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ORIGINAL ARTICLE

Criminal career-related factors among female robbers in the State of São Paulo, Brazil, and a presumed 'revolving-door' situation

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DESCRIPTORS

Female Inmates;
Robbery;
Substance Misuse;
Trans-Generational Theory.

Abstract

Introduction: Risk-taking behaviors, family criminality, poverty, and poor parenting have been frequently associated with an earlier onset of criminal activities and a longer criminal career among male convicts. **Objective:** This study aims to identify factors related to the onset and recurrence of criminal behavior among female robbers in the State of São Paulo - Brazil. **Method:** It was a cross-sectional study carried out inside a feminine penitentiary in São Paulo. From June 2006 to June 2010, 175 inmates convicted only for robbery were recruited to be evaluated about family antecedents of criminal conviction, alcohol and drug misuse, impulsiveness, depressive symptoms, and psychosocial features. **Results:** Having family antecedents of criminal conviction consistently predicted an earlier onset of criminal activities and a longer criminal career among female robbers. Drug use in youth and the severity of drug misuse were significantly related to the initiation and recurrence of criminal behavior, respectively. **Discussion:** Prisons must systematically screen detainees and provide treatments for those with health problems in general. Children of inmates should obtain help to modify the negative consequences of their parents' incarceration in order to mitigate the negative consequences of pursuing this 'static' factor.

DESCRITORES:

Mulheres sentenciadas;
Roubo;
Uso Excessivo de Drogas;
Teoria Trans-Gerações.

Fatores relacionados à carreira criminal em mulheres condenadas por roubo no estado de São Paulo, Brasil, e uma situação presumível de “porta giratória”

Resumo

Introdução: Comportamentos de correr riscos, criminalidade familiar, pobreza e pais inadequados foram frequentemente associados a um início mais precoce de atividades criminais e a uma carreira criminal mais longa em presos do sexo masculino. **Objetivo:** Esse estudo visa identificar os fatores relacionados ao início e à recorrência do comportamento criminal em mulheres assaltantes no estado de São Paulo, Brasil. **Método:** Este foi um estudo em corte transversal realizado dentro de uma penitenciária feminina em São Paulo. De junho de 2006 a junho de 2010, 175 internas condenadas apenas por roubo foram recrutadas para avaliação quanto a antecedentes familiares de condenação por crimes, uso inadequado de drogas e álcool, impulsividade, sintomas depressivos e características psicossociais. **Resultados:** Ter antecedentes familiares de condenação por crimes predisse consistentemente um início mais precoce de atividades criminais e uma carreira criminal mais longa em mulheres assaltantes. O uso de drogas na juventude e a gravidade do uso de drogas estavam significativamente relacionados respectivamente ao início e à recorrência do comportamento criminal. **Discussão:** As prisões deveriam avaliar sistematicamente os presos e proporcionar tratamento para aqueles com problemas de saúde em geral. Os filhos dos internos deveriam obter ajuda para modificar as consequências do encarceramento de seus pais e reduzir as consequências negativas da evolução desse fator ‘estático.’

Introduction

Throughout history, in many different societies, females have committed fewer crimes than males. Given that the typical offender is a young male, the majority of studies on crime-related factors have focused on this gender. However, data indicate that the proportion of females incarcerated is growing at a faster pace than men.

Data from the *Secretaria de Administração Penitenciária* (Penitentiary Administration Secretariat) of São Paulo State - Brazil - pointed out that the female incarceration rate increased by almost 184%, whereas the male incarceration rate added up to almost 31% between 2005 and 2009. Some of the violent and drug-related crimes committed by women have grown in this period, such as homicide (increased by 109%), drug trafficking (increased by 200%) and mainly robbery (increased by 261%).¹ The substantial increase in female offending has also been a trend in other countries and cultures² and this has encouraged researchers to learn more about the characteristics of female offenders, the factors that determine the crimes and the risk of re-offending. However, while the predictors of male offender recidivism are relatively well known, they have not been so intensively investigated for female offenders. This can be in disagreement with the fact that recidivism accounts for a significant proportion of women in jail. In fact, literature points out that almost two thirds of female detainees have recidivism histories and almost one half are on probation at the time of incarceration.³

