Integrative Molecular Medicine



Research Article ISSN: 2056-6360

Crime, re-offence, and substance abuse of patients with severe mental disorder

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Abstract

Scientific research has shown that there is a causal association between crime, re-offence, and severe mental disorder. Numerous authors have found that psychosis, particularly schizophrenic psychosis, personality disorders, namely antisocial personality disorder, and substance abuse are disorders, which considerably increase the criminal risk. The patients' decompensation and the associated comorbidity, in this regard, can never be neglected. Therefore, in this paper a review of literature was performed whose goals demonstrate: 1) the relationship between severe mental disorder and crime; 2) the relationship between severe mental disorder and re-offence; 3) the relationship between substance use and crime; 4) the relationship between substance use in individuals with severe mental disorder and crime and re-offence. Promoting the independence and well-being of these patients contributing to the maintenance of social peace, which requires timely monitoring and evaluation of the clinical condition and functionality of the individual, through articulation in a network, which would allow to assess and foster the skills of the individual as a social being.

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The study of risk factors for juvenile criminal behavior, including the prediction of criminal behavior in adulthood, indicates that the association between psychopathology and crime must not be neglected.

The prediction of criminal convictions in young adults, fifteen years after the evaluation of 1,086 Swiss children and adolescents, was analyzed [1]. The risk factors assessed in childhood and adolescence included socioeconomic status, migratory history, perceived parental behavior, family and social stressors, coping styles, externalization and internalization of problems, and drug abuse, including problematic alcohol consumption. These authors concluded that persistent criminal behavior throughout life, with onset during childhood, was associated with psychosocial adversities, cognitive deficits, psychopathology and difficulties in temperament, whereas criminal behavior limited to adolescence was conceived as a type of temporary mal-adjustment. Regardless of the design and methodology of the studies, there is a relationship between behavioral problems in childhood and adolescence, and subsequent criminality in adulthood [2]. Another risk factor is substance abuse [3]. Early drug use, including alcohol use, is related to subsequent crime, [4] predicting the use of so-called "hard drugs", persistent criminal behavior, even when controlled for other causes of behavioral problems.

However, even if there were no studies on the relationship between psychopathology and juvenile criminal behavior that persisted into adulthood, it would be theoretically expected to find an association between psychopathology and crime in adults. Because normative behavior implies the individual's ability to understand the existing norms, values and laws, but also, and above all, the ability and desire to adapt their behavior to what is legislated, so as to not perpetuate

criminal behavior [5].

The probability of perpetrating criminal behavior is much greater if the individual suffers from a psychopathological condition that [5]: 1) does not allow the ability to understand what is legal (e.g., intellectual disability, dementia); 2) changes the ability to exercise their free and informed will (e.g., mania, schizophrenic psychosis); 3) reduces, among other aspects, respect for other individuals, norms, values, and laws, reduces the ability to tolerate frustrations, and/or significantly increases impulsivity and aggressiveness (e.g., antisocial personality disorder); 4) increases the pleasure in inflicting suffering on others (e.g., sadism); 5) provides sexual pleasure induced by a paraphilia (e.g., pedophilia); 6) consubstantiates in substance abuse and/or addiction (e.g., alcohol, heroin); 7) alters their personality and consequent ability to evaluate and/or adapt their behavior according to normative requirements (e.g., changes in personality following a traumatic brain injury); 8) potentiates illegal compulsive behavior (e.g., kleptomania, pyromania); 9) determines symptoms (e.g., fear) that condition behavior that may be criminalized (e.g., phobic disorder or panic disorder that condition the absence of mandatory relief); 10) determines legal behavior whose consequences potentiate illegal behavior (e.g., pathological gambling, which may induce theft, signature falsification, etc.).

The relationship between violence and psychiatric disorders within the community were studied [6]. Of the 368 subjects (in 10,059

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Key words: crime, re-offence, substance abuse, mental disorder, recidivism

Received: March 24, 2017; Accepted: April 17, 2017; Published: April 20, 2017

Integr Mol Med, 2017 doi: 10.15761/IMM.1000281

respondents) who had reported some type of violence in the previous year, more than half (55.5%) fulfilled criteria for a mental disorder, as opposed to 19.6% of the non-violent subjects. Substance abuse was the most prevalent diagnosis among violent subjects (41.6%), compared to non-violent subjects (4.9%). The prevalence of affective disorders was three times higher among violent responders (9.4%) than non-violent responders (3.0%), while the prevalence of anxiety disorders was 20.1% in violent subjects, against 14.1% in non-violent subjects. The prevalence of violent behavior among subjects with schizophrenia or schizophreniform disorder was 12.7%, which was close to other groups of psychiatric disorders. The risk of committing a violent act increased significantly with the number of psychiatric diagnoses (psychiatric comorbidity) of the offender.

