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Age, sex and personality in early cannabis use



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ABSTRACT

Previous studies analysing personality and cannabis use in adult samples suggest that cannabis users show significant higher levels of impulsivity, sensation seeking and schizotypy. However, there are few studies exploring this relationship in adolescence using psychobiological models of personality. Given the relevance of identifying individual differences that lead adolescents to early cannabis use to prevent future health problems, the present study aimed to explore the relationship between age, sex, personality and early cannabis use using a psychobiological model of personality in a sample of 415 students (51.8% boys) from 12 to 18 years. Chi² tests showed significant higher prevalence of cannabis use in boys and in the group aged 15–18 years. Multiple analysis of variance showed significant higher scores in psychoticism, sensation seeking and in all its subscales in cannabis users group, while an interaction with age was found for extraversion and neuroticism: cannabis users scored higher than non-users in the youngest group (12–14 years) but lower in the oldest group in both dimensions. Finally, regression analysis showed that narrower traits of sensation seeking (experience seeking and disinhibition) were the most associated to early cannabis use. Results are discussed in terms of early cannabis users' personality profiles and in terms of the self-medication theory.

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1. Introduction

Cannabis is the most widely illegal recreational drug consumed in the world, with adolescents from 15 years old and young adults showing the highest consumption rates, increasing the prevalence of consumption up to 28% in European countries such as Spain [14,15]. Since the 1990s there has been a significant increase in the consumption of cannabis between general and school population in many countries of the European Union, but recently, a decline tendency has been detected. Nevertheless, the mean age for the initiation of cannabis use is around 14 years, situating it as the illegal drug that starts being consumed earlier than any other illegal substance in developed countries, and with boys showing a higher prevalence of consumption than girls'. However, although prevalence of cannabis use in adolescence is high, the large majority of adolescents will phase out cannabis use before it becomes problematic, and the percentage of adolescents who meet the criteria for long-term substance abuse is significantly lower [15,2,4]. Nevertheless, the negative impact that this substance might have on adolescents' academic and social functioning, as well as on future mental and physical health, is significant and it is

increasing sanitary costs for western societies [14,21,22]. It is well established that frequent cannabis use exacerbates the expression of schizotypal symptomatology and a greater incidence of depression and anxiety in early adulthood is found [25,23,7,32] when its use begins in early adolescence [3,6,31].

Teenage is a significant period of brain development and behavioural maturation during which the corresponding changes in neuroplasticity places the adolescent brain at a particular risk to environmental factors such as drug exposure; using cannabis in this period increases the future risk of using other illicit drugs later in life, a phenomenon known as the gateway hypothesis [22]. However, it is also worth noting that a general increase in exploratory and social behaviours is also characteristic of this ontogenetic period [26,27,29], and not all individuals will be lead to abuse or to the intake of other addictive substances. And, although there are other factors that might lead to early cannabis use, such as cultural or familiar background, it is suggested that there is a genetical vulnerability [2,22,1,9] with reward-system based personality traits being their most powerful predictors [20,24,8,17,5,13]. Previous studies show that impulsivity and sensation seeking are the traits most associated to early cannabis use while anxiety and schizotypy are most related with a more persistent and heavy use through time. Schizotypy is a continuum of personality characteristics and experiences ranging from normal dissociative, imaginative states to more extreme states related to

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psychosis and in particular, schizophrenia [12]. It is defined by four factors including:

- unusual experiences;
- cognitive disorganization;
- a tendency to introverted, emotionally flat and asocial behaviour;
- and impulsive non-conformity, particularly with regard to rules and social conventions.

Schizotypy is also associated to the extreme upper end of the Eysenckian ‘psychoticism’ dimension of normal personality [11,16], a dimension regarded as a component of antisocial behaviour with associated impulsiveness, non-conformity and mood-related disinhibition, it is rather related with narrower symptoms of psychopathy and with the negative aspects of schizotypy [12]. Self-medication theories suggest that cannabis intake would act as a self-medication that helps individuals modulate specific outcomes of their extreme behaviours and personality [9,8,17,5]. For instance, cannabis would have a relaxing effect for those who express impulsive tendencies, and would facilitate the reduction of anxiety in social situations [8].

