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Psychological risk and protective factors for antisocial behavior in adolescents

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The aim of this paper is to analyze the influence and differential weight of some specific psychological variables on adolescent antisocial behavior. A sample of 1,851 adolescents (49.92 % men and 50.08 % women) from the Autonomous Community of Madrid was assessed. Several stepwise regression analyses were conducted, considering three different age groups (14–15, 16 and 17–18 years), with the criterion variables and the results showed that the main psychological risk factors associated with antisocial behavior were variables linked to sensation seeking construct (impulsiveness, disinhibition, excitement seeking, etc.), while the protective factors identified were variables such as empathy and religious practices. The age groups were considered, keeping a design of optimum prevention programs with psychological character in mind.

Key words:
Antisocial behavior. Adolescents. Psychological risk.

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Factores psicológicos de riesgo y protección para la conducta antisocial en adolescentes

Este estudio tiene por objetivo analizar la influencia y el peso diferencial de determinadas variables psicológicas en la conducta antisocial de los adolescentes. Se utilizó una muestra de 1.851 adolescentes de ambos sexos (49.92 % hombres y 50.08 % mujeres) de la Comunidad Autónoma de Madrid. Se realizaron varios análisis de regresión por pasos teniendo en cuenta tres grupos diferentes de edad (14–15, 16 y 17–18 años) con las variables criterio y se confirmó que los principales factores de riesgo psicológicos para explicar la conducta antisocial eran variables vinculadas al constructo búsqueda de sensaciones (desinhibición, impulsividad, búsqueda de excitación, etc.), mientras que los factores de protección estaban representados por variables como la empatía y la

práctica religiosa. Se consideraron los grupos de edad teniendo en cuenta su importancia para el diseño de programas de prevención óptimos de carácter psicológico.

Palabras clave:
Conducta antisocial. Adolescentes. Factores psicológicos.

INTRODUCTION

In recent years, the relationship existing between an extensive combination of psychological variables has been widely studied as possible determinants of the origin and maintenance of antisocial behavior. However, the evolution of the contribution of these factors in the years that suppose the transition from childhood to the adult stage has hardly been analyzed.

Hyperactivity, attention deficit, impulsiveness and risk taking

Many studies relate concentration problems, hyperactivity, impulsiveness and risk behaviors as risk factors that would make it possible to predict criminal behaviors and alcohol abuse in both adolescence and adulthood¹⁻⁵.

Internalizing disorders: nervousness/anxiety and depression

Many individuals who have antisocial behaviors comorbidly manifest emotional disorders⁶. In relationship to depression, many studies find that individuals with antisocial behaviors have concomitant emotional disorders, among which depression and characteristics such as decreased self-concept would appear^{7,8}. In several longitudinal and epidemiological studies in the general population, it has been possible to verify the relationship between emotional disorders such as anxiety and depressive ones with the increased likelihood of having antisocial behaviors and using drugs. However, a slightly negative correlation has also appeared, even leading to denial of the relationship².

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Association with serious mental disorders

Certain crimes (destruction of property and violent crimes) may originate in abnormal mental conditions such as distorted perceptions, defective reasoning and altered affect regulation characteristic of psychoses^{9,10}. This could be interpreted in terms of an antisocial behavior intrinsic to early manifestations of schizophrenia. Furthermore, both drug abuse and antisocial personality are disorders that have a reciprocal influence, that is, the likelihood of the appearance of one increases that of the other⁹.

Early initiation to violence and delinquency

The nature of the link between the appearance of early violent behavior and «violent careers» requires investigation, however evidence shows that early antisocial behavior is associated with later worsening and chronicity of violence¹¹⁻¹⁴.

Personality variables

Impulsiveness

Eysenck and Eysenck¹⁵ related impulsiveness with tridimensional personality system: extraversion, neuroticism and psychoticism. In a wide definition (impulsiveness strictly speaking, risk assumption, non-planning and irreflection), it would positively correlate with extraversion and psychoticism while in a restricted definition (impulsiveness strictly speaking), it would positively correlate with neuroticism and psychoticism. The wide definition is that which has been frequently related with antisocial behavior. This is so both in institutionalized samples^{16,17} and in deviated behaviors shown by the general population^{2,18-21}.

Sensation seeking

This construct represents the need to seek and experience new sensations, that are varied and complex, from which physical and/or social risk may be derived²². Its presence is related with the impulsive component of extraversion, lack of agreement with social rules, low responsibility and having little self-control. Inversely, its absence indicates agreement with social rules and controlled and conventional behavior. The existing investigations provide data in favor of the relationship between sensation seeking and being involved in different antisocial behaviors²³⁻²⁵.