Some authors have suggested that crime perpetration-related factors can be gender-specific. History of sexual and physical abuse, suicide attempts, self-harm experiences, romantic relationships with criminal partners are potential criminogenic factors for women,^{4,5} while substance misuse, some types of mental illnesses, low self-esteem,

impulsiveness, anti-social personality patterns, poverty, poor educational background, history of convicted parents, have been identified as criminogenic factors for both male and female inmates. Although high impulsiveness levels have been pointed out as a criminogenic factor among general offenders, there seems to be slight differences between male and female inmates, with women showing higher reactive impulsiveness and lower instrumental impulsivity than men.⁶ In reality, static factors (for instance, age of onset of criminal behavior, personal and family antecedents of conviction, history of having committed violent crimes previously) combine with dynamic ones (such as substance misuse, impulsiveness, mood disorders, cognitive distortions) locate people at higher or lower risk of beginning and maintaining their criminal behaviors.

Although it is paramount to consider differences between the originating and maintaining factors of crime, this is not a simple task because many of these factors can be overlapped. The criminogenic factors for inmates must be adequately identified and those recidivism-related ones must receive special attention.

Various studies have verified a high prevalence of different psychopathological problems in male and female inmates.^{7,8} Nearly one fifth of the women in prisons has shown severe psychiatric disorders. This seems to be higher than the rate among male detainees.⁸ More than half of the female convicts have reported a serious history of drug abuse.⁹ Thus, substance abuse, mood disorders and personality disorders are commonly found in this population and represent notable mental health and criminogenic factors.¹⁰⁻¹² However, the challenge is to determine which of these factors are reliably associated with recidivism risk and, consequently, with a longer criminal career among female offenders.

In addition to these factors, the strong connection between criminal behaviors of biological parents and their offspring is well documented.¹³⁻¹⁶ This relationship has been broadly considered to derive from complex genetics as well as environmental and cognitive interactions.¹⁷⁻¹⁹ Categorically, *having a family member with a criminal history - parents and siblings alike - substantially increases the likelihood of a person committing delinquent acts.*²⁰ Also, some evidence suggests that the law violations by women are often associated with an emotional relationship with others and the fulfillment of role expectations within that connection (more than with man). Women may use the money that was stolen for personal excesses, but more often the money is used to fulfill a caretaking role or to maintain a love relationship.²¹

There have been studies showing that the earliest onset of offending is a strong indicator of a more severe tendency toward delinquency and criminal activity mainly among men. The most important childhood risk factors for future offending are measures of family criminality, risk-taking behaviors, poor parenting, low school attainment, and poverty. Thus, having a family member with a criminal history should exert influence in the beginning and maintenance of criminal activities.²²

Unfortunately, studies on the criminal career among female inmates are still in their infancy. To determine which aspects can differentiate female inmates with longer criminal careers from those with shorter ones should help correctional professionals establish effective prevention and therapeutic strategies and develop more reliable risk-assessment instruments. The offender rehabilitation is evidenced through the reduction or desistence of criminal behavior. Given that rehabilitation is the fundamental goal of most correctional systems, the scientific focus on criminal career-related factors and methods to "shorten" it must be continuously improved.

Based on the literature findings highlighting that family antecedent of criminal activities, drug use problems, and high impulsiveness levels are related to criminal involvement, we aimed to analyze the extent to which these variables are associated with the beginning and the maintenance of criminal activities. For this, we hypothesized that having family antecedents of criminal conviction (which includes parents and siblings) would be significantly related to an earlier onset of criminal behavior and a longer criminal career length. Also, we surmised that higher scores on drug misuse, impulsiveness and depression symptoms are positively and significantly associated with a longer criminal career, given that all of these factors are considered criminogenic factors.

