Associations between personality and best friend's use with marijuana use and marijuana-related problems: a moderation study

Student: Andrea Esteve Llidó (20904947V) **Tutor**: Laura Mezquita
Degree final project in Psychology 2020/2021 (PS1048)

Resumen

La marihuana es la sustancia ilegal más consumidas entre los jóvenes adultos (Muldrow et al., 2021). Existen diferentes variables biológicas, psicológicas y sociales que influyen en el consumo de marihuana (Engel, 1977). Esta investigación tiene como objetivo estudiar como la personalidad y el consumo del mejor amigo influyen en el consumo propio de marihuana en jóvenes adultos, así como explorar posibles efectos de interacción entre la personalidad y el consumo del mejor amigo a la hora de predecir el consumo propio de marihuana y los problemas derivados. Para ello, utilizamos una muestra compuesta por 680 estudiantes de la Universidad Jaume I entre 15 y 72 años (edad media 22,68 años; DT= 5,75), que rellenaron mediante Qualtrics el BFPTSQ (Ortet et al., 2017), el CUDIT (Adamson et al., 2010) y el CODIS (creación propia por el grupo de investigación de Personalidad y Psicopatología de la UJI). Se realizaron análisis de correlación, regresiones lineales y las interacciones se representaron mediante la plataforma InterActive (McCabe et al., 2018). Los resultados mostraron que el consumo del mejor amigo, la extraversión, la baja amabilidad y la baja responsabilidad se asocian a una mayor frecuencia de consumo de marihuana. Cuando se exploraron los efectos de interacción se encontró que, a mayor frecuencia de consumo del mejor amigo, las asociaciones entre los rasgos de personalidad de riesgo y el consumo propio de marihuana fueron mayores. Por tanto, el presente estudio sugiere que la influencia del mejor amigo es factor de riesgo para el consumo propio, y que este también modera la influencia de variables distales como la personalidad. Así pues, incluso cuando las intervenciones dirigidas a la personalidad han demostrado su eficacia para reducir el consumo de drogas (Conrod, 2016), se debe tener en cuenta el papel del contexto en el consumo de sustancias de jóvenes adultos.

Palabras claves: personalidad, marihuana, consumo, amigos, jóvenes adultos.

Abstract

Marijuana is one of the most widespread illegal substances that young adults consume (Muldrow et al., 2021), and different biological, psychological and social variables influence marijuana use (Engel, 1977). This research work has a twofold aim: to study how personality and best friend's use influence own marijuana use in young adults, and to explore possible interaction effects between personality and best friend's use in predicting marijuana self-use and related problems. In order to do so, we employed a sample made up of 680 students from the Universitat Jaume I (UJI, Spain) aged between 15 and 72 years (mean age 22.68 years; SD: 5.75). They filled out Qualtrics in the BFPTSQ (Ortet et al., 2017), and the CUDIT (Adamson et al., 2010) and the CODIS (created by the UJI Personality and Psychopathology Research Group). Correlation analyses and linear regressions were carried out, and interactions were represented with the InterActive platform (McCabe et al., 2018). The results showed that best friend's use, extraversion, low agreeableness, and low conscientiousness were associated with higher marijuana use frequency. When exploring the interaction effects, the associations between risky personality traits and marijuana self-use were higher when best friend's use was more frequent. Hence the present study suggests that the best friend influence is a risk factor for self-use, which also moderates the influence of more distal variables, such as personality. Thus even when personality-targeted interventions have been proven effective in reducing drug use (Conrod, 2016), the role of context in substance use must be taken into account.

Key words: marijuana, personality, use, friends, young adults.

ASSOCIATIONS BETWEEN PERSONALITY AND BEST FRIEND'S USE WITH MARIJUANA USE AND MARIJUANA-RELATED PROBLEMS: A MODERATION STUDY

Student: Andrea Esteve Llidó (20904947V) - **Tutor**: Laura Mezquita – **FDP**: Psychology 2020/2021 (PS1048)