Aggressiveness

Continuity has been found between antisocial behavior and signs of early aggressiveness regarding the subsequent period of violent crimes. Aggressive behavior measured be-

tween the age of 6 and 13 years consistently predicts violence in males^{2,6}. In this sense, Stattin, et al.²⁷ find that two thirds of the children who commit aggressions against their teachers between the ages of 10 and 13 years have a later history of violent crimes at the age of 26 years, this relationship not appearing in women.

Intelligence

A low IQ is associated with deviated behaviors, even after considering the school achievement level, although it seems that the association is somewhat reduced²⁸. Even though the IQ-delinquency relationship has been frequently studied, the combined existing data do not make it possible to draw any firm conclusion. Rutter, et al.²⁹ conclude that cognitive deficiencies that increase risk may do so because they entail some deficiency in the intention-stimulus detection or in previous planning when deciding how to respond to social challenges. In any event, it is not always possible to speak about cognitive deficit in antisocial subjects, since its possible superiority may be considered in certain intelligence subtypes. In this sense, it has been found that individuals with antisocial personality disorder have higher scores on the measurement of Machiavellian intelligence (manipulation, dominant behavior, competitive behavior, leadership, etc.)³⁰.

Attitudes and beliefs

The results suggest that a quick attitudinal and behavioral deviation of the basic rules of behavior, such as honesty and trust, are associated with a subsequent violent behavior^{2,28,31}. In this sense, a wide range of cognitive-social processes is distorted or deficient in youth with antisocial behaviors. They would have deficiencies in attribution (with a typically external control locus), in problem solving, in evaluation of behaviors that favor aggression, and low assessment of typical characteristics of the aggressive youth³²; incapacity for altruistic behavior, cooperation difficulties even in reciprocal exchange with mutual benefit, conversion of social relationships of mutual benefit in competitive relationships, etc.³³.

The presence of these variables would be directly related with the severity of deviated behaviors.

Other antisocial behaviors

The available evidence suggests that being involved in any form of antisocial behavior in childhood is associated to a great risk of substance abuse, delinquency and playing hooky during adolescence and adulthood³⁴. Thus, interventions aimed at changing the general antisocial behavior predictors should be effective in the prevention of possible future maladaptive behaviors.

METHOD

This present study included the participation of 1851 adolescents of both genders (49.92 % men and 50.08 % women) whose ages ranged from 14 to 18 years (mean age 15.82) and who were classified into three groups: *a*) 14-15 years (42.36 %); *b*) 16 years (26.15 %), and *c*) 17-18 years (31.50 %). They belonged to several courses of secondary education. All of the participants came from six institutes of the Madrid municipality of Majadahonda, including public and private schools, representatives of different socio-economic levels. Within each one of the teaching centers, the sample was made by conglomerates, using the classroom as a sample unit. The participating classrooms of each secondary education course were chosen randomly.

Instruments

In the study performed, a questionnaire was used that included a first part presented as a survey and a second one in which five psychological assessment scales were included.

The first part is made up of a questionnaire that includes the evaluation of different psychological variables, considering aspects such as the existence of behavior problems, participation in different associations and religious or sports practice.

In the second part, five psychological assessment scales were used. They were validated and adapted for the adolescent population, and gather information on different psychological variables. These are: The Antisocial Behavior scale (ASB)³⁵, Self-concept Assessment Questionnaire (SA)³⁶, Depression Assessment Scale (DAS)³⁷, Sensation Seeking Scale for children and adolescents (SSS-J)³⁸ and Impulsiveness, Venturesomeness and Empathy scale (IVE-J)³⁹.

Variables

To reach the objectives proposed, the following variables were evaluated and/or selected:

1. *Age*. Subjects were grouped into three groups that reflect different transition stages from childhood to adult stage, considering 14-15 years, 16 years and 17-18 years.
2. *Psychological variables*. They come from both the first part of the instrument in survey format and the different scales that form the second part. They may be grouped into three well differentiated categories:
 - *Antisocial behavior*. Measured by the ASB that includes items focused on detecting deviated behaviors of typical social behavior rules of the age and some pre-criminal behaviors in childhood

and adolescence. The scale does not aim to make inferences linked to inner states, but rather to focus on self-observable behaviors, it being the alternative of dichotomic response.

