

## ORIGINAL ARTICLE

# Forensic psychiatry in the largest secure ward in Portugal: characteristics of the population and psychopharmacological intervention

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*Forensic psychiatry is defined as a specialty of psychiatry in which clinical and scientific knowledge is applied to the legal system, both with regard to civil and criminal law. Nowadays, the largest security ward is in Coimbra, at the University Hospital. It comprises 111 patients: 91 males and 20 females. The aim of the security measures, according to the penal code, is the protection of legal assets and psychosocial rehabilitation. In our sample, the most frequent diagnosis was Schizophrenia (37.8%); Moderate Intellectual Disability (23.4%) and Mild Intellectual Disability (14.4%) were the second and third most frequent diagnoses. The criminal acts accounting for the most prevalent security measures fell under domestic violence (19.8%) first, followed by attempted murder (16.2%), and theft (14.5%). The elaboration of a therapeutic and rehabilitation plan is essential, and its aim is to diminish the person's dangerousness. It is fundamental to think of the safety ward as a health production space and not as a place of mere disease management or "dangerous states", thus trying to solve the patient's problems.*

## Key words

*Intellectual developmental disorder, forensic care, Schizophrenia, pharmacological treatment pathways*

## Introduction

Forensic psychiatry is defined as a specialty of psychiatry in which clinical and scientific knowledge is applied to the legal system, both with regard to civil and criminal law [1]. One of the most interesting issues in this relationship between law and psychiatry is the problem of criminal responsibility [1], where it must be determined whether or not an individual was aware of the consequences of his/her unlawful action before or at the time of the

action (*mens rea*). Should a person's capacity to understand the consequences of his/her actions have been impaired or diminished due to a mental disorder, article 20 of the Portuguese Criminal Code would apply.

In this article, the term "not criminally responsible" (NCR) is used as follows: *Not criminally responsible due to a mental disorder: 1- A person is not criminally responsible if, due to a mental disorder, he/she is incapable at the time of committing the act of appreciating its unlawfulness or of conforming his/her conduct in accordance with that appreciation; 2- A person may be declared not criminally responsible if due to a serious mental disorder (unintentional in nature and whose effects he/she cannot control, without being thereby censurable) he/she had had, at the time of committing the act, the capacity to appreciate its unlawfulness or to conform his/her conduct in accordance with that appreciation sensibly diminished; 3- The agent's proved incapacity to be influenced by punishment may constitute a sign of the situation defined in the previous number; 4- Criminal responsibility is not excluded when the mental disorder has been caused by the agent himself/herself with the intention to commit the act [2].*

Once an individual is found not criminally responsible, it entails that the mental illness was at the origin of the offense. The symptoms of their mental disorder are considered to be the cause of their behaviour. Therefore, managing psychiatric symptoms would aid in mitigating risk. Additionally, the probability of reoffending is related to the severity of the mental disorder and the likelihood of psychiatric relapse, but involuntary admission is not

necessarily justified simply with being found to be NCR. Instead, security measures appear to be justified when there is a high probability that the individual would relapse in a way that he/she would commit a similar unlawful action and would be found NCR for that act as well [3].

Nowadays, the largest secure ward admitting NCR patients in Portugal is in Coimbra, at the University Hospital. In total, it has 111 patients, 91 males and 20 females. These patients were deemed not criminally responsible on the account of a mental disorder for the offense they committed. The decision to admit them was made due to the level of risk they pose for public safety; secure units are necessary due to their status as dangerous patients with a high likelihood of reoffending in the future [2].

Once the NCR status is given to the accused, the issue of likelihood of reoffending and therefore their level of dangerousness becomes paramount. In accordance to the Portuguese Penal Code, the aim of admitting dangerous NCR patients to a secure unit is to ensure public safety and their psychosocial rehabilitation, with the ultimate goal of safely reintroducing these patients into the community. Placed safety measure(s) must be proportionate to the seriousness of the index offense and to the degree of dangerousness of the patient (Article 40, paragraph 3 of the Penal Code [3]), and cannot, under the terms of the Portuguese Constitution, be perpetual or be of defined or indefinite duration. Likewise, the duration of the security measure(s) cannot exceed the duration of the sentence for the crime committed (Article 30 of the Constitution of the Portuguese Republic). The security measure(s) may only be applied if the severity of the crime is proportional to the danger of the agent. The duration of the jail time as defined by the Portuguese Criminal Code according to the committed offense will indicate how long the patient who committed a similar offense could be detained in the secure unit; however, the effective time spent will depend on how long the patient remains a risk for public safety. The duration of the security measure(s) is

