

Personality Profiles and How they Relate to Drug Consumption among Young People in Spain

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Abstract:

Objective: The objective of this work was to find out whether specific Type A Behavior Pattern (TABP) profiles exist which may constitute a risk factor for the consumption of legal and illegal substances (alcohol, tobacco, psychoactive drugs, cannabis, cocaine and hallucinogens) by young Spaniards.

Methodology: An ad hoc prospective ex post facto design questionnaire was prepared covering socio-demographic data, consumption behavior and the Type A Behavior Pattern (TABP, Jenkins Activity Survey Form H, JASE-H). The sample comprised 3,816 young people between the ages of 18 and 29 from the province of Cordoba (Spain).

Results: Hierarchical clustering was used to obtain 3 groups; one characterized by low scores (the TBBP group), one characterized by medium scores and the third characterized by hostility-competitiveness (the HC group). Logistic regression showed that membership of the HC group was a risk factor for the consumption of psychoactive drugs and illegal substances, while membership of the TBBP group was a protective factor for the consumption of legal substances.

Conclusions: Specific personality profiles were identified which constitute either a risk factor or a protective factor for substance abuse. These results will prove useful to drug consumption prevention and treatment programs focused on the above-mentioned personality profiles.

Key words: Type A Behavior Pattern, hostility, competitiveness, clustering, consumption, young people

Introduction

The consumption of psychoactive substances does not depend on a single factor, but on multiple aspects such as family history (evidence of genotypes), relationship with peers, individual and cultural factors, and by-passing crazes (Arpana, Jacobson, Prescott & Kenneth, 2004; García & Carrasco, 2003; Belmonte, Ruiz-Olivares & Herruzo, 2016). Drug consumption among young people has become a global health concern, with the latest data showing an increase in substance abuse. According to the European Monitoring Centre for Drugs and Drug Abuse, 18.7 million young people consumed drugs in 2016 (EMCDDA, 2017).

A deeper understanding of the variables which affect initiation and persistence in the consumption of psychoactive substances is of great help when designing efficient prevention and intervention strategies (Le Bon, Basiaux, Streel, Tecco, Hanak, Hansenne, Ansseau, Pelc, Verbanck & Dupont, 2004; Natividade, Aguirre, Bizarro, & Hutz, 2012). Of the individual factors involved, personality may play an important role in a person's predisposition and precipitation towards substance abuse, continued use of substances and dependence on the same (García & Carrasco, 2003). Although strictly speaking it would not be correct to speak of addictive personalities, it is known that personality variables in people who engage in substance abuse differ from those in people who do not engage in such behavior (Cervera, Rubio, Haro, Bolinches, De Vicente & Valderrama, 2001). Personality traits might be thought of as pre-existing factors which influence a person's decision to behave in a certain way and then persist in that behavior. However, no evidence has yet been produced regarding the specificity with which those traits may affect substance consumption (Le Bon, et al., 2004). Personality traits that have been linked with consumption include the desire for new sensations and experiences (Santuário, Cuadra, Sánchez & Urcelay, 2012); impulsiveness (Lawrence & Clark, 2008; Perry & Carroll, 2008; Verdejo, Doran, McChargue & Cohen,

2007; Pedrero, 2009;); and Cloninger's temperament dimensions (Leventhal, Waters, Boyd, Moolchan, Heishman, Lerman & Pickworth, 2007). Despite attempts to predict what type of substance is more likely to be consumed by analyzing personality, the key behavioral and personality factors associated with drug use have still not yet been established (Le Bon, et al., 2004).