In another study, all the individuals born in Denmark between January 1, 1944 and December 31, 1,947 were studied [7]. When the 324,401 subjects were 43 years old, all those who were admitted to a psychiatric institution at least once and all those who were convicted in court at least once were identified. It was found that all diagnostic groups considered (MMD – major mental disorders; MR – mental retardation; APD – antisocial personality disorder; DRG – drug use disorders; ALC – alcohol use disorders; OMD – other mental disorders), except the ORG women group (ORG – organic disorders), exhibited an increased risk of violence, when compared to the NMD group – non-disordered group.

Wallace et al. [8] conducted a study on the criminal convictions of patients suffering from schizophrenic psychosis, occurring within a 25-year period, which was characterized by a radical deinstitutionalization and by increased substance use. To conduct this study, they analyzed the criminal records of 2,861 patients who were first admitted for schizophrenia in the Australian state of Victoria, in the years 1975, 1980, 1985, 1990, and 1995. They compared the sample to a control group, in the period of 1975-2000, of 2,861 subjects from the community, paying particular attention to factors such as age, sex, and place of residence. After concluding the study, they found that patients with schizophrenia exhibited a higher number of criminal convictions (8,791 vs. 1,119), a higher likelihood of being convicted of criminal offences (21.6 vs. 7.8) and violent offences (8.2 vs. 1.8). The proportion of convicted patients increased from 14.8% in 1975, to 25.0% in 1995, but a similar proportion increased from 5.1% to 9.6% among control subjects. Regarding substance abuse among schizophrenic individuals, the authors concluded the rates of substance use and abuse increased from 8.3% in 1975 to 26.1% in 1995. Significantly higher rates of criminal convictions were found in schizophrenic individuals with substance abuse compared to those who did not abuse substances (68.1% vs. 11.7%).

In 2006, Swanson et al. [9] conducted a study within the framework of project CATIE (Clinical Antipsychotic Trials of Intervention Effectiveness), of the National Institute of Mental Health (USA), with which they intended to examine the prevalence of violent behavior, in the previous six months, of people with schizophrenia. The sample comprised 1,410 subjects, 74.3% males, with ages between 18-65 years, a mean age of 40.5 years, 19.2% married or cohabiting, 25.4% with less than a high school level education, 35.2% completed high school, 39.4% had attended university, and 3.8% were homeless. The researchers concluded that 19.1% of the subjects had perpetrated some type of violent behavior and 3.6% had committed serious violent behavior. Positive psychotic symptoms, such as persecutory ideation, increased the risk of minor and severe violence, while negative psychotic symptoms, such as social withdrawal, reduced the risk of

severe violence. Minor violence was associated with co-occurring substance abuse and interpersonal and social factors. Severe violence was associated with psychotic and depressive symptoms, behavioral problems in childhood and victimization.

Among the non-clinical variables were correlates of severe violence at a young age, behavioral problems in childhood and prison history. Among the clinical/functional variables, above-average scores for positive symptoms on the Positive and Negative Syndrome Scale (PANSS) increased the risk, whereas above-average scores for negative symptoms on the PANSS, namely, loss of spontaneity and conversation flow, passive/apathetic social withdrawal, blunted affect, poor communication, and difficulties in abstract thinking, reduced the risk [9]. The five positive symptoms related to severe violence were hostility, suspicion/persecution, behavior influenced by hallucinatory activity, grandiosity - with unrealistic convictions of superiority - and excitation (hyperactivity resulting from accelerated motor behavior, high responsiveness to stimuli, hypervigilance or excessive lability.9 Conceptual disorganization, characterized by incoherent thinking, and unfounded and idiosyncratic beliefs (however, delusional activity of suspicion/persecution was highly associated with severe violence) were the two positive symptoms that were not associated, by themselves, with severe violence [9].

