Int J Ment Health Addiction (2018) 16:496–506
https://doi.org/10.1007/s11469-017-9847-7

ORIGINAL ARTICLE

Persistence in Crime in Young Adults with a History of Juvenile Delinquency: the Role of Mental Health and Psychosocial Problems

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Published online: 28 November 2017

Abstract The prevalence of juvenile offenders recidivating and returning to the justice system during young adulthood is alarming. However, the relationship between psychosocial problems and crime in young adults with a history of juvenile offending remains almost unexplored. This study examined the role of mental health and psychosocial problems in criminal indicators among young adults with a history of juvenile delinquency. The protocol was administered in 2014/2015 to young adults with records of juvenile delinquency in 2010/2011, evaluating a set of mental health, psychosocial, and criminal indicators. The results showed that their current psychological distress and drug consumption are related to criminal indicators. Our findings suggest that mental health might play a major role in criminal behavior. Recommendations for the juvenile justice system and social welfare policies are provided.

Keywords Juvenile delinquency · Psychosocial problems · Mental health · Recidivism · Crime · Young adulthood

Juvenile delinquency is a serious challenge for societies around the world and is often the first step in a criminal career (Basto-Pereira et al. 2015; Farrington 2003; Mulder et al. 2011; Trulson et al. 2005). The study conducted by Mulder et al. (2011) with a Dutch sample ($N = 728$) found that around 80% of serious juvenile offenders with official records recidivate over the next 5 years. Additionally, a study conducted in the USA ($N = 2436$) indicates that 85% of

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the incarcerated violent juvenile offenders are rearrested during the 5 years after their release from juvenile detention centers (Trulson et al. 2005).

Past contact with the juvenile justice system (the effects of labeling and deviant group contagion) and past criminal behavior are among the main reasons that juvenile delinquency is considered to be one of the best predictors of future criminal behavior (Bergman and Andershed 2009; Dishion and Tipsord 2011; Gendreau et al. 1996; Welsh and Rocque 2014).

However, a history of juvenile delinquency and justice involvement are not the only powerful predictors of adult criminal behavior. A broad spectrum of family, psychological, and social problems during childhood and adolescence has predicted several criminal indicators in adulthood (Aebi et al. 2013; Farrington et al. 2009; Loeber et al. 2007). Together with a history of criminal activity, these psychosocial risks tend to perpetuate, aggravate, or originate other psychosocial vulnerabilities over time (Fatori et al. 2013; Henry et al. 2012; Maniglio and Innamorati 2014). Simultaneously, as shown by a wide range of studies, adult criminal outcomes are also associated with adult psychosocial problems, such as addiction (Bennett et al. 2008; Gendreau et al. 1996), mental illness (Gendreau et al. 1996; Yu et al. 2012), educational level (Gendreau et al. 1996; Pratt and Cullen 2005), and family disruption (Gendreau et al. 1996; Nivette 2011).

These studies raise the hypothesis that serious psychosocial problems in individuals with a history of past juvenile delinquency could be stimulated cyclically, severely increasing the risk of recidivism and re-entrance into the justice system during adulthood (Caprara et al. 1985; Trzesniewski et al. 2006). This may especially be the case during young adulthood because it is precisely during this stage that the levels of criminal behavior achieve their peak (Stolzenberg and D'Alessio 2008).

Despite the scientific knowledge that juvenile delinquency is a high risk factor for future criminal activity, the relationship between present psychosocial vulnerabilities and current criminal indicators in a high-risk group, such as young adults with a history of past juvenile delinquency, remains almost unexplored. A better understanding of the relationship between psychosocial problems and criminal indicators in this population is of tremendous importance because it will enable better criminal justice and improved social policies, preventing recidivism, re-arrest, and social marginalization. For these reasons, the main aim of this study is to explore the relationship between a set of present psychosocial vulnerabilities—namely, sociodemographics, mental health, well-being, education, employment, addictive behavior, and housing—and two current criminal indicators—self-reported delinquency in the last 12 months and self-serving cognitive distortions related to anti-social behavior in young adults with an official history of juvenile delinquency.