One of the personality profiles most closely associated with health is the Type A Behavior Pattern (henceforth referred to as TABP). The TABP is a complex mixture of factors (hostility, impatience, competitiveness and workload) (Friedman & Roseman, 1974 in Bermúdez, Sánchez-Elvira & Pérez, 1991; Gil-Lacruz & Izquierdo, 2004). It characterizes people who "have a competitive lifestyle, with high levels of work commitment and time urgency, and who are more likely to suffer from heart illness in general and myocardial infarction in particular" (MacDougall et al., 1985 in Gil-Lacruz & Izquierdo, 2004). At the other end of the scale are people with the Type B Behavior Pattern (henceforth referred to as TBBP), who have a more relaxed, less pressurized lifestyle and whose behavior is less marked by impatience, hostility or competitiveness (García & Berrios, 1999). The TABP has traditionally been associated with heart trouble and sleep, eating and psychosomatic disorders (De la Fuente & De la Fuente, 1995), and with work stress (Matud, García & Matud, 2002; Solís-Cámara, 2007). Its relationship with drug consumption, however, has scarcely been addressed in scientific literature (Folsom, Hughes, Buehler, Mittelmark, Jacobs & Grimm, 1985; Leventhal, et al., 2007), and even when connections have been made the results obtained have been contradictory. Some studies have found a positive relationship between the two variables. For example, people with the TABP have been found to consume 30% more alcohol than those with the TBBP (Folsom, et al., 1985; Camargo, Vranizan, Thoeresen & Wood, 1986; Dielman, Leech, Miller & Moos, 1991; Forgays, Forgays, Wrzesniewski & Bonaiuto, 1992; Leventhal, et al., 2007), and to run a higher risk of potential behavioral

addiction (use of Internet or mobile phones, shopping and/or gambling) than those with the TABP (Belmonte, et al., 2016), but in other studies, no significant relationship has been detected (Jordan & Perri, 1987; Glynn, De Labry & Hou, 1988). It should, however, be noted that when researchers have focused on the specific factors that make up the TABP, the results obtained have shown greater consensus (García & Carrasco, 2003). Studies in this area indicate higher levels of hostility and impatience in people who consume alcohol than in people who do not consume alcohol (Dielmam, et al., 1991; Schonwetter & Janisse, 1991; Whiteman, Fowkes, Deary & Lee, 1997; Musante & Treiber, 2000; García & Carrasco, 2003). One of the contexts in which the TABP has been studied the most is that of the work environment, research into the adolescent/young population being relatively scarce in comparison (García & Carrasco, 2003).

The apparent inconsistency of the results obtained in the different studies linking TABP with substance consumption may be due to different combinations of specific TABP factor profiles in the samples used in those studies. It was therefore of interest to find out whether specific personality profiles exist that are more closely linked to drug consumption than the TABP itself: i.e., to establish which specific combination of the traits which typically characterize the TABP is most associated with problematic drug consumption behavior. It was also necessary to explore these relationships among young Spaniards, since few research papers have produced any information regarding this population. We also wanted to broaden the scope of the study to explore how the TABP may affect consumption of other substances (such as cannabis, cocaine and hallucinogens) and to increase the size of the sample in order to have enough individuals to represent each profile. This would all be beneficial when designing specific, efficient prevention plans. The objective of this work was therefore to establish whether certain personality profiles rooted in the Type A Behavior Pattern (TABP) constitute a risk factor for consumption of substances like alcohol, tobacco, psychoactive

drugs, cannabis, cocaine and hallucinogens among young people in Spain. The starting hypothesis was that, as occurs with alcohol (Musante & Treiber, 2000; García & Carrasco, 2003), people with personality profiles characterized by hostility and/or impatience would have a greater risk of consuming substances than people with profiles in which such traits were less predominant.

Methodology

Sample and procedure

In this study, the sample included 3,816 young people between the ages of 18 and over 29 from the city and province of Cordoba (Spain). More specifically, 1,411 (37%) were from urban areas and 2,405 (63%) from rural areas; 2,015 (53.3%) were women and 1,766 (46.7%) were men; 1,442 (38%) were aged 18-20, 987 (26%) 21-23, 677 (17.9%) 24-26, 510 (13.5%) 27-29 and 173 (4.6%) were over 29. In accordance with the ethical guidelines proposed by the American Psychological Association (APA, 2009), all the participants voluntarily agreed to take part in the study, receiving no remuneration whatsoever. The confidentiality of the data obtained was guaranteed, the information being used only for scientific purposes. Data was collected randomly from those attending activities at places like the university, training courses, vocational training workshops, gyms, social centers, etc. The questionnaire took around 25/30 minutes to complete.