Introduction

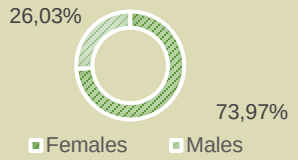
Marijuana is the most widespread illegal substances among young adults (Muldrow et al., 2021). Different biological, psychological and social variables can influence marijuana use (Engel, 1977). Of them, personality is a distal psychological variable that impacts marijuana use. The Five Factors Model is the most widely employed personality model with the most empirical evidence. It is composed of emotional stability (or low neuroticism), extraversion, openness to experience, agreeableness and conscientiousness (John et al., 2008). Previous studies have found that high openness, low agreeableness and low conscientiousness are related to marijuana use, while high neuroticism, low agreeableness and low conscientiousness are associated with marijuana-related problems (Herchenroeder et al., in press). Some proximal social variables also influence marijuana use, such as best friend's use (Tucker et al., 2014). Previous studies have found that more frequent best friend's use is related to higher marijuana self-use (Kennedy et al., 2019; Herold et al.,2021). Previous studies have indicated that both personality and best friend's use, and their interaction, impact using other drugs like alcohol (Siewert et al., 2004; Kuntsche et al., 2008; Mezquita et al., 2014; Gallego et al., 2018; Mezquita et al.,2021). However, to the best of our knowledge, the moderating role of best friend's use in the relation of personality with self-marijuana use and derived problems has not yet been explored. This is the aim of the present study.

Hypothesis

1:↑O,↓A,↓ C→ ↑ Marijuana use
2:↑N,↓A,↓C→ ↑ Problems

3: Best friend's use →↑Self-use
4: Best friend's use →↑Relation personality, use and problems

Participants



- **N**= 680 students from the UJI.
- **Mean Age**: 22.68 years (SD=5.75).
- **Degree**: Psychology (37%), Criminology (5%), Business A (4.6%), others (53.4%).
- **Mean Family income:** 1927 €/mth (SD=2076.41).

	MALES	FEMALES		
	Mean (SD)	Mean (SD)	t	d
Emotional Stability	23.04 (7.31)	17.95 (7.87)	7.45***	0.66
Extaversion	25.24 (7.25)	25.83 (7.64)	-0.89	-0.08
Openness	29.17 (6.41)	28.57 (6.91)	1.00	0.09
Agreeableness	27.06 (5.77)	28.17 (5.66)	-2.20*	-0.19
Conscientiousness	23.36 (7.43)	25.69 (7.07)	-3.67***	-0.32
Best Friend's Fq. Use	1.93 (2.33)	1.20 (1.72)	3,42***	0,38
Fq. Self-Use	1.66 (2.02)	0.98 (1.42)	4.15***	0.43
Cudit	9.42 (6.20)	6.02 (4.67)	3.85***	0.64

*p < 0.05, **p < 0.01 and ***p < 0.001

Cohen's d values of 0.20, 0.50, and 0.80 correspond to small, medium, and large effect sizes (Cohen,1992)

Procedure

The utilized data come from the "Cross-cultural and longitudinal study of psychosocial variables of risk and protection to toxic and behavioral addictions in young people" of the UJI. In this study, only the data related to personality, own marijuana use, best friend's use and problems caused by marijuana use were employed.

Instruments

- **BFPTSO** measures the five personality factors (Ortet et al., 2017).
- **CUDIT- R** measures marijuana related-problems (Adamson et al., 2010).
- **CODIS** measures frequency of marijuana use. We apply measures for own and best friend's use (created by the UJI Personality and Psychopathology research group).

Analysis

- Descriptive analyses, correlations, and linear regressions, were performed with SSPS Statistics v27.
- The interaction plots were performed with the InterActive program (McCabe et al., 2018).

Results

Correlations

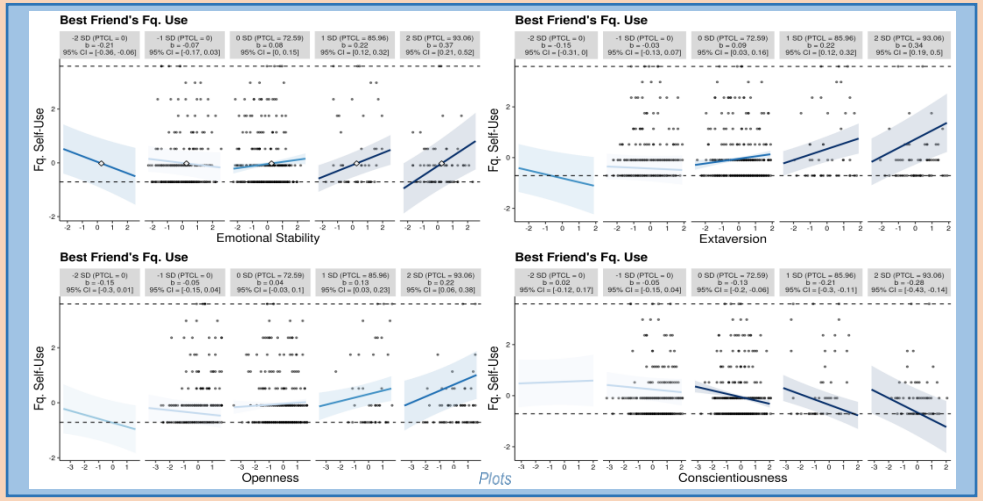
	Fq. Self-Use	Cudit
Emotional Stability	0.058	0.039
Extaversion	0.136***	0.019
Openness	0.074	0.045
Agreeableness	-0.095*	-0.060
Conscientiousness	-0.205***	-0.149*
Best Friend's Fq. Use	0.519***	0.513***

