

Research Article

Analysis of Indicators of Antisocial and Criminal Behavior in Adolescent Students

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Abstract

Introduction: Crime and violence are not limited to age or gender, and adolescents are the population that is vulnerable to these acts due to the physical and psychological developmental characteristics of their age. **Material and Methods:** The AD questionnaire was applied to a student population in two Mexican cities, analyzing their antisocial-criminal behavior with the Student t test. **Results:** 157 students from 12 to 17 years old were evaluated in two large Mexican cities, mean age 14.54 years, score A (4.34) D (0.80). **Discussion:** The mean antisocial score was located in the 1st percentile, and for delinquency in decile 4(M) and 2(F); and a significant difference in antisocial and criminal behavior ($p < 0.05$). **Conclusions:** The results of the present study contrast with those reported in the literature, probably due to the heterogeneity of the sample and the two different social contexts of the two cities.

Keywords: Adolescents; Antisocial behavior; Criminal behavior; Psychometrics

Introduction

The study of the criminal phenomenon originated during the 1970s when the first formal methods of study were established in the

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FBI and the establishment of Criminal Profiling; since then, understanding the motives behind criminal behavior has been a highly relevant aspect in international literature [1]. Numerous studies have been conducted on the criminological origin across all age groups [2].

Psychometrics is a tool in psychology aimed at establishing an objective way of determining traits such as personality, intelligence, values, perception, etc. This allows for the quantification of phenomena and gives them objectivity; in recent years, its use has been implemented for the study of criminal behavior [3-6].

The adolescent population represents a group particularly susceptible to phenomena that may lead to criminal behavior [7]. Adolescence is characterized by gradual changes in physical, cognitive, and social aspects [8]. It is during adolescence that a critical period arises in the onset and/or increase of behavioral problems, specifically antisocial and delinquent behaviors. The decisions made during this stage of life are not accompanied by the maturity and perspective that should accompany them due to the impulsivity that may accompany this stage of life [9-11].

Psychometric studies have been conducted on juvenile offenders as a means of analyzing the profile and antisocial behavior, which is defined as any behavior reflecting the perpetration of violent actions against others and the violation of socially accepted norms. Antisocial and delinquent behavior may be influenced by social and psychological factors, but recent evidence has been published regarding the relationship between criminality and neuroanatomical, neurophysiological, biochemical, and even genetic factors [10,12-14].

The trend of antisocial and delinquent behavior in adolescents tends to increase with age, especially between the ages of 15 and 19. The incidence rate of delinquency in Mexico is 25,000 per 100,000 inhabitants, but this figure may increase or decrease depending on the geographical region studied. The percentage of adolescent individuals with antisocial traits can range from 8-82%, depending on the sample studied, while the delinquent tendency can vary from 1 to 71%; with the emergence of organized crime gangs in Mexico, the number of adolescents involved in criminal activities has increased, giving rise to the figure of the child hitman [12,15,16].

Antisocial behavior includes acts that clearly violate social rules and are directed against others [7], and refer to different behaviors reflecting transgression of social rules and/or action against others [13], making these characteristics a reason to relate them to delinquent acts since delinquency is an antisocial situation of human behavior and fundamentally a rupture of the normal possibility of interpersonal relationships [17].

The study of juvenile delinquency is of utmost importance worldwide, especially in countries with sociocultural conditions like those of Mexico; public prevention strategies for delinquent behavior have been designed, which must be based on knowledge of the determinants of criminal behavior, especially in adolescent populations [16,18,19].

The questionnaire on antisocial and delinquent behaviors (AD) has been conducted with Spanish-speaking populations, and the results found were developed by Nicolás Seisdedos Cubero and consist of an application manual and a response booklet, with responses being in a dichotomous form (YES, NO). It consists of 40 questions divided into 20 for the antisocial scale and 20 for the delinquent scale [12]. The higher the score obtained, the higher the percentage assigned for the qualification of this.

This instrument has been applied to Spanish-speaking populations to detect variables of antisocial behaviors and delinquent behaviors in a specific population, (Table 1); which shows various applications in several countries, the article addressing them, publication year, evaluated population, and year.

Manuscript	Country	year	Study sample	Results
Propensity for Antisocial and Criminal Behavior in Mexican Adolescents.(12)	México	2011	77 teenagers	Average
				Antisocial
				H: 12.16; M: 10.08
				Criminal
H: 3.29; M: 1.32				
Family function and antisocial and criminal behavior of adolescents from public educational institutions in the city of Ibagué -Colombia. (15)	Ibagué, Colombia	2013	406 teenagers	High trend
				Antisocial
				Men: 86% / Women: 12%
Antisocial behavior in adolescents and young people: prevalence in the Basque Country and differences based on sociodemographic variables. (20)	País Vasco España.	2016	3026 teenagers	High trend
				Antisocial
				Men: 8.21 / Wwomen: 7.33
Relationship between family risk factors and antisocial behavior in adolescents. (21)	México	2016	500 teenagers	Classification for the risk of
				commit anti-social behavior
				low 58.2% / middle 35.2% / high 6.6 %

