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Family criminal history and risk factors in convicts and university students.

Antecedentes de infracción familiar y factores de riesgo en apenados y universitários.

Histórico infracional familiar e fatores de risco em apenados e universitários.

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Contribuições

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Abstract

Crimes committed by family members are one of the main predictors of criminal behavior. Convicts and university students were compared regarding family history, intergenerational transmission, parenting styles, and risk factors, totaling 791 adult individuals of both sexes (394 convicts and 397 university students). Participants responded to the *Family Criminal History Inventory - FCHI*, to the *Parenting Style Inventory - PSI* and to a socioeconomic questionnaire with risk factors for criminal behavior. Serious crimes, such as murder, were only found in the families of convicts. There were significant and positive correlations between family members and offenses committed. Risk factors (violent neighborhoods, deviant peers, parents' low educational attainment, and risky parenting practices) differentiated the groups. Multiple linear regression identified influence of deviant peers, violent neighborhoods, mothers' low educational attainment, and negative parenting practices as predictors of criminal behavior, while appropriate housing and positive parenting practices were identified as protective factors. The possibility of reviewing public policies to inhibit and change offending behavior is discussed in light of the data obtained.

Keywords: Criminal Behavior; Criminals; Universities; Students; Parenting Styles

Resumo

Um dos principais preditores para comportamento criminoso são os crimes cometidos por familiares. Comparou-se apenados e universitários quanto ao histórico infracional familiar, transmissão intergeracional, estilos parentais e fatores de risco em 791 indivíduos adultos, de ambos os sexos (394 presos e 371 universitários). Os participantes responderam ao Inventário de Histórico Infracional Familiar (IHIF), Inventário de Estilos Parentais (IEP) e a um questionário socioeconômico com fatores de risco para comportamento criminal. Os crimes graves, como o homicídio, se concentraram na família dos apenados. Houve correlações significativas e positivas entre membros familiares e infrações cometidas. Os fatores de risco (vizinhança violenta, pares desviantes, baixa escolaridade dos pais, práticas parentais de risco) diferenciaram os grupos. A regressão linear múltipla identificou a influência de pares desviantes, vizinhança, baixa escolaridade da mãe e práticas parentais negativas como preditores de comportamento infracional, por um lado, e moradia adequada e práticas parentais positivas, como fatores de proteção, por outro. Discutem-se as possibilidades de revisão de políticas públicas para inibição e progressão do comportamento infrator em função dos dados obtidos.

Palavras-chave: Comportamento Criminoso; Criminosos; Universidades; Estudantes; Estilos Parentais.

Resumen

Uno de los principales predictores del comportamiento criminal son los delitos cometidos por miembros de la familia. Se compararon apenados y estudiantes universitarios en términos de antecedentes familiares, transmisión intergeneracional, estilos de parentales y factores de riesgo en 791 individuos adultos de ambos sexos (394 reclusos y 371 estudiantes universitarios). Los participantes respondieron al Inventario de Historia Familiar (IHIF), el Inventario de Estilos Parentales (IEP) y un cuestionario socioeconómico con factores de riesgo para conductas delictivas. Los delitos graves, como el asesinato, se han centrado en la familia de los presos. Hubo correlaciones significativas y positivas entre los miembros de la familia y las infracciones cometidas. Los factores de riesgo (vecindario violento, parejas evitativas, baja educación de los padres, prácticas parentales en riesgo) diferenciaron a los grupos. La regresión lineal múltiple identificó la influencia de compañeros, el vecindario, la baja escolaridad de la madre y las prácticas parentales negativas como predictores del comportamiento infraccional, por un lado, y la vivienda adecuada y las prácticas parentales positivas, como los factores protectores, por el otro. Discutimos las posibilidades de revisar las políticas públicas para la inhibición y progression de la conducta infractora de acuerdo con los datos obtenidos.

Palabras clave: Conducta criminal; Criminales; Estudiantes; Universidades; Estilos Parentales.