Other important factors to be taken into account were substance abuse, pre-morbid personality and ecological problems, in particular, the quality of existence within the family circle and expressed emotion – high criticism potentiated relapse [9]. Cohabitation with family may prevent or provoke violent behavior in patients, with the authors finding that the patients who lived alone were less likely to get involved in conflicts than those who lived with family, which was more evident in a subgroup of young female patients who lived with family and were using substances [9].

In addiction, Swinson et al. [10] studied the homicides that also took place in England and Wales, between January of 1997 and December of 2006. During that period, 5,884 killers were convicted – a homicide rate of 1.28 (per 100,000 of the general population) –, of which 605 (10.2%) exhibited mental illness at the time of the offence and, among these, 348 (5.9% of the total) suffered from schizophrenic psychosis – a rate of .08 (per 100,000 of the general population). Three hundred and thirtyone killers suffered from psychotic symptoms at the time of the crime. In the period under analysis, there was a mean annual increase of 2% in homicides among the general population - albeit with a decrease in 2005-2006 -, and a mean annual increase of 4% and 6% in the number of homicides committed, respectively, by individuals who suffered from schizophrenic psychosis, and by those who exhibited psychotic symptoms at the time of the crime. Drug and alcohol use may trigger or exacerbate psychotic symptoms and the most likely explanation for this increase seems to be increased drug use in individuals who had psychotic symptoms at the time of the crime. The main drugs used by the individuals with psychosis were cannabis (n = 121), cocaine (n = 121)43) and amphetamines (n = 39). The increase in homicides by drug users, about 20 annually, and in the same time period (2003-2005), was of equal magnitude to the increase of homicides perpetrated by those who suffered from psychotic symptoms.

In Portugal, the first studies on homicidal criminality occurred in the Judicial District of Porto (JDP) (the Judicial District of Porto included the entire northern region of Portugal and some counties south of the Douro river, with an approximate population of 3.5 million inhabitants), perpetrated between 1988-1991, pointed towards

a homicide rate among schizophrenic individuals and individuals with paranoid psychosis clearly superior to the general population, despite, in that period, individuals not guilty by reason of mental illness (NGMI) having been responsible for only 8.3% of homicides (the individuals with personality disorder were, out of all 51 killers who underwent expert psychiatric evaluation in that period of four years, the most represented group, with approximately half of the total) [11-13]. It should be noted that, of the 16 psychotic individuals, eight were schizophrenic, seven suffered from paranoid psychosis and one suffered from affective psychosis.

In another research, in which the homicides perpetrated in the JDP, in the year 1990, were studied, it was found that, for a population of approximately 3.5 million individuals, there were 59 homicides perpetrated by 53 killers [14]. Of these, four (7.5%) were considered NGMI and responsible for five (8.5%) victims; of the four individuals NGMI, two were schizophrenics who killed three (5.8%) victims (one killed their mother, the other killed two neighbors, one of which was a cousin), one of the individuals suffered from a delirium of jealousy (he killed his "rival", a neighbor), the other killer NGMI, as a consequence of childhood meningitis, suffered from mild intellectual disability concomitant with personality disorder with severe impulse control disorder, particularly, aggressive impulse. If we consider a prevalence of schizophrenia of 3 per 1,000 (.33% - Encyclopedie Medico-Chirurgicale), the homicide rate of schizophrenic individuals would be 17 times greater than the homicide rate of non-psychotic individuals. If the prevalence considered is 6 per 1,000, the homicide rate is 8.5 times higher than in non-psychotic individuals. The results by Shaw et al. [15], in England, and other authors cited above, are also very close to those found by Almeida [14].

The five homicides perpetrated by the four individuals NGMI represent a rate of .14 homicides per 100,000 inhabitants/year, almost overlapping the homicide rate of patients with severe mental illness of .13/100,000 inhabitants/year explained by Coid [16].

The crimes reported to the police are a small part of the crimes committed by individuals with mental illness, particularly, by those suffering from schizophrenic psychosis [17,18]. The study of the criminal trajectory of 33 patients who suffered from schizophrenic psychosis (19 men), conducted between 1991 and 2003, revealed that these patients had committed a total of 42 crimes, 74.0% against people and 24.0% against property, but only one of the crimes had been reported to the authorities. This fact indicates that crime committed by individuals with severe mental illness is regarded with great tolerance and complacency. And this conduct by family and friends is often negligent and contributes to the eruption of severe crime.