Instruments

Substance consumption questionnaire.

A questionnaire used in earlier research projects (Lucena, Ruiz-Olivares, Pino & Herruzo, 2013) was adapted to provide information about consumption patterns for substances like alcohol, tobacco, psychoactive drugs, cocaine, cannabis and hallucinogens. The answer options for each of the substances were a Likert scale where 0 was "Never consumed", 1 "At some time in my life", 2 "In the last 12 months" and 3 "In the last 30 days".

Jenkins Activity Survey, Form H (JASE-H).

The Spanish version of this survey was used (Fernández-Abascal, Martín, Cruzado, 1990; Bermúdez, et al., 1991; Del Pino, Dorta, & Gaos, 1993) (Cronbach's alpha between 0.75 and 0.88). The JASE-H has 32 items in the form of sentences, and the respondent has to indicate the degree to which each one is applicable to or descriptive of him/herself. The answer options constitute a 6-point Likert scale, the lowest value being 1 ("Not at all"), and the highest being 6 ("Total agreement"). The JASE-H is designed to obtain an overall score (TABP/TBBP), with four scales evaluating: competitiveness, impatience, hostility and workload. This last dimension is considered a consequence of the TABP and may have a high score both in TABP and TBBP.

Data analysis

A standard statistical package (SPSS.21) was used to create a database. To explore specific differences within the TABP, a cluster analysis was first performed to group together those young people who shared similar characteristics with reference to the different TABP dimensions. The individuals in each group had to be sufficiently similar in each dimension and sufficiently different from those in the other groups. The optimum cluster minimizes distances between members of the same group in the chosen dimensions, while maximizing distances between the centers of the different groups. In the absence of empirical evidence to support an ideal number of groups, and taking into account the dimensions in the TABP, a maximum of 9 different combinations could be envisaged. A hierarchical analysis was therefore carried out to establish the correct number of groups which would represent the internal structure of those dimensions. To avoid long observation chains and minimize differences within each cluster, the Ward method was used. With the clusters obtained (3), an Analysis of Variance was performed, comparing substance consumption between the groups. A post-hoc test was also carried out. Finally, a logistic regression analysis was performed,

taking substance consumption or non-consumption as a dependent variable and the different clusters as independent variables.

Results

Cluster Analysis and Analysis of Variance

The cluster analysis took into account standard scores from the original questionnaire, so the first task was to typify the scores obtained. Table 1 shows the scores for the final clusters. Cluster 1 was characterized by low scores in all dimensions, thus coinciding with Jenkins' Type B behavior pattern. In our study we called this the Type B Behavior Pattern (TBBP) group. Cluster 2 had more or less average scores for impatience and workload, and high scores for competitiveness and hostility. We called this group the Hostility-Competitiveness (HC) group. Cluster 3 generally had more or less average scores for all dimensions and could therefore be described as the NoA-NoB group.

(Insert Table 1 somewhere here)

Table 2 shows the results of the analysis of variance (ANOVA), which revealed significant differences between the three clusters for consumption of alcohol, cannabis, cocaine and hallucinogens. For alcohol, the Games-Howell post-hoc analysis showed differences between the TBBP cluster and the HC and NoA-NoB clusters, with higher consumption levels in the latter two groups. For cannabis, consumption was again lower in the TBBP group, but significant differences were found, above all with the HC group, where consumption was highest. For cocaine, the highest consumption was registered in the HC group, which, in this regard, showed significant differences with the TBBP and NoA-NoB clusters (there were no significant differences between these last two groups). For hallucinogens, the cluster with the highest level of consumption was the HC group, with significant differences being observed with the NoA-NoB cluster. In this case, there were no significant differences between the TBBP and HC groups.

(Insert Table 2 somewhere here)

Logistic regression analysis

To perform the regression analysis, two dichotomous consumption groups were established:

Non-consumers (those young people who indicated that they had never consumed) vs.

