	33.5 (±3.8)
N:5911***	3.431	1.222	658	600

\*Substances with early initiation of use: tobacco and alcohol prior to age 14 and cannabis prior to age 15  
 \*\* Confidence level 95%  
 \*\*\* The population selected for this analysis is young people who have used tobacco, alcohol or cannabis at some time  
 \*\*\*\*Only age 18 and over. N: 4676

research with regard to starting ages established as “early” are considerable, the range being as broad as 11 to 18 (DuRant et al., 1999; Mathers, Toumbourou, Catalano, Williams & Patton, 2006). Cut-off points for early first use in the Madrid study were set on the basis of the local reality.

Finally, it is observed that the strength of the associations increases as the number of substances with early first use rises, this being the case in practically all the associations studied, suggesting that future research should consider the pertinence of analyzing early initiation of use based on groups of substances.

## REFERENCES

- Agrawal, A.; Grant, J.D.; Waldron, M.; Duncan, A.E.; Scherrer, J.F.; Lynskey, M.T.; Madden, P.A.; Bucholz, K.K. & Heath, A.C. (2006). Risk for initiation of substance use as a function of age of onset of cigarette, alcohol and cannabis use: findings in a Midwestern female twin cohort *Prev Med*, *Aug*, *43* (2), 25-8.
- Agrawal, A.; Neale, M.C.; Prescott, C.A. & Kendler, K.S.; (2004). A twin study of early cannabis use and subsequent use and abuse/dependence of other illicit drugs. *Psychol Med*, *Oct*, *34* (7), 1227-37.
- Andersen, S.L. & Teicher, M.H.. (2009). Desperately driven and no brakes: developmental stress exposure and subsequent risk for substance abuse. *Neurosci Biobehav Rev*, *Apr*, *33* (4), 516-24.
- Arseneaul, L.; Cannon, M.; Poulton, R.; Murray, R.; Caspi, A. & Moffitt; T.E. (2002). Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study. *BMJ*, *325* (7374), 1212-3.
- Behrendt, S.; Wittchen, H.U.; Höfler, M.; Lieb, R. & Beesdo, K. (2009). Transitions from first substance use to substance use disorders in adolescence: is early onset associated with a rapid escalation? *Drug Alcohol Depend*, *Jan*, *99* (1-3), 68-78. Epub 2008 Sep 2.
- Britton, A.; Nolte; E.; White, I.R.; Gronbaek, M.; Powles, J.; Cavallo, F. & McPherson, K. (2003). A comparison of the alcohol-attributable mortality in four European countries. *Eur J Epidemiol*, *18* (7), 643-51.
- Copeland, J. & Swift, W. (2009). Cannabis use disorder: epidemiology and management. *Int Rev Psychiatry*, *Apr*, *21* (2), 96-103.
- Chen, X.; Stanton, B.; Shankaran, S. & Li, X. (2006). Age of smoking onset as a predictor of smoking cessation during pregnancy. *Am J Health Behav*, *May-Jun*, *30* (3), 247-58.
- Daniel, J.Z.; Hickman, M.; Macleod, J.; Wiles, N.; Lingford-Hughes, A.; Farrell, M.; Araya, R.; Skapinakis, P.; Haynes, J. & Lewis, G. (2009). Is socioeconomic status in early life associated with drug use? A systematic review of the evidence. *Drug Alcohol Rev*, *Mar*, *28* (2), 142-53.
- Degenhardt, L.; Chiu, W.T.; Sampson, N.; Kessler, R.C.; Anthony, J.C.; Angermeyer, M.; Bruffaerts, R.; de Girolamo, G.; Gureje, O.; Huang, Y.; Karam, A.; Kostyuchenko, S.; Lepine, J.P.; Mora, M.E.; Neumark, Y.; Ormel, J.H.; Pinto-Meza, A.; Posada-Villa, J.; Stein, D.J.; Takeshima, T. & Wells, J.E. (2008). Toward a global view of alcohol, tobacco, cannabis, and cocaine use: findings from the WHO World Mental Health Surveys. *PLoS Med*, *Jul*, *5* (7), 141.
- DuRant, R.H.; Smith, J.A.; Kreiter, S.R. & Krowchuk, D.P. (1999). The relationship between early age of onset of initial substance use and engaging in multiple health risk behaviors among young adolescents. *Arch Pediatr Adolesc Med*, *Mar*, *153* (3), 286-91.
- Eaton, D.K.; Kann, L.; Kinchen, S.; Ross, J.; Hawkins, J.; Harris, W.A.; Lowry, R.; McManus, T.; Chyen, D.; Shanklin, S.; Lim, C.; Grunbaum, J.A. & Wechsler, H. (2006). Youth risk behavior surveillance--United States, 2005. *MMWR Surveill Summ*, *Jun*, *55* (5), 1-108.
- Ezzati, M.; Lopez, A.; Rodgers, A.; Vander Hoorn, S.; Murray, C. et al. (2002). Selected major risk factors and global and regional burden of disease. *Lancet*, *360*, 1347-1360.
- Faggiano; F.; Vigna-Taglianti, F.D.; Versino, E.; Zambon, A.; Borraccino, A. & Lemma, P. (2007). Prevención del consumo de drogas ilegales en las escuelas. (Cochrane Review translated). In: The Cochrane Library Plus, number 4, 2007. Oxford, Update Software Ltd. Available at: <http://www.update-software.com>. (Translated from The Cochrane Library, 2007 Issue 4. Chichester, UK: John Wiley & Sons, Ltd.).
- Fenoglio, P.; Parel, V. & Kopp, P. (2003). The social cost of alcohol, tobacco and illicit drugs in France, 1997. *Eur Addict Res*, *Jan*, *9* (1), 18-28.
- Fernández, S.; Nebot, M. & Jané, M. (2002). Evaluación de la efectividad de los programas escolares de prevención del consumo de tabaco, alcohol y cannabis ¿Qué nos dicen los meta-análisis? *Rev Esp Salud Pública*, *76* (3), 175-187.
- Fowler, T.; Lifford, K.; Shelton, K.; Rice, F.; Thapar, A.; Neale, M.C.; McBride, A. & van den Bree, M.B. (2007). Exploring the relationship between genetic