A prospective and longitudinal study, of 35 years, was conducted with 49,398 men recruited into the Swedish army in 1969-1970 [19]. Three hundred and seventy-seven were later diagnosed with schizophrenic psychosis, of which 24.7% were convicted for a violent crime, compared to 6.0% of individuals who did not suffer from schizophrenic psychosis. An analysis adjusted to the risk factors reported at the age of 18 years allowed to conclude that the contribution of schizophrenia to criminal offence more than doubled the risk of criminal conviction and quadrupled for severe violent offences.

Rocha [20] (unpublished dissertation thesis by Ana Rocha defended in 2014) analyzed, at the start of 2014, the files of 110 individuals NGMI in the Psychiatry and Mental Health Clinic of the Prison of Santa Cruz do Bispo (PMHCSCB). The mean age was 42.0 with a standard deviation of 12.4. Single individuals (n = 89) and individuals with a low

education level (n = 68 had no more than primary level education, 24 of which were illiterate) were predominant.

Sixty-three (57.3%) individuals NGMI suffered from schizophrenia (22 of which in comorbidity with substance abuse), 35 (31.8%) suffered from intellectual disability (17 in comorbidity with substance abuse), whereas the other 12 (10.9%) individuals NGMI had been diagnosed with other pathologies: toxic psychosis (n = 3), bipolar disorder (n = 2), chronic alcoholism (n = 2), organic brain syndrome (n = 2), dementia (n = 1), schizoaffective psychosis (n = 1) and epileptic psychosis (n = 1) [20].

About 13 million annual admissions to prisons in the USA (12.9% of which are women), more than one million are individuals with serious mental illness (SMI) [21] The authors studied a group of 3,769 adult individuals with SMI (41% women), under 65 years of age, who were detained in the Pinellas County prison, in Florida, for at least one day between July 1, 2003 and June 30, 2004. The study followed these individuals over the next two years and collected information regarding their detention in the previous year. The 3,769 detainees accounted for 10.4% of all individuals detained during that period of 12 months. During the 4-year period that was studied (July 1, 2002 and June 10, 2006), the sample had generated a total of 17,663 detentions with a mean of 4.7 detentions per individual (in women 4.2%, in men 4.9% - OR = 1.15; 95% CI, 1.12-1.18; p < .001). Among women with SMI, 83% were diagnosed as suffering from a mood disorder and 17% with a psychotic disorder, whereas in men those numbers were 76% and 24%, respectively. Men tended to be older than women, to have more cases of homelessness and to be more likely to be directed to an involuntary psychiatric evaluation.

The authors highlighted that the total absence of support from mental health services for many of the participants, or their very infrequent contacts with mental health services, pointed toward failed opportunities to treat the patients, particularly those whose mental illness symptoms led to crime and were subject to re-incarceration [21].

A 30-year (1981-2010) follow-up study of individuals suffering from schizophrenic psychosis were conducted in order to compared those who had exhibited a single homicidal behavior in the Chuvash Republic of the Russian Federation and those who had recidivated with a second homicide [22]. Sixteen (10.7%) of the 149 killers with schizophrenia had committed a previous homicide. These sixteen killers included nine offenders who had already been diagnosed with schizophrenia before they committed their first homicide after January 1981, three offenders who were diagnosed with schizophrenia only after the first homicide and four who committed a second homicide over the 30 years of the study and had been diagnosed as suffering from schizophrenia at the time of the homicide committed before 1981. Therefore, nine (6.0%) of the 149 killers who were diagnosed with schizophrenia at the time of the initial homicide perpetrated between 1981-2010 committed a second homicide during the 30 years of the study, after a mean interval of 13.9 years (SD = 9.1 years). Recidivists perpetrated the second homicide, on average, 4.1 years after they had been released and with a mean age of 42 years. All 16 recidivists were men from rural areas and small cities, and 13 of them, known for suffering from schizophrenic psychosis, returned to rural settings before committing the second homicide. Female killers (n = 15) were included in the group of non-recidivists. At the time of the second homicide, six (38.0%) had relapsed with positive symptoms of schizophrenia, nine (56.0%) were intoxicated with alcohol and 10 (62.0%) had engaged in a discussion immediately before the homicide, which, in some cases, was

originated by psychotic symptoms of the offenders.