Methods

Participants and Procedures

In 2014, the Portuguese General Direction of Prison and Probation Services of the Ministry of Justice provided a codified list of 219 young adults with official records of juvenile delinquency 4 to 5 years previously. These young adults were convicted of, or were serving sentences, in 2010/2011 for, crimes committed between the ages of 12 and 15. In 2014/2015, they had completed, or they were serving, non-custodial sentences (e.g., community work) for juvenile or for recent adult convictions in one of 28 Juvenile Justice Services or

Probation Offices across the country. Of the 219 young adults, a total of 123 were excluded from our study for a number of reasons, including the fact that they were not attending probation/juvenile justice offices three or more times consecutively (where the evaluation was scheduled); they had been transferred to another office; they had emigrated; or they are living in a closed community. Of the remaining 96 young adults, 75 agreed to participate in the study (~ 80%), representing an appropriate participation rate (see Galea and Tracy 2007). The final sample was composed of 69 males (92%) and six females (8%), with an average age of 20.20 years (standard deviation = 1.58), and with official records of juvenile delinquency. Detailed information about socio-demographic characteristics is provided in Table 1.

The survey participation was voluntary. The aims of the research project and the guarantee of confidentiality were explained to each respondent who was interested in participating. Following that procedure, all individuals who agreed to participate in this study completed an informed consent form and a questionnaire in a private room. This research project was submitted to and authorized by the University of Minho Ethics Committee and the General Direction of Prison and Probation Services of the Ministry of Justice (GDPS).

Measures

Socio-demographic Questionnaire and Other Relevant Information A socio-demographic questionnaire was used to collect information about gender, age, race/ethnicity (majority/minority), occupation (student/worker/student worker/without occupation), school grade achievement, whether the individual was living in a socially deprived neighborhood (Yes/No), and the current number of friends who were under arrest or who had been arrested in the past.

Addiction The individual's alcohol abuse and illicit drug use in the last year were evaluated using five questions, four of which were used to evaluate the presence of alcohol abuse in the last year. Each participant was questioned as to whether in the last year (a) any family member had been concerned about their consumption of alcoholic beverages (Yes/No); (b) their alcohol consumption had caused any health, legal, social, or financial problems (Yes/No); (c) they had tried to stop their alcohol consumption without success (Yes/No); and (d) their alcohol consumption was putting them in dangerous situations (Yes/No). Alcohol abuse during the last year was deemed to be present if one or more situations were considered present by the respondent. The participants were also questioned about their illicit drug use in the last year (Yes/No).

Brief Symptom Inventory (BSI) The BSI (Derogatis 1993; Portuguese version, Canavarro 1999) is a multidimensional self-reported measure used to evaluate the current level of general psychological distress and psychiatric symptoms through three global indexes (global severity index, positive symptom index, positive symptom total). It also evaluates nine types of psychopathologic symptoms (somatization, depression, anxiety, phobic anxiety, interpersonal sensitivity, obsessive-compulsivity, hostility, paranoid ideation, and psychoticism). The questionnaire is composed of 53 questions and uses a Likert scale to evaluate the frequency of each psychological symptom occurring in the last 7 days ("0" = *Never* to "4" = "*Very often*"). Both the original (Derogatis 1993) and the Portuguese (Canavarro 1999) versions of this inventory showed good psychometric proprieties. In order to evaluate the general level of psychological distress and psychiatric symptoms, the global severity index (GSI) was used in the current study and showed an excellent level of reliability ($\alpha = .96$).

Table 1 Descriptive statistics and correlation matrix ($N = 75$)

	Descriptive statistics			Correlations												
	M	SD	Range	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Self-serving cognitive distortions—total	2.67	.80	1–6		.38**	−.02	.14	.04	.38**	−.18	−.23†	−.08	.07	.34**	.13	−.14
2. Self-reported delinquency last 12 months	1.59	1.82	0–12			.10	.18	−.06	.32**	−.15	−.04	.05	.15	.30**	.02	−.12
3. Gender (*n*/%)							.07	−.25*	−.11	.10	−.13	.16	.21†	.04	−.13	−.36**
Female	6	8%														
Male	69	92.00%														
4. Age	20.20	1.58	18–26					−.06	.11	−.25*	−.22†	−.11	.09	.20†	.02	−.04
5. Race/ethnicity (*n*/%)									−.06	.01	.32**	−.09	−.02	−.09	.38**	.25*
Majority	44	58.67%														
Minority	31	41.33%														
6. Psychological distress (global severity index)	.72	(.54)	0–4							−.50**	−.11	.07	.27*	.34**	.07	.02
7. Perceived quality of life	70.00	15.30	0–100								.07	.22†	.00	−.19	−.04	.09
8. School grade achievement	7.23	2.24										.16	−.06	−.06	.05	.02
9. Occupation (*n*/%)													.11	−.03	−.11	−.01
Not working or studying	42	56.00%														
Working and/or studying	33	44.00%														
10. Alcohol abuse last year (*n*/%)														.11	.10	−.04
No	50	66.67%														
Yes	25	33.33%														
11. Drug Consumption last year (*n*/%)															.11	−.15
No	33	44.00%														
Yes	42	56.00%														
12. Living in a social neighborhood (*n*/%)																−.21†
No	41	54.67%														
Yes	34	45.33%														
13. *N.* of pers. living in the same household	4.12	1.96														

