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Factors associated with recidivism among adolescents girls in conflict with the law in an institution in Brasília, Federal District, Brazil

Fatores associados à reincidência entre adolescentes femininas em conflito com a lei de uma instituição de Brasília, Distrito Federal, Brasil

Factores asociados a la reincidencia entre adolescentes mujeres en conflicto con la ley de una institución de Brasília, Distrito Federal, Brasil

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Abstract

Recidivism is a challenge for the Brazilian socio-educational system because it is associated with personal, social and environmental factors, especially among juvenile offenders. This study examined key characteristics and potential association with recidivism in 391 female adolescent offenders from a correctional institution in Brasília, Federal District, Brazil, between 2004 and 2011. Cross-sectional data on socio-demographics, drug use and offense characteristics from institutional information were examined. Associate factors with recidivism were examined using negative binomial regression analyses. 32.5% of offenders were recidivists at present admission and the mean frequency of recidivism among recidivists was 2.16. About half (53.6%) of the sample reported drug use. After the adjustment, recidivism was positively associated with: age; offender's drug use; residence status; offense type; and no family drug use. Factors associated with juvenile offenders' recidivism confirm findings from elsewhere, and should inform targeted interventions in Brazil.

Recurrence; Adolescent; Drug Users

Resumo

A reincidência constitui um desafio para o sistema socioeducativo brasileiro por estar associada a fatores pessoais, sociais e ambientais, especialmente entre adolescentes em conflito com a lei. Este estudo verificou as principais características associadas à reincidência em uma amostra de 391 mulheres adolescentes em conflito com a lei em uma unidade de internação de Brasília, Distrito Federal, Brasil, entre 2004-2011. Dados transversais sociodemográficos acerca do uso de drogas e sobre as características do ato infracional foram analisados. Fatores associados à reincidência foram analisados por regressão binomial negativa. Trinta e dois vírgula cinco por cento das adolescentes pesquisadas eram reincidentes e a frequência média de reincidências foi de 2,16. Cinquenta e três vírgula seis por cento da amostra relataram uso de drogas. Após ajuste, reincidir foi positivamente associado à idade, uso de drogas, residência, tipo de ato infracional e não uso de drogas pela família. Nossos achados corroboram com outros contextos mundiais, demonstrando a necessidade de orientação nas intervenções adotadas pelo sistema socioeducativo brasileiro.

Recidiva; Adolescente; Usuários de Drogas

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Introduction

In many countries, the number of correctional inmates has been rising in recent decades. Additionally, correctional institutions need improvements in the health care offered to its incarcerated population¹. Particular attention is given to young offenders or inmates, given that they constitute a key risk population susceptible to a complex array of external factors and circumstances in their behavior². Individuals who make up this population are at an early stage in their lives and so future offenses and their negative consequences for individual and society form a principal concern for interventions³. In many industrialized countries, young offenders represent up to 20% of the recorded offender or correctional inmate population. In Brazil, the number of young offenders has increased from 10,446 in 2006 to 20,532 in 2012, only 5% of whom were female^{4,5}; reported information on recidivism varies between 43,3%⁴ and 54%⁵.

Among young offender following residential treatment, different studies have documented recidivism rates of between 40% and 85%⁶. Available data suggests that the odds of recidivism are generally higher for male than female juvenile offenders^{3,7}. A fairly large body of research has focused on identifying potential factors associated with recidivism among male young offenders^{8,9,10}. Consequently, there has been a lack of attention to female offenders^{11,12,13}, especially in Brazil, including information about recidivism by gender.

Factors associated with recidivism among young offenders are commonly differentiated into "static" factors (those that are historic and cannot be changed, such as age at first offense and prior offenses), and "dynamic" factors (those that can potentially be changed, such as the youth's friends or school performance, criminal attitudes and denial of responsibility)^{14,15}. Factors for which at least some supportive evidence for an association with recidivism include: socio-demographic and offense history^{7,16}; family history and situational variables (unfavorable social context of life, such as lack of access to housing, education and health with desirable quality)^{14,16,17}; clinical or behavioral problems^{8,19,20}; and educational factors^{8,21}. A large proportion of young offenders placed in correctional facilities are diagnosed with a mental health disorder, and most reported that they were under the influence of alcohol or drugs when they committed the delinquent act that led to their current detainment^{10,22,23}. In addition, it has been emphasized that the characteristics and recidivism of female young of-

fender populations have been understudied, yet require distinct attention¹¹.

