

## Maladaptive personality traits in adolescence: Behavioural, emotional and motivational correlates of the PID-5-BF scales

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### Abstract

**Background:** Despite the recent popularity of the classification for maladaptive traits proposed by the DSM-5, little is known about the implications of these traits in adolescent populations. This study examines the relationship between the five broad maladaptive traits included in the DSM-5 (Negative Affect, Detachment, Antagonism, Disinhibition and Psychoticism) and a wide range of criteria of adolescent functioning: behavioural (bullying, cyberbullying, victimization, cybervictimization, problematic Internet use, substance use), emotional (negative and positive emotions, life satisfaction, self-esteem, loneliness) and motivational (extrinsic and intrinsic aspirations). **Methods:** Data were collected from 921 community adolescents, who were administered the brief form of the Personality Inventory for the DSM-5 (PID-5-BF) as well as self-reported measures of the behavioural, emotional and motivational criteria. **Results:** Antagonism and Disinhibition were the most important traits for behaviour problems, with face-to-face bullying being more associated with maladaptive traits than cyberbullying; Negative Affect, Detachment and Psychoticism were more closely related to emotional dissatisfaction, and adolescents' goals were associated with most of the maladaptive traits. **Conclusions:** This study supports the relevance of the PID-5 traits for adolescents, and extends the nomological net of pathological personality traits to multiple facets of emotions, motivations and social behaviour in young people.

**Keywords:** Maladaptive traits, PID-5-BF, bullying, cyberbullying, problematic Internet use, well-being, self-determination theory, adolescence.

### Resumen

**Rasgos desadaptativos de personalidad en la adolescencia: correlatos conductuales, emocionales y motivacionales de las escalas PID-5-BF.** **Antecedentes:** a pesar de la reciente popularidad de los rasgos desadaptativos de la personalidad propuestos por el DSM-5, se sabe poco sobre sus implicaciones en la adolescencia. Este estudio examina la relación entre los cinco grandes rasgos desadaptativos incluidos en el DSM-5 (Afecto Negativo, Desapego, Antagonismo, Desinhibición y Psicoticismo) y múltiples criterios de funcionamiento adolescente: conductuales (acoso, ciberacoso, victimización, cibervictimización, uso problemático de Internet, uso de sustancias), emocionales (emociones negativas y positivas, satisfacción con la vida, autoestima, soledad) y motivacionales (aspiraciones extrínsecas e intrínsecas). **Método:** se recogieron datos en 921 adolescentes de la población general, a quienes se les administró el PID-5-BF, así como medidas autoinformadas de los criterios a analizar. **Resultados:** Antagonismo y Desinhibición fueron los rasgos más asociados con los problemas de conducta, y el bullying se vio más relacionado con los rasgos PID que el cyberbullying; Afecto Negativo, Desapego y Psicoticismo se relacionaron más estrechamente con la insatisfacción emocional, y los rasgos desadaptativos contribuyeron también a predecir las metas de los jóvenes. **Conclusiones:** este estudio apoya la relevancia de los rasgos del PID-5 en la adolescencia, y extiende su red nomológica a múltiples facetas de las emociones, motivaciones y conducta social de los adolescentes.

**Palabras clave:** rasgos desadaptativos, PID-5-BF, acoso, ciberacoso, uso problemático de Internet, bienestar, teoría de la autodeterminación, adolescencia.

Interest in the maladaptive aspects of personality has increased greatly in recent years, especially since a trait-based model of personality pathology was proposed for inclusion in the DSM-5 (Section III). This model comprises five general traits: Negative Affect (tendency to experience a wide range of distressing feelings), Detachment (social withdrawal, anhedonia), Antagonism (tendency to show behaviors that put an individual at odds with other people), Disinhibition (irresponsibility, impulsivity, risk taking) and

Psychoticism (eccentricity and unusual cognitions). These traits are supposed to be maladaptive versions of normal personality traits (e.g., the Five Factor Model, FFM) and, in fact, it has been shown that Negative Affect, Antagonism and Disinhibition are aligned with Neuroticism, Agreeableness and Conscientiousness, respectively, while the links Detachment-Extraversion and Psychoticism-Openness are more modest (Watson, Stasik, Ro, & Clark, 2013).

The PID-5 measures have acquired great popularity, and their correlates and consequences are being widely investigated in adults (Al-Dajani, Gralnick, & Bagby, 2016). Application of the concepts of personality pathology to adolescents has traditionally been controversial, due to the stigmatizing effect which has been attributed to personality disturbances. However, a growing

number of researchers are currently interested in the maladaptive traits of personality in young people (De Clercq et al., 2014). In fact, favourable evidence for the utility of the PID-5 measures in young people has been reported (Somma et al., 2016). In general, researchers of personality pathology are encouraged to study the nomological net of maladaptive traits (McCabe, Vrabel, & Zeigler-Hill, 2017), but this need is even more pointed for adolescent populations, where the scarcity of studies on the PID model is remarkable.

The aim of this study is to investigate the implications of the five broad maladaptive traits measured by the PID-5-BF, including potentially relevant outcomes in the behavioural, emotional and motivational spheres of adolescent life.

First, considering the behavioural dimensions, this study investigates how the maladaptive traits are related to aggression and victimization within bullying and cyberbullying, to problematic Internet use (PIU) and to substance use. All of these examples represent problematic behaviours which not only are highly prevalent in adolescence (Durkee et al., 2012) but they also negatively affect the psychosocial development (Gámez-Guadix, Orue, Smith, & Calvete, 2013).