N. of pers. living in the same household number of persons living in the same household

† $p < .1$; * $p < .05$; ** $p < .001$

EURHIS-QOL-8 Questionnaire This is a self-reported measure to evaluate the perceived qualify of life (Power 2003; Portuguese version; Pereira et al. 2011). The perceived quality of life is evaluated through a total of eight items answered using a 5-point Likert scale. These items include questions about perceived satisfaction with general health, housing conditions, money, and interpersonal relationships, among other questions. The original (Power 2003) and the Portuguese (Pereira et al. 2011) versions of EUROHIS-QOL-8 showed good psychometric proprieties. The total score of EUROHIS-QOL-8, used in this study, showed a good level of reliability ($\alpha = .96$).

How I Think Questionnaire (HIT) The HIT is a multidimensional measure that evaluates self-serving cognitive distortions related to anti-social behavior (Barriga et al. 2001; Portuguese version: Veloso 2013). This self-report questionnaire comprises 54 affirmations where each participant classifies their agreement with each sentence using a 6-point Likert scale ("1" = strongly disagree to "6" = strongly agree).

The HIT questionnaire evaluates a set of self-serving cognitive distortions (self-centeredness, blaming others, minimizing/mislabeling, assuming the worst) and anti-social behaviors (lying, stealing, opposition-defiance, physical aggression). It also includes a total score (HIT total). The original version (Barriga et al. 2001) and the Portuguese version (Veloso 2013) showed good psychometric properties. The HIT total score was used as a general measure of self-serving cognitive distortions related to anti-social behavior. This dimension showed an excellent level of reliability ($\alpha = .92$).

Self-Report Questionnaire for Measuring Delinquency and Crime (D-CRIM) This measure evaluates self-reported delinquency during the last 12 months and across the lifetime using a diversity index as explained below (Basto-Pereira et al. 2017). Each participant is questioned about whether they had committed (Yes = 1/No = 0) any of the 12 different types of crimes (theft, robbery, driving without a license, domestic violence, aggression, rape, drug trafficking, illegally carrying a firearm, homicide, family violence, blackmail, and property damage) during the last 12 months and also over their lifetime. Self-reported delinquency total scores were the sum of items endorsed for the D-CRIM and reported during the last 12 months and during the entire lifetime. The study conducted by Basto-Pereira et al. (2017) suggests that D-CRIM has appropriate psychometric properties for the Portuguese adult population.

Data Analysis

The statistical analyses were performed using the SPSS 22.0 software package (SPSS; Version 22.0, Chicago, IL, USA). Pearson correlations (for quantitative psychosocial variables), phi correlations (for dichotomized psychosocial variables), and point biserial coefficients (between quantitative and dichotomized psychosocial variables) were conducted to test the relationship between 11 psychosocial characteristics and two criminal indicators. Linear regressions were used to test the predictive ability of the current psychosocial problems on each criminal indicator. The psychosocial variables were included in the models only when correlated or marginally correlated ($p < .1$) with the outcome. A square-root transformation was applied to the variable for self-reported delinquency in the last 12 months, to guarantee that the residuals of the regression would be normally distributed. Then, the linear regression assumptions were tested and satisfied (Field 2009).

This study had an appropriate sample size to perform the Pearson correlations, phi correlations, and the point biserial coefficient analysis (VanVoorhis and Morgan 2007). With regard to the multivariate linear regressions performed, the ratio between participants/variable was, in both cases, appropriate for running the analysis and effectively detecting significant predictors (Green 1991; VanVoorhis and Morgan 2007). In addition, an analysis was conducted in G Power software to determine the level of effect size required to be identified by our linear regression models with a sample of 75 participants for a power of .80 (Cohen 1988 guidelines), and a .05 level of significance, two-tailed. The regression model equations with two predictors have an ability to identify an effect size greater than $f^2 = 0.13$, while the regression model equations evaluating three predictors have an ability to identify an effect size greater than $f^2 = 0.15$. Note that, according to Cohen (1988), $0.02 \leq f^2 < 0.15$ is a small effect size, $0.15 \leq f^2 < 0.35$ is a medium effect size, and $f^2 \geq 0.35$ is a large effect size.

