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CHANGES IN BODY MASS, DRUG USE AND AGGRESSIVE BEHAVIOUR IN FORENSIC PATIENTS DURING THE COVID-19 PANDEMIC

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Summary

The main objective of this study was to assess behavioural changes in forensic patients (those assessed as not guilty by reason of insanity and sent for an involuntary forensic treatment) during the COVID-19 pandemic restrictions. There were 82 patients treated at the Department for Forensic Psychiatry of the University Psychiatric Hospital Vrapče in 2020, 45 of which stayed in the department for the whole year. Data were extracted from their charts and from the nurses' reports about their body masses, additional therapy prescribed and incidents at the ward. During the lock-down due to the COVID-19 pandemic, the body masses of the forensic patients decreased significantly in the first weeks of the lock-down and stayed low during the rest of 2020. Patients used fewer additional antipsychotics, benzodiazepines, hypnotics and pain killers in April 2020 as compared to February 2020. In June 2020, the use of these drugs returned to pre-pandemic levels, with the exception of antipsychotics. In August 2020, painkiller use increased to higher than pre-pandemic levels. The number of incidents during lock-down was lower compared to pre-pandemic levels.

Keywords: COVID-19; forensic psychiatry; body mass; pharmacotherapy.

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1 INTRODUCTION

The COVID-19 pandemic has placed people around the world in unprecedented life conditions: People were banned from freely crossing the border and even from travelling within the country. Shops and services were closed for months, and restrictions to personal contacts were introduced. There have been drastic changes to daily life. COVID-19 is a disease caused by SARS-CoV-2 (severe acute respiratory syndrome Coronavirus-2) and is spread by respiratory droplets that are dispersed when coughing, sneezing or talking. The pandemic status of COVID was declared by the World Health Organization on the 11th of March, 2020. The first case of COVID-19 in Croatia was confirmed on the 25th of February, 2020.¹

After the introduction of anti-epidemic measures, there was a sudden drop in the numbers of visits to emergency units in 2020, similarly to earlier epidemics of SARS in Hong Kong.² The reasons for such decrease were fear of catching the virus in the hospital, a decrease in the number of incidents and traffic accidents due to the lock-down, a decrease in the number of elective surgeries and subsequent iatrogenic complications, better air quality, and a decrease in the number of infectious diseases due to the lock-down of schools and kindergartens. A similar decrease in the number of visits to psychiatric hospitals and outpatient facilities has been noted in connection with the decreased interest in hospital treatment as there was no option to leave the hospital during the weekend, visits were banned and group therapies were dismissed, in addition to other reasons mentioned earlier.³ The decrease in psychiatric emergency departments was between 15 and 52% in different countries.⁴

Life in a forensic facility, similarly to prisons, in some ways resembles the life of the rest of the public during the Corona pandemic. Yet, even more restrictions were implemented to prevent the spread of the disease among inmates and staff. Visits of family members and friends were banned altogether, and visits of lawyers, representatives and other legal staff were limited and restricted (and in some situations even banned for a certain period of time – e.g., if a staff member or an inmate had