Falk *et al.* [23] studied the distribution of convictions for violent crime in the Swedish population (1973-2004) and sought to identify risk factors for persistence in violent crime. All individuals born between 1958 and 1980 (2,393,765) were included. Persistent violent offenders (with a life history of three or more convictions for violent crime) were compared to offenders convicted for one of two offences, and to non-offenders. A total of 93,642 individuals (3.9%) had at least one conviction for violent crime, 24,342 of which were persistent violent offenders (1.0% of the total population) and responsible for 63.2% of total convictions. Persistent violence was associated with males (OR = 2.5), personality disorder (OR = 2.3), convictions for violent crime before the age of 19 (OR = 2.0), offences related to drugs (OR = 1.9), non-violent crime (OR = 1.9), substance use disorder (OR = 1.9), and major mental disorder (OR = 1.3).

A 21-year retrospective outcome study of New South Wales (Australia) forensic patients found NGMI, granted conditional and unconditional release were conducted [24]. During the 21-year period studied, 364 offenders received an NGMI and were placed under the supervision of the MHRT (Mental Health Review Tribunal). Of 364, 197 were released into the community, including 85 who were granted unconditional release. Over a follow-up period averaging 8.4 years, 18% of conditionally released patients reoffended, 11.8% were convicted of a further offence, 8.7% were charged with a violent offence, 3.1% were convicted of a violent offence and 3.7% were sentenced to a term of imprisonment. Five (3.1%) conditionally released forensic patients received a further NGMI verdict. One-quarter of the conditionally released patients had their conditional release revoked and half were readmitted to the hospital. Of the forensic patients granted unconditional release, 12.5% were charged with an offence, 9.4% received convictions for an offence, 6.3% were charged with a violent offence and 4.7% were convicted of a violent offence, in a mean followup period of 7.6 years. None committed a further serious offence resulting in a term of imprisonment, nor received a second NGMI verdict. The authors concluded that the treatment and rehabilitation of forensic patients, together with decision-making procedures of the MHRT, are effective in protecting the community from further offending by forensic patients [24].

Matejkowski et al. [25] studied a 379 inmates released from New Jersey Department of Corrections; 190 of whom had serious mental illness (SMI) and 189 of whom did not have SMI. Results indicate that criminal risk mediated the relationship between SMI and recidivism. This indirect effect was conditioned by whether the individual had a juvenile conviction. Specifically, for early start offenders, criminal risk was positively related to recidivism while this relationship was not observed for late start offenders. A juvenile history of criminal involvement may signal the presence of heightened need among adults with SMI. This simple indicator could function to differentiate for clinicians those adults who are good candidates for exploring further, and targeting for amelioration, criminogenic needs to reduce further criminal involvement.

It is known that the majority of individuals who have been deemed NGMI, and are/were subject to detention measures, suffer from psychosis, particularly schizophrenic psychosis, and have committed crimes, often very serious and mainly against people, including homicide [17].

Keeping these patients without adequate supervision after they leave the institutions is unacceptable and unreasonable, especially after the institutionalization measure is declared extinct. Many of these patients have absent or insufficient morbid consciousness, come from unstable and disadvantaged families, and they lack competent and careful supervision. As their time in freedom extends, many patients breaking from treatment and therapy tend to engage in risk behavior, including alcohol and drug abuse, which contribute to the decompensation of the illness they suffer from, as well as further eruption of repeated crime, often severe [13].

In 2010, was implemented the project "Psychiatric Monitoring of NGMI Outpatients" in the Magalhães Lemos Hospital (MLH) (Porto, north of Portugal) and focused on individuals deemed NGMI by the courts and who regularly leave the PMHCSCB, after completing the detention measure or being on probation [26].

Seventy-two participants, living within a 60 km radius from Porto, integrated the project that was implemented between February 1, 2010 and January 31, 2012. The team consisted of a psychiatrist, a psychologist, and a nurse.