initially decided by the court at the time of the NCR finding but can end at any time if the court is satisfied that the level of dangerousness that justified admission into the secure unit is no longer met. [3,4]. For serious crimes, where the sentence is longer than 5 years in prison, the shortest possible duration of the security measure(s) is 3 years. After the measure(s) has/have been implemented, a reassessment of the individual must take place every two years. At any time, a judge can order a new assessment to evaluate the clinical and behavioural characteristics of the patient [5,6].

This study aims to characterize the profiles of the patients found not criminally responsible and admitted in a secure Portuguese hospital as their characteristics complied with security measures criteria as per the Portugal Criminal Code. The benefits and limitations of such medico-legal framework will be highlighted.

## Materials and Methods

A retrospective chart review was performed in the Forensic Psychiatry Program in Coimbra, Portugal, between January and March 2018. All patients admitted during that period of time were deemed eligible. Prior to receiving consent from all patients to access their chart of the purpose of conducting this study, the protocol was approved by our local Ethical Review Board. Digital and paper medical records of the inpatients were analysed. Their sociodemographic status, the types of crime they committed, the duration of the security measures, and the pharmacological treatment they received were recorded. As this is a descriptive study, no statistical analysis was performed.

## Results

### *Sociodemographical data*

The final sample included 111 subjects with an average age of 45.81 years old, ranging from 21 to 81 years old. Among our sample, 91% were younger than 65 years old. The average age of female patients was 46.19 years old (range 24 to 71). The average age of male patients was 45.52 years old (range 21 to 81). With

respect to gender, there was a predominance of males (74.1%, n=83) compared to females (24.1% n=27).

#### *Index offense and legal outcome*

The index offense that was associated most with the NCR finding and led to the placement of the security measure(s) was domestic violence (19.8%), followed by *attempted murder* (16.2%) and theft (14.5%) (Table 1). Most of the patients committed only one crime at the time of the index offense; 28.8% of the patients had committed more than one crime for which they were found NCR (n=32). 74.1% of the female population (n=27) and 30.1% of the male population (n=25) had committed multiple offenses overall.

On average, the minimum sentence duration was 2.66 years. The average maximum duration was 8.95 years. For women, the maximum penalty time was 6.52 years on average (ranging from 1 to 16 years), while for men the average time was 9.78 years (ranging from 1 to 25 years).

Table 1: Summary of the crimes

| <b>Offense</b>            | <b>Number of patients (%)</b> |
|---------------------------|-------------------------------|
| Domestic violence         | 22 (19.8%)                    |
| Attempted murder          | 18 (16.2%)                    |
| Theft                     | 16 (14.5%)                    |
| Murder                    | 11 (9.9%)                     |
| Criminal offense          | 10 (9%)                       |
| Forest fire               | 8 (7.2%)                      |
| Possession/use weapon     | 6 (5.4%)                      |
| Qualified damage          | 4 (3.6%)                      |
| Threat                    | 4 (3.6%)                      |
| Aggravated threat         | 4 (3.6%)                      |
| Rape                      | 4 (3.6%)                      |
| Sexual coercion           | 1 (0.9%)                      |
| Driving Without a Licence | 1 (0.9%)                      |
| Resistance to justice     | 1 (0.9%)                      |
| Qualified kidnap          | 1 (0.9%)                      |

#### *Psychiatric conditions*

The most frequent diagnoses were schizophrenia (37.8%), moderate intellectual disability (23.4%) and mild intellectual disability (14.4%). Altogether, schizophrenia

and intellectual disabilities account for 77.4% of diagnoses (Table 2). For females, the main diagnosis was mild intellectual disability (29.6%) and for males, it was schizophrenia (45.8%).

Among our sample, 40% had a concurrent disorder. Whereas concurrent disorder was found in 14.8% of the female population (n=4), it was found in 48.2% of the male population (n=40).