Second, considering the emotional dimensions, we examined the association between the maladaptive traits and measures of subjective well-being (positive emotions, negative emotions, satisfaction with life), as well as with measures traditionally considered to reflect emotional health and psychological adjustment (i.e., self-esteem and loneliness; see Mann, Hosman, Schaalma, & DeVries, 2004; Mushtaq, Shoib, Shah, & Mushtaq, 2014).

Third, this study also includes motivational dimensions. The capacity to establish and pursue meaningful and autonomous goals is commonly recognised as a component of a healthy functioning. Particularly, we examined the relationship between maladaptive traits and the relative importance given to extrinsic aspirations (e.g., wealth, fame) and intrinsic aspirations (e.g., personal growth, relationships). The self-determination theory has emphasized that attaching greater importance to extrinsic goals than to intrinsic goals is an indicator of poor psychosocial adjustment, as it reflects dependence on external recognition and does not fit with the innermost human needs (Kasser & Ryan, 1993). The relationship between a relatively high endorsement of extrinsic goals and multiple markers of personal and social dysfunction has been demonstrated both in adults (Romero, Gómez-Fraguela, & Villar, 2012) and in adolescents (Williams, Cox, Hedberg, & Deci, 2000).

As already mentioned, the five maladaptive traits have been scarcely studied in relation to psychosocial patterns in adolescents. However, based on the findings of previous studies with the FFM as well as on the nature of the maladaptive traits, the following hypothesis can be proposed: 1) Antagonism and Disinhibition will be strongly implicated in aggressive behaviours (bullying, cyberbullying) and substance use; conduct problems have shown consistent relationships with personality traits like grandiosity, manipulateness, irresponsibility and impulsivity (e.g., Fanti & Kimonis, 2012), which suggests the role of Antagonism and Disinhibition as possible correlates; 2) Negative Affect and Disinhibition will play a significant role in victimization and PIU, as suggested by available reviews on the FFM (Kayis et al., 2016; Mitsopoulou & Giovazolias, 2015); 3) Negative Affect and Detachment will be related to low levels of emotional well-being and internalizing symptoms, following the available evidence on Neuroticism and Extraversion; 4) Antagonism may play a

prominent role in the pursuit of extrinsic rather than intrinsic goals, in consonance with the previous literature on personality traits and goal setting (Romero et al., 2012)

## Method

### Participants

A total of 921 adolescents (469 female, 452 male) participated in this study, which forms part of a wider project on the development of psychosocial maladjustment in adolescence. The participants ranged in age between 12 and 19 years (mean 14.85; SD = 1.70) and attended nine secondary schools in urban rural areas in Galicia (NW Spain).

### Instruments

*Maladaptive personality traits.* The PID-5-Brief Form (PID-5-BF; Krueger, Derringer, Markon, Watson y Skodol, 2012) was used to measure maladaptive personality traits: Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism. The PID-5-BF consists of 25 items (five for each dimension) with a 4-point Likert-type scale ranging from 0 (very false or often false) to 3 (very true or often true). The PID-5-BF was created as a very short version of the PID-5 questionnaire that could be used to capture the maladaptive global domains rapidly and efficiently, without measuring the most specific facets. The suitability and psychometric efficacy of the Spanish versions of the PID-5 have been demonstrated (Gutiérrez et al., 2015), and previous studies have provided evidence of the validity of the PID-5-BF, not only in adults, but also in adolescents (Fossati, Somma, Borroni, Markon, & Krueger, 2017). On the present dataset, both EFA and CFA (Maximum Likelihood estimator through MPlus 7.4) also supported a five-factor solution (CFI = .918; RMSEA = .051), which largely reproduces the original item distribution in the PID-5 (results available under request). Regarding the reliability, the alpha values obtained in the present study were .62 (Negative Affect), .65 (Antagonism), .66 (Detachment), .67 (Disinhibition) and .74 (Psychoticism). Alpha coefficients were also computed for different age ranges (i.e., 12-14, 15-16, 17-19), and no clear pattern emerged for the alphas in relation to age (results available under request).

*Behavioural criteria.* The Spanish version of the European Bullying Intervention Project Questionnaire (EBIPQ; Ortega, Del Rey, & Casas, 2016) was used to measure face-to-face bullying behaviour (both in terms of aggression and victimization). The instrument consists of 14 items (seven for aggression and seven for victimization), which were administered in the present study with the response scale “never” (0 times; scored as 0), “occasionally” (between 1 and 2 times; scored as 1), “sometimes” (between 3 and 5 times; scored as 2), “frequently” (between 6 and 10 times; scored as 3) and “very often” (more than 10 times; scored as 4), and a reference period of the previous six months. For both dimensions (aggression and victimization), the items referred to actions such as hitting, insulting, threatening, excluding others or spreading rumours about them (e.g., “Someone has insulted me”, “I have threatened someone”). The alpha coefficients of these dimensions were respectively .82 and .85.

The Spanish version of the European Cyberbullying Intervention Project Questionnaire (ECIPQ) (Ortega et al., 2016) was used

to measure cyberbullying. The instrument includes 22 items (11 for aggression and 11 for victimization), which were applied using the same response scale and reference period as for the dimensions of face-to-face bullying. For both cyberaggression and cybervictimization, the items refer to actions such as excluding people on social networks, spreading rumours, stealing online identity, etc. (e.g., "Someone has posted personal information about me online", "I have excluded or ignored someone on a social network or chat"). The alpha coefficients were respectively .89 and .92.

