

Gender differences among cannabis self-cultivators in Spain

Diferencias de género entre autocultivadores de cannabis en España

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Abstract

The increase in cannabis use coincides with the proliferation of small-scale cannabis cultivation. These crops facilitate substance availability and increased use. Some investigations have studied the characteristics of small-scale cultivators; however, it is not known whether their profiles differ by gender. The aim of the present study was to analyse differences among growers regarding sociodemographic variables, patterns of use and health problems from a gender perspective. A descriptive observational study was designed with a sample of 219 cultivators (157 men and 62 women), aged between 18 and 34. Problematic use of cannabis (CPQ), cannabis dependence (SDS), patterns of abuse (CAST), risky alcohol use (AUDIT), nicotine dependence (FTND) and sociodemographic variables (*ad hoc* questionnaire) were analysed. The results showed convergence between men and women in some indicators: early onset and daily cannabis use, psychosocial problems deriving from use, a similar number of problematic use and cannabis dependence cases, as well as a polydrug trend. Conversely, men reported greater physical problems and more intensive use of cannabis and alcohol. Women cannabis growers presented a similar profile to their male counterparts, whereas studies of the general population have shown cannabis use to be higher among men than women. This fact supports the relevance of researching specific risk factors related to gender, which can exert a differential influence on the intensity of use, and their relationship with small-scale cultivation. Implications of these results for planning preventive strategies and treatment are discussed from a gender perspective.

Key Words: Cultivation; Cannabis; Gender differences; Problematic use; Cannabis dependence.

Resumen

El incremento en el consumo de cannabis coincide con la proliferación del cultivo de cannabis a pequeña escala. Estos cultivos favorecen la disponibilidad de la sustancia e incrementan su consumo. Investigaciones previas han dejado entrever las características definitorias de poblaciones de cultivadores, pero se desconoce si su perfil difiere en función del género. El objeto del presente estudio fue analizar las diferencias de género en autocultivadores en relación con variables sociodemográficas, patrones de consumo y problemáticas de salud. Se diseñó un estudio observacional descriptivo, con una muestra de 219 cultivadores (157 hombres y 62 mujeres), con edades entre 18 y 34 años. Se analizaron problemas de consumo (CPQ), dependencia del cannabis (SDS), patrones de abuso (CAST), consumo de riesgo de alcohol (AUDIT), dependencia de la nicotina (FTND) y variables sociodemográficas (cuestionario *ad hoc*). Los resultados mostraron convergencia entre hombres y mujeres en los indicadores: inicio temprano y consumo diario de cannabis, problemáticas psicosociales derivadas del consumo, un número similar de casos de consumo problemático y dependencia del cannabis y tendencia al policonsumo. Contrariamente, los varones refirieron mayores problemas físicos, consumo intensivo de cannabis y de alcohol. A diferencia de los estudios en población general, donde el consumo de cannabis es mayor en hombres que en mujeres, las mujeres autocultivadoras presentan un perfil similar a los autocultivadores hombres. Este hecho sugiere la necesidad de investigar sobre los factores de riesgo específicos al género que pueden estar influyendo diferencialmente en el consumo intensivo y su relación con el autocultivo. Se discuten las implicaciones de los resultados en la planificación de estrategias preventivas y de tratamiento, desde una perspectiva de género.

Palabras clave: Autocultivo; Cannabis; Diferencias de género; Consumo problemático; Dependencia del cannabis.

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It is estimated that 1% of European adults use cannabis on 20 or more days per month, i.e. daily or almost daily. Of these users, 60% are between 15 and 34 years of age and more than three quarters are men (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2016). In the case of Spain, 31.5% of individuals aged 15 to 64 years have tried it once in their lives (Spanish Observatory on Drugs and Addictions [OEDA], 2016), and the number of daily users has increased in recent years, tripling between 1997 and 2005 before levelling off at around 2% since then. In addition, the age of onset of people between 15 and 64 years of age has stabilised in recent years at an average of around 18.5 years (OEDA, 2016).