Consumers (those young people who had ever used, in the last 12 months and in the last 30 days). The analysis (see Table) showed that the TBBP group acted as a protective factor for tobacco and alcohol consumption, while the HC group acted as a risk factor for consumption of psychoactive drugs, cannabis, cocaine and hallucinogens. Explained variance was high for consumption of tobacco (60.8%), psychoactive drugs (80.4%), alcohol (61.5%), cannabis (56.8%), cocaine (89.1%) and hallucinogens (94.5%).

(Insert Table 3 somewhere here)

Discussion and Conclusions

Bearing in mind the aims of this study, the cluster analysis data can be considered consistent with the classifications obtained in other studies into the TABP (Friedman & Roseman, 1974 in Bermúdez, et al., 1991; Gil-Lacruz & Izquierdo, 2004). Cluster 1, obtained with low scores in all dimensions (competitiveness, hostility, impatience and work load) is very similar to the TBBP referenced in Jenkins' study (García & Berrios, 1999), while Cluster 2 grouped together individuals with average scores in dimensions like impatience and work load but high scores in hostility and competitiveness. This group would be most similar to PCTA except for the impatience trait related to substance use (Folsom, et al., 1985; Leventhal, et al., 2007). It should be noted that there are no previous studies establishing new clusters based on the characteristics of PCTA with which to discuss our results. In this sense, it is interesting to point out that perhaps other personality traits are exercising some kind of mediation, that is to say that the sample of participants was also less impulsive, motivated and conscientious (Turiano, Whiteman, Hampson, Roberts & Mroczek, 2012). Finally, the people included in

Cluster 3 had average scores in all dimensions and were therefore not characterized by any of them.

Analysis of the relationship between consumption patterns for substances like alcohol, tobacco, psychoactive drugs, cannabis, cocaine and hallucinogens in the different clusters indicated that consumption was highest in the Hostility-Competitiveness cluster, followed in order by the NoA-NoB cluster and the TBBP cluster. The TBBP group showed the lowest consumption levels for all the substances. In this respect, our results coincide with those obtained in some earlier studies (Folsom, et al., 1985; Camargo, et al., 1986; Dielman, et al., 1991; Forgays, et al., 1992; Leventhal, et al., 2007). In general, the combination of dimensions like hostility and competitiveness may have a negative impact on consumption. These results coincide with those obtained in other research, in which the TABP has been linked to addiction to video games (Griffiths & Dancaster, 1995) and to the consumption of substances like tobacco and alcohol (Folson, et al., 1985; Le Bon et al., 2004; Leventhal et al., 2007). For the hostility dimension in particular, the results obtained coincide with other studies where hostility has been found to act as a predictive risk factor for coronary illnesses (Spielberg, Krasner & Solomon, 1988). Hostile people are more likely than non-hostile people to experience problems with the consumption of substances like alcohol (García & Carrasco, 2003). This link between health and hostility is explained in several theoretical models. Leiker and Hailey's Health-Behavior Model (1988) suggests that people who are more hostile tend to have unrecommendable health habits (correlation between hostility and alcohol consumption, smoking, lack of physical exercise, careless personal hygiene, etc.) and find it more difficult to adhere to medical advice and treatment.

Apart from the differences observed between the clusters regarding substance consumption, it was also found that the TBBP group was a protective factor for tobacco and alcohol consumption and the HC group was a risk factor for the consumption of psychoactive

drugs, cannabis, cocaine and hallucinogens. This data coincides with the conclusions of other studies into alcohol consumption among people with the TABP/TBBP, in which people with the TABP were found to have a higher risk of experiencing problems with consumption (Folson, et al, 1985; García & Carrasco, 2003; Le Bon et al., 2004; Leventhal et al, 2007). For the other substances, research still needs to be carried out in order to be able to compare results.