The Internet Addiction Test (Young, 1998) was used to measure PIU. This instrument, which has been widely used to study Internet use in young people, consists of 20 items on a 5-item Likert response scale (ranging from 1=rarely to 5=always). The items refer to the feeling experienced when the subject cannot connect to the Internet (e.g., "How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back online?") and on interference by Internet use on academic performance and time management (e.g., "How often do your grades or school work suffer because of the amount of time you spend online?"). The alpha value in the present study was .88.

Two items were included in the questionnaire to measure alcohol and substance use, referring respectively to the frequency of use of alcohol and cannabis in the last month. These items were answered on a scale ranging from 0 ("never") to 5 ("more than 20 times").

*Emotional criteria.* We administered measures of subjective well-being that are well recognised in research on emotions and quality of life. Thus, we used the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to measure positive and negative affect experienced in the past year, as well as the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). The alpha coefficients were .86 for positive affect, .87 for negative affect, .85 for satisfaction with life. As a measure of self-esteem, the Rosenberg Self-Esteem Scale (Rosenberg, 1965), was used ( $\alpha = .83$ ). As a measure of loneliness we administered the Loneliness Scale (Hughes, Waite, Hawkey, & Cacioppo, 2004), consisting of three items (e.g., "How often do you feel isolated from others?"), which, in our study, showed an internal alpha consistency of .87.

*Motivational criteria (life aspirations).* We used the Life Aspirations Index, previously translated and used in the Spanish population (Romero et al., 2012), to evaluate the importance given by the adolescents to extrinsic and intrinsic aspirations. This version considers 35 aspirations (e.g., "To be physically healthy", "To be famous", "To keep up with fashions in hair and clothing", "To help others improve their lives"), grouped into seven domains: personal growth, relations, community, health, wealth, fame and image. Each of the 35 aspirations was rated by the participants (How important is it to you?) on a 7-point scale ranging from "not at all" to "very". The reliabilities (Cronbach's alpha) ranged between .62 (personal growth) and .85 (fame). Summary scores for intrinsic aspirations (personal growth, relations, community, health) and extrinsic aspirations (wealth, fame, image) were also calculated by averaging the scores for the corresponding domains. The reliabilities of the measures of intrinsic and extrinsic aspirations were .88 and .86, respectively. In addition, given that the theory emphasizes the *relative* importance of extrinsic and intrinsic aspirations, the scores for intrinsic aspirations were subtracted from the scores for extrinsic aspirations following the procedure used in previous studies (e.g., Kasser & Ryan, 2001), so that high scores reflect a strong extrinsic orientation.

All of the measures used to evaluate the behavioural, emotional and motivational dimensions have previously been applied in Spanish research studies, providing favourable evidence for reliability and validity (e.g., Atienza, Pons, Balaguer, & García-Merita, 2000; Romero, Luengo, Gómez-Fraguela, & Sobral, 2002; Sandín et al., 1999).

### Procedure

The compliance of ethical standards was taken into account throughout the study procedure, with data collection being approved by the Bioethics Committee at the Universidade de Santiago de Compostela. The data collection was conducted under conditions of anonymity and confidentiality, after written parental consent and assent of the participants had been obtained. Neither the participants nor their schools received any reward for participating in the study. The questionnaires were administered in class under the supervision of the researchers. Prior to the data collection, and as an initial check of the feasibility of the questionnaire administration, a pilot study was undertaken on a group of 25 adolescents, which showed that there were no major difficulties for item understanding, and that the measures could be administered during a class session.

### Data analysis

First, as preliminary analyses, the mean values and standard deviations of the measures used and the associations with age and gender (comparisons made with *t*-tests) were examined; effect sizes for the differences were estimated through Cohen's *d*. Second, in order to analyze the associations between the maladaptive traits and the criteria measured for this study, zero-order correlations between calculated; as numerous correlations were obtained from a large sample, and to minimize the Type I error, Bonferroni's correction was applied. Finally, hierarchical regression analysis was used to determine the degree to which the maladaptive traits predict the behavioural, emotional and motivational criteria. Gender and age were introduced in the first step, and the maladaptive traits were entered in the second step for all the studied criteria. The analyses were conducted on IBM SPSS Statistics 24.

## Results

### Descriptive statistics and associations with gender and age

Mean values and standard deviations of the measures used and the associations with gender and age are shown in Table 1.

As for gender comparisons, the girls scored higher on Negative Affect and lower on Detachment, Antagonism and Disinhibition than the boys. The girls also displayed lower levels of externalizing behaviours (e.g., aggression via bullying and cyberbullying, substance use) and scored lower on indicators of well-being (higher scores for negative emotions and loneliness, lower self-esteem). The girls also attached less importance to extrinsic aspirations (e.g., wealth, fame) and more importance to intrinsic aspirations (e.g., personal growth, community). Considering age, it was positively (although only slightly) correlated with the maladaptive traits (except Negative Affect); age was also positively correlated with indicators of internalizing disturbances (e.g., negative emotions, loneliness). These results appear to be consistent with the decrease

Table 1  
Descriptive statistics, gender comparisons and correlations with age for the measures included in the study