The high prevalence of cannabis use has coincided with an increasing normalisation of the substance in our society. This normalisation entails a perception of low risk associated with its use (OEDA, 2016), and although the health problems related to cannabis are clearly lower than those linked to other illicit substances, or even nicotine or alcohol (Hall, 2017; Lachenmeier & Rehm, 2015), the high prevalence of use of this drug may have implications for public health (Degenhardt et al., 2013). Factors such as the type and strength of cannabis, and the intensity its use account for a range of health problems and different degrees of association. Cannabis use has been clearly associated with neuropsychological problems (Meier et al., 2012), psychosis (Murray, Quigley, Quattrone, Englund & Di Forti, 2016), and, although with less empirical support, with affective disorders (Marconi, Di Forti, Lewis, Murray & Vassos, 2016). Likewise, regular cannabis use is linked to addiction. Approximately 1-2 out of 10 regular users develop dependency, with those starting use in adolescence being at higher risk (Murray et al., 2016). There are also problems of an organic nature, such as respiratory or cardiovascular diseases (Aldington et al., 2007; Hall & Degenhardt, 2009; Tashkin, 2015) and even a greater chance of dying before the age of 60 (Manrique-García, Ponce de Leon, Dalman, Andréasson & Allebeck, 2016).

Several studies also show gender differences in cannabis use; women progress more rapidly from onset to dependence (Schepis et al., 2011), respond less positively to treatment (Sherman, Baker & McRae-Clark, 2016), and experience greater severity in the symptomatology of abstinence (Herrmann, Weerts & Vandrey, 2015). In addition, the evidence suggests that the endocannabinoid system, the main neurobiological system involved in the reinforcing effects of THC, is sexually dimorphic (Hart-Hargrove & Dow-Edwards, 2012) and could explain the variability between sexes (Davis & Fattore, 2015; Schliez, Budney, Lee & Vandrey, 2017).

In recent years, the phenomenon of small-scale cultivation has grown rapidly. Such domestic growing intended for private consumption has a number of advantages for the

user since it increases availability of the substance, reduces its cost and, therefore, facilitates an increase in the extent of its use (Isorna, Amado, Cajal & Seijo, 2016). However, there are differences in the way European countries officially classify cannabis plantations (for criminal purposes), and in some cases there are no clear divisions or criteria (Wouters, 2013). For example, a “small” plantation can have 50-249 plants in Belgium, 20-99 in Germany, 1-10 in Hungary or 1-50 in Poland (EMCDDA, 2012, p.80). Potter (2010) also distinguishes between “non-profit” and “for-profit” growers. The author identifies those growing for personal use, cultivators for therapeutic purposes (for their own use or that of others) and activist growers as non-profit-oriented producers. In terms of profit-oriented growers, he identifies “occasional opportunists”, who start cultivating for personal consumption but who are attracted by the perceived profit potential, the “autonomous grower”, who essentially cultivates for private use and sells the surplus to friends, and the “corporate grower”, who runs larger operations and who may also participate in other criminal activities.

Potter et al. (2015) show that the main motivations of small-scale growers are, among others, financial savings (cultivation is cheaper than buying the substance), quality control (growers believe their own product to be healthier), cultivation for personal use, avoiding contact with criminal circles (for example, street vendors, traffickers), obtaining cannabis for medical purposes, as well as other considerations of a political or ideological nature, and minimising participation in drug trafficking or other criminal activities.

Several investigations show that, when grown for recreational use, the search for stronger cannabis (with a higher concentration of THC) has become a common goal (Knight et al., 2010; Mehmedic et al., 2010). Changes in new plant varieties have focused on increasing the concentration of 9-THC, while other cannabinoids such as CBD or CBN are maintained or reduced (Mehmedic et al., 2010). In the last two decades, the average concentration of THC has gone from 4% to 12%, while that of CBD has decreased from 0.28% to 0.15% (ElSohly et al., 2016). Currently, the average THC percentage of “joints” (consumption of cannabis derivatives, or mixed with tobacco) consumed in Spain ranges from 0.7%, the lowest percentage observed, to 40% (Association Welfare and Development, 2014); according to results found by Casajuana et al. (2017), a “joint” would have approximately 7mg of THC. Given that it is regular or daily consumption which is associated with most of the harmful effects (Fischer et al., 2017), this increase in the potency of the substance, linked to new forms of cultivation, favours the development of cannabis use disorders and causes greater damage to health (Di Forti et al., 2014; Hall & Degenhardt, 2009).