In view of the above, it can be concluded that personality traits associated with substance consumption do exist, and that they influence and may predispose individuals towards harmful levels of consumption. These traits provide vital information which should be incorporated into the work of health professionals dealing with young people in the fields of substance abuse diagnosis, prevention, pedagogy, treatment and research (Fantín, 2006). As Patiño-Masó, Gras-Pérez, Font-Mayolas, and Baltasar-Bagué (2013) insist, it is possible, and indeed necessary, to consider implementing specific substance abuse prevention programs for the young capable of reinforcing their own preventive attitudes towards consumption. The results of this study support the idea that dimensions like hostility and competitiveness are risk factors which correlate positively and significantly with substance consumption among young people. Although an “addictive personality”, as such, does not exist, there are nevertheless patterns of behavior like the TABP which may constitute a risk factor for greater individual vulnerability in consumption habits (Natividad, et al., 2012). As Gómez and Fraguela (2006) point out, behavior patterns constitute important dimensions in a person’s progress through the different stages of their life. It is therefore possible that young people in particular may find themselves subjected to biological and social pressures that cause the stress which is linked directly to addictive behavior.

Limitations of the study and areas for future research. The first of this study’s limitations resides in the use of self-report questionnaires as the only means of gathering data about both substance abuse and the TABP. Social desirability bias may have interfered with young

people's responses. In most cases, it is difficult to distinguish between social desirability as a bias of individual answers and the need for social approval as a personality characteristic (Dominguez, Aguilera, Acosta, Navarro & Ruiz, 2012; Perinelli & Gremigni, 2016). Another limitation is that information was sometimes gathered in classrooms (university, training courses, employment workshops, etc.), and this inevitably leads to a certain amount of selection bias and underestimation in the results. It should also be remembered that, despite the interest aroused by these results, caution should be observed when generalizing them because the sample only covered young people from the city and province of Cordoba (Spain). For future research, it would be useful to examine the cognitive factors underlying these types of behavior with a view to planning measures to be taken with young people. Work might also be done to establish the neurobiological substrates which confirm the nature of personality dimensions (Cervera, et al., 2001) and their possible relationship with persistence in addictive behavior.

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Table 1: Centers of final clusters.

	Group 1 (552) TBBP	Group 2 (1,393) Hostility-Competitiveness	Group 3 (1,874) NoA-NoB
Impatience	6.56	17.07	12.57
Competitiveness	3.31	32.17	20.89
Hostility	7	23	15
Workload	8.28	23.86	17.51

Table 2: Analysis of Variance (ANOVA) between the cluster centers for substance consumption.

		M	td	F	p	Post hoc
Tobacco	TBBP	1.22	1.00	1.923	.146	TBBP < NoA-
	CH	1.35	1.275			NoB < CH
	NoA-NoB	1.30	1.283			
Psychoactive drugs	TBBP	.28	.665	2.659	.070	NoA-NoB < TBBP
	CH	.32	.693			< CH
	NoA-NoB	.27	.641			
Alcohol	TBBP	1.78	1.276	17.221	*.000	TBBP < NoA-NoB
	CH	2.14	1.197			< HC
	NoA-NoB	2.07	1.199			
Cannabis	TBBP	.59	.920	5.511	*.004	TBBP < NoA-NoB
	CH	.75	.945			< HC
	NoA-NoB	.68	.955			
Cocaine	TBBP	.12	.431	8.949	*.000	TBBP < NoA-NoB
	CH	.20	.549			< CH
	NoA-NoB	.13	.455			
Hallucinogens	TBBP	.08	.347	9.119	*.000	NoA-NoB < TBBP
	CH	.10	.388			< CH
	NoA-NoB	.05	.263			

p<.05;

Table 3: Logistic regression between substance consumption and clusters.

	Wald	S.E.	p	Exp. (B)	CI (95%)
Tobacco					
TBBP	5.009	0.093	0.025	0.812	(0.677-0.974)
Psychoactive drugs					
HC	6.191	0.083	0.013	1.231	(1.045-1.449)
Alcohol					
TBBP	42.074	0.093	0.000	0.549	(0.458-0.658)
Cannabis					
HC	21.967	0.068	0.000	1.374	(1.203-1.569)
Cocaine					
HC	20.132	0.105	0.000	1.598	(1.302-1.962)
Hallucinogens					
HC	14.382	0.142	0.000	1.714	(1.297-2.264)

TBBP: Type B Behavior Pattern; HC: Hostility-Competitiveness; NoA-NoB: not characterized by any trait.