	Mean (SD) for the total sample (n= 921)	Mean (SD) for girls (n=469)	Mean (SD) for boys (n=452)	d girls-boys	Correlations with age
<b>Maladaptive traits</b>					
Negative Affect	1.67 (0.62)	1.84 (0.60)	1.50 (0.58)	0.28***	.07
Detachment	0.79 (0.60)	0.73 (0.57)	0.85 (0.62)	-0.20**	.12***
Antagonism	0.62 (0.53)	0.51 (0.49)	0.73 (0.59)	-0.40***	.09**
Disinhibition	1.12 (0.63)	1.07 (0.59)	1.19 (0.66)	-0.19**	.08*
Psychoticism	1.11 (0.70)	1.14 (0.69)	1.08 (0.71)	0.04	.10**
<b>Behavioural measures</b>					
Bullying-aggression	3.59 (3.69)	3.20 (2.21)	4.52 (3.20)	-0.48***	.12***
Bullying-victimization	6.08 (5.64)	5.93 (4.22)	6.21 (5.03)	-0.06	.03
Cyberbullying-aggression	2.20 (1.80)	1.62 (1.03)	2.77 (2.08)	-0.70***	.10**
Cyberbullying-victimization	2.82 (2.08)	2.50 (2.03)	3.08 (2.82)	-0.23	.04
Problematic Internet use	38.82 (13.46)	37.33 (12.59)	40.38 (14.22)	-0.10**	.10**
Monthly consumption of alcohol	0.98 (0.81)	0.84 (0.73)	1.09 (0.93)	-0.29**	.37**
Monthly consumption of cannabis	0.35 (0.31)	0.27 (0.21)	0.43 (0.41)	-0.49*	.17**
<b>Emotional measures</b>					
Positive emotions	35.37 (7.80)	35.18 (7.74)	35.79 (7.41)	-0.08	-.10**
Negative emotions	25.46 (8.33)	27.14 (8.27)	23.12 (7.75)	0.50***	.21***
Satisfaction with life	16.32 (4.61)	16.78 (4.47)	16.58 (4.70)	0.04	-.06
Self-esteem	20.21 (5.84)	19.63 (5.80)	21.41 (5.48)	-0.31***	-.07
Loneliness	6.24 (2.86)	6.49 (2.81)	5.69 (2.71)	0.28**	.21***
<b>Motivational measures (life aspirations)</b>					
Wealth	4.16 (1.35)	3.83 (1.25)	4.51 (1.37)	-0.51***	.02
Fame	3.70 (1.55)	3.36 (1.48)	4.06 (1.58)	-0.45***	-.01
Image	3.86 (1.32)	3.77 (1.23)	3.95 (1.40)	-0.01*	-.03
Personal growth	6.04 (0.80)	6.15 (0.74)	5.93 (0.83)	0.27***	.07
Relationships	6.02 (0.90)	6.05 (0.92)	5.99 (0.89)	0.06	.03
Community	5.43 (1.16)	5.62 (1.09)	5.25 (1.17)	0.32***	-.00
Health	6.04 (0.96)	6.11 (0.91)	5.99 (1.00)	0.12*	-.04
Extrinsic aspirations	3.91 (1.21)	3.66 (1.12)	4.17 (1.24)	-0.43***	-.00
Intrinsic aspirations	5.83 (0.73)	5.94 (0.89)	5.72 (0.75)	0.26***	.03
Relative importance extrinsic-intrinsic aspirations	-1.91 (1.31)	-2.28 (1.25)	-1.55 (1.30)	-0.57***	-.03

\* p < .05; \*\* p < .01; \*\*\* p < .001. Note: For gender comparisons, effect sizes are shown along with the statistical significance of the differences

in levels of psychosocial adjustment and well-being throughout adolescence reported in other studies (e.g., Currie et al., 2012)

#### *Correlations between the maladaptive personality traits and the behavioural, emotional and motivational criteria*

The zero-order correlations between the maladaptive traits and the criteria measured are shown in Table 2. As numerous correlations were calculated for a large sample, and to minimize the Type I error, Bonferroni's correction was applied: thus, significance threshold was set at  $p < .00045$ .

Regarding the behavioural criteria, all of them were significantly correlated with at least some of the maladaptive traits. Antagonism and Disinhibition appear as relevant correlates for all of the behavioural criteria. Negative Affect was particularly closely associated with victimization, Detachment with PIU, and Psychoticism with both victimization and PIU. Considering the emotional criteria, the most important domains were Negative Affect, Detachment and Psychoticism; particularly, these traits showed the strongest correlations with with negative emotions, (low) self-esteem and (high) loneliness. Additionally, Detachment and Psychoticism were negatively related to life satisfaction, and Detachment showed a significant negative correlation also with positive emotions. Given that the contents of Negative Affect and of PANAS (negative

emotions) might be overlapped to some extent, the items from both scales were checked, and one possible overlap was identified: "I get irritated easily by all sort of things" (PID-5-BF) with "(I have felt) Irritable" (PANAS). While the PID-5-BF tries to capture general dispositional tendencies, the PANAS, as it was applied in this study, measures the degree to which different emotions (e.g., irritability) were experienced in the last year. Although these are conceptually different variables, we computed again the correlations between Negative Affect (PID-5-BF) and negative emotions (PANAS) after removing the two overlapping items. The resulting correlation was .24, somewhat lower than the original .30, but still significant, even after Bonferroni's correction ( $p < .00045$ ).

As for the motivational criteria, the traits Disinhibition and especially Antagonism were associated with interest in extrinsic goals (wealth, image, fame) both in absolute and relative terms. Negative Affect was positively associated with intrinsic aspirations, in contrast to the pattern observed for the other traits.