Introdução

International studies have shown that crime is concentrated in families (Beijers et al., 2017; Besemer & Farrington, 2012; Bijleveld & Wijkman, 2009) and that convicted parents are one of the more important risk factors for children to commit crimes in the future (Besemer & Bui, 2019), i.e., family criminal history is a critical predictor of criminal behavior (Besemer et al., 2016; Farrington et al., 2015; Hjalmarsson & Lindquist, 2012). Such influence is not limited to parents, it also includes grandparents and siblings, especially if they are in close contact with the child (Flanagan et al., 2019; Patterson et al., 1992). Beijers et al. (2017) indicate that crimes committed by siblings seem to be more influential as a risk factor than those committed by parents and grandparents. Siblings are a particularly important influence if they are close in age, as they will be exposed to the same environmental factors, especially negative parenting practices (Flanagan et al., 2019; Patterson et al., 1992).

The term "intergenerational transmission" generally refers to transferring individual skills, traits, and types of behavior from one generation to another. Intergenerational research investigates the causal sequences involved in the development of offending behavior in consecutive generations, as well as preventive interventions for descendants who may be at risk of delinquency (Auty et al., 2017).

Over the past decades, researchers have sought to understand the occurrence, etiology and nature of intrafamily crimes (Hjalmarsson & Lindquist, 2012). Although intergenerational transmission of criminal behavior is scientifically well-founded, its explanatory mechanism still requires investigation, especially regarding the role of each risk factor in the total composition of such transmission (Auty et al., 2017).

Aversive experiences in childhood, such as physical, psychological, and sexual abuse or physical and emotional neglect increase the chances of committing offenses in the future (Graig et al., 2021). Social vulnerability (poverty,

large family size, and poor housing conditions) and family dysfunctions (parents' separation, domestic violence, mental illness, substance abuse, and incarceration) are considered risk factors for intergenerational transmission of offending behavior (Braga et al., 2017; Malvaso et al., 2018). Studies on intergenerational transmission of criminality indicate that children of offending parents are at risk of committing offenses (Junger et al., 2013; Van de Weijer, 2014) and young people who commit serious crimes in adolescence are more likely to continue being offenders in adulthood (Farrington, 2018).

Poor parenting practices and styles (Flanagan et al., 2019; Gomide et al., 2017; Patterson et al., 1992), low educational attainment (Cabello et al., 2017; Franco & Bazon, 2019), violent neighborhoods (Bacchini et al., 2015; Chung & Steinberg, 2006), influence of deviant peers (Ashton et al., 2020; Cutrín et al., 2015; Dishion & Patterson, 2015), poor housing, and high number of people residing in the same place (Farrington, 2019; Farrington et al., 2015; van de Weijer & Bijleveld, 2018) make up the most robust set of risk factors discussed in the literature. Farrington et al. (2015) point out that these risk factors are stable throughout the lives of individuals and behave similarly within and through generations.

In addition to these risk factors, external factors such as criminal justice interventions amplify intergenerational transmission of offending behavior through labeling (Besemer et al., 2017). Members of offending families are under closer surveillance of the system, facilitating their detention, which does not necessarily mean that there is greater transmission of offending behavior in these families (Besemer et al., 2013). Public policies to combat criminality should consider the possibility that government agents (police officers) are responsible for sustaining intergenerational transmission of offending behavior (Farrington, 2011).

Disruptive families are more likely to have children with antisocial behavior because they tend to display higher risk factors than non-disruptive families (low income, low parental supervision, and parental conflicts) (Flanagan *et al.*, 2019). Families that expose children to environments that model and reinforce antisocial behavior (lying, stealing, running away from school, etc.) favor their children's involvement in delinquent practices (Pardini *et al.*, 2015).

Criminal behavior is a type of antisocial behavior (ASB). ASB is the result of a learning history that starts in family relationships (Patterson *et al.*, 1992). Patterson *et al.* (1992) emphasized that deficient and negative parenting practices, with parents and grandparents who are antisocial and/or users of substances, and the presence of environmental stressors (hostile neighborhoods, low income, among others), aggravated by child's difficult temperament, are a strong predictor of offending behavior. Farrington (2005) pointed out that the development of antisocial behavior is influenced by individual, family, and contextual factors, and that professional and school failure; exposure to antisocial role models, such as criminal parents; ineffective parenting practices; delinquent siblings and friends; and high-crime schools and neighborhoods, increase the possibility of displaying offending behavior. Individual characteristics combined with the availability of opportunities and activating factors (such as alcohol consumption and encouragement by peers) increase antisocial potential, leading to violence.