Methods

Subjects

Between 2006 and 2010, 175 female robbers were randomly selected from a total of 2,686 women who were serving sentences for different types of violent and non-violent crimes in the *Penitenciária Feminina Sant'Ana* in São Paulo State, Brazil, one of the oldest penal institutions in our country. The randomization process was done by using a random number table whose numbers were matched with inmates' legal records.

Eighteen eligible inmates refused to take part in this research because they believed that their answers could impair the criminal procedure, in spite of being reassured by the researchers that the information would be kept confidential.

For the purposes of this study, we selected inmates convicted only of robbery to avoid the influence of other crimes and motivations on the results. No selected woman was mentally retarded or severely mentally disordered (e.g., psychotic or severe mood disorders), which would deserve treatment in a forensic hospital.

It is important to note that there were 1,092 women imprisoned for robbery (simple, aggravated or armed) in the State of São Paulo in 2009.¹ Therefore, it is our contention that we interviewed about 14.4% of all female robbers in our state.

Procedure

After obtaining a list of eligible inmates, the interviewers spoke to these women individually and explained the study, the eligibility requirements, and the contents of the consent form. Data from their criminal reports were also reviewed.

Interviews were conducted in a private room in the penitentiary and each one lasted almost 90 minutes. The interviewers offered inmates the possibility of talking about the results of the instruments applied, in case they manifested any interest. All interviews were conducted by a specifically trained and clinically experienced medical staff and supervision was provided by the latter author of the present study.

The access to this penitentiary was allowed by the Penitentiary Counseling of São Paulo and the *Secretaria de Administração Penitenciária* (Penitentiary Administration Secretariat) of São Paulo. This study was approved by the Ethical Committee of *Faculdade de Medicina do ABC - São Paulo, Brazil* - and was supported by the *Fundação de Amparo à Pesquisa of the State of São Paulo, Brazil* (FAPESP).

Measures

This was a sectional study, where the subjects provided information in a face-to-face interview. The prisoners were evaluated with the Alcohol Use Identification Test (AUDIT),^{23,24} the Drug Abuse Screening Test (DAST),²⁵ the Barratt Impulsiveness Scale - version 11 (BIS-11),²⁶ the Sexual Addiction Screening Test²⁷ and the Beck Depression Inventory (BDI).²⁸ We also applied a structured questionnaire developed by the Ambulatory for the Treatment of Sexual Disorders of ABC Medical School, Santo André, São Paulo, Brazil, that focuses on the following topics: sociodemographic data, personal history of alcohol and drug use, family history of alcohol and drug problems and involvement with criminal offenses, personal history of being sexually abused in childhood, employment history, reason for current imprisonment, previous convictions or charges, and the age of onset of criminal activities.²⁹

To evaluate the history of sexual aggression experienced by these inmates, we utilized the modified version of the Sexual Experiences Survey (SES).^{30,31}

The following measures were used to evaluate the criminal career:

- a. Age of onset of criminal activities. Given that many inmates initiate their criminal career before the age of 18, and that the minimum age of criminal responsibility

- is 18 in Brazil, we based this information on self-reports. In fact, individuals who commit an offense before their 18th birthday are under the jurisdiction of child welfare authorities and their offenses are not registered;
- b. Criminal career length. To get this measure, we calculated the difference between the age of admission into the penitentiary to serve the current sentence and the self-reported age of onset of criminal activities. Since these inmates can obtain different legal benefits for prison release depending on their physical and psychological state and behavior in the correctional facility and criminological history, we preferred using the 'age of the admission into the penitentiary' as the presumptive end of the criminal career;
 - c. Recidivism history. We have evaluated the official registries of previous convictions, including the same type of crime (robbery) or different ones.