#### *Regression analyses for examining the predictive power of the maladaptive traits on the behavioural, emotional and motivational criteria*

Hierarchical regression analysis was used to determine the degree to which the maladaptive traits predict the behavioural,

**Table 2**  
Zero-order correlations between the maladaptive personality traits and the behavioural, emotional and motivational dimensions considered

	Negative Affect	Detachment	Antagonism	Disinhibition	Psychoticism
<b>Behavioural measures</b>					
Bullying-aggression	.11	.26*	.46*	.31*	.19*
Bullying-victimization	.27*	.25*	.23*	.29*	.35*
Cyberbullying-aggression	.05	.17*	.35*	.23*	.14*
Cyberbullying-victimization	.18*	.18*	.29*	.25*	.25*
Problematic Internet use	.16*	.32*	.36*	.37*	.29*
Monthly consumption of alcohol	.00	.16*	.22*	.14*	.10
Monthly consumption of cannabis	.00	.13*	.18*	.17*	.19*
<b>Emotional measures</b>					
Positive emotions	-.05	-.17*	.00	-.04	-.03
Negative emotions	.30*	.17*	.13*	.12*	.29*
Satisfaction with life	-.11	-.20*	-.15*	-.16*	-.21*
Self-esteem	-.23*	-.18*	-.05	-.15*	-.26*
Loneliness	.20*	.21*	.06	.11	.30*
<b>Motivational measures (life aspirations)</b>					
Wealth	.01	.08	.33*	.17*	-.01
Fame	.02	.02	.34*	.13*	.06
Image	.16*	.11	.30*	.18*	-.04
Personal growth	-.15*	-.12*	-.12*	-.08	.03
Relations	.28*	-.20*	-.04	.02	.00
Community	.17*	-.16*	-.22*	-.13*	.03
Health	.08	-.18*	-.04	-.04	-.13*
Extrinsic aspirations	.05	.04	.38*	.19*	.00
Intrinsic aspirations	.26*	-.21*	-.18*	-.08	.02
Relative importance extrinsic-intrinsic aspirations	-.09	.16*	.45*	.22*	-.01

\* p<.00045, on the basis of Bonferroni's correction

emotional and motivational variables. Taking into account that, described above, both gender and age were significantly associated with the variables measured in this study, gender (girls = 0, boys = 1) and age were controlled in the first step, and the maladaptive traits were introduced in the second step. The results are shown in Table 3.

Considering the behavioural criteria, the increase in the variance explained by the maladaptive dimensions was significant in all cases; the criterion least predicted by maladaptive dimensions was substance use, whereas aggressive behaviours (bullying,

cyberbullying) and PIU yielded the highest coefficients of explained variance. Antagonism and Disinhibition were good predictors of almost all of the behavioural criteria, especially the externalizing ones (e.g., bullying, cyberbullying, substance use). Negative Affect and Psychoticism also made an important contribution to predicting victimization (both face-to-face and through Internet). Interestingly, maladaptive dimensions appear to be better predictors of face-to-face bullying than of cyberbullying. This pattern was observed for measures of both aggression and of victimization.

**Table 3**  
Regression analyses conducted to examine the predictive power of the maladaptive personality traits on behavioural, emotional and motivational criteria

	Behavioural measures							Emotional measures					Motivational measures (aspirations)		
	Bullying-aggression	Bullying-victim.	Cyberbul-aggression	Cyberbul-victim.	Problematic Internet use	Monthly alcohol use	Monthly cannabis use	Positive emotions	Negative emotions	Life satisfact.	Self-esteem	Loneliness	Extrinsic aspirat.	Intrinsic aspirat	Extrinsic-intrinsic
Gender	.05	.04	.04	.04	.07	.03	.02	.05	-.16***	.09*	.15***	-.14***	.16***	-.02	.16***
Age	.07*	-.02	.05	.04	.03	.36***	.15***	-.07*	.13	-.09*	-.01	.22***	-.04	.05	-.06
Negative Affect	.06	.18***	.00	.11**	.08*	.00	-.03	-.06	.29***	-.05	-.17***	.18***	.10*	.27***	-.06
Detachment	.03	.06	.00	.01	.11**	-.04	.01	-.26***	.13***	-.15***	-.26***	.24***	-.14***	-.21***	-.01
Antagonism	.36***	.06	.28***	.16***	.19***	.16***	.12**	.08*	.00	.02	.06	-.04	.39***	-.13***	.43***
Disinhibition	-.16***	.13***	.13***	.13***	.20***	.14***	.10**	.04	.02	-.03	-.01	-.04	.12***	-.04	.13***
Psychoticism	-.01	.19***	.00	.10**	.08*	-.06	.01	-.01	.20***	-.17***	-.20***	.24***	-.13***	.07	-.16***
Increase in R <sup>2</sup>	.21	.19	.13	.12	.20	.04	.03	.06	.22	.09	.10	.20	.16	.13	.19
Adjusted total R <sup>2</sup>	.24	.19	.13	.12	.22	.18	.07	.07	.31	.11	.22	.22	.19	.15	.26

p < .05; \*\* p < .01; \*\*\* p < .001  
Note: The table shows standardized beta coefficients for the final three-step model

Considering the emotional criteria, the contribution of maladaptive traits was significant in all cases. The explanatory power of the maladaptive traits was generally stronger for negative indicators (i.e., negative emotions, loneliness) than for positive indicators of well-being (i.e., positive emotions, life satisfaction). Self-esteem also shows a relatively high proportion of the explained variance within the emotional criteria considered.