- 1 Darko Ropac, Ina Stašević, and Goranka Rafaj, "Neki epidemiološki pokazatelji u pandemiji COVID-19 u Republici Hrvatskoj tijekom 2020", *Acta Medica Croatica* 74, no. 4 (2020): 303.
- 2 Dennis G. Barten, Gideon H. P. Latten, and Frits H. M. van Osch, "Reduced Emergency Department Utilization During the Early Phase of the COVID-19 Pandemic: Viral Fear or Lockdown Effect?", *Disaster Medicine and Public Health Preparedness* 16, no. 1 (2022): 2.
- 3 Dusan Kolar, "Psychiatric Emergency Services and Non-Acute Psychiatric Service Utilisation During the COVID-19 Pandemic", *European Archives of Psychiatry and Clinical Neuroscience* 271, no. 2 (2021): 391-392; Gautam Gulati, and Brendan D. Kelly, "Domestic Violence Against Women and The COVID-19 Pandemic: What is the Role of Psychiatry?", *International Journal of Law and Psychiatry* 71, (2020): 101594; Anita Kurtović Mišić, Lucija Sokanović, and Nina Mišić Radanović, "Kažnjiva ponašanja fizičkih i pravnih osoba za vrijeme pandemije Covid-19: između kaznenog, prekršajnog i upravnog prava", *Zbornik radova Pravnog fakulteta u Splitu* 58, no. 2 (2020): 419-439.
- 4 Barten, Latten, van Osch, *Reduced Emergency Department Utilization During the Early Phase of the COVID-19 Pandemic*, 2; Manuel Goncalves-Pinho *et al.*, "The Impact of COVID-19 Pandemic on Psychiatric Emergency Department Visits - A Descriptive Study", *Psychiatric Quarterly* 92, no. 2 (2020): 623; Victoria Brooks, "COVID-19's Effects on Emergency Psychiatry", *Current Psychiatry* 19, no. 7 (2020): 34.

tested positive for the Coronavirus).⁵ Nevertheless, in correctional settings – including forensic psychiatry – due to the specific policies on admissions and releases, it was difficult to implement distancing measures, because spaces for eating, sleeping and living must be shared among the inmates.⁶

Contrary to “civil”, “not-forensic” psychiatry, patients hospitalised in forensic psychiatric settings stay in these facilities for months and years. Decisions on their admissions and discharges depend on legal (judicial) reasons rather than medical reasoning and indications. Even during the pandemic, there was no reduction in admissions to forensic facilities.

To enable legal processes and procedures to continue, forensic psychiatry, shortly after the outbreak of the pandemic, introduced video conferences as well as tele-medical and tele-legal platforms. Legal, procedural and assessment interviews were organised through online systems. Although many studies show that online assessments are comparable to face-to-face assessments, there have been individual cases that proved to be problematic, both in assessment settings as well as court settings. For example, the interviewee can be accompanied by another person in the same room (and that person can be invisible to the interviewer), who can give instructions to the interviewee.⁷ Therefore, French psychiatrists opposed this way of conducting court-sanctioned psychiatric evaluations.⁸ Further restrictions inside the forensic setting were introduced to reduce the possibility of spreading the virus inside the facility. It is well documented that patients with severe mental disorders can have problems in applying protective measures, e.g., by refusing to wear masks or to stay isolated.⁹ Furthermore, in patients who use sedative psychotropic drugs, there is a risk of respiratory sedation in case of the infection. To protect the patients, group activities were stopped. This poses an additional risk of re-offending; research shows that participation in group therapy activities reduces prison recidivism rates.¹⁰ In addition, all temporary therapy leaves (e.g., visits to family members or therapeutic activities outside the hospital) were stopped.¹¹ Patients who were employed while residing at the forensic facility (e.g., going to work in the morning and returning to the facility after work) had to leave their jobs as all departures from the facility were banned.

- 5 Tobias Wasser, Lori Hauser, and Reena Kapoor, “The Management of COVID-19 in Forensic Psychiatric Institutions”, *Psychiatric Services* 71, no. 10 (2020): 1088.
- 6 Gary A. Chaimowitz *et al.*, “Stigmatization of Psychiatric and Justice-Involved Populations During the COVID-19 Pandemic”, *Progress in Neuropsychopharmacology & Biological Psychiatry* 106, (2021): 110150.
- 7 Eric Y. Drogin, “Forensic Mental Telehealth Assessment (FMFTA) in the Context Of COVID-19”, *International Journal of Law and Psychiatry* 71, (2020): 101595.
- 8 Thomas Fovet *et al.*, “French Forensic Mental Health System During the COVID-19 Pandemic”, *Forensic Science International: Mind and Law* 1, (2020): 100034.
- 9 Wasser, Hauser, Kapoor, *The Management of COVID-19 in Forensic Psychiatric Institutions*, 1089.
- 10 Ema Gruber *et al.*, “Terapijska zajednica odjela forenzičke psihijatrija zatvorske bolnice Zagreb”, *Kriminologija & socijalna integracija: časopis za kriminologiju, penologiju i poremećaje u ponašanju* 21, no. 2 (2013): 147.
- 11 Thomas Fovet *et al.*, *French Forensic Mental Health System During The COVID-19 Pandemic*, 100034.