The term 'criminal career' has been defined as the trajectory of the individual's criminal activity from the first to the last offense. This term does not suggest that offenders are assumed to live off their crimes, but it is intended as a "means of structuring the longitudinal sequence of criminal events associated with an individual in a systematic way". The basic structure of a criminal career involves: (a) age of initiation, (b) age at termination, and (c) mean number of crimes committed per year (or per some pre-defined period) while active. Although studies have shown that a lot of convicts continue their criminal activities inside prisons,³² the criminal career length is usually computed considering the difference between the age of onset of criminal activities and the age at the last imprisonment, given that the criminal career maintenance after release is elusive. However, if a convict previously served other sentences inside prisons, these periods of 'intermittency' cannot be considered as pauses in his / her criminal career per se. In fact, among some offenders, prison is not an outstanding event but rather a recurrence during their criminal careers.

Analysis

One hundred and fifty-seven female inmates participated in this research. The outcome measure - "age of onset of criminal activities" - was analyzed by Kaplan-Meier survival analysis, without censoring data (log-rank test). Differences in criminal career length were compared between female inmates with and without family antecedents of criminal conviction by using univariate analysis. Next, *Cox Proportional Hazards Regression* analyses were used to adjust variables that could confound the association between each outcome measure and "family antecedents of criminal conviction".

The criminal career length was defined as the period (in years) between the age of the admission into the penitentiary to serve the current sentence and the self-reported age at the beginning of criminal activities. Also, we computed the correlation matrix of the variables potentially related to the concept of criminal career length, such as the recidivism rates. The Pearson's *r*, Phi and Point-biserial correlation coefficients were used to indicate relationships between two continuous variables, two categorical variables as well as between one continuous variable and another categorical one, respectively. All statistic analyses were performed with SPSS for personal computer, version 18.

Results

Descriptive statistics

Sociodemographic features

As shown in Table 1, the mean age at the admission into this penitentiary was 25.49 (SD = 6.71) years, 71.34% were single or divorced, 45.86% were white, 73.88% had not completed the 7th grade and 68.15% were Christian. The mean monthly income before penalty (in 'Reais', the Brazilian currency) was 478.25 (SD = 653.39). Thirty-three (21.02%) inmates reported history of being sexually abused in childhood.

Crime related factors

Sixty-eight (43.31%) had *official* recidivism registries and, among these recidivists, forty-eight (70.59%) committed the same type of crime previously (robbery). Fifty-five (35.03%) revealed family antecedents of criminal conviction (parents and / or siblings) and thirty-two (20.38%) got involved with criminal boyfriends or husbands.

One hundred fourteen (72.61%) alleged the necessity of money as the main motive for the crimes and 90 (57.32%) used handguns to perpetrate the latter crime.

The mean time of imprisonment was 44.60 (SD = 46.69) months and the mean time of the penalty was 127.96 (SD = 107.20) months.

Psychometric Measures

Means and standard deviations for continuous variables are shown in Table 1.

Criminal career

Onset of criminal activities

The mean age of the onset of criminal activities was 20.91 (SD = 7.06) years. As shown in Figure 1, inmates with family antecedents of criminal conviction showed an earlier onset of criminal activities (log rank $\chi^2 = 12.20$, 1df, $p < 0.01$). This difference remained after controlling for education (stratified log rank $\chi^2 = 11.99$, 1df, $p < 0.01$). The mean age of the onset of criminal activities among female robbers with family antecedents was 18.38 (SD = 5.89) years as opposed to 22.27 (SD = 7.28) years among female inmates without family antecedents ($t = 3.41$, 155df, $p < 0.01$). After, the following variables were entered into a Direct Cox Proportional Hazards Regression analysis as potential confounding variables: history of being sexually abused in childhood and history of drug use in youth. Of these variables, the 'family antecedent of criminal involvement' and the 'drug use in youth' were significantly and independently related to a more precocious beginning of criminal activities. The odds ratios of 1.46 and 2.69 mean that the variables 'family antecedents of criminal conviction' and 'drug use in youth' increase the odds of a more precocious onset of criminal activities by 46% and 169%, respectively (Table 2). The test of the full model with all predictors against a constant-only model was statistically significant, ($\chi^2 = 44.67$, 3df, $p < 0.01$).