Prevalence of antisocial and criminal behavior in secondary school students Túpac Amaru II - Florencia de Mora.(22)	Perú	2018	433 teenagers	High risk for
				AB: 43% / CB 35%
Antisocial behaviors and automatic thoughts in Peruvian schoolchildren. (23)	Perú	2019	353 teenagers	Trend
				AB
				Men: 29.7% / Women: 26.7%
				CB
Men 16.89 / Women 15.59%				
Antisocial and criminal behavior in adolescents from a public school in Floridablanca - Santander during the night shift. (6)	Colombia	2019	113 teenagers	Average
				Antisocial
				H: 10; M: 14
				Criminal
H: 7; M: 11				

Table 1: Studies conducted focused on the AD questionnaire in the Spanish-speaking population.
AB Antisocial Behavior; CB Criminal Behavior, Source: self made.

Methodology

The study was conducted on a sample of students, aged between 12 and 17 years old, residing in the cities of Veracruz and Guadalajara, Mexico. The Antisocial and Delinquent Behaviors Questionnaire proposed by Nicolás Seisdedos was administered. It consists of 40 questions that assess antisocial behavior and delinquent tendencies. The antisocial scale evaluates whether the individual has engaged in actions that deviate from societal norms within established parameters of behavior, while the delinquent scale evaluates actions that violate legal norms.

The sum of affirmative responses provides a numerical value to establish the A scale (antisocial behavior) and the D scale (delinquent behavior). The combination of numerical values allows us to establish percentiles, which vary according to gender. Using the statistical software SPSS v.26®, measures of central tendency were obtained, and the difference in means was analyzed using the Student's t-test for independent variables. We analyzed whether there are significant differences in these two scales depending on the student's place of residence or gender.

This study adhered to all ethical principles originating from the Declaration of Helsinki of the World Medical Association. Anonymity of the participants was maintained at all times.

Results

The study was conducted on a sample of 157 students (88 males, 69 females), aged between 12 and 17 years old, with a mean age of 14.54 years. For the A scale (antisocial behavior), a mean score of 4.34 out of 20 was obtained, while for the D scale (delinquent behavior), the mean score was 0.80 out of 20 (Please refer to Table 2).

	N	Mean
Score A	157	4.34
Score C	157	0.8
EDAD	157	14.54

Table 2: Descriptive statistics.

The table was prepared by the researchers.

Based on the mean results, percentile values were established. The distribution of the sample is illustrated in (Table 2). The score obtained in antisocial behavior predominated in the first percentile for both genders. For delinquent behavior, the majority of females were located in the fourth percentile, while for males, the second percentile predominated. (Table 3) displays the means and standard deviations according to the place of residence and the scores obtained in the assessed type of behavior. It is noteworthy that for both evaluated behaviors, the mean was higher for students residing in the city of Veracruz.

Percentile	Female (A)	Male (A)	Total	Female (C)	Male (C)	Total
			n=157			n=157
01-oct	29	42	71	0	0	0
oct-20	9	16	25	0	53	53
21-30	5	11	16	0	0	0
31-40	6	3	9	47	0	47
41-50	5	4	9	0	0	0
51-60	3	6	9	0	22	22
61-70	5	2	7	0	5	5
71-80	4	2	6	8	3	11
81-90	3	2	5	7	4	11
91-100	3	0	3	7	1	8

Table 3: Percentile frequency of antisocial behavior and criminal behavior in the studied population.

The table was prepared by the researchers.

Analyzing the difference in means and standard deviation based on the place of residence, a significant difference was obtained in both parameters, with a p-value less than 0.05 and a 95% confidence interval, as shown in (Table 4). On the other hand, it was observed that there is no significant difference based on gender, with p-values of 0.106 and 0.228 for antisocial and delinquent behavior respectively, as seen in (Tables 5&6).

Score	Residence	n=	Mean	SD. Standard Deviation	SEM. Standard Error of the Mean
Antisocial	Veracruz	80	6.65	4.302	0.481
	Guadalajara	77	1.95	3.312	0.377
Criminal	Veracruz	80	1.24	1.85	0.207

	Guadalajara	77	0.34	0.898	0.102
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Table 4: Measures of central tendency according to the place of residence.2.

The table was prepared by the researchers.

scales	t-value	Difference of means	Difference of standard error	IC 95%	Value p
Antisocial	7.65	4.7	0.61	3.49 - 5.92	0.000*
Criminal	3.9	0.9	0.23	0.44 - 1.36	0.000*

Table 5: Differences in means of antisocial and delinquent behavior among adolescents based on place of residence.

Source: Self-prepared; CI: Confidence Interval, $p < 0.05$

scales	t-value	Difference of means	Difference of standard error	IC 95%	Value p
Antisocial	0.33	0.24	0.73	-168.19	0.106
Criminal	0.22	0.53	0.25	-0.97	0.288

Table 6: Difference in means of antisocial and delinquent behavior among adolescents based on gender.