Nevertheless, some patients stated that the social distancing and isolation measures imposed on the general population made their lives more similar to those of the patients.¹²

Forensic psychiatric systems vary by country, and some include prison psychiatry, while others do not. In Croatia, there is a distinction between forensic psychiatry and prison psychiatry. Patients of forensic psychiatry are assessed as not guilty by reason of insanity. They are not considered guilty of a crime and are sent for treatment to one of four forensic facilities in the country. These facilities are part of the health system, and there are no prison staff present (no guards). Patients of prison psychiatry receive psychiatric treatment for mental issues during their stay in prison. There is one such setting in the country, and it is part of the legal/penal system.¹³

1.1 Criminal Responsibility in Croatian Criminal Law

Mental disorders can cause one's criminal responsibility to be diminished or even completely excused due to specific symptoms. A person can have delusional ideas and therefore perceive reality completely differently, strongly believing that someone is going to hurt or even kill them, and they cannot understand the true nature of their surroundings. Similarly, patients with hallucinations have distorted views of their environment.

A diminished ability to understand or control one's behaviour is considered a valid reason to diminish or abolish one's criminal responsibility.¹⁴

Different European countries and legal systems have different levels of diminished responsibility (from one to three, apart from abolished criminal responsibility).¹⁵

In Croatia, there are four levels of criminal responsibility. Every person is considered criminally responsible at the age of 14. There are two levels of diminished responsibility, termed "diminished responsibility, but not severely" and "severely diminished responsibility". In addition, there is also the level of absent responsibility (i.e., criminally irresponsible or not guilty by reason of insanity). To be assessed as not guilty by reason of insanity, the person needs to be unable to understand the true nature of his/her behaviour at the time of the crime or unable to control his/her behaviour due to a mental illness (most often a psychotic disorder).¹⁶ Different mental symptoms, syndromes and disorders (e.g. strong emotional reactions, severe substance dependence etc.) can lead to the assessment of diminished criminal responsibility.

12 Kolar, *Psychiatric Emergency Services and Non-Acute Psychiatric Services Utilization During COVID-19 Pandemic*, 391.

13 Nadica Buzina, Vlado Jukić, and Goran Arbanas, "Kazneno-pravni aspekti forenzičke psihijatrije", u: *Hrvatska psihijatrija početkom 21. stoljeća*, ur. Vlado Jukić (Zagreb: Medicinska naklada, 2018), 335; Goran Arbanas, "Dynamic Group Psychotherapy in Forensic Psychiatry", *Psihoterapija* 34, no. 1 (2020): 34.

14 Criminal Code, Official Gazette, no. 125/11, 144/12, 56/15, 61/15, 101/17, 118/18, 126/19, 84/21 (hereinafter cited as CC/11).

15 Harold Dressing, Hans Joachin Salize, and Harvey Gordon, "Legal Frameworks and Key Concepts Regulating Diversion and Treatment of Mentally Disordered Offenders in European Union Member States", *European Psychiatry* 22, no. 7 (2007): 427.

16 Art. 24, Para. 2 of the CC/11.

Offenders assessed as not guilty by reason of insanity are not considered guilty and cannot be proscribed any legal sanctions apart from psychiatric treatment (either in a hospital or as outpatients).

Offenders assessed as of diminished responsibility still have to face legal sanctions (because they still have at least some level of criminal responsibility). In addition, they can also be referred to psychiatric treatment or treatment for substance dependence. These treatments can be organised inside a prison (if the person receives a prison sentence) or in a civil health system (if the person receives a suspended sentence/probation).