- *Self-concept and depression*. It includes variables measured in the SA, that are positive self-concept, negative self-concept and self-concept-self-esteem; the considerations in the DAS, which are depression and happiness; and a variable presented in the first part in Likert scale of four alternatives (from «none» to «much») that measure satisfaction with free time.
- *Personality characteristics*. It includes variables measured by the SSS-J, including emotion seeking, excitement seeking, disinhibition, sincerity and susceptibility to boredom, and those included in the IVE-J, which are impulsiveness, venturesomeness and empathy.
- *Personal resources and ethical-moral values*. It includes variables presented in Likert scale of 4 alternatives, from «none» to «much,» measuring the participation in cultural associations, participation in athletic associations, religious practice and sports practice.

RESULTS

Correlational analysis between psychological variables and antisocial behavior

As a first step, before continuing to the analysis of regression done, the existing correlations were calculated between each one of the different groups of variables included in the present study and the criterion variables. This was done in order to detect, on the one hand, if they existed, high interrelationships between the variables used that could affect the subsequent regression study results and, on the other, analyze the nature of the relationships between the risk and antisocial behavior variables.

As can be seen in table 1, the results show the non-existence of multicollinearity between the variables analyzed (correlations lower than 0.80 were obtained in every case), indicating their adequacy for the performance of subsequent predictive analyses.

Regression analysis: prediction of practice of antisocial behavior

In this section, the results obtained after different stepwise regression analyses (stepwise method) performed with prognostic variables are presented. Antisocial behavior (measured by the ASB scale) was used as a predictive variable, considering the different age groups (14-15 years, 16 years

Table 1		Correlations between psychological variables and antisocial behavior
Psychological variables		Antisocial behavior
Self-concept and depression		
Positive self-concept		-0.274*
Negative self-concept		0.033
Self-concept-self-esteem		0.118*
Depression		0.226*
Happiness		-0.37
Satisfaction with free time		0.29
Personality characteristics		
Emotion seeking		0.212*
Excitement seeking		0.505*
Disinhibition		0.642*
Sincerity		0.528*
Susceptibility to boredom		0.269*
Venturesomeness		0.265*
Empathy		-0.179*
Impulsiveness		0.480*
Personal resources and ethical-moral values		
Participation in cultural association		0.008
Participation in athletic		0.071
Religious practice		-0.163*
Sports practice		-0.038
*p ≤ 0.001.		

and 17-18 years). There were 18 predictive variables that were related with psychological attitudes. They were the following: a) variables related with self-concept and depression (positive self-concept, negative self-concept, self-concept-self-esteem, depression, happiness and satisfaction with free time); b) variables related with personality characteristics (emotion seeking, excitement seeking, disinhibition, sincerity, susceptibility to boredom, impulsiveness, venturesomeness and empathy), and c) variables related with personal resources and ethical-moral values (participation in cultural associations, participation in athletic associations, religious practice and sports practice).

Regarding the regression analysis performed, in an attempt to provide the presentation of the large amount of resulting data, the selection of those models that are statistically significant and that explain a greater percentage of criterion variance, showing determination coefficient (R^2), adjusted coefficient of determination (*adjusted* R^2), typical coefficient of regression (β) and model significance (F) is presented in the following.

Table 2 includes the resulting models of the regression analyses conducted to identify better prognosticators of

psychological character of the practice of antisocial behaviors.

All the psychological variable subgroups considered were significant prognosticators of antisocial behavior. They were able to predict between 57.9 % and 3.7 % of the criterion variance for the 14-15 year old group, between 50.2 % and 2.8 % at 16 years, and finally, between 48.1 % and 3 % in the 17-18 year old subjects.

In all the age groups, personality characteristics were the best predictors of antisocial behavior, followed by variables related with self-concept and depression and finally by the personal resources and ethical-moral values. Thus, the high predictive value of the personality variables in the different age groups (R^2_{14-15} : 0.579; R^2_{16} : 0.502, and R^2_{17-18} : 0.481) versus the values obtained in the personal resources group (R^2_{14-15} : 0.037; R^2_{16} : 0.028, and R^2_{17-18} : 0.030) stands out.

Specifically, out of all the variables included in the total of the models proposed disinhibition, as a component of sensation seeking, is the variable that explains a greater percentage of antisocial behavior variance (R^2_{14-15} : 0.427; R^2_{16} : 0.425, and R^2_{17-18} : 0.364), greatly above the remaining psychological factors.