#### *Pharmacological data*

*Oral antipsychotic drugs* - Oral neuroleptics were prescribed for 90.1% of patients; 51.4% (n=57) received first generation antipsychotics and 71.2% (n=79) second generation antipsychotics. It must be noted that 66.7% (n=74) received neuroleptics from one of the generations as opposed to 33.3% (n=37) from both generations. On average, the patients were medicated with  $1.41 \pm 0.9$  different types of neuroleptics. The maximum number of antipsychotic medications prescribed per patient was 5.

*Depot antipsychotic drugs* - Depot antipsychotic formulations were used in 47.7% (n=53) of the sample. Haloperidol was the most commonly used, with 85% of patients using it (73.4% took this on a monthly basis, with the rest taking it every 3 weeks). The mean dose of haloperidol per month was 146 mg (ranging from 50 mg to 300 mg). Risperidone, a long-acting injection, was used in 9% of the patients (n=5) and prescribed every 14 days. Paliperidone, a long-acting injection, was used in 5.7% of the patients (n=3), with monthly injections.

*Mood stabilizer drugs* - Mood stabilizer drugs were prescribed in 36% of the cases (n=40). Among this group, 62.5% (n=25) were taking Valproic Acid with a mean dose of 1000 mg per day, 7.5% (n=3) Topiramate, 10% (n=4) Gabapentin, and 15% (n=6) Carbamazepine.

*Benzodiazepines* - Most patients (72.1%, n=80) were taking benzodiazepines. For 10 patients (9%), two different types of benzodiazepines were prescribed. Regarding the type of benzodiazepines prescribed, Lorazepam was the most frequently used (55.6%) and Diazepam the second most used (18.9%). Choices for

types of benzodiazepines with long half-lives are highlighted.

*Other drugs* - Only one patient had a psychostimulant treatment (0.9%), Methylphenidate. Three patients were on anti-dementia drugs (2.7%). Antidepressant therapy was used for 20 patients (18%).

Table 2: Main diagnoses based on DSM 5 criteria

Notes: 1 – bipolar type; 2 - current or most recent episode manic, with psychotic features; 3 - persecutory type; 4 – severe; 5 – other (or unknown), severe; 6 - Intellectual Developmental Disorder.

| Main diagnosis by DSM – 5                      | DSM-5 code | Total of patients | Male       | Female    |
|--|------------|-------------------|------------|-----------|
| Frontotemporal Disease                         | 294.11     | 2 (1,8%)          | 2 (2,4%)   | -         |
| Schizoaffective Disorder <sup>1</sup>          | 295.70     | 4 (3,6%)          | 1 (1,2%)   | 3 (11,1%) |
| Schizophrenia                                  | 295.90     | 42 (38,2%)        | 38 (45,8%) | 4 (14,8%) |
| Bipolar Disorder <sup>2</sup>                  | 296.44     | 2 (1,8%)          | 1 (1,2%)   | 1 (3,7%)  |
| Delusional Disorder <sup>3</sup>               | 297.1      | 10 (9,1%)         | 6 (7,2%)   | 4 (14,8%) |
| Antisocial Personality Disorder                | 301.7      | 3 (2,7%)          | 2 (2,4%)   | 1 (3,7%)  |
| Alcohol Use Disorder <sup>4</sup>              | 303.90     | 3 (2,7%)          | 3 (3,6%)   | -         |
| Substance Use Disorder <sup>5</sup>            | 304.90     | 1 (0,9%)          | -          | 1 (3,7%)  |
| Intellectual Disability, Mild <sup>6</sup>     | 317        | 16 (14,5%)        | 8 (9,6%)   | 8 (29,6%) |
| Intellectual Disability, Moderate <sup>6</sup> | 318.0      | 25 (22,7%)        | 20 (24,1%) | 5 (18,5%) |
| Intellectual Disability, Severe <sup>6</sup>   | 318.1      | 2 (1,8%)          | 2 (2,4%)   | -         |