1.2 Rights of People with Mental Disorders (Including Forensic Patients) in Croatia

The first law protecting persons with mental disabilities in Croatia was issued in September 1997. In the latest version of this law,¹⁷ Article 14 lists the 19 specific rights of persons with mental disabilities, such as: the right to be familiarised with one's rights; the right to know the reasons and aims of the hospitalisation; the right to be treated in the psychiatric hospital nearest to the place of residence etc.

Some of these rights were restricted during the COVID pandemic. One of the rights, the right to educate and advance one's career, was banished during the pandemic due to restrictions from leaving the hospital. In some cases, during the strictest lockdown, it was impossible to meet physicians or lawyers in person (also one of the listed rights). Right number 11 is the right to associate with other people in the facility and to be allowed to have visits from other people. This right was the most dramatically violated due to the health restrictions.

2 RESEARCH METHODOLOGY

2.1 Sample

The sample in this study were people who were hospitalized at the University Psychiatric Hospital Vrapče, Department for Forensic Psychiatry during 2020. This department has 70 beds, which were fully occupied during 2020. There are four forensic facilities in Croatia with 358 beds.¹⁸ We included, in the statistical analysis, only those patients who were hospitalized before the 1st of February 2020 and who were not released before the 1st of January 2021. This inclusion criterion was introduced to have all the data for all of the participants. Therefore, the sample consisted of 45 forensic patients, 41 men and 4 women. There were 82 patients treated at the facility during the same period, but the rest were not hospitalized during the whole period.

All of the patients were assessed as not guilty by reason of insanity (NGRI) with high risk of committing a new crime in the future and therefore sent for an involuntary forensic inpatient treatment.

Patient age was 49.8 ± 12.5 on average (range 23 to 70).

17 Law on Protection of Persons with Mental Difficulties, Official Gazette, no. 76/14.

18 Buzina, Jukić, Arbanas, *Kazneno-pravni aspekti forenzičke psihijatrije*, 330-336.

Diagnoses were reached according to ICD-10¹⁹ and are present in Table 1. 73.3% of the patients have a diagnosis of psychosis (F20-F29).

2.2 Method and Procedure

Data were collected from nurses' reports and chart lists. Patients' weight was regularly measured (monthly), and these data are written in their charts. All the medication given to each patient is written on the chart by a physician.

Nurses working at the ward write a report after each shift, giving details of the patients' behaviour, and every incident (no matter how small) is included in the report. The report is written twice a day (at 7 a.m. and at 7 p.m.).

One of the authors read all the reports and patient charts covering February, April, June, August, October and December of 2020 and transferred all the data.

Data collected included weight, any additional therapy (given to the patient in addition to regular, every-day therapy) and all the incidents that happened on the ward.

The first case of COVID in Croatia was confirmed in February 2020, and the government introduced the first restrictions in March 2020. Therefore, we decided to collect data starting from February 2020 (base line, pre-pandemic).

3 RESULTS AND DISCUSSION

Figure 1 shows the average body mass of our sample during 2020. As can be seen from the graph, the average body mass decreased steadily until October. The biggest drop occurred in April, compared to February ($p < 0.001$).