It is also suggested that sex might be a potential confound to studies of personality and cannabis use, since males are more likely to use cannabis and they also score significantly higher on impulsivity, sensation seeking and on the negative aspects of schizotypy. And although age of initiation has been identified as a significant predictor in the relationship between early cannabis use and future mental disorders, it has rarely been considered in the studies analysing normal personality and cannabis use in adolescence [20,24,8]. Furthermore, the role of personality traits under a dispositional approach in early cannabis use, and how certain combinations of traits increase the risk of early cannabis use in adolescence have been explored relatively few. Accordingly, the present study aims to identify, from a dispositional–psychobiological theoretical frame, those personality traits which are most related to early cannabis use, using Eysenck’s and Zuckerman’s personality models, in a non-clinical sample of Spanish adolescents, controlling for age and sex. Following the literature, it is hypothesised that (1) the prevalence of use would be higher in boys of increasing age from 12 to 18 years old, and (2) early cannabis use would be associated with adolescents showing higher scores in sensation seeking, neuroticism and psychoticism, which includes traits of impulsiveness and non-conformity. Finally, it is expected that (3) sex and age differences would be related with personality profiles of early cannabis users.

2. Method

2.1. Participants

An initial sample of 486 students from four public high schools from the province of Barcelona participated in this study. Only those participants who answered completely all the questionnaires and who did not show social desirability were included in the data analyses. Social desirability was measured through the ‘Lie’ scale included in the J-EPQ [16], and the 5% of subjects with the lowest scores in this scale were rejected from the analyses. The final sample ($n = 415$) consisted of 215 boys (51.8%) and 200 girls, ranging from 12 to 18 yrs old (mean = 14.76; SD = 1.75).

2.2. Measures

To assess personality two questionnaires were administered:

- the Spanish version of the Junior Eysenck Personality Questionnaire (J-EPQ) [16]: it extends personality assessment to children

and adolescents, measuring the same three major dimensions of personality as the adult version through 81 dichotomous items. The Neuroticism (N) scale consists in 23 items assessing levels of negative affect such as depression and anxiety. The internal consistency of the N scale for the present sample was .77. The Extraversion (E) scale consists in 24 items, which assess being outgoing, talkative, high on positive affect (feeling good), and in need of external stimulation. The internal consistency of the E scale for the present sample was .83. The Psychoticism (P) scale or ‘tough mindedness’ is associated with egocentrism, aggressive and non-empathic behaviours through 18 items. The internal consistency of the P scale for the present sample was .82.

- the Spanish version of the Junior Sensation Seeking Scale (J-SSS) [28]: it is an adaptation for adolescents of the Sensation Seeking Scale [35]. Sensation seeking (SS) is defined as ‘‘the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience’’ [33]. The scale contains 40 dichotomous items, with scores ranging from 0 to 40 (highest sensation seeking score). The internal consistency of the J-SSS scale for the present sample was .86 and it includes 4 subscales assessing: Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (Dis), and Boredom Susceptibility (BS). The TAS subscale contains items expressing a desire to engage in sports or other physically risky activities that provide unusual sensations of speed or defiance of gravity, such as parachuting, scuba diving, or skiing. The ES subscale encompasses items measuring the seeking of novel sensations and experiences through the mind and senses, travelling, or being unconventional. The Dis subscale contains items describing seeking sensations through social activities such as parties, social drinking, and sex. Finally, the BS subscale measures intolerance for repetitive experiences of any kind, including routine work and boring people.

To assess early cannabis use, in line with previous research to explore cannabis use [7,6], participants were asked ‘‘Have you smoked cannabis during the last year?’’ Participants who answered ‘‘yes’’ (18.3%) were categorised as users and participants who answered ‘‘no’’ (81.7%) were categorised as non-users.

2.3. Procedure

A cross-sectional design was established and the researcher contacted four randomised high schools in Barcelona province (Catalunya) and asked for their collaboration. Questionnaires were administered during school sessions by the researcher and her assistants and participants completed the questionnaires anonymously in classroom settings. Parents were informed and gave consent prior to participant’s inclusion in this study. All students participated voluntarily and did not receive any academic or economic reward for their collaboration. The Ethical Committee of the university and the high schools’ management teams approved the protocol.

2.4. Statistical Analyses

Means and standard errors of the means were computed for the J-SSS, J-EPQ scales and for age. Age was categorised into 2 age groups [30]: from 12 to 14 years old and from 15 to 18 years old. Prevalence of cannabis use and Chi² tests were computed to contrast distributions by sex and age groups. Cronbach’s alphas were also calculated to test internal scores consistencies for the J-SSS and for the J-EPQ. Pearson correlations were computed between age, J-SSS, and J-EPQ. A multivariate analysis of variance

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