This study examined characteristics of a sample of adolescent female offenders admitted to a correctional facility (*Unidade de Internação do Plano Piloto – UI*) between 2004 and 2011 in Brasília, Federal District, Brazil, and examined (a) factors potentially associated with recidivism in the sample, and (b) factors potentially associated with the frequency of recidivism in the sub-sample of offenders who had reported any recidivism.

Methods

This is a study based on secondary data obtained from self-reported information at the time of admission from a sample of 391 female adolescent offenders admitted to a UI in Brasília from 2004 to 2011, with an age range of 12-18 years. Following deletion of cases with missing variable values, an overall analysis sample of $n = 284$ remained. The dependent variable was the frequency of recidivism, which has computed among those reporting previous offenses. People for whom the current correctional admission is the first occurrence were given a recidivism number of zero.

The following independent variables were also analyzed: age in years (≤ 15 ; 16; 17; 18); type of offense for which current correctional admission occurred (robbery/attempted robbery; theft; drug dealing/possession; attempt against life; threat and extortion; bodily injury/fight/contempt; other); current drug use (yes; no); family drug use (yes; no); attending school (yes; no); residential status (parents/other relatives; on her own).

A descriptive analysis was conducted of the socio-demographic characteristics and recidivism. For the categorical variables, data are presented as proportions and for continuous variables; means and their standard errors were calculated. Factors associated with the number of recidivism were analyzed using simple and multiple negative binomial regressions with log link and reported in mean-ratio (MR). Factors associated with frequency of recidivism were computed with the sub-sample ($n = 127$) of offenders who had reported "any recidivism" (number of recidivism > 0) using the same approach. In both analyses, the potential associations of factors with recidivism were analyzed individually and all variables considered in the univariate model were included in the multivariate model. All tests were performed assuming a 5% significance level. All statistical analyses were performed using the Generalized Linear Models²⁴ module of

Statistical Package for Social Sciences, version 15 (SPSS Inc., Chicago, USA). This research study was approved by the Ethics Research Committee, Faculty of Health, University of Brasília, approval file #649.523.

Results

Table 1 gives the descriptive characteristics of the sample. Specifically, about four in ten participants of the sample were 15 years or younger. Most common offenses for current admission were robbery/attempted robbery. A higher proportion of the sample reported current drug use, did not report any family drug use, were not attending school at the time of detention, and lived with their parents or other relatives at point of admission. Information on recidivism is described next: 44.7% of offenders in the sample were recidivists at present admissions; 25% had 2 or more previous offenses; the mean frequency of recidivism among the entire sample was 1.05 (range: 0-8; SD = 1.61), and among recidivists 2.34 (range: 1-8; SD = 1.67).

The potential associations of recidivism and the variables of study are shown in Table 2. In the simple negative binomial regression analysis, the association of each variable (separately) with recidivism was considered (crude analysis). The frequency of recidivism in 16 year old young offenders increased 56,6% when compared to girls aged 15 years or younger (MR = 1.566; p-value = 0.046) and, regarding 17 and 18 year old young offenders, the frequency of recidivism increased 117.5% and 192.2%, respectively. The recidivism for theft offense was more than 2 times the recidivism of robbery/attempted robbery offenses (MR = 2.32; p-value = 0.005) and the bodily injury/fight/contempt offenses also showed higher recidivism (MR = 2.381; p-value = 0.05). However, there were no significance differences between robbery/attempted robbery with drug dealing/possession, attempt against life and threat and extortion offenses (p-value > 0.05). Young offenders who were attending school at the time of detention presented 39.1% less recidivism (MR = 0.609, p-value = 0.007). Although offender drug use showed a positive association with recidivism (MR = 2.741; p-value < 0.001), no associations were found with family drug use in crude analysis (p-value > 0.05). Recidivism was more frequent in young offenders who live on their own (MR = 1.696; p-value = 0.002).

In adjusted analysis performed using multiple negative binomial regression, all variables essentially showed the same results, with two exceptions. Attending school at the time of detec-

Table 1

Select socio-demographic, drug use and offense characteristics of female adolescent offenders (n = 284), Brasília, Federal District, Brazil, 2004-2011.