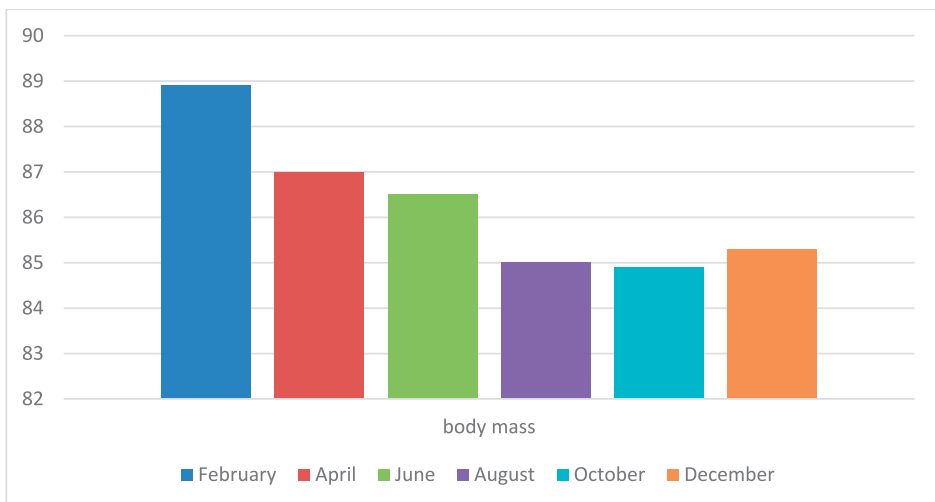


Figure 1 Average Body Mass in 2020 Over Months

19 World Health Organization (WHO), *The ICD-10 Classification of Mental and Behavioural Disorders* (Genève: World Health Organization, 1993).

When lockdown was introduced in Croatia, the Ministry of Health issued a recommendation for all hospitals to reduce contacts between hospitalized patients and visitors but also banned all temporary exits from the hospital.²⁰ Before the lockdown, approximately two-thirds of forensic patients in our facility were allowed to go to the nearest supermarket and shops to buy some necessary sanitary products, cigarettes and food. With the start of the lockdown, patients were banned from leaving the hospital. Even in case of emergencies (e.g., visiting another medical facility for health reasons, attending the funeral of a family member etc.), after their return to the facility, they had to be quarantined for 14 days in their rooms, with no contact with other patients. Previous to the lockdown many of the patients would buy unhealthy food (i.e., snacks, cookies, chocolate etc.) during their visits to local shops. With the reduction of exits from the facility, they were left to eat only the food they were offered in the hospital. Without this additional calorie intake, their body mass was reduced.

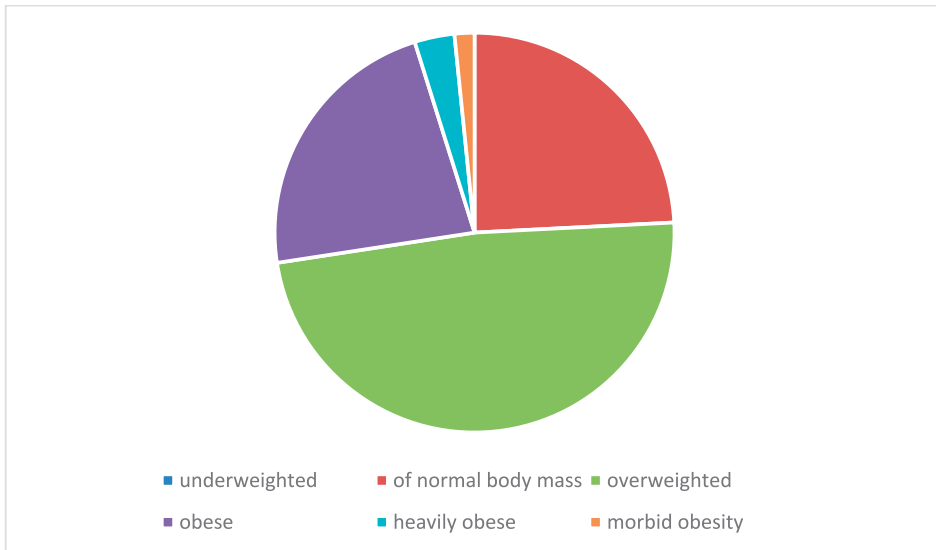


Figure 2 Weight of the Patients in February 2020 Over Months

Before the COVID pandemic, the majority of the patients were overweight (Figure 2). Only one-quarter of patients were of normal body mass (body mass index, BMI 20–25), and three-quarters were overweight or obese. It is known that people with mental disorders frequently have obesity as a comorbidity, and this is more pronounced in patients with schizophrenia and bipolar disorder.²¹ Reasons for

20 Ropac, Stašević, Rafaj, *Neki epidemiološki pokazatelji u pandemiji COVID-19 u Republici Hrvatskoj tijekom 2020*, 301; Wasser, Hauser, Kapoor, *The Management of COVID-19 in Forensic Psychiatric Institutions*, 1089.