Typologies of growers have been established using key criteria such as their motivation, the size of the plantations

(Hough et al., 2003; Potter, 2008; Spapens, 2011; Weisheit, 1992; Wiecko & Thompson, 2014) and how they run their businesses (Álvarez, Gamella & Parra, 2016). However, although the profile of small-scale growers has already been described in two earlier studies (Álvarez et al., 2016; Isorna et al., 2016), ours is the first study that brings a gender perspective to the analysis of private cannabis cultivation in Spain and, therefore, contributes to a better understanding of the phenomenon and the characteristics of male and female small-scale growers.

Studying the differential profiles of domestic growers will enable an approach to interventions and treatments which is adapted to their characteristics and clinical pictures, while the needs analyses of men and women are expected to identify different risk factors and problems depending on gender.

Method

Participants

The study was carried out with 219 subjects, of which 157 were men (71.69%) and 62 women (28.31%). All participants reported cultivating and using cannabis. Participants aged between 18 and 34 were selected as the population with the highest prevalence of use (OEDA, 2016). The average age was 25.50 years ($SD = 3.58$).

Procedure and design

A descriptive observational study was conducted between June 2012 and February 2014. An intentional non-probabilistic sampling technique was used to select participants. Initial contact was established with key informants who cultivated cannabis for private use. The classification criteria used to identify small-scale growers was self-labelling. The initial sample was obtained through Grow Shop stores in different cities and comprised 37 key informants. Using an exponential non-discriminatory snowball system, each informant then provided contact with other cannabis users.

For participation in this study, the ethical standards established in the Declaration of Helsinki (2013) and the Data Protection Law 15/1999 were respected: participation was voluntary, informed consent for their data to be used for research purposes was provided freely, and participants were advised that they could leave the study at any time. Likewise, the data were treated confidentially to respect the privacy of the subjects.

Measurement instruments

In order to obtain data on sociodemographic characteristics and habits regarding the use of cannabis as well as other substances (legal and illegal), the following methods were used.

An ad hoc sociodemographic questionnaire was created with the following study variables: sex, age, educatio-

nal level, habitual residence (alone or sharing with family or friends), and current occupation (see Table 1). Other items reported on growing habits, (where seeds are bought for cultivation and how much is spent on them), on the use of cannabis and other substances (frequency of cannabis use in the last thirty days, lifetime consumption of cocaine or synthetic drugs), what drugs they use in the evening/at night (combination of cannabis and other legal drugs, or cannabis with other illegal drugs), whether they have ever sold illicit drugs (cannabis), and the principal reason for sale (earning money and/or using for free).

Cannabis Problems Questionnaire (CPQ) (Copeland, Gilmour, Gates & Swift, 2005). The questionnaire was designed to assess problems related to the habitual use of cannabis in the adult population and consists of 22 dichotomous response items (yes vs. no). It was translated into Spanish by the researchers and submitted to a back-translation procedure. The measure comprises three factors (Copeland et al., 2005): the physical ($\alpha = .70$), psychological ($\alpha = .62$) and social consequences ($\alpha = .54$) of cannabis use, and the whole scale yielded an α of .83 with the participants of our study.

Cannabis Abuse Screening Test (CAST) (Legleye, Karila, Beck & Reynaud, 2007). This is a 6-item scale the purpose of which is the detection of problematic cannabis use or patterns of abuse through the identification of problems derived from use over the last twelve months. Items are answered on a 5-point scale (0 = Never, 1 = Rarely, 2 = Occasionally, 3 = Quite often and 4 = Very often). In our study, the scale produced an α of .70.

The Spanish adaptation by González-Saiz, de las Cuevas, Barrio and Domingo-Salvany (2008) of the *Severity of Dependence Scale* (SDS) (Gossop et al., 1995) was used. This scale assesses the psychological consequences of cannabis dependence. It consists of 5 items with a Likert-type response scale, with items 1 to 4 having the response options: 0 = Never/almost never, 1 = Sometimes, 2 = Often, 3 = Always/almost always, while the options on item 5 are: 0 = Nothing difficult, 1 = Fairly difficult, 2 = Very difficult, 3 = Impossible. It provides global dependence scores ranging from 0 (no dependence) to 15 (maximum dependency). Reliability obtained with the data of our sample was $\alpha = .72$.

Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente & Grant, 1993). For the present study, a Spanish adaptation of the questionnaire by Rubio, Bermejo, Caballero and Santo-Domingo (1998) was used. This instrument classifies subjects presenting a pattern of harmful or high-risk alcohol use. It comprises 10 items related to recent use, symptoms derived from dependence and problems related to alcohol intake. The Likert-type response scale consists of 3 or 5 alternatives. The reliability of the questionnaire obtained with the participants in the study was $\alpha = .80$.

The *Fagerström Test for Nicotine Dependence* (FTND) (Heatherton, Kozlowski, Frecker & Fagerström, 1991) was used

to obtain a measure of nicotine dependence. It consists of 6 items (2 items with a 4-option Likert-type response scale, and 4 dichotomous items). A cut-off score of 6 is indicative of high physical dependence on nicotine. A score between 0 and 4 represents low-level dependency, with 5 representing moderate, and ≥ 6 high dependency. An α of .58 was obtained with the participants in this study.

The questionnaires and scales were administered by previously trained researchers, blinded to the objectives of the study. Participants were assessed in individual sessions and in non-abstinence conditions. Administration time ranged from 15 to 30 minutes.

Data analysis

Given that sample size varies from one statistical test to another, the design of the present study was subjected to an a posteriori power analysis. We found that the probability of detection ($1 - \beta$) of significant differences ($\alpha < .05$) for a mean effect size ($d = .50$) ranged from 80% to 91% for the comparison of means with the t-test for independent samples. For a comparison of the population mean with a given test value, this probability was 100%, for the results of chi-squared tests it lay between 97% and 99%, and was 100% for MANOVA. Therefore, the study design is sensitive to the detection of significant differences.

For the contrast of means between two groups (males vs. females), Student's t-test for independent samples was used. Likewise, the Student's t statistic was used for a sample when comparing a mean with a given test value. The resulting values were transformed to Cohen's effect size d (1988) and interpreted according to conventionally established cut-off points. The association between categorical

variables was analysed with chi-square contingency tables, obtaining a phi effect size for 2x2 tables which was subsequently converted to Cohen's d . For tables other than 2x2, Cramer's phi was calculated. The difference of means for statistically correlated variables was calculated by means of a MANOVA, with η^2 representing the effect size reported.

Although studies comparing means are extremely useful in scientific research, the results present difficulties in generalising to professional practice ($N = 1$). Therefore, the combined use of both types of analysis is recommended (American Psychiatric Association [APA], 2014; Arce, Fariña, Carballal & Novo, 2006; Palmer, Borrás, Pérez-Pareja, Sesé & Vilariño, 2013).

Results

Sociodemographic data

The sociodemographic data presented in Table 1 shows that men and women were of equal age, $t(217) = -1.304$, $p = .134$, $d = -0.20$. The level of educational achievement was significantly different in both groups, $\chi^2(3, N = 218) = 23.932$, $p < .001$, Cramer's $\phi' = .331$, with more women reporting university studies than men, in contrast with elementary school education, $\chi^2(1, N = 135) = 16.292$, $p < .001$, $\phi = .31$, school-leaving certificate, $\chi^2(1, N = 96) = 10.158$, $p = .001$, $\phi = .32$, and higher secondary education, $\chi^2(1, N = 113) = 7.328$, $p = .007$, $\phi = .25$.

However, no statistically significant differences were found according to their occupation (i.e., studying, employed, unemployed), $\chi^2(2, N = 184) = 1.761$, $p = .415$, $\phi = .09$, or the people they live with, $\chi^2(1, N = 214) = 1.498$, $p = .221$, $\phi = .08$.

Cannabis growing

Results show that men ($M = 32.99$) and women ($M = 27.43$) spend a similar amount of money each month, $t(197) = 0.832$, $p = .406$, $d = 0.13$, on products for cultivation, which they buy almost exclusively in Grow Shop stores (.657).

The proportion of women reporting that they have sold cannabis is significantly smaller (.581) than that of men (.813), $\chi^2(1, N = 217) = 11.428$, $p = .001$, with a moderate effect size, $d = 0.47$. However, participant gender did not mediate differences in the main motivation for the sale of the product (i.e., using for free, earning money, using for free and earning money, and others), $\chi^2(3, N = 163) = 6.204$, $p = .102$, Cramer's $\phi' = .194$. While men sell mostly to earn money and use for free (.402), more than half of the women do it exclusively to earn money (.583) (see Table 2).