The overall goal was to ensure follow-up and appropriate therapy for these patients. The specific objectives consisted in integrating and maintaining all individuals in a care network and preventing them from decompensating, thus preventing crime relapse. The planned project tasks comprised:

- 1. conducting the epidemiologic survey of the phenomenon, namely: identifying target individuals; identifying their places of residence; and getting to know the individual, their family and their residence;
- 2. contacting other relevant providers in the individual's followup (general practitioner, social worker from the area of residence);
- 3. visiting patients at home periodically, done by the nurse and/ or psychologist;
- 4. doing home consultation by the psychiatrist, when considered necessary by the members of the team;
- 5. developing a patient report, updated regularly, covering clinical and psychiatric elements, including medical and nursing documentation, a social report, and other elements considered appropriate (e.g., evolution of the legal process).

The sample consisted of 72 participants (69 male; 52 single; $M_{\rm age}$ = 43.0; SD = 10.7, $Max_{\rm age} = 74$; $Min_{\rm age} = 24$; 30 were illiterate or did not complete primary education), residing within a radius of 60 km from the city of Porto [26].

Inclusion criteria included having Portuguese nationality, having been deemed NGMI between 2000 and 2010, and having fulfilled detention measures at the PMHCSCB. Participants who have a nationality other than Portuguese and participants who have fulfilled detention measures at the Sobral Cid Hospital or the Caxias Hospital were excluded. Diagnosis was made in accordance with the Diagnostic and Statistical Manual of Mental Disorders [27].

The team intervention was particularly relevant in nine situations: four patients suffering from paranoid schizophrenic psychosis, two of which with psychiatric comorbidity as a result of substance abuse; two patients suffering from paranoid psychosis; one patient suffering from mild intellectual disability and substance abuse; one patient suffering from severe intellectual disability and alcohol abuse; and a patient who had a prefrontal syndrome and concomitant alcohol abuse. We emphasize that the six decompensated psychotic patients had no

monitorization or psychiatric treatment for an extended period of time. They displayed multiple behavioral changes, including aggressive behavior, and the homicidal potential of some of them was very serious [26].

Discussion

The team intervention with these patients may have prevented situations of homicide, consummated or attempted (especially in nine patients), or serious bodily injury, or property damage. This is due to the fact that the implementation of the project allowed the compensation of patients who were inserted in the community without treatment, some of which for over a year.

For most patients, their families remained their foundation and fundamental support, even in situations when family members were the victims of the patient's criminal behavior [28]. When families, due to exhaustion or any other reason, are not an effective support for patients, particularly in the context of psychiatric treatment, the likelihood of decompensation and remaining decompensated for long periods of time is much higher [13].

The implementation of Decree-Law 36/98, of July [24,29] in the two strands of involuntary commitment and outpatient compulsory treatment, allowed a fast and effective compensation of psychotic patients, some of whom were severely decompensated and committed crimes mostly not reported to the authorities [17].

A different situation is that of individuals who, having been considered NGMI at the time of the crime, are intellectually disabled, often with co-morbidity, in particular with associated signs of substance abuse. Some of these individuals do not meet the eligibility criteria for the application of the Decree-Law 36/98, [29]. which hinders their compensation and the prevention of criminal recidivism.

Regarding situations where the lack of support in the community is manifest, usually consisting in family support, detention measures will be stretched to the limit of the penal framework for that objective type of illicit act, at the end of which the individual remains unsupported when released. Upon being placed in the community, the lack of support remains. The right to freedom is not questioned, nor is it an extension of the detention measure proposed. Rather, it is defended that the initiatives to keep the individual within the community should organize more consistently in the period of probation, with an effective connection between structures of Justice and Health, particularly, the LSMH, Social Security and the community-based structures that are in connection with it, such as the Private Institutions of Social Solidarity (IPSS). We think it is indispensable to promote an inter-institutional relationship.

The above indicates the defense of not only an assessment prior to releasing the individual into the community, and this cannot be limited to issuing letters of referral to the General Practitioner, and eventually another sent to the LSMH, but rather a suitable monitoring of the patient (NGMI) through consultations, with the transmission of relevant clinical and judicial information, and a more adequate monitoring of the psychiatric treatment of the patient in the community. This work should be prepared when the individual is still fulfilling the detention measure. Mental health services do have some role in preventing homicides, [30,31] including by focusing on comorbid substance use of patients with an established diagnosis of psychotic illness [32,33] and by an earlier treatment of the first psychotic episode [34]. It is essential to coordinate between different entities (legal/correctional and mental health) from the moment the patient (NGMI) is released after serving a

detention measure, with their effective integration into an official unit of psychiatric care [35]. There is lack of legislation requiring the official mental health services to effectively follow-up individuals deemed NGMI who completed a detention measure [36,37]. There is also lack of legislation forcing mental health professionals to alert health authorities when these individuals do not comply with prescribed therapy [13].