When all the prognostic variables are analyzed together, the sign of the β coefficients obtained would indicate that prediction of a greater practice of antisocial behaviors in adolescents would be determined by variables such as depression (β_{14-15} : 0.347; β_{16} : 0.245 and β_{17-18} : 0.127), self-concept-self-esteem (β_{14-15} : 0.283; β_{16} : 0.377, and β_{17-18} : 0.264), disinhibition (β_{14-15} : 0.340; β_{16} : 0.469, and β_{17-18} : 0.359), sincerity (β_{14-15} : 0.256; β_{16} : 0.270, and β_{17-18} : 0.196), impulsiveness (β_{14-15} : 0.210; β_{16} : 0.121, and β_{17-18} : 0.183), excitement seeking (β_{14-15} : 0.145, and β_{17-18} : 0.127) and participation in athletic associations (β_{14-15} : 0.101, and β_{17-18} : 0.085). However, the negative sign of the same coefficients in variables such as positive and negative self-concept, empathy and religious practice would indicate the protective role of these indicators against antisocial behaviors.

To summarize the results obtained, it is interesting to comment the tendency of the different groups of variables considered to decrease their predictive power as the subjects' age increases. An example is the role of the personality characteristics, which in the 14-15 year old group accounts for 57.9 % of the antisocial behaviors while they decrease to 48.1 % in the 17-18 year old group.

DISCUSSION AND CONCLUSIONS

Heeding the psychological variables that are significant prognosticators of antisocial behaviors, it is possible to state that the group that predicts a greater risk is that formed by personality characteristics and, especially, the variable

Table 2		Prediction of practice of antisocial behaviors based on psychological variables considering different age groups					
Stepwise	Regression models	β	R^2	Adjusted R^2	Change in R^2	F of change	F
14-15 years							
Self-concept of depression							
1	Depression	0.347	0.091	0.090	0.091	76,100***	76,100***
2	Positive self-concept	-0.339	0.138	0.136	0.047	41,006***	60,561***
3	Self-concept-self-esteem	0.283	0.211	0.208	0.073	69,965***	67,374***
4	Negative self-concept	-0.144	0.223	0.219	0.012	11,648***	54,154***
Personality characteristics							
1	Desinhibition	0.340	0.427	0.426	0.427	568,949***	568,949***
2	Sincerity	0.256	0.523	0.521	0.096	152,989***	417,562***
3	Impulsiveness	0.210	0.557	0.556	0.035	59,848***	319,794***
4	Excitement seeking	0.145	0.569	0.567	0.012	21,220***	251,515***
5	Empathy	-0.101	0.579	0.577	0.010	17,944***	209,281***
Personal resources and ethical-moral values							
1	Religious practice	-0.172	0.026	0.025	0.026	19,331***	19,331***
2	Participation in athletic association	0.101	0.037	0.034	0.010	7,537**	13,522***
16 años							
Self-concept of depression							
1	Positive self-concept	-0.645	0.065	0.063	0.065	32,736***	32,736***
2	Self-concept-self-esteem	0.337	0.120	0.117	0.055	29,375***	30,046***
3	Depression	0.245	0.134	0.129	0.014	7,367**	24,110***
4	Negative self-concept	-0.226	0.152	0.144	0.018	9,645**	20,829***
Personality characteristics							
1	Desinhibition	0.469	0.425	0.424	0.425	348,748***	348,748***
2	Sincerity	0.270	0.491	0.489	0.066	60,690***	226,817***
3	Impulsiveness	0.121	0.502	0.499	0.011	10,587***	157,825***
Personal resources and ethical-moral values							
1	Religious practice	-0.168	0.028	0.026	0.028	13,017***	13,017***
17-18 años							
Self-concept of depression							
1	Positive self-concept	-0.298	0.056	0.054	0.056	33,143***	33,143***
2	Self-concept-self-esteem	0.264	0.110	0.106	0.053	33,346***	34,207***
3	Depression	-0.127	0.124	0.119	0.014	9,091**	26,167***
Personality characteristics							
1	Desinhibition	0.359	0.364	0.362	0.364	321,045***	321,045
2	Sincerity	0.196	0.421	0.419	0.058	55,752***	204,037
3	Impulsiveness	0.183	0.456	0.453	0.035	35,734***	156,358
4	Excitement seeking	0.148	0.469	0.465	0.013	13,577***	123,296
5	Empathy	-0.112	0.481	0.476	0.012	13,016***	103,361
Personal resources and ethical-moral values							
1	Religious practice	-0.158	0.023	0.021	0.023	12,822**	12,822***
2	Participation in athletic association	0.085	0.030	0.026	0.007	4,081*	8,487***