Characteristic	Frequency (n = 284)	%
Age (years)		
≤ 15	99	39.4
16	80	28.2
17	96	33.8
18	9	3.2
Type of offence		
Robbery/Attempted robbery	116	40.8
Theft	20	7.0
Drug dealing/Possession	74	26.1
Attempt against life	28	9.9
Threat and extortion	14	4.9
Bodily injury/Fight/Contempt	12	4.2
Other	20	7.0
Offender drug use		
No	134	47.2
Yes	150	52.8
Family drug use		
No	215	75.7
Yes	69	24.3
Attending school at the time of detention		
No	185	65.1
Yes	99	34.9
Residence status		
Parents/Other relatives	198	30.3
On her own	86	69.7

tion was no longer significant (p-value > 0.05) and the family drug use became significant (p-value = 0.026).

Results of the potential associations with frequency of recidivism among the sub-sample of recidivists are displayed in Table 3. In the univariate model, residence status was the only variable positively associated with recidivism; after adjustments, no associations were found.

Discussion

Our study described select offender characteristics, and explored potential factors associated with recidivism in a sample of adolescent female offenders from a correctional institution in Brasília. Much of the scientific attention regarding correctional populations – including young offenders – has focused on male offenders, who are the

Table 2

Results of the simple (univariate) and multiple negative binomial regression analysis of potential associations of age, type of offense, school attendance, offender drug use, family drug use and residence status with recidivism in the sample of female adolescent offenders (n = 284). Brasília, Federal District, Brazil, 2004-2011.

	$\beta \pm SE$	Crude MR (95%CI)	p-value	$\beta \pm SE$	Adjusted MR (95%CI)	p-value
Age (years)			0.001			0.000
≤ 15	0.000	1.000		0.000	1.000	
16	0.449 ± 0.225	1.566 (1.008-2.434)	0.046	0.702 ± 0.255	2.018 (1.224-3.327)	0.006
17	0.777 ± 0.209	2.175 (1.445-3.275)	0.000	0.824 ± 0.233	2.279 (1.444-3.597)	0.000
18	1.072 ± 0.442	2.922 (1.228-6.953)	0.015	2.108 ± 0.514	8.228 (3.006-2.252)	0.000
Type of offense			0.006			0.001
Robbery/Attempted robbery	0.000	1.000		0.000	1.000	
Theft	0.842 ± 0.309	2.320 (1.266-4.251)	0.005	1.257 ± 0.341	3.516 (1.800-6.868)	0.000
Drug dealing/Possession	0.213 ± 0.215	1.238 (0.813-1.884)	0.320	0.106 ± 0.231	1.112 (0.707-1.749)	0.645
Attempt against life	-0.242 ± 0.332	0.785 (0.409-1.506)	0.466	-0.342 ± 0.351	0.710 (0.357-1.412)	0.329
Threat and extortion	-0.041 ± 0.426	0.959 (0.416-2.211)	0.922	0.104 ± 0.463	1.110 (0.448-2.750)	0.821
Bodily injury/Fight/Contempt	0.759 ± 0.387	2.137 (1.000-4.566)	0.050	1.085 ± 0.414	2.960 (1.316-6.659)	0.009
Other	0.868 ± 0.308	2.381 (1.266-4.251)	0.005	0.641 ± 0.345	1.898 (0.966-3.732)	0.063
Attending school at the time of detention			0.007			0.316
No	0.000	1.000		0.000	1.000	
Yes	-0.496 ± 0.184	0.609 (0.425-0.73)	0.007	-0.203 ± 0.202	0.816 (0.549-1.214)	0.316
Offender drug use			0.000			0.000
No	0.000	1.000		0.000	1.000	
Yes	1.008 ± 0.180	2.741 (1.927-3.899)	0.000	0.995 ± 0.201	2.704 (1.822-4.014)	0.000
Family drug use			0.491			0.026
No	0.000	1.000		0.000	1.000	
Yes	-0.136 ± 0.197	0.873 (0.593-1.285)	0.491	-0.505 ± 0.227	0.603 (0.387-0.941)	0.026
Residence status			0.002			0.045
Parents/Other relatives	0.000	1.000		0.000	1.000	
On her own	0.529 ± 0.186	1.696 (1.205-2.388)	0.002	0.390 ± 0.194	1.477 (1.009-2.162)	0.045

95%CI: 95% confidence interval; MR: mean ratio.

$\beta \pm SE$: beta coefficients and standard error estimated by simple (crude) and multiple (adjusted) negative binomial regression. In each variable, the category with MR = 1 is the reference category. Pearson chi-squared goodness of fit test: $\chi^2 = 270.929$; df = 270; p-value = 0.423.

predominant group in correctional facilities and more often recidivists^{25,26}. Consequently, there has been a lack of attention on female offenders, as recognized elsewhere^{11,12,13}. These studies have argued that life challenges or factors influencing deviance are experienced differently between genders, including mental health or substance use problems; victimization or violence; educational and/or financial disadvantages.