Finally, regarding the motivational criteria, both the extrinsic and intrinsic aspirations (considered separately) were predicted by the maladaptive traits. In addition, the maladaptive traits were able to explain, beyond gender and age, the relative importance of extrinsic and intrinsic aspirations. Antagonism was a particularly strong predictor of extrinsic aspirations, in both absolute and relative terms, while Negative Affect and Detachment predicted (positively and negatively respectively) intrinsic aspirations.

### Discussion

This study stems from the need of analyzing how maladaptive traits are related to important aspects of the behavioural, motivational and emotional development in adolescents. Although the normal personality traits have been widely studied in adolescence, less is known about the importance of the five maladaptive traits included in the DSM-5 for understanding problems frequently observed in adolescents. The study findings show the importance of maladaptive traits in predicting multiple aspects of adolescent functioning.

First, regarding the behavioural criteria, Antagonism and Disinhibition were consistently associated with problems within the externalizing domain, such as bullying, cyberbullying and substance use. This result was expected, considering the findings of research on normal personality (i.e., FFM), which has shown that (low) Agreeableness and (low) Conscientiousness are related to antisocial behaviour and drug abuse in adolescents (Jones, Miller, & Lynam, 2011). Moreover, research on psychopathology in adults has already indicated that Antagonism and Disinhibition may be the bases of a wide range of externalizing dysfunctions (Kotov et al., 2017). Thus, our results joins the evidence supporting the role of personality styles based on deceitfulness, manipulateness, callousness (i.e., Antagonism) and limited self-constraint (i.e., Disinhibition) as robust markers for conduct problems in different developmental stages.

The present study also suggest that bullying and cyberbullying may present similar correlates, as indicated by other studies (Del Rey, Elipe, & Ortega-Ruiz, 2012). Our results show that an antagonistic disinhibited profile seems to underlie both behaviours. However, the predictive power of the maladaptive traits was greater for bullying than for cyberbullying; it is possible that the expression of aggression via digital media requires a lower level of personal dysfunction, due to the disinhibitory role of anonymity and the numerous, readily available, opportunities for displaying aggressive behaviour online. The same pattern was observed in relation to victimization: the correlates of face-to-face victimization and cybervictimization were similar (e.g., Negative Affect, Disinhibition, Psychoticism), but maladaptive personality was more important for the former than for the latter.

The study results also indicated that the PIU is linked to the five maladaptive traits. This finding is consistent with the trends observed in the relationship between the PIU and the FFM (Kayis et al., 2016) and also with the findings of research applying the

PID model to college students (Gervasi et al., 2017). The observed relationship between PIU in adolescents and the five maladaptive traits shows that this type of behaviour may correspond to both the externalizing and internalizing spectra. This contrasts with substance use, which, within the map of maladaptive personality, appears to be more closely aligned with the externalizing angle defined by Antagonism and Disinhibition. Similarities between PIU and substance use have been proposed in their underlying processes (e.g., Gámez-Guadix, Calvete, Orue, & Las Hayas, 2015); our study shows that, while there may be some personality dimensions lying behind both of them, PIU may show distinctive personality foundations, particularly in the domains of social withdrawal (Detachment), emotional instability (Negative Affect) and cognitive dysregulation (Psychoticism).

As regards the emotional criteria measured in this study, the findings show that Negative Affect, Detachment and Psychoticism were consistently associated with indicators of emotional dissatisfaction. The findings regarding Negative Affect and Detachment are not surprising given that these dimensions are considered indicators of the internalizing domain of psychopathology (Krueger & Markon, 2014). The findings on Psychoticism are consistent with those of some previous studies conducted with both Eysenck's P dimension (Ciarrochi & Heaven, 2007) and measures of schizotypy (Abbott & Byrne, 2012); the social difficulties associated with Psychoticism may cause the emotional troubles observed in relation to this dimension, as suggested by Abbott and Byrne (2012). The findings also show that the maladaptive dimensions are less closely associated with positive indicators of emotional health (i.e., positive emotions, satisfaction with life) than with the negative indicators. This finding is consistent with the nature of maladaptive traits, which try to capture the pathological aspects of psychological functioning rather than the more positive dimensions of mental health.

Finally, considering motivational dimensions, the study findings show that attaching greater importance to extrinsic than to intrinsic aspirations was associated with higher Antagonism and Disinhibition, which is in agreement with the previously observed relationship between externalizing problems and extrinsic goals in adolescents (Williams et al., 2000). However, in contrast to the predictions of the self-determination theory (i.e., that neurotic people will attach greater value to extrinsic than to intrinsic goals; Kasser & Ryan, 1993) and with the findings of other FFM studies in adults (Romero et al., 2012), Negative Affect was more closely associated with intrinsic goals (e.g., personal growth, relationships) than with extrinsic goals (e.g., physical attractiveness, fame). It therefore appears that adolescents with high levels of Negative Affect may try to deal with their insecurities via aspirations that enable them to define their identity in an inward direction rather than via goals that generate social recognition. If so, the relationship between traits and aspirations may be subject to developmental influences. This hypothesis should be systematically studied in further research.