- and environmental influences on initiation and progression of substance use. *Addiction*, Mar, 102 (3), 413-22.
- Foxcroft, D.R.; Ireland, D.; Lister-Sharp, D.J.; Lowe, G. & Breen, R. (2007). Prevención primaria para el abuso de alcohol en los jóvenes (Cochrane Review translated). In: The Cochrane Library Plus, number 1, 2007. Oxford, Update Software Ltd. Available at: <http://www.update-software.com>. (Translated from The Cochrane Library, 2007 Issue 1. Chichester, UK: John Wiley & Sons, Ltd.).
- Grant, J.D., Scherrer, J.F.; Lynskey, M.T.; Lyons, M.J.; Eisen, S.A.; Tsuang, M.T.; True, W.R. & Bucholz, K.K. (2006). Adolescent alcohol use is a risk factor for adult alcohol and drug dependence: evidence from a twin design. *Psychol Med*, Jan, 36 (1), 109-18.
- Grimshaw, G.M. & Stanton, A. (2007). Intervenciones para el abandono del hábito de fumar en personas jóvenes (Cochrane Review translated). In: The Cochrane Library Plus, number 4, 2007. Oxford, Update Software Ltd. Available at: <http://www.update-software.com>. (Translated from The Cochrane Library, 2007 Issue 4. Chichester, UK: John Wiley & Sons, Ltd.).
- Hall, W.D. (2006) Cannabis use and the mental health of young people. *Aust N Z J Psychiatry*, Feb, 40 (2), 105-13.
- Hayatbakhsh, M.R.; Mamun, A.A.; Najman, J.M.; O'Callaghan, M.J.; Bor, W. & Alati, R. (2008). Early childhood predictors of early substance use and substance use disorders: prospective study. *Aust NZ J Psychiatry*, Aug, 42 (8), 720-31.
- Jernigan, D.H.. (2001). Global Status Report: Alcohol and Young People. Geneva: World Health Organisation.
- Kendler, K.S.; Schmitt, E.; Aggen, S.H. & Prescott, C.A. (2008). Genetic and environmental influences on alcohol, caffeine, cannabis, and nicotine use from early adolescence to middle adulthood *Arch Gen Psychiatry*, Jun, 65 (6), 674-82.
- Kokkevi, A.; Nic Gabhainn, S. & Spyropoulou, M. (2006) Risk Behaviour Focus Group of the HBSC. Early initiation of cannabis use: a cross-national European perspective. *J Adolesc Health*, Nov, 39 (5), 712-9.
- Khuder, S.A.; Price, J.H.; Jordan, T.; Khuder, S.S. & Silvestri, K. (2008). Cigarette smoking among adolescents in Northwest Ohio: correlates of prevalence and age at onset. *Int J Environ Res Public Health*, Dec, 5 (4), 278-89.
- Lando, H.; Thai, D.T.; Murray, D.M.; Robinson, L.A.; Jeffery, R.W.; Sherwood, N.E. & Hennrikus, D.J. (1999). Age of initiation, smoking patterns, and risk in a population of working adults. *Prev Med*, Dec, 29 (6 Pt 1), 590-8.
- Lemstra, M.; Bennett, N.R.; Neudorf, C.; Kunst, A.; Nannapaneni, U.; Warren, L.M.; Kershaw, T. & Scott, C.R. (2008). A meta-analysis of marijuana and alcohol use by socio-economic status in adolescents aged 10-15 years. *Can J Public Health*, May-Jun, 99 (3), 172-7.
- Lynskey, M.T.; Heath, A.C.; Bucholz, K.K.; Slutske, W.S.; Madden, P.A.; Nelson, E.C.; Statham, D.J. & Martin, L. (2003). Escalation of drug use in early-onset cannabis users vs co-twin controls. *JAMA*, 289 (4), 427-33.
- Madrid Salud (2005) Instituto de Salud Pública. Estudio de salud de la ciudad de Madrid . Mortalidad atribuible 248- 53. <http://www.madridsalud.es>.
- Madrid Salud (2006). Instituto de Adicciones. Consumo de drogas, percepciones y actuaciones de prevención entre la población adolescente y joven de la Ciudad de Madrid. Available at: <http://www.madridsalud.es/adicciones/otros/CONSUMO%20DE%20DROGAS.pdf>
- Mathers, M.; Toumbourou, J.W.; Catalano, R.F.; Williams, J. & Patton, G.C. (2006). Consequences of youth tobacco use: a review of prospective behavioural studies. *Addiction*, Jul, 101 (7), 948-58.
- Observatorio Español sobre Drogas (OED) (2005). Informe 2004. Situación y tendencias de los problemas de drogas en España. (105-128). Ed. Ministerio de Sanidad y Consumo. Delegación del Gobierno para el Plan Nacional sobre Drogas.
- Rehm, J.; Giesbrecht, N.; Patra, J. & Roerecke, M. (2006) Estimating chronic disease deaths and hospitalizations due to alcohol use in Canada in 2002: implications for policy and prevention strategies. *Prev Chronic Dis*, Oct, 3 (4), A121. Epub 2006 Sep 15.
- Rehm, J.; Gnam, W.; Popova, S.; Baliunas, D.; Brochu, S.; Fischer, B.; Patra, J.; Sarnocinska-Hart, A. & Taylor, B. (2007). The costs of alcohol, illegal drugs, and tobacco in Canada, 2002. *J Stud Alcohol Drugs*, Nov, 68 (6), 886-95.
- Roncero, C.; Collazos, F.; Valero, S. & Casas, M. (2007). Cannabis consumption and development of psychosis: state of the art. *Actas Esp Psiquiatr*, May-Jun, 5 (3), 182-9.
- Single, E.; Robson, L.; Rehm, J. & Xie, X. (1999).