School failure is an important link in the process of acquiring offending behavior (Patterson *et al.*, 1992) and the low educational attainment of offenders and their relatives is a risk factor for the development of ASB (Cabello *et al.*, 2017). Negative school experiences, due to relationship problems with teachers and classmates, low academic performance, and frequent punishment by school authorities lead to school dropout and affiliation with deviant groups (Cutrín *et al.*, 2015; Franco & Bazon, 2019), and deviant peers can act as role models and a source of reinforcement for antisocial

behavior (Chung & Steinberg, 2009; Dishion & Patterson, 2015).

The assortative mating theory, in which an offending parent seeks to relate to a male or female partner with similar behavior, explains part of the phenomenon (Besemer *et al.*, 2017). When both parents show criminal behavior, the chances of their children developing similar behavior are high. Parental incarceration, or incarceration of any family member, produces stressful experiences, such as poor supervision, low income, mental illness, illegal drug use, and lower formal education (Farrington *et al.*, 2001; Murray *et al.*, 2012; Murray *et al.*, 2012).

There is no data on the intergenerational transmission of criminal behavior in Brazil. Therefore, the aim of this study was to compare the family criminal history of convicts to the family criminal history of university students. Risk factors associated with the development of criminal behavior, such as parenting styles, parental education, type of neighborhood, peer influence, type of housing, and number of people living in the house, were compared.

METHOD

Participants

A sample of 791 individuals was selected by convenience and composed of 394 convicts, who were serving sentences in a city in the interior of the state of Paraná, and 397 university students, from a private university in Curitiba (PR). Among convicts, 91% were male, with an average age of 33 years ($SD = 9.6$), and among university students, 22% were male, with an average age of 24 years ($SD = 8.7$). Most convicts (62.4%) had dropped out of school or were attending Middle School, others were attending or had dropped out of High School (29.7%), a small part (6%) had completed Higher Education, and the rest did not have any formal education (1.3%).

Instruments

Three instruments were used for data collection: a socioeconomic questionnaire prepared by the authors, the *Family Criminal History Inventory – FCHI* (Gomide & Dallaqua, 2022), and the *Parenting Style Inventory - PSI* (Gomide, 2021).

The socioeconomic questionnaire collected variables associated with risk factors for criminal behavior, such as parents' educational attainment, number of people living in the house, perception of the home where they grew up (very appropriate/poorly appropriate/inappropriate), neighborhood (very violent/slightly violent/not violent) and peer influence (many offending friends/few offending friends/no offending friends).

The *FCHI* assessed offenses already committed by participants or their relatives. The inventory has one column, listing 17 types of offenses organized in two factors (Factor 1: theft, murder/attempted murder, armed robbery, bodily injury, unlawful carrying/possession of a weapon, possession of stolen goods, robbery, kidnapping, drug trafficking, and domestic violence; Factor 2: driving under the influence, driving without a license, and drugs for personal use); and one row, listing family members (respondent, father, mother, siblings, grandparents, maternal and paternal uncles and cousins). The *FCHI* also collects data on participants' first offense and arrest. Participants must indicate with an "x" the offenses committed by them or by family members. If they do not know the answer, they should check UNK (Unknown). Internal consistency for the instrument's overall score had an alpha coefficient of $\alpha = 0.859$.