*p < 0.05, **p < 0.01 and ***p < 0.001

Regression Analysis

	Fq. Self-Use	Cudit	Fq. Self-Use	Cudit
Age	-0.020	-0.003	-0.031	-0.008
Sex	-0.052	-0.234**	-0.050	-0.240**
Emotional Stability (ES)	0.064	-0.096	0.082*	-0.130
Extaversion (E)	0.096*	-0.035	0.100**	-0.064
Openness (O)	0.028	-0.006	0.039	-0.028
Agreeableness (A)	-0.060	0.026	-0.085*	-0.031
Conscientiousness (C)	-0.156***	-0.024	-0.139***	0.031
Best Friend's Fq. Use (Friend)	0.473***	0.480***	-0.041	-0.144
ES x Friend			0.151***	0.083
E x Friend			0.466***	0.159
O x Friend			0.410*	0.151
A x Friend			-0.070	0.529
C x Friend			-0.274*	-0.199
ΔR^2	0.310	0.323	0.367	0.346

*p < 0.05, **p < 0.01 and ***p < 0.001



Discussion

As in previous studies, both variables, personality (Herchenroeder et al., in press) and best friend's use (Tucker et al., 2014; Kennedy et al., 2019), predict marijuana self-use. However, when analyzing its associations with marijuana-related problems, the effect of personality is less relevant, but the effect of best friend's use remains. As in previous studies, low conscientiousness and low agreeableness predict marijuana use (Herchenroeder et al., in press). In addition, and as in previous studies with youths, a positive association between extraversion and frequency of use appears, similarly to those found with other drugs like alcohol (Mezquita et al., 2021). Taken together, these results suggest that extraversion can facilitate drug use in samples of youths, while the role of extraversion is less relevant in older adults. The non significant associations between openness and the marijuana outcomes are unexpected compared to previous works (Terracciano et al., 2008; Rajapaksha et al., 2020) but similar to recent reports with undergraduates from different countries, including Spanish youths (Herchenroeder et al., in press). Thus, additional studies to clarify the role of openness in marijuana use in undergraduates are needed. Emotional Stability is also related to frequency of marijuana use. This result is also unexpected, but it is similar to what it is usually found with alcohol, where neuroticism acts as a protective factor for alcohol use in early alcohol use stages (Siewert et al., 2004; Kuntsche et al., 2008) and as a risk factor in later stages (Mezquita et al., 2021).Finally, when exploring interaction effects, at higher levels of best friend's use, the associations between the personality characteristic of risk and marijuana self-use are closer, similarly to those found with other drugs like alcohol (Gallego et al., 2018; Walker et al., 2017).

Overall, the present study suggests that the best friend's influence on marijuana self-use is a strong predictor of marijuana self-use, and this environmental variable also moderates the influence of more distal variables like personality. Even though personality-targeted interventions have been efficiently shown to reduce drug use (Conrod, 2016), the context role should be taken into account.

Bibliographic References

Adamson, S. J., Kay-Lambkin, F. J., Baker, A. L., Lewin, T. J., Thornton, L., Kelly, B. J., & Sellman, J. D. (2010). An improved brief measure of cannabis misuse: the Cannabis Use Disorders Identification Test-Revised (CUDIT-R). *Drug and Alcohol Dependence*, *110*(1-2), 137–143. https://doi.org/10.1016/j.drugalcdep.2010.02.017

Conrod, P. J. (2016). Personality-targeted interventions for substance use and misuse. *Current Addiction Reports*, *3*(4), 426–436. https://doi.org/10.1007/s40429 016-0127-6

Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science, 1*(3), 98–101. https://doi.org/10.1111/1467-8721.ep10768783

Engel, G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science*, *196*(4286), 129–136.