- Morbidity and mortality attributable to alcohol, tobacco, and illicit drug use in Canada. *Am J Public Health, Mar, 89* (3), 385-90.
- Otead, L.F. & Lancaster, T. (2007). Intervenciones para la prevención de la venta de tabaco a menores (Cochrane Review translated). In: The Cochrane Library Plus, number 4, 2007. Oxford, Update Software Ltd. Available at: <http://www.update-software.com>. (Translated from The Cochrane Library, 2007 Issue 4. Chichester, UK: John Wiley & Sons, Ltd.).
- Stefanis, N.C.; Delespaul, P.; Herquet, C.; Bakoula, C.; Stefanis, C.N. & van Os, J. (2004). Early adolescent cannabis exposure and positive and negative dimensions of psychosis. *Addiction, 99*, 1333-41.
- Storr, C.L.; Westergaard, R. & Anthony, J.C. (2005). Early onset inhalant use and risk for opiate initiation by young adulthood. *Drug Alcohol Depend, Jun 1, 78* (3), 253-61.
- Tang, Z. & Orwin, R.G. (2009). Marijuana initiation among American youth and its risks as dynamic processes: prospective findings from a national longitudinal study. *Subst Use Misuse, 44* (2), 195-211.
- Thomas, R. & Perera, R. (2007). Programas escolares para la prevención del hábito de fumar (Cochrane Review translated). In: The Cochrane Library Plus, number 4, 2007. Oxford, Update Software Ltd. Available at: <http://www.update-software.com>. (Translated from The Cochrane Library, 2007 Issue 4. Chichester, UK: John Wiley & Sons, Ltd.).
- Vieira, D.L.; Ribeiro, M. & Laranjeira, R. (2007). Evidence of association between early alcohol use and risk of later problems. *Rev Bras Psiquiatr, Sep, 29* (3), 222-7.
- Warner, L.A.; White, H.R. & Johnson, V. (2007). Alcohol initiation experiences and family history of alcoholism as predictors of problem-drinking trajectories. *J Stud Alcohol Drugs, Jan, 68* (1), 56-65.
- Wittchen, H.U.; Behrendt, S.; Höfler, M.; Perkonig, A.; Lieb, R.; Bühringer, G. & Beesdo, K. (2008). What are the high risk periods for incident substance use and transitions to abuse and dependence? Implications for early intervention and prevention. *Int J Methods Psychiatr Res, Jun, 17* (Suppl 1), S16-29.