Table 3: Summary of drugs used in the sample

| Drugs                    | Number of patients (%) | Male patients (%) | Female patients (%) |
|--------------------------|------------------------|-------------------|---------------------|
| Oral Antipsychotics      |                        |                   |                     |
| <i>First generation</i>  | 57 (51.4)              | 48 (57.8)         | 9 (33.3)            |
| <i>Second generation</i> | 79 (71.2)              | 64 (77.1)         | 15 (65.2)           |
| Depot Antipsychotics     |                        |                   |                     |
| <i>Haloperidol</i>       | 45 (40.9)              | 38 (45.8)         | 7 (25.9)            |
| <i>Risperidone</i>       | 5 (4.5)                | 4 (4.8)           | 1 (3.7)             |
| <i>Paliperidone</i>      | 3 (2.7)                | 3 (3.6)           | -                   |
| Mood stabilizers         |                        |                   |                     |
| <i>None</i>              | 71 (64)                |                   |                     |
| <i>Carbamazepine</i>     | 6 (5.4)                | 4 (4.8)           | 2 (7.4)             |
| <i>Gabapentin</i>        | 4 (3.6)                | 3 (3.6)           | 1 (3.7)             |
| <i>Lithium</i>           | 2 (1.8)                | 1 (1.2)           | 1 (3.7)             |
| <i>Topiramate</i>        | 3 (2.7)                | 1 (1.2)           | 2 (7.4)             |
| <i>Valproic acid</i>     | 25 (22.5)              | 19 (22.9)         | 6 (22.2)            |
| Benzodiazepines          |                        |                   |                     |
| <i>Alprazolam</i>        | 1 (1.1)                | 1 (1.2)           | -                   |
| <i>Clonazepam</i>        | 10 (11.1)              | 7 (8.4)           | 3 (11.1)            |
| <i>Diazepam</i>          | 17 (18.9)              | 11 (13.3)         | 6 (22.2)            |
| <i>Flurazepam</i>        | 1 (1.1)                | 1 (1.2)           | -                   |
| <i>Lorazepam</i>         | 50 (55.6)              | 42 (50.6)         | 8 (29.6)            |
| <i>Oxazepam</i>          | 11 (12.2)              | 9 (10.4)          | 2 (7.4)             |

## Discussion

This descriptive study is a snapshot of the individuals admitted to the largest forensic program in Portugal and their pharmacological treatment.

From the obtained data, we can infer that most inpatients in the security ward are young men. The main offense committed was domestic violence. However, there are differences when looking at patient gender; in the female population, the most frequent offense is attempted murder whereas in the male population, after domestic violence, the most two frequent are kidnapping and murder. The co-occurrence of two psychiatric conditions is frequent in our population; the most popular one is the consumption of psychoactive substances, which is commonly found in offenders suffering from a mental health condition [7]. In our sample, we found a prevalence of 40.5%, with a higher frequency in men. Schizophrenia and intellectual disabilities are the most common diagnoses, and altogether they represent 77.4% of the population. The presence of intellectual disability is much more frequent in men. Interestingly however, there are as many women diagnosed with intellectual disabilities as with a psychotic disorder, but there are double the amount of men diagnosed with a psychotic disorder compared to those with intellectual disabilities. Taking into consideration the impact of the intellectual disability in relation to violent behaviour is relevant when considering treatment options and appropriate placement in the community. Additionally, considering the severity of the mental illness(es) is important in ensuring stability; indeed, someone can offend due to an acute psychotic episode/relapse, an unfortunate and unexpected event, and others can offend due to recurrent and hard-to-treat psychosis associated with antisocial and aggressive traits.

As for the psychopharmacology, most patients are under therapy with antipsychotics, either in oral forms or in long-term injectable releases. The fact that we work with a population with particular characteristics (serious behavioural changes, resistant psychosis situations) very often

makes the use of various antipsychotics for clinical stabilization necessary. Less than half of the patients were medicated with long-acting antipsychotic medications, in spite of its well-known advantages in patients with low adherence to therapy. Poor adherence to treatment does not only impact the clinical prognosis due to frequent relapses, it also directly and indirectly increases health-related costs for the community [8]. Depot medication helps decrease the number of the re-hospitalizations, better helps long-term stabilization of psychiatric symptoms, and helps promote follow-up for individuals lacking insight into their mental illness [9]. Increasing the use of long-acting injectable drugs in the future may contribute to a better prognosis of patients with psychiatric diseases.