Table 1 Sociodemographic, criminological and psychometric features among female robbers

Variables	Female Robbers (n = 157)
Age, mean (SD)	29.10 (7.58)
Marital status, n (%)	
Single / Divorced	112 (71.34)
Married / Common-law	39 (24.84)
Widowed	6 (3.82)
Race, n (%)	
White	72 (45.86)
Black	39 (24.84)
Mixed Race	46 (29.30)
Educational level, n (%)	
6 th grade or less	116 (73.88)
7 th to 12 th grade	34 (21.66)
High School or more	7 (4.46)
Religion, n (%)	
Christian	107 (68.15)
Afro-Brazilian	19 (12.10)
Spiritualist	12 (7.65)
Others	19 (12.10)
History of being sexually abused in childhood, n (%)	33 (21.02)
Monthly income before penalty (Brazilian currency), mean (SD)	478.25 (653.39)
Romantic relationship with criminal husband/ boyfriend, n (%)	32 (20.38)
First-degree relatives with history of criminal convictions, n (%)	55 (35.03)
Criminal recidivism history, n (%)	68 (43.31)
Age of the beginning of the criminal activities, mean (SD)	20.91 (7.06)
Age at the admission into current penitentiary, mean (SD)	25.49 (6.71)
Total time (in months) of penalty, mean (SD)	127.96 (107.20)
Time (in months) of imprisonment, mean (SD)	44.60 (46.69)
AUDIT, mean (SD)	7.88 (10.30)
DAST, mean (SD)	8.41 (6.71)
BIS, total mean scores (SD)	67.99 (11.97)
Motor Impulsivity, mean (SD)	2.13 (0.49)
Attentional Impulsivity, mean (SD)	2.10 (0.50)
Nonplanning Impulsivity, mean (SD)	2.31 (0.52)
SAST, mean (SD)	4.16 (3.81)
BDI, mean (SD)	15.52 (7.84)

Criminal career length

The overall mean length of criminal career was 4.59 (5.79) years. The mean length of the criminal career among female robbers with family antecedents of criminal conviction was 6.16 (SD = 6.32) years as opposed to 3.74 (SD = 5.33) years among female robbers without family antecedents ($t = 2.54$, 155df, $p = 0.01$). Figure 2 shows the box plot for the mean length of female robbers' criminal careers with and without family antecedents of criminal conviction. After, the following variables were entered into a Forward Stepwise Cox Proportional Hazards Regression analysis as potential confounding variables: DAST (drug addiction screening test), AUDIT (alcohol use identification test), SAST (sexual addiction screening test), total score on BIS-11 (Barratt impulsiveness scale) and BDI (Beck depression inventory) mean levels, monthly income before the penalty, romantic relationship with criminal boyfriends / husbands, history of being sexually abused in childhood, and education level.

The Stepwise method was chosen because all of these predictors might be highly correlated with the outcome (criminal career length) and one could rule out the effect of the other. In Step 1, where only the predictor "family antecedent of criminal behavior" was included, the model was statistically reliable ($\chi^2 = 4.25$, 1df, $p = 0.04$). In Step 2, where the predictors "family antecedent of criminal behavior" and "DAST mean levels" were included, the model was also statistically significant, ($\chi^2 = 8.25$, 2df, $p = 0.01$). The odds ratios of 0.69 and 0.97 in Step 2 mean that the variables

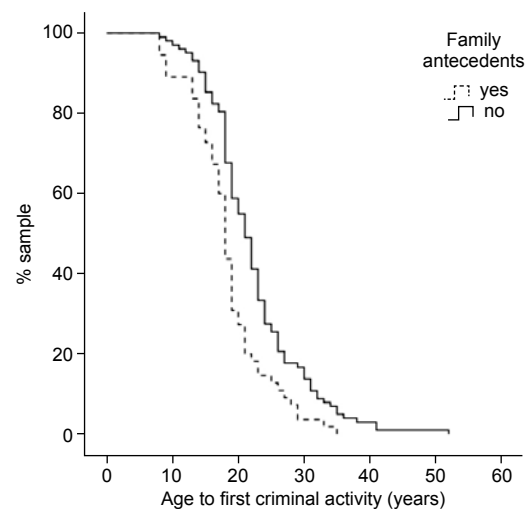


Figure 1 Survival function for the onset of criminal activities between female robbers with and without family history of criminal conviction.