The implementation of this project [26] showed that patients who committed a crime and were deemed NGMI relapse and perpetrate criminal behavior to a substantial degree when they are released and are not properly monitored by psychiatric services, particularly when they discontinue the medication. The project allowed to interrupt and prevent diverse criminal behaviors, some of which very serious, which could result in homicide.

The findings clearly demonstrate the impact that the monitoring and the proper treatment of these patients is not always as effective as their pathology justifies, and it unequivocally stresses that, if that strict monitoring is not conducted, criminal relapse is inevitable and not negligible [26].

Acknowledgement

Fernando Almeida, Social and Behavioral Sciences Department, Maia University Institute (Portugal) and Instituto de Ciências Biomédicas Abel Salazar, University of Porto (Portugal). Diana Moreira, Laboratory of Neuropsychophysiology, Faculty of Psychology and Educational Sciences, University of Porto, Social and Behavioral Sciences Department, Maia University Institute, and Portucalense Institute of Neuropsychology and Cognitive and Behavioral Neurosciences (Portugal).

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. The study was conducted according to APA ethical standards.

References

- Aebi M, Giger J, Plattner B, Metzke C, Steinhausen H (2014) Problem coping skills, psychosocial adversities and mental health problems in children and adolescents as predictors of criminal outcomes in young adulthood. Eur Child Adolesc Psychiatry 23: 283-93. [Crossref]
- Cleary A, Nixon E (2012) Early adult outcomes for Irish children with behavioural difficulties. Int J Soc Psychiatry 58: 643-51. [Crossref]
- Brook J, Zhang C, Brook D (2011) Antisocial behavior at age 37: Developmental trajectories of marijuana use extending from adolescence to adulthood. Am J Addict 20: 509-15.
- 4. Schug R, Fradela F (2015) Mental Illness and Crime. Los Angeles: Sage Publications.
- Almeida F (2016) Psicopatologia e Crime. In: Dicionário Crime, Justiça e Sociedade. Lisboa: Edições Sílabo; 2016. p. 402-403.
- Swanson J, Holzer C, Ganju V, Jono R (1990) Violence and psychiatric disorder in the community: evidence from the Epidemiologic Catchment Area surveys. Hosp Community Psychiatry 41: 761-70. [Crossref]
- Hodgins S, Mednick SA, Brennan PA, Schulsinger F, Engberg M (1996) Mental disorder and crime. Evidence from a Danish birth cohort. Arch Gen Psychiatry 53: 489-496. [Crossref]
- Wallace C, Mullen P, Burgess P (2004) Criminal offending in schizophrenia over a 25-year period marked by deinstitutionalization and increasing prevalence of comorbid substance use disorders. Am J Psychiatry 161: 716-27. [Crossref]
- Swanson JW, Swartz MS, Van Dorn RA, Elbogen EB, Wagner HR, et al. (2006)
 A national study of violent behavior in persons with schizophrenia. Arch Gen Psychiatry 63: 490-499. [Crossref]