Different medical algorithms suggest that the first therapeutic option should be second-generation antipsychotics [10,11]. First-generation antipsychotics are generally associated with extrapyramidal side effects, with increased hyperprolactinemia and, in the long term, tardive dyskinesia compared to second-generation antipsychotics. Another aspect to take into account is its therapeutic efficacy. Although the results are not replicated in all studies, there are those who suggest that first-generation antipsychotics may be less effective than second-generation antipsychotics clozapine, amisulpride, olanzapine, and risperidone [12]. Besides patients that require a mood stabilizer due to the nature of their mental illness (bipolar disorder...), the choice of this therapeutic class helps some patients control their impulses. Another frequently prescribed psychopharmacological class was benzodiazepines. These allow for control of anxiety throughout the day as well as sleep regularization. The most commonly used benzodiazepines were those with long half-lives, allowing a greater stabilization of anxiogenic levels throughout the day. Future studies should look at the efficacy in risk management depending on the type of antipsychotic used, as most of the patients suffer from a psychotic disorder; research about concomitant use of another class of

psychiatric drug would also be meaningful to optimize pharmacological treatment and focus on psychotherapy intervention.

Involuntary treatment within our population needs to be addressed. Indeed, lacking insight into their mental illness is often the main barrier to initiate pharmacological intervention. The peculiarity of Portuguese legislation is that involuntary treatment can be initiated under an involuntary admission status without any other legal requirement. The law established in 1998 in the Portuguese Mental Health Law addressed both issues involuntary treatment and involuntary admission [13]. Article 12 of the Portuguese Mental Health Law states that *1. Anyone carrying an acute psychiatric anomaly that by its nature creates a situation of danger of significant value, to themselves or others, of personal nature or to property, and refusing to accept necessary medical treatment, can be admitted to the adequate establishment; 2. Admission (to said establishment) is permitted when someone who carries an acute psychiatric anomaly lacks the required insight to evaluate the sense and scope that lack of treatment would have, as it relates to consent and how the absence of treatment would be evidenced in a deterioration of their condition* (translated by the authors) [13]. Thus, involuntary hospitalization is an adequate answer before two distinct situations: 1) the patient may be a danger to themselves or other people; and 2) the patient does not have enough insight to understand the meaning and scope of the consent, and the lack of treatment deeply deteriorates his/her mental health. Involuntary treatment is specified in the 3rd section of Article 11 of the same law and states that the committed patient has to undergo the medically indicated treatments, without prejudice to the provisions of Article 5 (2). This provision relates to psychosurgery [13]. This implies that the simple principle of being involuntarily admitted is sufficient to force treatment. In the forensic situation, the patients are in fact under an involuntary admission,

ordered by the Court; these patients cannot refuse to be medically treated.

## Conclusions

Therapeutic interventions in a secure program dealing with NCR patients are based on clinical-forensic and social parameters [5]. The aim of the security measures, in accordance with the Portuguese Penal Code, is to protect the public and the psychosocial rehabilitation of the patients.

This paper allows us to better understand the outset of the largest forensic psychiatry program in Portugal by looking at a sample of patients found not criminally responsible and admitted into a secure unit in Portugal complying with security measures, and it looks at sociodemographic aspects, crimes and duration of security measures, and therapeutic protocols. The characteristics of the patient population (sociodemographic aspects, index offenses, duration of the security measures and therapeutic protocols) help identify the patients' needs and how to allocate the resources.

Polypharmacy is an obvious aspect of the care provided to these patients. This can raise clinical and ethical questions on a patient basis in relation to their ability to consent to treatment and the accumulative side effects; however, this also speaks to the difficulty in treating some individuals whose mental disorder is associated with violent behaviour. Therefore, a follow-up study should look in detail at patients receiving polypharmacy, in order to identify its pros and cons and if this fulfils both the goals of managing public safety and promoting rehabilitation. It is necessary to think of the secure ward as a health production space, trying to solve the patients' problems, and not as a place of mere disease management or "dangerous states".

Conflict of Interest: none

Acknowledgements: The authors report that this study follows the recommendation of the Declaration of Helsinki.

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