In the present study, the mean scores obtained by gender in students evaluated in the cities of Veracruz/Guadalajara for antisocial behaviors were 6.72 and 6.86 / 2 and 1.95, respectively; for delinquent behavior, they were 1.25 and 1.26 / 0.35 and 0.34 in males and females, respectively.

Discussion

The population studied in the city of Veracruz consisted of 80 youths, while in Guadalajara, there were 77, aged between 12 and 17 years old. An exclusion criterion for participating in the study was having been detained for any criminal act. This type of study represents a form of psychometrics, and its associative model of antisocial and delinquent behaviors has already been validated and tested in various circumstances since it was proposed by Nicolás Seisedos [20]. Therefore, this is not the first application of this type, and information has been obtained from other countries and from Mexico City [21].

It was found that in the city of Veracruz, the mean score obtained for antisocial behaviors was 6.65 out of 20 possible points. It was noted that the higher the score, the greater the probability of developing antisocial behaviors among the participants. In contrast, students evaluated in the city of Guadalajara had a mean score of 1.95. After conducting the Student's t-test for independent samples, a statistically significant difference was evident with a p-value $< 0.000^*$. This difference could likely be explained by the intrafamily and social context specific to the local population [14].

Regarding delinquent behavior, the evaluated population in Veracruz obtained an average score of 4.6 in antisocial behavior, higher than Guadalajara, whose mean was 0.9 points. Again, a statistically significant difference was found based on geographic location, with a p-value $< 0.000^*$. Taking this into account, it has been demonstrated

that the commission of crimes represents a phenomenon whose effects are harmful to the social fabric, especially considering that individuals who engage in not only criminal but also antisocial behaviors more frequently are young people [22].

In contrast to the data obtained, a study conducted by Gaeta et al. in Mexico City in 2011 found that the propensity for antisocial behaviors in men and women (mean = 12.16 and 10.08, respectively) and for criminal behaviors (mean = 3.29 and 0.68, respectively) evidenced a statistically significant difference in their study groups ($t=2.83$; $p<.01$ and $t=5.48$; $p<.01$, respectively) [12]. The results of the Veracruz and Guadalajara study demonstrate a different reality, as in Veracruz, mean scores for antisocial behaviors were 6.72 and 6.86, and for criminal behaviors, they were 1.25 and 1.26 by gender, for men and women, without significant differences, thus not consistent with the literature.

On the other hand, students from Guadalajara showed mean scores of 2 and 1.95 for antisocial behaviors, and for criminal behaviors, they obtained 0.35 and 0.34 for men and women, respectively. This highlights a lower mean than reported in other studies, with no significant difference between genders [12].

Another study published by Ochoa et al. in 2016, conducted on adolescents from two schools in the northern region of the country, demonstrated that a stronger intrafamily relationship was associated with a lower likelihood of engaging in antisocial behaviors among adolescents. A solid and interconnected family environment plays an important role in shaping individuals' personalities, reducing the likelihood of social rule-breaking and dissatisfaction with their surroundings [23].

Overall, the figures obtained from the application of the AD questionnaire in Spanish-speaking countries such as Colombia, Peru, and the Basque Country show that Colombia and Mexico have the highest scores on both questionnaires. However, our research found that students from Veracruz had scores more in line with what is reported in the literature, while students from Guadalajara reported lower scores. Additionally, most of the students evaluated in both cities scored below the 5th percentile for the Mexican population (Table 2).

The study focused on the genesis of antisocial behaviors or juvenile delinquency has been the subject of various approaches for analysis. Internal causes or motivations, affiliation with criminal groups from an early age, as well as external causes such as family environment, social-community factors, school, and socioeconomic-cultural factors can all facilitate or inhibit the onset of these behaviors [23]. Therefore, when evaluating two youth populations with different realities even within the same country, it is possible to justify the difference in scores for both types of behaviors and the latent risk of engaging in delinquent or antisocial acts.

Conclusion

In this thesis, the hypothesis presented was refuted as the figures obtained have decreased compared to other studies presented. It is mentioned that even though the percentages are low, they are linked to the confinement situation experienced in the country due to the global pandemic caused by the COVID-19 virus. This pandemic has led to the isolation and confinement of society, largely halting the social phenomena that were previously considered normal and triggering other impacts that will need to be studied further.

The use of an instrument that, while not determining the unequivocal presence of social and criminal behaviors on its own, offers an approximation to the possible genesis of these phenomena. It allows defining and directing actions that can help student populations avoid such practices. As an initial approach, the utility of this information can provide a general overview of the existence of these behaviors (antisocial and delinquent) and thus implement policies that can prevent adolescents from engaging in such behaviors and getting into conflict with the law.

Data Availability

The entire dataset supporting the results of this study is available upon request to the corresponding author, under the condition of not revealing data that could characterize a particular individual, as per the present work.

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