Patterns of use

The age of onset of cannabis use was similar for men and women, 15.05 and 15.39 respectively, $t(214) = -1.251$, $p = .212$, $d = -0.19$.

Table 1. Sociodemographic characteristics of the population of cultivators.

Sociodemographic	Men ($n = 157$)	Women ($n = 62$)
Age	$M = 25.30$ (3.58)	$M = 26.00$ (3.59)
Educational level attained		
Elementary education	38.2%	19.7%
School-leaving certificate	17.8%	8.2%
Higher secondary school	24.2%	19.7%
University studies	19.7%	52.5%
Current occupation		
Student	35.9%	39.6%
Employed	35.9%	41.5%
Unemployed	28.2%	18.9%
Permanent residence		
Shared home	84.3%	91.8%
Living alone	15.7%	8.2%

Table 2. Motivations for the sale of cannabis by gender.

	Men	Women
Free use	18.9%	16.7%
Earning money	36.2%	58.3%
Free use and earning money	40.2%	22.2%
Other	4.7%	2.8%

Approximately half of the participants (55.5%) used cannabis daily or almost daily, without any statistically significant differences between women (51.6%) and men (57.1%), $\chi^2(1, N = 218) = 0.334, p = .563, d = 0.08$. Similarly, 56.2% were long-term users, that is, they have been using cannabis for 10 years or longer, a characteristic independent of gender, $\chi^2(1, N = 216) = 0.003, p = .953, d = 0.01$.

While the general sample of growers reported a problematic pattern of cannabis use, $t(210) = 7.566, p = .001, d = 0.52$, men presented a significantly higher pattern of cannabis abuse ($M = 9.97$) as measured on the CAST scale than women ($M = 8.00$), $t(209) = 2.806, p = .005, d = 0.43$. On the other hand, the case study (test value = 7) revealed a similar number of subjects in both groups with problematic cannabis use, $\chi^2(1, N = 211) = 1.661, p = .197$, and with a small effect size, $d = 0.18$.

The population under study is shown to present psychological dependence on cannabis (SDS, test value = 3), $t(203) = 5.722, p < .001, d = 0.40$, with dependency levels reported being similar in both groups, $t(202) = 0.679, p = .498, d = 0.10$, as were the number of cases identified, $\chi^2(1, N = 204) = 0.605, p = .437, d = 0.10$.

The multivariate results indicated that men and women have significantly different problems related to cannabis use (CPQ), $F(3, 207) = 149.828, p < .001$. Specifically, men claimed to suffer more consequences on a physical level than women, $F(1, 209) = 5.878, p = .016, \eta^2 = .027, 1-\beta = .675$, with no differences found between both groups in the social and psychological areas (see Table 3).

Regarding the consumption of other substances (i.e., cocaine or ecstasy, alcohol and tobacco), 61.6% of the sample reported having used cocaine at some time in their lives (experimental use), with no differences in use between the two groups, $\chi^2(1, N = 214) = 1.561, p = .212, d = 0.16$. Specifically, patterns of cocaine use in the last year (not used vs. occasional use vs. habitual use) are independent of gender, $\chi^2(2, N = 134) = 4.365, p = .113$, Cramer's $\phi' = .184$.

Cigarette smoking was reported at a similar level among women ($M = 2.90$) and men ($M = 3.27$), $t(161) = 1.003, p = .317, d = 0.18$. For its part, the population of cannabis growers did not report nicotine dependence ($M = 3.18$, test value = 6), $t(162) = -17.460, p < .001$, with a large effect size, $d = -1.37$. The case study did not reveal a significant rela-

Table 3. Univariate results of the gender differences in cannabis problems.

Factors	F	p	η^2_p	M_v	M_m	1- β
Physical	5.878	.016	.027	4.29	3.34	.675
Psychological	0.008	.927	.000	2.43	2.46	.051
Social	1.596	.208	.008	1.74	2.03	.242

Note. M_v = Mean men, M_m = Mean women. $gl = (1, 209)$.

tionship, $\chi^2(1, N = 163) = .025, p = .874, d = 0.00$ between tobacco dependence and participant gender, with the majority of men and women (85.8% and 88.4%, respectively) falling below the dependency threshold as measured with the FTND questionnaire.