The *PSI* is an instrument that assesses the parenting practices used by parents in the education of their children. It is composed of 42 questions about seven parenting practices: two positive (A) Positive Monitoring (She/he asks how my day at school was and listens carefully), (B) Moral Behavior (When I damage something that belongs to someone else she/he teaches me to tell what I did and apologize); and five negative (C) Neglect (I feel she/he doesn't pay attention to me), (D) Inconsistent Punishment (When she/he is happy, she/he doesn't care about the wrong things I do), (E) Relaxed Discipline (she/he threatens to spank me and then nothing happens), (F) Negative Monitoring (When I go out she/he calls me too many times) and (G) Physical Abuse (she/he hits me with belts or other objects); where each variable

corresponds to six questions. Participants respond to items according to a 3-point *Likert* scale (never, sometimes, and always). The interpretation of results must be performed according to the Inventory's normative table (Gomide, 2021). *PSI's Cronbach's* alpha showed good internal consistency coefficients for positive monitoring (paternal = 0.778; maternal = 0.734), moral behavior (paternal = 0.775; maternal = 0.718), negligence (paternal = 0.745; maternal = 0.764); physical abuse (paternal = 0.853; maternal = 0.789) and acceptable coefficients for inconsistent punishment (paternal = 0.627; maternal = 0.598), relaxed discipline (paternal = 0.513; maternal = 0.561) and negative monitoring (paternal = 0.526; maternal = 0.448). According to Zanon and Hauck Filho (2015) alphas between 0.50 and 0.70 are acceptable, and alphas above 0.70 are good.

Ethical Procedures

The research was approved by the Ethics Committee (CAAE: 55547116.6.0000.8040). Individuals who accepted to participate signed a Free and Informed Consent Form (FICF).

Data Collection Procedures

Since participants were adults, they responded to the maternal and paternal versions of *PSI*, considering the way their parents acted when they were between nine and 18 years of age. They responded to the *FCHI*, indicating whether they or their relatives had committed any of the crimes mentioned. Due to the low educational attainment of the convicts, instrument application was individual, in a room designated by the institution management, and the items were read one by one. University students responded to the instruments collectively in a classroom. A team of psychology students helped to collect data from university students. The application of the instruments lasted approximately 30 minutes for both groups over nine months.

Data Analysis

Data analysis was performed using the *Statistical Package for the Social Sciences* (SPSS) version 23.0. The *Shapiro Wilk* statistical test verified the non-normality of the sample, indicating the use of nonparametric tests, such

as *Spearman's correlation*, *Mann-Whitney* and the Chi-square test to perform comparisons. Multiple Linear Regression analysis was performed using the *Stepwise* method. The following requirements were checked through this analysis: sample size, linear relationship between response and predictor variables, absence of multicollinearity, homoscedasticity, independence and normality of residuals, and absence of *outliers* among residuals. Most requirements were met, except for *outliers* among residuals, which did not damage the analytical procedures employed. Regression analysis was performed with the entire sample of 791 participants (removing *outliers*) to observe greater response variability.

RESULTS

Initially, the risk factors for the development of offending behavior were compared between the groups of convicts and university students (parenting styles, parents' educational attainment, type of neighborhood, influence of peers, type of housing, and number of people living in the house) in order to identify which of them are predictors of offending behavior. Then, the family history indexes of the university students were compared to those of the convicts.

Parenting Styles

The parenting style index showed that negative parenting practices are more prevalent than positive parenting practices among convicts, significantly differentiating groups. Positive parenting practices (positive monitoring, and moral behavior), both maternal and paternal, showed significantly higher rates among university students: maternal positive monitoring ($U = 63280$; $p = 0.001$) and paternal positive monitoring ($U = 43078.5$; $p = 0.001$); maternal moral behavior ($U = 64495.5$; $p = 0.001$) and paternal moral behavior ($U = 42110$; $p = 0.001$). Negative parenting practices showed statistically higher indices among convicts: inconsistent maternal punishment ($U = 49937$; $p = 0.001$) and inconsistent paternal punishment ($U = 47256.5$; $p = 0.005$); maternal neglect ($U = 58821.5$; $p = 0.001$) and paternal neglect ($U = 41804$; $p = 0.001$); maternal negative monitoring ($U = 60401.5$; $p = 0.001$) and paternal negative

monitoring ($U = 47231$; $p = 0.005$); maternal physical abuse ($U = 57159$; $p = 0.001$) and paternal physical abuse ($U = 36283$; $p = 0.001$). The negative practice of maternal relaxed discipline ($U = 71266$; $p = 0.269$) and paternal relaxed discipline ($U = 49583$; $p = 0.063$), as well as maternal *PSI* ($U = 69445.5$; $p = 0.093$) did not differentiate the groups. Paternal *PSI* showed a statistically lower index in convicts ($U = 46553.5$; $p = 0.002$).