21 Manuel Gurpegui *et al.*, “Overweight and Obesity in Patients with Bipolar Disorder or Schizophrenia Compared with a Non-Psychiatric Sample”, *Progress in Neuro-Psychopharmacology & Biological Psychiatry* 37, no. 1 (2012): 170.

obesity in schizophrenic patients include the following: some antipsychotic drugs can increase appetite and body weight; these patients are often inactive and spend the majority of their time sitting and/or laying; there might be a premorbid genetic vulnerability for both obesity and schizophrenia.²² Obesity increases the risks of adult-onset diabetes mellitus and cardiovascular disorders, lower quality of life, and non-adherence with pharmacotherapy; consequently, obesity can be one of the reasons for the higher mortality of these patients. Almost three-quarters of our sample were patients suffering from schizophrenia and related psychotic disorders.

Although our patients reduced their body mass by three kg on average during the eight-month period, they remained overweight in December (Figure 3) Nevertheless, this drop in body mass can have a positive impact on their physical health. Since 71% of the patients are smokers, reduction of body mass is even more important.

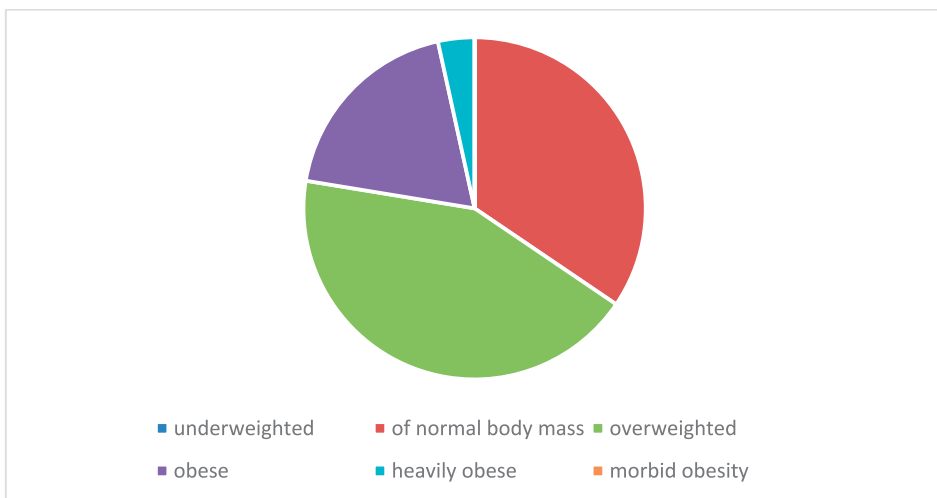


Figure 3 Weight of the Patients in December 2020

All the patients in the ward have pharmacotherapy. They have their usual (everyday) therapy, but sometimes, for different reasons (if they have insomnia, if they feel anxious, nervous, or when they have aches and pains), they can be given additional therapy. For some patients, this additional therapy is written in their chart, and a nurse can give them such therapy when they ask for it. For others, a nurse needs to contact a physician, who is in the hospital to prescribe such therapy. Figure 4 shows the number of tablets that were given additionally and the number of patients that were given such therapy. There is a significant increase ($p = 0.003$) in August, October and December.

22 Peter Manu *et al.*, “Weight Gain and Obesity in Schizophrenia: Epidemiology, Pathobiology, and Management”, *Acta Psychiatrica Scandinavica* 132, no. 2 (2020): 102.