The sample of growers presents a high-risk pattern of alcohol consumption ($M = 10.07$, test value = 8), $t(197) = 4.580, p < .001, d = 0.32$. Furthermore, the case study showed similar figures for men (65%) and women (56.4%) with high-risk drinking, $\chi^2(1, N = 198) = .933, p = .334, d = 0.14$. On the other hand, the contrast of means showed that men ($M = 10.93$) reported significantly higher alcohol use, $t(147.353) = 3.737, p < .001$, than women ($M = 7.84$), with a moderate effect size, $d = 0.59$. Additionally, men reported significantly higher rates of binge drinking (the intake of at least 5 SDUs in a period of 2 hours), $t(167.604) = 3.579, p < .001$, than women (4 or more SDUs in 2 hours), with a moderate effect size, $d = 0.57$.

Based on the average age of onset of legal and illegal substance use, results indicate that a) men and women start smoking equally early (13.97 vs. 14.14 years, respectively), $t(207) = -.483, p = .630, d = -0.08$, b) the use of illicit drugs such as cocaine or ecstasy begins at a similar age (17.49 males and 17.82 females), $t(133) = -.853, p = .395, d = -0.17$, c), while men begin the consumption of alcohol at a significantly earlier age, $t(212) = -2.09, p = .037, d = -0.32$ (14.05 men and 14.64 women).

Regarding patterns of polydrug use in recreational contexts, more than half of the population of growers (.724) used cannabis in combination mostly with other legal drugs (i.e., tobacco and alcohol), there being no differences, $\chi^2(1, N = 185) = 0.561, p = .454, d = 0.10$, mediated by gender (.706 in the case of men and .776 for women).

Discussion

The results found in the present study showed that more male cultivators reported having basic studies in comparison to women, while more than half of women growers have university studies. This fact may be linked to the ratio of men and women making up our study, in addition to the intentional and non-random sample selection procedure, which may have generated a bias through the contact

networks. Another plausible explanation is that, according to data from the Ministry of Education, Culture and Sport (2017), women have higher rates of enrolment and course completion in higher education in Spain. Although the age of onset of cannabis use falls within the period of compulsory secondary education and hardly differs between men and women (OEDA, 2016), frequent use is more marked among men, which may have a greater negative impact on their educational trajectories, leading to greater school failure. In any case, more longitudinal studies are needed to clarify the relationship between cannabis use and educational level attained since school failure and use of this substance share common risk factors (Lynskey & Hall, 2000) which can determine the directionality and course of this relationship.

Contrary to expectations, both groups mostly reported sharing their habitual residence (with relatives, friends or their partner). What could traditionally be considered a constraining factor (Becona et al., 2013) and therefore inhibiting use, seems to have no effect. This phenomenon could be explained by a relaxation of attitudes and a normalization, not only of use, but also of small-scale cannabis cultivation among the population.

Most of the participants reported being students or employed at the time of the study. Without taking gender into account, this professional profile of growers reflects that the practice of domestic cultivation is an activity which is complementary to a profession or occupation and therefore reinforces the idea that we are dealing with a group which is socially adapted rather than abnormal (Potter et al., 2015).

Although a greater proportion of men sell cannabis than women, there are no significant inter-gender differences in reasons for selling. However, in the case of women, growing cannabis as a way of earning money and, therefore, having a secondary source of income (most of them were employed) appears to be more important than for men, for whom earning money and using cannabis for free are equally important motivators. The sale of the substance thus not only helps them cover the costs of the crop (Potter et al., 2015) and some or all of their private supply but also provides them with a profit.

Products for cultivation are purchased almost exclusively in Grow Shops, which confirms the fundamental role played by these specialised stores in the expansion of cannabis culture (Isorna, 2013), with similar spending by men and women. It is estimated that Spanish users spend around 55 Euros per month on the purchase of cannabis (Álvarez, Gammella & Parra, 2017), twice as much as study participants reported spending on their crop on average, and the figure may vary depending on the profile of the grower. Given the purchase of products for cultivation (through Grow Shop) and the average expenditure (€27.43) of the our study sample, and with reference to the Potter classification (2010),

the “cooperative grower” profile would be discarded a priori, with for-profit growers, “occasional opportunists” and/or “autonomous growers” offering more appropriate labels. These data also suggest that it may be interesting to investigate in greater depth whether the profile of “occasional opportunist” is more representative of women, and “autonomous grower” of men, respectively.