Additionally, multiple linear regression was performed to assess the influence of parenting practices on criminal behavior. For this analysis, 14 cases with *outliers* were removed. Regression analysis resulted in a statistically significant model ($F(5,626) = 24.225$; $p < 0.001$; $R^2 = 0.16$). Maternal variables predicting criminal behavior are: negative monitoring ($\beta = 0.204$; $t = 5.289$; $p < 0.001$), moral behavior ($\beta = -0.158$; $t = -3.787$; $p < 0.001$), and inconsistent punishment ($\beta = -0.129$; $t = -3.212$; $p = 0.001$); while paternal variables predicting criminal behavior are: positive monitoring ($\beta = -0.342$; $t = -7.204$; $p < 0.001$), and negligence ($\beta = -0.168$; $t = -3.657$; $p < 0.001$). On the one hand, the regression model indicated that the negative parenting practices "maternal negative monitoring", "maternal inconsistent punishment", and "paternal neglect" are risk factors for the development of criminal behavior. On the other hand, it showed that the positive parenting practices "maternal moral behavior" and "paternal positive monitoring" are protective factors.

Educational Attainment

The difference in paternal and maternal educational attainment between the parents of the university students and the parents of convicts was significant, indicating greater educational attainment in the first group. Most of the mothers and fathers of the convicts (82%) and a quarter of the mothers and fathers of university students (26.2%) completed Elementary school and Middle School ($\chi^2 = 244.74$; $p < 0.001$). On the other hand, 73.73% of the mothers and 67.9% of the fathers of university students, and only 18% of the mothers and fathers of the convicts completed High

school, Higher education, and Graduate studies ($\chi^2 = 184.32$; $p < 0.001$).

Type of Housing and Number of Residents per Home

Large family size and poor housing were significantly more present among convicts. Although most participants reported living with up to five people (88% of university students and 58% of convicts), the number was significantly higher in the group of university students ($\chi^2 = 40.57$; $p < 0.001$). In addition, 37% of convicts and only 11% of university students reported living in homes with 6 to 10 people ($\chi^2 = 236.45$; $p < 0.001$); while 4% of convicts and 0.7% of university students reported living in overpopulated homes, with 11 to 20 people ($\chi^2 = 65.33$; $p < 0.001$).

The housing where they grew up until the age of 12 also differentiated the groups. Most of the students (87%) and only 37% of the convicts ($\chi^2 = 114.61$; $p < 0.001$) considered their housing very adequate; 44.4% of the convicts and 10.6% of the university students considered their housing poorly adequate ($\chi^2 = 421.16$; $p < 0.001$); and 17.8% of the convicts and 1.5% of the university students considered their housing inadequate ($\chi^2 = 682.66$; $p < 0.001$).

Neighborhood and Deviant Peers

Violent neighborhoods and deviant peer affiliation were significantly higher among convicts. Most convicts (72%) and 55% of the university students reported living in non-violent neighborhoods ($\chi^2 = 16.07$; $p < 0.001$); 16% of the convicts and 40% of the university students reported living in slightly violent neighborhoods ($\chi^2 = 56.05$; $p < 0.001$); and 11% of the convicts and 3% of the university students reported living in very violent neighborhoods ($\chi^2 = 85.33$; $p < 0.001$).

Affiliation with many offending friends was reported by 21.6% of convicts and 11.8% of university students ($\chi^2 = 30.72$; $p < 0.001$), with some offending friends by 26.1% of convicts and 48.6% of university students ($\chi^2 = 41.96$; $p < 0.001$) and with no offending friends by 52.3% of convicts and 39.5% of university students ($\chi^2 = 15.29$; $p < 0.001$).