Results

Descriptive statistics and the correlation matrix between all variables are presented in Table 1.

The largest correlation is negative and was found between psychological distress and perceived quality of life ($r = -.50$, $p < .01$). Both self-serving cognitive distortions and self-reported delinquency were positively correlated with drug consumption in the last year and with psychological distress (GSI). The level of educational achievement was marginally correlated with the self-serving cognitive distortions ($r = -.23$, $p = .051$).

The correlations between psychological distress and self-serving cognitive distortions ($r = .38$, $p < .001$) and psychological distress and self-reported delinquency in the last 12 months ($r = .38$, $p < .001$) were the largest correlations found between predictors and outcomes.

The predictive ability of psychosocial factors on self-serving cognitive distortions and on self-reported delinquency in the last 12 months was tested, as presented in Table 2.

Self-serving cognitive distortions were positively predicted by the level of psychological distress ($\beta = .28$; $p = .015$) and the presence of drug consumption in the last year ($\beta = .24$; $p = .035$). The level of school achievement inversely and marginally predicted the level of self-serving cognitive distortions ($\beta = -.18$; $p = .087$). The overall model explained 19.7% of the variance (R^2 adjusted = .20, F (3.71) = 7.04, $p < .001$).

Table 2 Linear regressions for prediction of criminal outcomes previously correlated with psychosocial factors ($N = 75$)

	Self-serving cognitive distortions				SQRT (self-reported delinquency in the last 12 months)			
Psychosocial predictors	B	SE	β	p	B	SE	β	p
Global severity index (psychological distress)	.41*	.16	.28	.015	.52	.18	.34	.004
Drugs consumption last year (1 = Yes)	.38*	.18	.24	.035	.27	.19	.16	.169
School grade achievement	−.07†	.04	−.18	.087				
Adjusted R^2	.20**				.15**			

SQRT square root

† $p < .1$; * $p < .05$; ** $p < .001$

The level of self-reported delinquency in the last 12 months was positively predicted by the level of psychological distress ($\beta = .34$; $p = .004$). The overall model explained 15.2% of the variance (R^2 adjusted = .15, F (2.72) = 7.63, $p = .001$).

Discussion

To the best of our knowledge, this is the first study to focus specifically on the relationship between psychosocial problems and criminal thinking and behavior in young adults with official records of juvenile delinquency. In addition to the socio-demographic variables, we analyzed the relationship between current mental health, well-being, education, employment, addiction, and housing psychosocial indicators in relation to the following two criminal indicators: cognitive distortions related to anti-social behavior and self-reported delinquency in the last 12 months.

Three psychosocial indicators emerged in our study: psychological distress, drug consumption in the last year, and school grade achievement. Self-serving cognitive distortions related to anti-social behavior were predicted by psychological distress and drug consumption in the last year and were marginally predicted by school grade achievement. Self-reported delinquency in the last 12 months was predicted by psychological distress. Over the last two decades, extensive research has reported a relationship between offending, or persistence in crime, and mental health problems, drug misuse, and school failure (see meta-analytic reviews: Assink et al. 2015; Cottle et al. 2001; Pratt and Cullen 2005). Our study suggests that a relationship between these three psychosocial problems and criminal indicators is also present in young adults with a history of juvenile delinquency.

Furthermore, these results suggest that mental health-related problems play a major role in criminal thinking and behavior. First, perceived quality of life, which includes items about satisfaction with health, housing, salary, and self-efficacy, was associated with psychological distress. Second, psychological distress is related to both criminal indicators. Simultaneously, research has shown that criminal behavior is also a predictor of psychosocial problems and could aggravate existing psychosocial problems (Lopes et al. 2012).