The data provided by our study indicate that men present a significantly greater pattern of cannabis abuse, understood as a more intensive intake of the substance, compared to levels reported in prevalence surveys in the general population (OEDA, 2016). However, the cut-off point to determine abuse is more conservative in our study than that used in the EDADES survey ($CAST \geq 4$), and so the percentage of high-risk cannabis users in the sample of growers of the present study may be even higher. This finding is especially relevant since there are studies that indicate one in two regular users will develop dependence on this substance, with those starting in adolescence being at higher risk (Murray et al., 2016). Prevalence studies indicate that men have a more marked tendency towards frequent use during adolescence, thereby increasing the risk compared to women. Consequently, this can be considered a risk factor which discriminates by gender.

Although the opportunities to use cannabis appear to be greater for men, once the conditions for greater access to the substance as a result of cultivation are met, there are hardly any differences between the sexes (Van Etten & Anthony, 2001). However, in the last decade, prevalence studies show how, at an early age, the cannabis use rates of girls are very similar to those of boys. The 2014 ESTUDES survey (OEDA, 2016) showed that 10.5% of girls at age 14 had used cannabis in the last 12 months compared to 11.5% of boys. As indicated by Murray et al. (2016), those adolescents who start using cannabis at an early age are at increased risk of developing problematic use, regardless of gender. However, we must also consider social factors with differential effects according to gender, such as the greater stigma and reproach associated with women using cannabis (Romo-Aviles, 2011), the greater acceptability of use by men, which can act as a moderating factor of use among women and as a risk factor for men; or the rapid progression from onset to dependence in women (Schepis et al., 2011).

Furthermore, male and female growers reported smoking cannabis every or almost every day, which, at a clinical level, results in higher risk of problematic use and being classified as cannabis dependent for both groups. Álvarez et al. (2017) point out that higher frequency and intensity of cannabis use can generate a greater incidence and prevalence of problems related to this use. However, various studies and research providing epidemiological data (APA, 2014; Becker & Hu, 2008) point out that cannabis use disorder diagnoses are two to three times more prevalent

among men, results which are in contrast to those obtained with the sample of the present study.

As to the use of different substances by women, levels of use are inversely proportional to the risks and the level of transgression involved (Fattore & Fratta, 2010). However, the safe spaces for use afforded by small-scale cultivation contribute to an increase in the prevalence of substance use among women. In any case, longitudinal studies of the growth of cannabis use which address gender and domestic cultivation are needed to provide evidence of the interaction processes that both can have according to gender.

In terms of the problems related to cannabis use, the present study did not observe any differences between men and women in relation to the prevalence of problematic use or psychological dependence on cannabis. As mentioned, males have easier access to the substance (Van Etten & Anthony, 2001), but the initial difficulties of access for women seem to dissipate with domestic cultivation, facilitating the frequency and intensity of cannabis and, therefore, a greater probability of developing a cannabis use disorder in both sexes. Thus, gender equality in the frequency of use of cannabis and the clinical picture of abuse may be explained by other risk factors beyond the availability of the substance through domestic cultivation.

More physical problems derived from cannabis use (e.g., worse physical health than usual, loss of knowledge or fainting, chest pains after smoking), are reported by men than women. This fact could be explained by the difference in intensive cannabis use by study participants, with men showing a significantly greater pattern of abuse. Another finding worthy of note is that male growers in the sample evidence both an earlier age of onset of alcohol use and significantly higher levels of drinking. This is supported by studies such as that of Peters, Budney and Carroll (2012), which indicate that long-term patterns of cannabis-alcohol polydrug use, of greater frequency and intensity, and earlier onset, are related to greater physical discomfort.

With regard to other psychosocial problems (e.g., smoking more whilst alone, spending more time with friends who also use, worrying about feelings of isolation or detachment, lack of motivation, feeling depressed), no gender differences were observed. This finding could be interpreted as a failure of the risk protection mechanism of the personal and community protection factors most present in women (Martínez & Robles, 2001).

In terms of age of onset, men and women started to use cannabis and tobacco, as well as the experimental use of cocaine, at very similar ages. Our sample of growers reported starting to use different substances at younger ages compared to the general population (OEDA, 2016).