Regression analysis resulted in a statistically significant model ($F(4, 559) = 50.062$; $p < 0.001$;

$R^2 = 0.26$) with four variables, including protective and risk factors. Fifty-nine cases with *outliers* were removed, i.e., only 7.5% of the total sample. The variable "very appropriate housing" was identified as a protective factor for offending behavior ($\beta = -0.287$; $t = -7.577$; $p < 0.001$), i.e., the more appropriate the housing where participants grew up, the less offending behavior was found. The risk variables predicting offending behavior were "many offending friends" ($\beta = 0.226$; $t = 6.062$; $p < 0.001$), "low maternal educational attainment" (Elementary School I) ($\beta = 0.205$; $t = 5.483$; $p < 0.001$) and "very violent neighborhood" ($\beta = 0.893$; $t = 3.230$; $p = 0.001$).

Comparison of Family Criminal History

Convicts and their siblings committed more offenses than other family members, while among university students, the highest frequency of offenses occurred among paternal and maternal cousins. In general, except for driving under the influence, convicts' nuclear families committed more offenses and were arrested more often than university students' nuclear families ($\chi^2 = 212.412$; $p = \leq 0.001$). Serious crimes (murder or attempted murder) were more frequent in the extended family of convicts (uncles, cousins, and grandparents), while less severe crimes (theft, drugs for personal use, traffic violations, vandalism, domestic violence) were more frequent among university students' family members ($\chi^2 = 53.273$; $p = 0.001$).

When comparing the total of each offense (Table 1) a higher frequency of theft, robbery, murder or attempted murder, unlawful carrying/possession of a weapon, drug trafficking, drugs for personal use, possession of stolen goods, domestic violence, bodily injury, and non-payment of alimony was found among convicts. Among university students, the highest frequencies were: driving without a license and driving under the influence.

Table 1.
Comparison of Total Offenses between Convicts and University Students

Offenses	Total		$\chi^2; p$
	Convicts n = 394	University Students n = 397	
Theft	165	55	$\chi^2 = 41.137; p < 0.001$
Robbery	123	1	$\chi^2 = 96.363; p < 0.001$
Murder or Attempted Murder	75	2	$\chi^2 = 60.363; p < 0.001$
Unlawful Carrying/Possession of a Weapon	143	5	$\chi^2 = 83.693; p < 0.001$
Drug Trafficking	148	12	$\chi^2 = 83.196; p < 0.001$
Drugs for Personal Use	204	78	$\chi^2 = 43.023; p < 0.001$
Possession of Stolen Goods	98	5	$\chi^2 = 62.151; p < 0.001$
Domestic Violence	42	1	$\chi^2 = 18.449; p < 0.010$
Bodily Injury	66	8	$\chi^2 = 18.526; p < 0.010$
Non-Payment of Alimony	27	0	$\chi^2 = 12.500; p < 0.014$
Driving without a License	220	95	$\chi^2 = 38.108; p < 0.001$
Driving Under the Influence	126	65	$\chi^2 = 33.855; p < 0.001$
Armed Robbery	13	0	$\chi^2 = 7.542; p < 0.056$
Vandalism	53	30	$\chi^2 = 3.815; p < 0.576$
Kidnapping	8	0	$\chi^2 = 3.911; p < 0.271$

There was a higher concentration of minor offenses, such as driving without a license (54%), driving under the influence (64.5%), and vandalism (50.6%) among university students and their family members. Serious offenses, such as 80% of the crimes of theft, murder/attempted murder, armed robbery, possession of stolen goods, and kidnapping, and 73.3% of the crimes of drug trafficking were concentrated among convicts and their family members.

In addition to individual offenses, the offenses committed by nuclear families also differentiated the groups. There was a significantly higher incidence of robbery ($U = 51830; p = 0.012$), unlawful carrying/possession of a weapon ($U = 50378; p = 0.028$) and domestic violence ($U = 44956.5; p = 0.001$) among convicts' fathers. University students' fathers showed higher frequencies of driving without a license ($U = 50011.5; p = 0.045$) and driving under the influence ($U = 46703; p = 0.001$). Convicts' mothers showed a higher rate of drug trafficking ($U = 76819.5; p = 0.008$), while university students' mothers showed higher rates of drug use ($U = 76634.5; p = 0.011$), driving without a license ($U = 72900.5; p = 0.001$) and driving under the influence ($U = 75061.5; p = 0.001$). Convicts' siblings showed significantly higher rates of theft ($U = 70424; p = 0.001$), robbery ($U = 70067.5; p = 0.001$), murder or attempted murder ($U = 74433; p = 0.001$), unlawful