In summary, the findings of this study confirm the usefulness of maladaptive traits for helping to understand behavioural, emotional and motivational dimensions in adolescents of the general population, including behaviours such as bullying and PIU, which are of substantial social, clinical and educational concern. The study also brings new evidence on a) how bullying and cyberbullying are differentially predicted by personality dimensions; b) how drug use and PIU differ on externalizing/

internalizing dimensions; c) the implications of Negative Affect for the contents of adolescent goals.

This study is not exempt from limitations. It is a cross-sectional study, relies solely on self-reports, and uses a brief measure for PID traits, with relatively modest reliabilities. Future research in this field should include more detailed examination of maladaptive traits in adolescents by using wider measures (i.e., the 220- and 100-item versions), assessing both the broad dimensions and also the specific facets proposed in the DSM-5 for describing pathological personality. As adolescence comprises a relatively wide range of ages, the utility of PID-5-BF in different stages of adolescence also deserves a closer look. On the other hand, further studies including adolescents from clinical and forensic populations should be conducted in order to examine more severe psychopathological entities matching the central purposes of the PID model. Finally, as evidence on the validity of PID dimensions is consolidated, further research will advance in the complexities of the relations between PID traits and behaviour, by studying a) interactions among personality factors, and b) relations of the PID traits with other variables (cognitive, psychosocial, community) which influence adolescent life outcomes. Structural models on

mediating and moderating factors will have to be built to capture the nuances of PID traits in adolescence, and to step into integrative theoretical models.

Nonetheless, the present study is, to the best of our knowledge, the first to examine the PID broad traits in relation to a large number of psychosocial criteria in adolescents. The findings contribute to advancing our knowledge of the nomological net of maladaptive traits in the behavioural, emotional and motivational spheres, and support the value of the PID-5-BF to identify dysfunctional tendencies which are relevant not only for clinical populations, but also for community-dwelling adolescents. The potential usefulness of the PID measures to assess personality maladaptive traits in young community populations warrants further attention, as it may open roads to early identification of subclinical personality difficulties and, consequently, to the implementation of effective prevention strategies.

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#### References

- Abbott, G.R., & Byrne L.K. (2012). Schizotypy and subjective well-being in university students. *Psychiatry Research, 196*, 154-156. doi: 10.1016/j.psychres.2011.08.013
- Al-Dajani, N., Gralnick, T.M., & Bagby, R.M. (2016). A psychometric review of the Personality Inventory for DSM-5 (PID-5): Current status and future directions. *Journal of Personality Assessment, 98*, 62-81. doi: 10.1080/00223891.2015.1107572
- Atienza, F.L., Pons, D., Balaguer, I., & García-Merita, M. (2000). Psychometric properties of the satisfaction with life scale in adolescents. *Psicothema, 12*, 314-319.
- Ciarrochi, J., & Heaven, P.C.L. (2007). Longitudinal examination of the impact of Eysenck's psychoticism dimension on emotional well-being in teenagers. *Personality and Individual Differences, 42*, 597-608. doi: 10.1016/j.paid.2006.07.022
- Currie, C., Zanotti, C., Morgan, A., Currie, D., de Looze, M., Roberts, C., & Rasmussen, V.B. (2012). *Social determinants of health and well-being among young people. Health Behaviour in School-aged Children (HBSC) study: International report from the 2009/2010 survey*. Copenhagen: WHO Regional Office for Europe
- De Clerq, B., De Fruyt, F., De Bolle, M., Van Hiel, A., Markon, K.E., & Krueger, R.F. (2014). The hierarchical structure and construct validity of the PID-5 trait measure in adolescence. *Journal of Personality, 82*, 158-169. doi: 10.1111/jopy.12042
- Del Rey, R., Elipe, P., & Ortega-Ruiz, R. (2012). Bullying and cyberbullying: Overlapping and predictive value of the co-occurrence. *Psicothema, 24*, 608-613.
- Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71-75.
- Durkee, T., Kaess, M., Carli, V., Parzer, P., Wasserman, C., Floderus, B., ... Wasserman, D. (2012). Prevalence of pathological internet use among adolescents in Europe: demographic and social factors. *Addiction, 107*(12), 2210-2222. doi: 10.1111/j.1360-0443.2012.03946.x
- Fanti, K.A., & Kimonis, E.R. (2012). Bullying and victimization: The role of conduct problems and psychopathic traits. *Journal of Research on Adolescence, 22*, 617-631. doi: 10.1111/j.1532-7795.2012.00809.x
- Fossati, A., Somma, A., Borroni, S., Markon, K.E., & Krueger, R.F. (2017). The personality inventory for DSM-5 brief form: Evidence for reliability and construct validity in a sample of community-dwelling Italian adolescents. *Assessment, 24*, 615-631. doi: 10.1177/1073191115621793.
- Gómez-Guadix, M., Calvete, E., Orue, I., & Las Hayas, C. (2015). Problematic Internet use and problematic alcohol use from the cognitive-behavioral model: A longitudinal study among adolescents. *Addictive Behaviors, 40*, 109-114. doi:10.1016/j.addbeh.2014.09.009
- Gómez-Guadix, M., Orue, I., Smith, P.K., & Calvete, E. (2013). Longitudinal and reciprocal relations of cyberbullying with depression, substance use, and problematic internet use among adolescents. *Journal of Adolescent Health, 53*(4), 446-452. doi:10.1016/j.jadohealth.2013.03.030
- Gervasi, A.M., La Marca, L., Lombardo, E.M.C., Mannino, G., Iacolino, C., & Schimmenti, A. (2017). Maladaptive personality traits and internet addiction symptoms among young adults: A study based on the alternative DSM-5 model for personality disorders. *Clinical Neuropsychiatry, 14*, 20-28.
- Gutiérrez, F., Aluja, A., Peri, J.M., Calvo, N., Ferrer, M. Baillés, E., ... Krueger, R.F. (2017). Psychometric properties of the Spanish PID-5 in a clinical and a community sample. *Assessment, 24*, 326-336. doi: 10.1177/1073191115606518.
- Hughes, M.E., Waite, L.J., Hawkey, L.C., & Cacioppo, J.T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging, 26*, 655-672. doi: 10.1177/0164027504268574
- Jones, S.E., Miller, J.D., Lynam, D.R. (2011). Personality, antisocial behavior, and aggression: A meta-analytic review. *Journal of Criminal Justice, 39*, 329-337. doi: 10.1016/j.jcrimjus.2011.03.004
- Kasser, T., & Ryan, R.M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology, 65*, 410-422.
- Kasser, T., & Ryan, R.M. (2001). Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In P. Schmuck & K.M. Sheldon (Eds.), *Life goals and well-being: Towards a positive psychology of human striving* (pp. 116-131). Goettingen, Germany: Hofrefe & Huber Publishers.
- Kayış, A.R., Satici, S.A., Yilmaz, M.F., Şimşek, D., Ceyhan, E., & Bakioglu, F. (2016). Big five personality trait and Internet addiction: A meta-analytic review. *Computers in Human Behavior, 63*, 35-40. doi: 10.1016/j.chb.2016.05.012