Table 2 Effects of confounding variables on the onset of criminal activities among female robbers (Direct Cox Proportional Hazards Regression)

Variables	SE	Wald	df	p	OR	CI (95%)
Family antecedents of criminal conviction	0.17	4.67	1	0.03*	1.46	1.04-2.04
Drug use in youth	0.19	26.72	1	< 0.01**	2.69	1.85-3.93
History of being sexually abused in childhood	0.21	1.01	1	0.31	1.23	0.82-1.85

* $p < 0.05$, ** $p < 0.01$.

‘family antecedents of criminal conviction’ and ‘DAST mean levels’ decrease the odds of “failing” in the career (criminal career) by 31% and 3%, respectively (Table 3).

Correlations

The way the criminal career length was calculated in this study generated values positively and significantly related to the general recidivism rates, and particularly to the recidivism history for robbery (specialization level). Also, having recidivism history for the same crime (robbery) was negatively and significantly associated with having recidivism history for different types of crimes (Table 4).

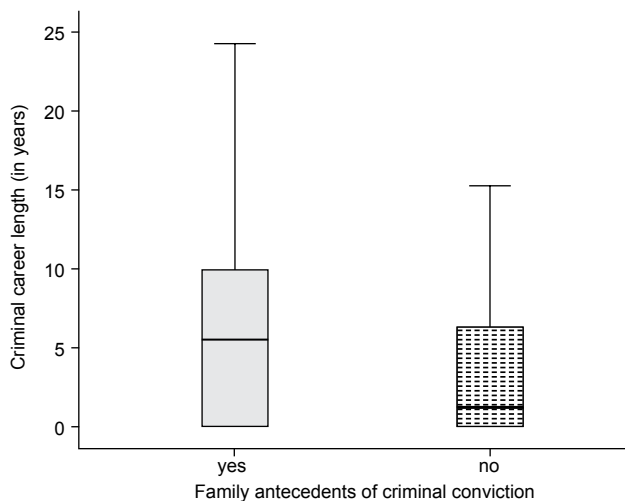


Figure 2 Criminal career length between female robbers with and without family history of criminal conviction.

Discussion

Our findings confirm the initial hypotheses that having family antecedents of criminal conviction consistently predict a more precocious beginning of criminal activities and a longer criminal career among female robbers. In addition, the drug use in youth and the severity of drug misuse during lifespan were significantly related to the initiation and recurrence of criminal behavior, respectively. Impulsiveness levels and scores on depression did not reveal predictive value in criminal career.

Several studies have already shown strong correlation between the criminal behavior of parents and the delinquent behavior of their children.^{14,15,19,33,34} Also, persistent delinquents tend to be brought up in families with widespread deviant conduct. There have been some explanations for the trans-generational transmission of crime, such as:

- a. The criminal behavior would be only a small part of other undesirable and shared behaviors, such as teenage pregnancy, alcohol use and perceptive errors;
- b. People with a criminal history would have a higher likelihood of marrying with others with similar socio-demographic characteristics and parental profiles;
- c. Children and adolescents learn criminal behaviors by observing and imitating the behavior of their parents;
- d. Criminal parents would have some genetic predisposition to criminal conduct and this could be transmitted to offspring;
- e. Criminal parents and their children would live in least-favorable environments and this would increase the chances of perpetration of certain types of crimes, such as robbery and drug trafficking, given financial need and peer influences;