Similar to other studies on recidivism in young offenders, our analysis found age to be a primary determinant for recidivism in our study population^{10,25,27,28}. Concretely, the major proportions of recidivism observed occurred among girls aged between 16 and 18 years²⁹. Especially in this overall young offender population, the in-

fluence – and positive correlation – of age with recidivism may be quite simple, as increased age provides additional opportunity for offending; this however does not necessarily suggest or constitute any implications for “criminal careers” within such a short and early lifespan as indicated for adult offender populations³⁰. On this basis, this age group should receive highest rehabilitation and secondary prevention, because they are more vulnerable to recidivism given that one of the strongest predictors of adult crime is a crime history from earlier in life^{29,31}.

However, there is a discrepancy among dynamic and static factors associated with young offenders. Other static factors, such as type of offense, increase their relevance as the adolescents

Table 3

Results of the simple (univariate) and multiple negative binomial regression analysis of potential associations of age, type of offense, school attendance, offender drug use, family drug use and residence status with frequency of recidivism in a sub-sample of female adolescent offenders recidivists (n = 127). Brasília, Federal District, Brazil, 2004-2011.

	$\beta \pm SE$	Crude MR (95%CI)	p-value	$\beta \pm SE$	Adjusted MR (95%CI)	p-value
Age (years)			0.455			0.190
≤ 15	0.000	1.000		0.000	1.000	
16	0.111 ± 0.335	1.117 (0.579-2.155)	0.741	0.580 ± 0.388	1.786 (0.836-3.817)	0.134
17	0.436 ± 0.307	1.547 (0.848-2.822)	0.155	0.741 ± 0.347	2.098 (1.063-4.138)	0.033
18	0.055 ± 0.546	1.057 (0.652-1.738)	0.919	0.808 ± 0.649	2.244 (0.629-8.009)	0.213
Type of offense			0.245			0.191
Robbery/Attempted robbery	0.000	1.000		0.000	1.000	
Theft	0.391 ± 0.394	1.479 (0.683-3.203)	0.321	0.757 ± 0.441	2.132 (0.898-5.063)	0.086
Drug dealing/Possession	-0.014 ± 0.310	0.986 (0.537-1.809)	0.964	-0.033 ± 0.327	0.968 (0.510-1.838)	0.921
Attempt against life	-0.600 ± 0.526	0.549 (0.196-1.538)	0.254	-0.615 ± 0.534	0.541 (0.190-1.540)	0.249
Threat and extortion	0.035 ± 0.640	1.035 (0.296-3.626)	0.957	0.123 ± 0.672	1.131 (0.303-4.224)	0.854
Bodily injury/Fight/Contempt	0.546 ± 0.507	1.725 (0.639-4.657)	0.282	0.752 ± 0.536	2.122 (0.742-6.069)	0.161
Other	0.787 ± 0.411	2.196 (0.981-4.915)	0.056	0.744 ± 0.448	2.103 (0.874-5.060)	0.097
Attending school in the moment of detention			0.193			0.604
No	0.000	1.000		0.000	1.000	
Yes	-0.352 ± 0.271	0.703 (0.414-1.196)	0.193	-0.151 ± 0.292	0.860 (0.485-1.522)	0.604
Offender drug use			0.303			0.649
No	0.000	1.000		0.000	1.000	
Yes	0.279 ± 0.271	1.322 (0.777-2.247)	0.303	0.143 ± 0.314	1.154 (0.624-2.133)	0.649
Family drug use			0.822			0.798
No	0.000	1.000		0.000	1.000	
Yes	0.064 ± 0.284	1.066 (0.611-1.862)	0.822	-0.082 ± 0.320	0.921(0.492-1.724)	0.798
Residence status			0.036			0.085
Parents/Other relatives	0.000	1.000		0.000	1.000	
On her own	0.506 ± 0.241	1.658 (1.034-2.359)	0.036	0.454 ± 0.264	1.575 (0.939-2.641)	0.085

95%CI: 95% confidence interval; MR: mean ratio.

$\beta \pm SE$: beta coefficients and standard error estimated by simple (crude) and multiple (adjusted) negative binomial regression. In each variable, the category with MR = 1 is the reference category. Pearson chi-squared goodness of fit test: $\chi^2 = 87.411$; $df = 113$; $p\text{-value} = 0.965$.

get older ^{14,29}, or may be the main predictor of recidivism in some cases ⁶. In the total sample of the present study, the type of offense showed negative association with recidivism among the young offenders involved in other offenses when compared to robbery. This is important information for the development of rehabilitation and/or secondary prevention programs for these adolescents; specifically those held for robbery offenses need to be monitored more closely ^{14,29}.