*p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001.

that has been shown to be most important is disinhibition. This latter one refers to situations in which the adolescent could overcome his/her own inhibitions or the conventionalisms if these occur (e.g.: «I do not mind swimming in the nude at the beach» and «If I were married, I would not mind changing partners»). Another important variable is excitement seeking, which is also a significant risk factor in the prediction of antisocial behaviors. These two constructs would form a part of the global dimension of sensation seeking²², steering the greater scores in this risk towards a greater likelihood of participating in deviated behaviors, an aspect verified in this study and that agrees with other investigations²³⁻²⁵. In addition to these two variables, another part of the sensation seeking, which is sincerity, appears as a risk factor (although with little predictive value). This variable refers to aspects such as «I have sometimes sworn or I have insulted someone», «I have sometimes cheated in the game,» etc., and only reflects the correlation between these behaviors and the antisocial behavior strictly speaking.

In regards to another one of the personality traits considered, impulsiveness acts as a risk variable for the development of antisocial behavior in all the age groups. In this sense, it seems that those young people who generally act impulsively, that is, assuming unplanned risks and, in short, being unreflective, would have a greater likelihood of practicing antisocial behaviors. The data would confirm the covariation between impulsiveness and deviated behavior already found in other studies^{2,18,20,21,40}. On the contrary, empathy would act as a protective factor, predicting less practice of antisocial behaviors.

Regarding the variables linked to mood state, they also appear as good predictors of participation in deviated behaviors. Thus, depression and self-concept-self-esteem have been shown to be significant risk factors while negative and positive self-concept has been revealed as protection factors. It could be considered that those young people who have a high concept of themselves when others judge them (e.g.: «The others accept my ideas and suggestions» and «I am very popular among my friends») have greater likelihood of being involved in antisocial behaviors. The fact that the self-concept-self-esteem variable appears as a risk factor may be because young people with high self-esteem are in a position of «fictitious» security that would make them feel more capable to initiate drug consumption in early ages or to maintain it under control in later stages. It could be stated that they would feel the practice of antisocial behaviors as something that would make them appear to be more of a leader among others and, in any event, as perfectly controllable as they want. According to the results obtained, the supposed protective relationship of self-esteem regarding deviated behaviors has been questioned in several studies⁴¹. The role of depression seems to be less confusing since it has a close relationship with the risk of the criterion variable in the line of other investigations^{6-8,42}. Another important variable is positive

self-concept, which is shown as a protector of antisocial behavior in all the ages. It is clear that greater personal satisfaction is an adequate predictor of a lower involvement of the adolescent in deviated behaviors⁴³. Interestingly, negative self-concept also has a protective role, although it has less weight than positive self-concept. It could be understood that young people with decreased self-concept would not relate with those group types that would participate in antisocial behaviors because they would probably be rejected by their own classmates belonging to these groups.

Finally, the role of the variables related with certain personal resources and ethical-moral values is stressed. On the one hand, the degree of participation in athletic associations acts as a risk factor. On the other hand, religious practice has a protecting role. It is possible that the athletic associations may be a good breeding ground where the hypothetical celebrations of triumphs promote the formation of groups or «bands» where the responsibilities of practicing antisocial behaviors are diluted. In this way, the subjects could benefit from the anonymity provided by the group. However, active participation in religion that they belong to protects against the practice of antisocial behaviors at all ages. It seems obvious that individuals who participate in a religion have a strict and prohibitive value system regarding deviated behaviors. These results have been supported by studies that show how low religiousness is positively related with drug use and delinquent behavior or, on the contrary, those that show how religion and morality are very relevant values for the protection of the adolescent against deviated behaviors⁴³. In synthesis, it seems that an adequate system of personal rules and beliefs would serve as inner control to not participate in maladaptive behaviors^{2,28,31}.

In conclusion, considering the models obtained for the different age groups, it could be stated that the general tendency is that of a decrease in the predictive power of psychological variables as the subject's age increases. In spite of the accredited resistance of the precursors of antisocial behavior to corrective education³⁰, this study goes in depth into the need to introduce preventive programs based on psychological variables in ages prior to participation in antisocial behaviors, in order to strengthen the protective variables and diminish the risk ones. The underlying idea is to provide young people with sufficient and effective psychological resources in stages prior to their confrontation with those situations that elicit antisocial behaviors.

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