- Swinson N, Flynn SM, While D, Roscoe A, Kapur N, et al. (2011) Trends in rates of mental illness in homicide perpetrators. Br J Psychiatry 198: 485-489. [Crossref]
- 11. Almeida F (1998) Homicídios. Temas Penitenciários 2: 93-100.
- 12. Almeida F, Costa P (1992) Homicídios e Psiquiatria Forense. O Médico 127: 97-100.
- Almeida F, Moreira D, Silva V, Cardoso A (2012) Internamento Compulsivo. Psiquiatria, Psicologia & Justiça 5: 49-66.
- 14. Almeida F (1999) Homicidas em Portugal. Maia: Publismai.
- Shaw J, Hunt IM, Flynn S, Meehan J, Robinson J, et al. (2006) Rates of mental disorder in people convicted of homicide. National clinical survey. Br J Psychiatry 188: 143-147. [Crossref]
- Coid J (1983) The epidemiology of abnormal homicide and murder followed by suicide. Psychol Med 13: 855-860. [Crossref]
- Almeida F (2007) Psicose Esquizofrénica e Criminalidade. Psiquiatria, Psicologia & Justiça 1: 5-33.
- Almeida F, Carvalho D (2012) Homicidas e doença mental grave: a propósito de uma amostra de homicidas submetidos a perícia psiquiátrica forense. In: Profiling, Vitimologia, & Ciências Forenses. Lisboa: Pactor 289-313.
- Eriksson A, Romelsjo A, Stenbacka M, Tengstrom A (2011) Early risk factors for criminal offending in schizophrenia: a 35-year longitudinal cohort study. Soc Psychiatry Psychiatr Epidemiol 46: 925-32. [Crossref]
- Rocha A (2014) Estudo dos Homicidas no Estabelecimento Prisional de Santa Cruz do Bispo (Unpublished master's thesis). Maia: Maia University Institute.
- Becker MA, Andel R, Boaz T, Constantine R (2011) Gender differences and risk of arrest among offenders with serious mental illness. J Behav Health Serv Res 38: 16-28. [Crossref]
- Golenkov A, Large M, Nielssen O (2013) A 30-year study of homicide recidivism and schizophrenia. Crim Behav Ment Health 23: 347-355. [Crossref]
- Falk O, Wallinius M, Lundstrom S, Frisell T, Anckarsater H, et al. (2014) The 1% of the population accountable for 63% of all violent crime convictions. Soc Psychiatry Psychiatr Epidemiol 49: 559-71. [Crossref]
- Hayes H, Kemp R, Large M, Nielssen O (2014) A 21-year retrospective outcome study of New South Wales forensic patients granted conditional and unconditional release.

- Aust N Z J Psychiatry 48: 259-82.
- Matejkowski J, Conrad A, Ostermann M (2016) Does Early Onset of Criminal Behavior Differentiate for Whom Serious Mental Illness Has a Direct or Indirect Effect on Recidivism?. Law and Mental Behavior.
- Almeida F, Moreira D2, Moura H3, Mota V3 (2016) Psychiatric monitoring of not guilty by reason of insanity outpatients. J Forensic Leg Med 38: 58-63. [Crossref]
- Fernandes S, Leite E, Vieira F, Costa Santos J (2014) [The disclosed DSM-5: what impact will it have on forensic psychiatry?]. Acta Med Port 27: 126-134. [Crossref]
- Lewis ME, Scott DC, Baranoski MV, Buchanan JA, Griffith EE (1998) Prototypes
 of intrafamily homicide and serious assault among insanity acquittees. J Am Acad
 Psychiatry Law 26: 37-48. [Crossref]
- 29. Republic Diary, I SÉRIE-A N.º 169, 24/7/1998, 3544-3550. Mental Health Act; 1998.
- Hodgins S, Müller-Isberner R (2004) Preventing crime by people with schizophrenic disorders: the role of psychiatric services. Br J Psychiatry 185: 245-250. [Crossref]
- Large M, Smith G, Swinson N, Shaw J, Nielssen O (2008) Homicide due to mental disorder in England and Wales over 50 years. Br J Psychiatry 193: 130-133. [Crossref]
- Fazel S, Buxrud P, Ruchkin V, Grann M (2010) Homicide in discharged patients with schizophrenia and other psychoses: a national case-control study. Schizophr Res 123: 263-269. [Crossref]
- Fazel S, Gulati G, Linsell L, Geddes JR, Grann M (2009) Schizophrenia and violence: systematic review and meta-analysis. PLoS Med 6: e1000120. [Crossref]
- Nielssen O, Large M (2010) Rates of homicide during the first episode of psychosis and after treatment: a systematic review and meta-analysis. Schizophr Bull 36: 702-712. [Crossref]
- Coid J, Hickey N, Kathtan N, Zhang T, Yang M (2007) Patients discharged from medium secure forensic psychiatry services: Reconvictions and risk factors. Br J Psychiatry 190: 223-229. [Crossref]
- 36. Bloom J, Williams M, Bigelow D (1991) Monitored conditional release of persons found not guilty by reason of insanity. *Am J Psychiatry* 148: 444-448. [Crossref]
- Skipworth J, Brinded P, Chaplow D, Frampton C (2006) Insanity acquittee outcomes in New Zealand. Aust N Z J Psychiatry 40: 1003-1009. [Crossref]

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