carrying/possession of a weapon ($U = 74415; p = 0.005$), drug trafficking ($U = 71048; p = 0.001$), drugs for personal use ($U = 71577.5; p = 0.002$), driving without a license ($U = 72570; p = 0.007$), possession of stolen goods ($U = 74430; p = 0.001$), domestic violence ($U = 74624; p = 0.001$), bodily injury ($U = 74825.5; p = 0.001$) and non-payment of alimony ($U = 74615; p = 0.016$).

No significant gender differences were found in total offenses considering the total *FCHI* score, which includes the sum of offenses committed by participants and their families, both for university students ($U = 13180.5; p = 0.660$) and convicts ($U = 5480.5; p = 0.648$). The convicts' sample was composed of 91% of males, and the university students' sample was composed of 88% of females. The difference in sample composition may be responsible for this result.

Family member correlation indicated intergenerationally of criminal behavior. There were positive and moderate correlations between the participant and their siblings ($r = 0.348; p < 0.001$); between parents ($r = 0.317; p < 0.001$); father and paternal uncles ($r = 0.316; p < 0.001$); paternal grandfather and maternal grandfather ($r = 0.349; p < 0.001$); paternal grandmother and maternal grandmother ($r = 0.304; p < 0.001$); paternal cousins and paternal uncles ($r = 0.498; p < 0.001$); paternal cousins and maternal cousins ($r = 0.444; p < 0.001$); paternal cousins and maternal uncles ($r = 0.300;$

$p < 0.001$); paternal uncles and maternal cousins ($r = 0.383$; $p < 0.001$) and paternal uncles and maternal uncles ($r = 0.445$; $p < 0.001$).

DISCUSSION

In this article, family criminal history, parenting styles, and risk factors for criminality among convicts and university students of both sexes were compared. The results corroborate intergenerational studies on criminal behavior that show a significant correlation of the crimes committed among family members (Besemer *et al.*, 2016; van de Weijer & Bijleveld, 2019; Farrington *et al.*, 2015; Hjalmarsson & Lindquist, 2012). The predictor variables for antisocial and offending behavior showed the relevance of parenting practices, both as a risk factor (neglect, negative monitoring, inconsistent punishment), and as a protective factor (positive monitoring, and moral behavior). Negligent, unavailable, and insensitive parents, with deficits in supervising their children's activities, do not take responsibility, do not show affection, and do not teach moral behavior (honesty, justice, generosity, etc.), favoring the development of antisocial behavior (Flanagan *et al.*, 2019). Parent counseling and training programs may be promising ways to inhibit offending behavior.

The different effects of family configurations as risk factors found in this study support criminological theories (Dishion & Patterson, 2015; van de Weijer & Bijleveld, 2018; Farrington, 2019). Deviant peer affiliation and school failure, combined with violent neighborhoods, inadequate housing, and large families living in poor conditions were found to be risk factors for intergenerational transmission of criminal behavior (Bacchini *et al.*, 2015; Cabello *et al.*, 2017; Chung & Steinberg, 2006; Cutrín *et al.*, 2015; Farrington, 2019; Farrington *et al.*, 2015; Franco & Bazon, 2019; van de Weijer & Bijleveld, 2018). Poor parenting and neglect, due to the scarcity of food and goods, which compromise a simultaneous distribution of care and food to the offspring favor the perpetuation of risk factors (Farrington *et al.*, 2015). This study showed that having many offending friends, low maternal educational attainment, and very violent neighborhoods were

risk factors for offending behavior, while very adequate housing was a protective factor.

The results of the study showed significant differences between the educational attainment of convicts and their parents and the educational attainment of university students and their parents. The low educational attainment of an individual and their family is a risk factor for the development of ASB (Cabello *et al.*, 2017; Franco & Bazon, 2019), and school failure is related to the beginning of deviant peer affiliation (Patterson *et al.*, 1992).