Table 3 Effects of confounding variables on the criminal career length among female robbers (Stepwise Cox Proportional Hazards Regression)

	SE	Wald	df	p	OR	CI (95%)
Step 1						
Family antecedents of criminal conviction	0.01	4.22	1	0.04*	0.97	0.95-0.99
Step 2						
Family antecedents of criminal conviction	0.01	4.61	1	0.03*	0.69	0.50-0.97
DAST mean levels	0.17	5.00	1	0.02*	0.97	0.95-0.99

* p < 0.05; DAST: Drug Abuse Screening Test

Table 4 Correlation matrix of variables related to the concept of criminal career

Variables	CCL	ACA	AAP	GRH	RHR	RHOC
Criminal career length	-					
Age of onset of criminal activities	-0.47**	-				
Age of admission into the penitentiary (current sentence)	0.37**	0.65**	-			
General recidivism history	0.47**	-0.22**	0.17*	-		
Recidivism history for robbery	0.44**	-0.29**	0.08	0.69**	-	
Recidivism history for other crimes	0.10	0.05	0.14	0.51**	-0.27**	-

* p < 0.05; ** p < 0.01; CCL: criminal career length; ACA: age of onset of criminal activities; AAP: age of admission into the penitentiary (current sentence); GRH: general recidivism history; RHR: recidivism history for robbery; RHOC: recidivism history for other crimes.

- f. Some families living in violent areas would be more intensively monitored by the police, and this could generate a persistent labeling of these families as criminals. This labeling approach would stress the negative effects of the social and family deprivation and increase the social distance from those who perceive these people to be dangerous;³⁵
- g. The impact of parental incarceration on children's development is profound. Children may show diverse emotional responses to this situation, such as guilt, shame, fear, sadness, anger, anxiety and, as a result, negative coping patterns.

Factors related to the beginning and maintenance of criminal behavior need to be further researched to establish efficacious models of penal treatment inside and outside jails. If 'static' and 'dynamic' factors are linked to precocious and recurrent criminal behavior among different types of inmates, health and policy strategies should be adequately carried out to act upon all of these factors preventively. Unfortunately, detainees do not have the chance of changing the 'static' factors that predict recidivism, given that such factors are not amenable to treatment. However, the children of the inmates can obtain help to modify the negative consequences of their parents' incarceration as long as penitentiary policies make efforts to exercise effective supervision over these youths. Thus, the consequences of having this 'static' factor could be managed and mitigated among inmates' children. Also, children that are left unsupervised are at higher risk of using substances and engaging in anti-social conducts.

In fact, inmates' children are often left confused and uncertain of what it means to be an adult, when they are separated from their parents. Low self-esteem, decline in school performance, truancy, flashbacks about the parents' crimes and arrests, difficulties in sleeping and concentrating, insecure attachments and substance abuse are symptoms commonly observed in inmates' children.^{36,37} Unfortunately, if the needs of these children were not recognized and coped with, a familiar revolving-door to prison can be a rule in the penitentiary system. From this point of view, prison populations represent an enormous social problem that impacts on a much wider community. In addition, research has demonstrated that children are negatively affected the most by the incarceration of their mothers rather than their fathers.³⁶ It is terribly unfortunate that government programs are not emphatically targeting these children, their foster caregivers and mothers in order to design and provide needed services.

However, some proposals have been considered to reduce negative consequences for inmates' children, such as: interventions with nurse home visitation; attempts to humanize prisons by training correctional professionals in conflict resolution, human rights and healthy motherhood; improvement of the alliance between foster caregivers and incarcerated mothers in order to decrease the dissonance between both parenting adults and to develop or maintain the role of mothers among female offenders. All of these recommendations could promote the social and emotional health of toddler and preschool-aged children.^{36,38,39}

It is also true that, among women condemned to prison for violent crimes, a longer criminal career has been observed in those that initiated the street drug consumption precociously. In fact, almost 90% of robberies committed by women have been economically driven and the vast majority of them revealed that the money would support their drug usage. Besides, the women with early-onset drug usage have most likely resided in areas with high concentration of poverty and frequently have family histories of drug use and criminal involvement.⁶ Our study demonstrated that regardless of low educational and poverty levels, drug misuse was significantly associated with the onset and recurrence of criminal behavior.