As has been indicated elsewhere, drug use is a consistent risk factor for violent behavior and recidivism ³². This indicates also that, as age increases, adolescents have more alcohol- and drug-related problems, which may be an op-

portunity effect, since those who have been alive longer have simply had more time to engage in these problem behaviors ^{15,24}. We found a substantive prevalence of drug use among adolescent offenders in the present sample; however our data did not allow us to explore the type of drug relation to offenses. Additionally, our results indicate that girls from non-drug user families were more likely to recidivate, a link that is not corroborated by previously published research. Although there is considerable support for the association between parenting profiles and adolescent problem behaviors, these data cannot be unambiguously interpreted. The interactions between parenting style and problem behaviors

may be bi-directional, or even include – mediating – external factors³³.

Our findings indicate that living with parents or relatives can be relevant factor in predicting recidivism for those who were recidivist already or not, and in this instance constitutes a protective factor for recidivism, as other studies have suggested^{8,10,34}. It may be that parental restraints or role modeling, or overall dynamics of higher psycho-social stability experienced by living with family at this stage of adolescent life may protect from continued delinquent behavior resulting in repeated correctional admission²⁶. In this context, it has been proposed that a multi-system approach might be desirable or effective towards reducing further recidivism in the target population of adolescent offenders^{35,36}, for example in the form of community-based supervision and substance abuse treatment, and with family involvement, both during and after the time spent in the correctional system.

Finally, the absence of any significant variable for “frequency of recidivism” among recidivists may be due to the sample’s short age-span covered or the relatively crude nature of the data that simply may not allow for the detection of any clear single-variable influences (or they may simply not exist).

Some limitations of our study need to be acknowledged. Firstly, our data are cross-sectional,

drawn as an opportunistic sample from an adolescent female offender population in a single correctional facility; therefore results are not generalizable. Our analyses rely on secondary data generated by self-report, and not drawing on standardized question items and/or a validated protocol, which significantly increases the possibility of bias (e.g., due to possible social desirability effects in responses) and reduces the potential of comparisons with other studies. Even though drug dealing and possession are distinct type of offense, we combined in the same variable because the frequency of possession only had appeared in a few cases (4).

In conclusion, in this sample we found that most female offenders were aged ≥ 15 years old, and admitted to adolescent corrections for robbery/attempted robbery and drug dealing/possession. Over half the sample reported current drug use and about half were recidivist offenders. Recidivism was positively associated with age, offender’s drug use, residence status, offense type and no family drug use, and negatively associated with attendance at school. Among the sub-sample of recidivists, there was an association with residence status. Finally, the results indicate several factors associated with recidivism among a sample of adolescent female offenders in Brazil that largely confirm findings from other countries.

Resumen

La reincidencia es un reto para el sistema socio-educativo brasileño. Este estudio examinó características claves y su posible asociación con la reincidencia de 391 adolescentes mujeres infractoras en una institución correccional en Brasilia, Distrito Federal, Brasil, entre 2004 a 2011. Se examinaron datos transversales socio-demográficos, uso de drogas y las características del delito cometido a partir de la información institucional. Los factores asociados con la reincidencia se obtuvieron por análisis de regresión negativa-binomial. 32,5% de las internas eran reincidentes y la

frecuencia media de reincidencia entre las reincidentes era de 2,16. Un 53,6% de la muestra informó consumo de drogas. Después del ajuste, la reincidencia se asoció positivamente con: edad; uso de drogas de la delincuente; estatus de residencia; tipo de delito; el no uso de drogas por parte de la familia. Los factores asociados con la reincidencia de las delinquentes confirman hallazgos de otros estudios, y deberían informar intervenciones específicas sobre esta población en Brasil.

Recurrencia; Adolescente; Usuários de Drogas

Contributors

A. D. Gallassi participated on the data collection, study design, drafted the article and revised it critically for important intellectual content and final approval of the version to be published. S. L. Santos and A. L. Galinkin contributed on the data collection and final approval of the version to be published. V. Santos, B. Fischer and G. A. Wagner participated on the study design, drafted the article and revised it critically for important intellectual content and final approval of the version to be published. E. Y. Nakano contributed on the statistical analyses and final approval of the version to be published.

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