As for tobacco, smoking begins among the population of growers before cannabis use. However, the study participants did not show levels of nicotine dependence, contrary to expectations due to the high comorbidity rates (53%)

between cannabis dependence disorders and smoking, especially when use begins at early ages (APA, 2014). This is consistent with theories in which tobacco is understood as a gateway or entry drug that facilitates the use of other illicit drugs such as cannabis (Fergusson, Boden & Horwood, 2008; Kandel, Yamaguchi & Klein, 2006) and which, in addition, mediates the progression of cannabis use to substance dependence (Hindocha et al., 2015).

Furthermore, the trend towards polydrug use is not restricted to either men or women in this sample. In fact, both groups reported using cannabis simultaneously with other legal drugs in recreational contexts and, likewise, present similar rates of experimental use of other illicit drugs (i.e., cocaine or ecstasy). These data suggest a levelling of male-female ratios in experimental and recent use of all addictive substances, highlighting the greater access to illicit drugs and the progressive increase in the use of legal drugs by women (Fattore, Melis, Fadda & Fratta, 2014; Romo-Avilés, 2011). This could point to a failure of the containment barriers or protective factors traditionally associated with female roles, as shown by the trends of recent years (EMCDDA, 2016).

Given the above, and comparing the male-female use ratios of both legal and illegal drugs in the population of growers, the existence of a feminisation process of drug use can be inferred (Romo-Avilés, 2011; Velasco, Vilariño, Amado & Fariña, 2014). This can be explained in part by the normalisation and legitimisation of cultivation and use of cannabis, as well as by its greater availability. Moreover, the visibility of women taking part in small-scale cannabis cultivation with the intention of distribution or sale can be understood on the basis of a favourable attitude towards drugs and the reduction of the stigma involved in a practice considered antisocial or deviant, and traditionally masculinised (Romo-Avilés, 2011) such as cannabis growing (López & Rodríguez-Arias, 2012). The sale of the product used to be considered a mainly male activity, with women relegated to a mere supporting role (Dahl & Sandberg, 2015).

Some of our findings, as well as the approach from a gender perspective, highlight the relevance of the present study in understanding the phenomenon of cannabis use and small-scale cultivation.

Despite the age of onset of cannabis use among male and female growers in our sample being similar, men present greater patterns of abuse; it thus remains to explore, differentially according to gender, the factors that trigger the onset and favour the maintenance of substance use, as well as the pattern of intensive use and associated problems (e.g., the availability and the opportunities to use drugs, socialisation processes, the perception of risk).

Similarly, the pattern of intensive use observed among our participants, embedded as it is in the current context of debate and changes regarding policies regulating cannabis use in certain countries, suggests the need to assess

harm-reduction policies focusing on the limitation and control of THC concentrations allowed in plants for cultivation, both small and large scale. We have evidence that regular use of this substance (Murray et al., 2016) with high concentrations of THC (Englund, Freeman, Murray & MacGuire, 2017) increases the likelihood of developing dependence, and it is regular or daily use that is associated with the most harmful effects (Fischer et al., 2017). Based on the profile observed among domestic growers, it seems advisable to apply appropriate prevention measures aimed at least at minimising the concentrations of THC and consequently the risk of dependence and associated problems.

Although the profiles of male and female small-scale growers are similar in the present study, preventive strategies and the differential treatment of drug dependency according to gender are practically non-existent. It should be noted that it is women who access the health system before men, even though they have greater difficulties in entering and staying in treatment programs (Tomás et al., 2007). Thus, interventions must be designed from a gender perspective, taking into account the different mediating variables (see Borrel & Artazcoz, 2008) in order to ensure greater suitability of and adherence to interventions.

Finally, and taking into account the clear bias in the masculinised perspective of substance addiction research, it is necessary to deepen our knowledge of the new forms of use and the practice of domestic cultivation by women, their motivation for such use, and identify the factors promoting the practice of cultivation, as well as the role they currently play in the process.

With regard to the design limitations of this study, which affect the generalizability of the results, it should firstly be noted that the cross-sectional design prevents causality relationships between the independent and dependent variables from being established and provides only associations between them. Secondly, the results are based on the self-reports of the growers themselves with the well-known response bias this method entails (e.g., fabrication). Thirdly, ours is sample of adult domestic growers, and the results may not be generalisable to populations of minors or those who do not grow cannabis. Finally, the classifications and diagnoses are based on psychometric assessment, that is, the conclusions of our study are diagnostic impressions.

Conflict of interests

The authors declare no conflict of interests.

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