The connection between substance abuse and criminal activities is well documented in scientific literature. Drug misuse is considered an important factor related to criminal recidivism, that is, a criminogenic factor. The higher severity of substance abuse is associated with self-reported property crime among women. Therefore, the maintenance of drug consumption by these inmates must be considered an important dynamic risk factor to criminal recidivism.¹²

Some studies have pointed out that intensive drug treatment in prisons may reduce criminal recidivism, especially if there is continued care in the community during post-release. Thus, the urgent foundation of an extensive interagency collaboration between mental health, law enforcement, and criminal justice systems is widely necessary so as to divert those with different psychological problems to appropriate mental health services inside and outside prisons.⁴⁰

The mean scores on impulsiveness (measured by BIS-11) in our sample were similar to mean scores of women incarcerated at a maximum-security prison investigated by Komarovskaya et al.⁶ Although high impulsiveness levels are etiologically linked to crime in general, mainly among male offenders, violence in women may not be a reflection of an ongoing pattern of impulsive behavior. In association with impulsiveness, other factors possibly account for a lot of violent infractions committed by women, at least to some extent, as those related to anger, self-esteem, drug misuse, and influence of romantic partners. Some studies have differentiated reactive from instrumental impulsiveness in relation to some criminal demeanors. Motor impulsiveness seems to be proxy to the concept of reactive while non-planning impulsiveness seems to be proxy to the concept of instrumental impulsiveness.

Although jails were never intended to be mental hospitals, they must systematically screen detainees and provide treatments for those with health problems in general. Therefore, to recognize the necessities of specific groups of female offenders is crucial for the development of an adequate system of health politics, as well as for decreasing criminal recidivism among those offenders who have shown higher risk. In addition, some types of crimes can be associated with different psychiatric problems, which may mean that the therapeutic management has to be personalized. Prisons are primarily custodial institutions responsible for the confinement of sentenced individuals and their mission to take care of prisoners must be continuously improved. Also, humane prisons that provide opportunities for inmates to maintain healthy contact with their families and children, penal institutions that address the issue of rehabilitation

and recidivism through research and evidence, and more options for punitive sentences other than incarceration, especially when offenders are parents, are all strategies that policy makers should be more focused on. As a general rule, the current correctional practice must decidedly be evidence-based and public resources should be provided to those assessed as higher-risk inmates.

Several limitations are observed in this study, such as:

- (1) The use of self-report to measure outcomes. No self-report measure covers the complete range of symptoms described in diagnostic manuals. Issues of compliance, the avoidance or denial of information, and anxiety about revealing secrets or making mistakes impair these assessment modalities to varying degrees for different subjects. Limitations in comprehension of items and reading ability related to chronological and developmental age are difficult to account for or to interpret correctly. Yet another difficulty noted, especially in brief self-report measures, is that, although they are easier to use and less likely to cause fatigue or contrasting responses, the use of forced-choice categories may simplify answers or distort the information obtained along particular choice sets;
- (2) The cross-sectional design, which can preclude a causal inference. This study design only provides information about the frequency and characteristics of a population, depending on the instruments and methods used by furnishing a "snapshot" of this population at a specified time;
- (3) There was no recruited control group. Also, a comparison with other offending groups would be particularly interesting. A wider sample including male convicts could be useful to compare the effect of family criminality on age of onset of criminal activities and length of criminal career between male and female inmates;
- (4) Estimates of over-participation in criminal activity vary across reporting method, being much higher with self-reports than with official records. An interesting way to manage this problem would be to evaluate both reporting methods (self-reports and official records) separately.

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* Modest

** Significant

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