- Kotov, R., Krueger, R.F., Watson, D., Achenbach, T.M., Althoff, R.R., Bagby, R.M., ... Zimmerman, M. (2017). The Hierarchical Taxonomy of Psychopathology (HiTOP): A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology, 126*, 454-477. doi: 10.1037/abn0000258
- Krueger, R.F., Derringer, J., Markon, K.E., Watson, D., & Skodol, A.E. (2012). Initial construction of a maladaptive personality trait model and inventory for DSM-5. *Psychological Medicine, 42*, 1879-1890. doi: 10.1017/S0033291711002674
- Krueger, R.F., & Markon, K.E. (2014). The role of the DSM-5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. *Annual Review of Clinical Psychology, 10*, 477-501. doi: 10.1146/annurev-clinpsy-032813-153732.
- Mann, M., Hosman, C.M., Schaalma, H.P., & de Vries, N.K. (2004). Self-esteem in a broad-spectrum approach for mental health promotion. *Health Education Research, 19*, 357-372.
- McCabe, G.A., Vrabel, J.K., & Zeigler-Hill, V. (2017). The connections between pathological personality traits and interpersonal behaviour. *Psychological Topics, 26*, 63-178.
- Mitsopoulou, E., & Giovazolias, T. (2015). Personality traits, empathy, and bullying behavior: A meta-analytic approach. *Aggression and Violent Behavior, 21*, 61-72. doi:10.1016/j.avb.2015.01.007
- Mushtaq, R., Shoib, S., Shah, T., & Mushtaq, S. (2014). Relationship between loneliness, psychiatric disorders and physical health? A review on the psychological aspects of loneliness. *Journal of Clinical Diagnosis and Research, 8*(9), 1-4. doi: 10.7860/JCDR/2014/10077.4828
- Ortega, R., Del Rey, R., & Casas, J. A. (2016). Assessing bullying and cyberbullying: Spanish validation of EBIPQ and ECIPQ. *Psicologia Educativa, 22*, 71-79. doi: 0.1016/j.pse.2016.01.004
- Romero, E., Gómez-Fraguela, J.A., & Villar, P. (2012). Life aspirations, personality traits and subjective well-being in a Spanish sample. *European Journal of Personality, 26*, 45-55. doi: 10.1002/per.815
- Romero, E., Luengo, M.A., Gómez-Fraguela, J.A., & Sobral, J. (2002). The structure of personality traits in adolescents: The five-factor model and the alternative five. *Psicothema, 14*, 134-143.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Sandín, B., Chorot, P., Lostao, L., Joiner, T.E., Santed, M.A., & Valiente, R.M. (1999). The PANAS scales of positive and negative affect: factor analytic validation and cross-cultural convergence. *Psicothema, 11*, 37-51.
- Somma, A., Fossati, A., Terrinoni, A., Williams, R., Ardizzone, I., Fantini, F., ... Ferrara, M. (2016). Reliability and clinical usefulness of the personality inventory for DSM-5 in clinically referred adolescents: A preliminary report in a sample of Italian inpatients. *Comprehensive Psychiatry, 70*, 141-151. doi: 10.1016/j.comppsy.2016.07.006
- Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070. doi:10.1037//0022-3514.54.6.1063
- Watson, D., Stasik, S.M., Ro, E., & Clark, L.A. (2013). Integrating normal and pathological personality: Relating the DSM-5 trait-dimensional model to general traits of personality. *Assessment, 20*, 312-326. doi: 10.1177/1073191113485810
- Williams, G.C., Cox, E.M., Hedberg, V.A., & Deci, E.L. (2000). Extrinsic life goals and health-risk behaviors in adolescents. *Journal of Applied Social Psychology, 17*, 756-177. doi: 10.1111/j.1559-1816.2000.tb02466.x
- Young, K. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior, 1*, 237-244. doi: 10.1089/cpb.1998.1.237