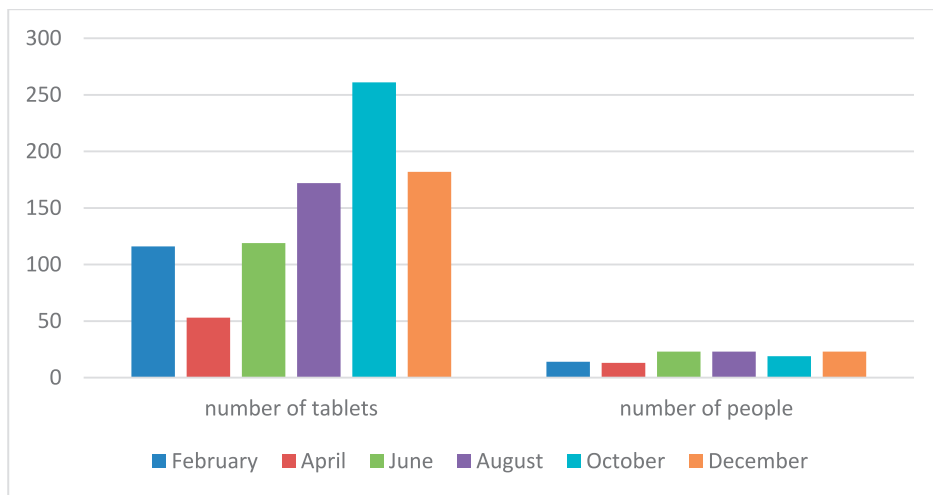


Figure 4 Number of Tablets (Left) and of People (Right) Given Over Months

In April, there was a significant drop of additional therapy needed, and we believe that this is a consequence of the short-term reaction to the pandemic and the lockdown. It is well-known that there has been a decrease in the number of visits to emergency units, psychiatric emergency units, and non-emergency facilities at the beginning of the pandemic.²³ Similar decreases have been noticed in other major incidents, such as Sars pandemics in Hong Kong, earthquakes and military actions.²⁴ In addition, forensic patients might have felt themselves to be more similar to other people; with the lockdown, everybody's movements were reduced, meaning everyone was in some kind of prison as they were confined to their homes, similarly to forensic patients.²⁵

In June, additional therapies rose back to pre-pandemic numbers. From August onwards, these numbers increased two-fold compared to pre-pandemic rates. It seems that prolonged incarceration and the inability to go outside the facility increased not only their anxiety and sleep problems but also pains and aches (Figure 7). If we look at the particular group of drugs, we can see that only the number of analgesics increased to higher levels compared to the pre-pandemic baseline, whereas the level

23 Barten, Latten, van Osch, *Reduced Emergency Department Utilization During the Early Phase of the COVID-19 Pandemic*, 3; Goncalves-Pinho *et al.*, *The Impact of COVID-19 Pandemic on Psychiatric Emergency Department Visits*, 623; Gulati, Kelly, *Domestic Violence Against Women and the COVID-19 Pandemic*, 101594; Carolin Hoyer *et al.*, "Decreased Utilization of Mental Health Emergency Service During The COVID-19 Pandemic", *European Archives of Psychiatry and Clinical Neuroscience* 271, no. 2 (2021): 377-379.

24 Hoyer *et al.*, *Decreased Utilization of Mental Health Emergency Service During the COVID-19 Pandemic*, 377; Ben Beaglehole *et al.*, "Psychiatric Admissions Fall Following the Christchurch Earthquakes: An Audit of Inpatient Data", *Australian & New Zealand Journal of Psychiatry* 49, no. 4 (2015): 347.

25 Kolar, *Psychiatric Emergency Services and Non-Acute Psychiatric Services Utilization During COVID-19 Pandemic*, 392.

of hypnotics and benzodiazepine use stayed at the pre-pandemic levels. Antipsychotic drugs did not show any increase but actually decreased (Figure 5)