Convicts' nuclear family (father, mother, and siblings) and extended family (grandparents, uncles, and cousins) accounted for the highest rates of offenses and serious crimes (robbery, murder/attempted murder, armed robbery, possession of stolen goods, kidnapping, and drug trafficking). Siblings were the relatives with the highest offending rates among the members of nuclear families. Less serious crimes (theft, drugs for personal use, traffic violations, and vandalism) occurred more frequently among the relatives of university students. These data corroborate studies on this subject (Beijers *et al.*, 2017; Beaver, 2013; Capaldi *et al.*, 2021; Walters, 2018).

Family incarceration rates were higher among convicts' family members. Parental custodial sentences had a more detrimental impact on children than noncustodial sentences (Källström *et al.*, 2019; Ting *et al.*, 2022). This factor brings disadvantages to a family in several domains, from educational deficits with deviant peer affiliation to, eventually, involvement with the criminal justice system (Foster & Hagan, 2015; Giordano *et al.*, 2019; Murray *et al.*, 2012). Imprisonment facilitates the interruption of parental vehicles and causes financial impact, favoring stigma and labeling (Besemer & Bui, 2019; Källström *et al.*, 2019; Ting *et al.*, 2022). Furthermore, children of incarcerated parents may be exposed to other risk factors already mentioned, Wildeman (2020) showed that paternal incarceration is linked with having peers who are less academically successful and more delinquent.

Limitations

The main limitation of this study is related to sample composition. Most convicts were male

while most university students were female. The results showed no significant gender differences in total offenses. Besemer and Farrington (2012) point out that males are more likely to commit crimes than females. Prosocial behavior develops differently in males and females, with greater empathy and problem-solving skills in females. Males are at greater risk of developing deficits in the frontal lobes of the brain, interfering with executive functions linked to learning difficulties and the development of antisocial behavior. Females, on the other hand, affiliate less with deviant peers, are less exposed to antisocial role models and have less opportunity for criminal involvement (Moffitt et al., 2001). Moffitt et al. (2001) showed that even when boys and girls were similarly exposed to family risk factors, boys had more deviant peers and a weaker connection to the school. Recent studies show that the patterns of intergenerational transmission of crime differ for girls and boys, or girls, not living with the biological father does not diminish the influence of his conviction (Anker & Andersen, 2021). Furthermore, Tzoumakis *et al.* (2020) found that regardless of the gender of parent in some cases the intergenerational transmission may be stronger in female offspring. Even though crime and conviction among women is rare, future studies should seek balance in sample composition according to sex to avoid this distortion.

In addition, the use of self-report instruments can lead to inaccurate data collection. In some situations, participants may be unaware of a family member's offense. In this case, the data can be falsely interpreted as "non-infringement". Despite this limitation, researchers in the area suggest the use of self-report instruments in studies that measure criminal activity, because they are a resource with reasonable validity to estimate this type of behavior. (Besemer et al., 2017; Farrington & Bergström, 2019).

Implications

The implications of the findings of this study can be organized into four groups. First, environmental stressors that favor the development of antisocial behavior (such as poor housing, large family size, and violent neighborhoods) were found in this study. Public

policies to improve neighborhoods and serve needy sectors of the population and people released from the prison system should be implemented to reduce crime. Second, results show that siblings have the greatest influence on the development of offending behavior. Since sibling delinquency is a risk factor for future criminal behavior in adolescence and adulthood, it is recommended that offending siblings be targets of priority interventions to reduce offending behavior. Thirdly, deficient parenting practices are important risk factors for intergenerational transmission of criminal behavior. Prevention programs in parenting practices should be included in public policies to prevent and mitigate family offending behavior, given their relevance. Finally, the well-established influence of low family educational attainment on offending behavior deserves primary attention. In this sense, priority should be given to actions that include the school environment, with prevention and mitigating programs, since low educational attainment of individuals and their parents, and resulting deviant peer affiliation in childhood and adolescence, are relevant risk factors for criminality.

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