The relationship between school grade achievement and self-reported delinquency is only marginally significant. However, as shown in previous meta-analytic studies (see Assink et al. 2015; Cottle et al. 2001; Pratt and Cullen 2005), general education effects (e.g., poor academic performance) on criminal indicators (self-reported delinquency/recidivism) have a low but significant effect. A significant body of the literature on deviance suggests that educational problems are part of a large constellation of psychosocial problems that are perpetuated over time (e.g., Wright et al. 2013), which partially explains the decrease in the significance between school grade achievement and self-reported delinquency in the presence of other psychosocial factors. Additionally, due to our small sample size ($N = 75$), small effect sizes might not have been detected as statistically significant. Future studies should include larger samples.

Contrary to our expectations, living in a social deprived neighborhood and household size were not associated with any of the criminal indicators. It is possible that a substantial number of these young adults could live even in conditions inferior to those in a social deprived neighborhood with an even greater capacity to promote criminal behaviors, such as sub-standard housing or they could be living on the streets (Midgley 2005). Future studies should address other forms of poor housing conditions.

Some of the psychosocial problems did not predict current criminal indicators in young adults with an official history of juvenile delinquency. Our results are in line with those found by Farrington et al. (1986), Loeber et al. (2007), and Basto-Pereira et al. (2015). This suggests that both desisters and persisters in crime often experience marginalized adult lives and share several psychosocial problems.

This research has some limitations that should to be addressed. The difficulty of finding and collecting self-reported data from young adults with previous official records of juvenile delinquency limited our sample size ($N = 75$). Therefore, due to our sample size, the fact that a significant part of the initial list of participants was impossible to monitor, and the legal and cultural differences between countries, any generalization of our results should be approached with caution. In addition, it would be useful for future studies to evaluate crime and drug consumption using a multimethod strategy (e.g., self-report, official records, drug tests). Another important issue to address is the ratio between males and females: 92% of our sample were males and only 8% were females. However, this percentage is close to the male/female ratio for those involved with the juvenile justice system in Portugal (DGRSP 2012).

Despite the limitations noted above, this study could provide some insights for policies for this high-risk group of young adults with official records of juvenile delinquency. First, our results suggest that, as a significant proportion of adults with a history of juvenile delinquency have poor and marginalized lives, community screening and intervention on mental health issues could be important, and mental health services should be affordable. Second, prisons, and particularly juvenile detention centers, should provide effective mental health evidence-based evaluations and interventions, not only focused on criminal behavior but also on mental health well-being as a whole. Better mental health will provide better current psychological resources and will increase the likelihood of future social integration.

Finally, juvenile delinquency is usually related to adult arrests and criminal behavior. Therefore, one of the best ways to prevent crime is to prevent juvenile delinquency. We recommend the use of effective preventive policies on juvenile delinquency. The establishment of common and effective guidelines for screening, identifying, and preventing inadequate parenting styles or high-risk behaviors should be a priority involving a large group of community services, such as child welfare, health care services, social neighborhood institutions, and local authorities. In this regard, recent cost-benefit studies have shown that preventive programs for high-risk families and interventions with juvenile delinquents (Loeber et al. 2003) and adult criminals are not only effective in preventing crime but also in bringing long-term social and economic benefits (see Drake et al. 2009; Welsh and Farrington 2011).

Conclusions

The main goal of our study was to explore the relationship between psychosocial problems and criminal thinking and behavior in young adults with an official history of juvenile delinquency. Adults with a history of juvenile delinquency are a high-risk group for criminal behavior and social marginalization. Therefore, understanding the relationship between criminal behavior and psychosocial problems is an important issue for juvenile and adult justice policies. To conclude, this study suggests that current psychological distress, drug consumption in the last year, and school grade achievement could be related to current criminal indicators in young adults with an official history of juvenile delinquency. A set of recommendations for the justice system and community policies is provided.

Acknowledgments The authors truly appreciate all support provided by the professionals of the *Direcção Geral de Reinserção e Serviços Prisionais* (DGRSP). In addition, we would like to thank the reviewers for their helpful comments and suggestions.

Funding Information The first author was supported by a doctoral grant from the Foundation of Science and Technology, FCT-Portugal (Reference: SFRH/BD/95190/2013). This study was conducted at the Psychology Research Centre, University of Minho, and supported by the Portuguese Foundation for Science and Technology and the Portuguese Ministry of Education and Science through national funds and when applicable co-financed by FEDER under the PT2020 Partnership Agreement (UID/PSI/01662/2013).

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Human Rights All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000(5).

Informed Consent Informed consent was obtained from all patients for being included in the study.

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