Gallego, S., Mezquita, L., Moya-Higueras, J., Ortet, G., & Ibáñez, M. I. (2018). Contribution of the five factors of personality and peers on adolescent alcohol use: a cross-national study. *Spanish Journal of Psychology*, 2018, *21*(58), 1–9. https://doi.org/10.1017/sjp.2018.63

Herchenroeder, L., Mezquita,L., Bravo, A., Pilatti, A., Prince, M., Pearson, M., and study Team. (in press). A cross-cultural examination of marijuana protective behavioral strategies' mediating role in the relationship between personality and marijuana outcomes. *The American Journal of Drugs and Alcohol Abuse.*

Herold, R., Boykan, R., Eliscu, A., Alcal, E., & Goniewicz, M. L. (2021). Association between friends' use of nicotine and cannabis and intake of both substances among adolescents. *International Journal of Environmental Research and Public Health, 18*(2), 695.

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative big-five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 114–153). Guilford Press.

Kennedy, T. M., Howard, A. L., Mitchell, J. T., Hoza, B., Arnold, L. E., Hechtman, L. T., Swanson, J. M., Stehli, A., & Molina, B. S. G. (2019). Adult substance use as a function of growth in peer use across adolescence and young adulthood in the context of ADHD: Findings from the MTA. *Addictive Behaviors*, *99*, 106106. https://doi.org/10.1016/j.addbeh.2019.106106

Kuntsche, E., von Fischer, M., & Gmel, G. (2008). Personality factors and alcohol use: A mediator analysis of drinking motives. *Personality and Individual Differences, 45*(8), 796–800. https://doi.org/10.1016/j.paid.2008.08.009

McCabe, C. J., Kim, D. S., & King, K. M. (2018). Improving present practices in the visual display of interactions. *Advances in Methods and Practices in Psychological Science*, *1*(2), 147-165. https://doi.org/10.1177/2515245917746792

Mezquita, L., Ibáñez, M. I., Moya, J., Villa, H., & Ortet, G. (2014). A longitudinal examination of different etiological pathways to alcohol use and misuse. *Alcoholism: Clinical and Experimental Research, 38*(6), 1770–1779. https://doi.org/10.1111/acer.12419

Mezquita, L., Ortet, G., & Ibáñez, M. I. (2021). Personality traits and alcohol use and misuse. In R. Cooke, D. Conroy, E. L. Davies, M. S. Hagger, & R. O. de Visser (Eds.), *The Palgrave Handbook of Psychological Perspectives on Alcohol Use* (pp. 105–131). Springer International Publishing. https://doi.org/10.1007/978-3-030-66941-6_5

Muldrow, A. F., Joo, J., Lee, Y., Schultz, C. P., Muldrow, A. F., Joo, J., Lee, Y., & Schultz, C. P. (2021). Sharing pro-marijuana messaging on social media: The moderating role of legislation. *Journal of American College Health*, 1–9. https://doi.org/10.1080/07448481.2020.1851694

Ortet, G., Martínez, T., Mezquita, L., Morizot, J., & Ibáñez, M. I. (2017). Big five personality trait short questionnaire: preliminary validation with Spanish adults. *The Spanish Journal of Psychology*, *20*, E7. https://doi.org/10.1017/sjp.2017.8

Rajapaksha, R. M. D. S., Hammonds, R., Filbey, F., Choudhary, P. K., & Biswas, S. (2020). A preliminary risk prediction model for cannabis use disorder. *Preventive Medicine Reports, 20*, 101228. https://doi.org/10.1016/j.pmedr.2020.101228

Siewert, E. A., Stallings, M. C., & Hewitt, J. K. (2004). Genetic influences on vulnerability to, and protective factors for, adolescent drinking. *Twin Research and Human Genetics, 7*(6), 617–625. https://doi.org/10.1375/1369052042663869

Terracciano, A., Löckenhoff, C. E., Crum, R. M., Bienvenu, J., & Jr, P. T. C. (2008). Five-Factor Model personality profiles of drug users. *BMC Psychiartry, 8*(1), 1–10. https://doi.org/10.1186/1471-244X-8-22

Tucker, J. S., De La Haye, K., Kennedy, D. P., Green, H. D., & Pollard, M. S. (2014). Peer influence on marijuana use in different types of friendships. *Journal of Adolescent Health, 54*(1), 67–73. https://doi.org/10.1016/j.jadohealth.2013.07.025

Walker, J. O, Gallego, S., López, F., Cuevas, A., Ortet, G & Ibañez, I. (2017, September 28-29). *The role of personality, peers and pocket money on adolescent problematic alcohol use* [Poster presentation]. Jornada AIIDI, Santiago de Compostela, Galicia, Spain.