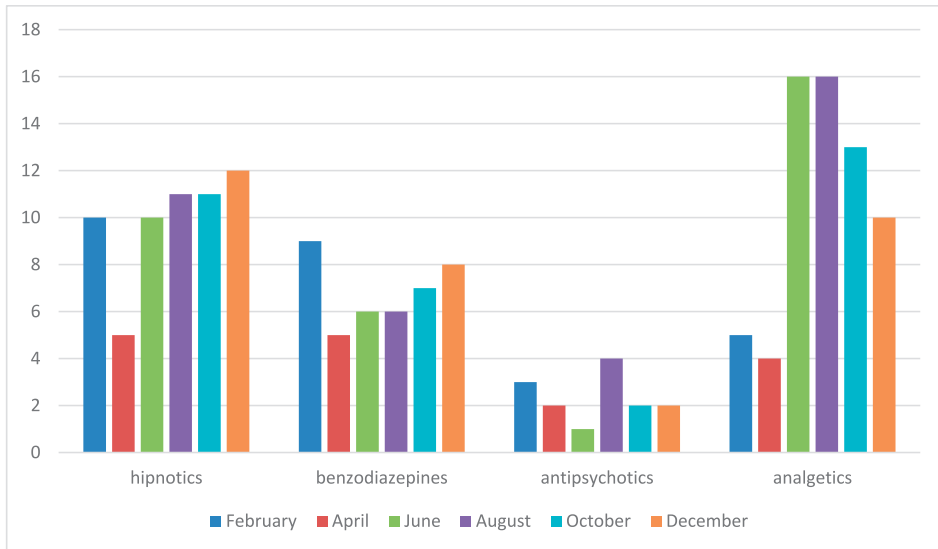


Figure 5 Usage of Additional Therapy Over Several Months

It is possible that this increase in analgesics use is due to the fact that all the physical activities outside the ward were banned as well as the decreased usage of outward facilities, such as going to the dentist or physiotherapist. Chronic musculoskeletal and teeth diseases might have worsened as a consequence, thus increasing painkiller usage.

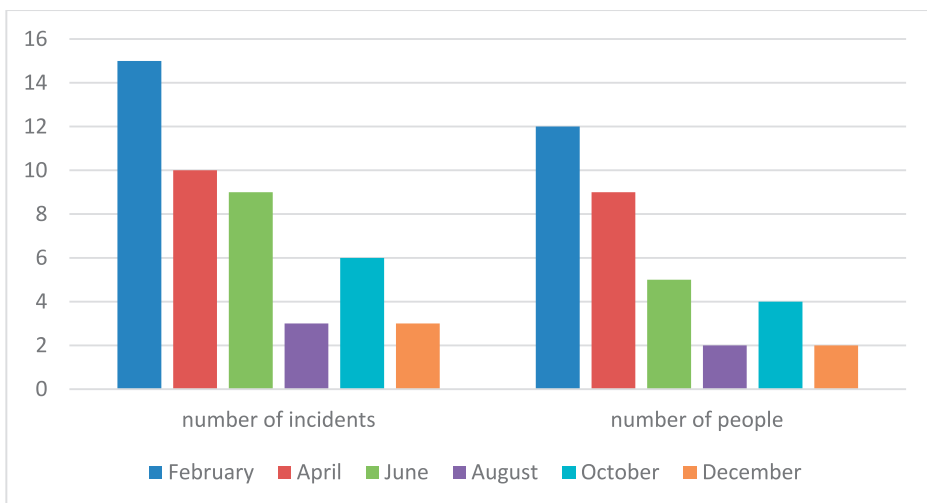


Figure 6 Incident Occurrence Over Several Months

Interestingly, the number of incidents on the ward continually decreased during 2020. This drop in the number of incidents and the number of people included in incidents was significant in August ($\chi^2= 8.36$; $p = 0.004$) and stayed low. This was unexpected, since confining people to an even smaller area (forensic patients were restricted to hospital units and were not allowed to go outside the unit) was expected to increase not only the risk of spreading the virus (because more people were confined to a smaller area) but also tensions, feelings of isolation and aggression.²⁶ One of the reasons for the decrease in incidents could be the aforementioned “equalising” effect of the lockdown. Another reason might be the effect of drugs used to reduce anxiety symptoms, which is seen as an increase in drug use as described earlier, but this does not seem very plausible since only the number of painkillers used increased to over the pre-pandemic levels. Finally, schizophrenic patients often have emotional symptoms (e.g., blunted affect, alogia and asociality), which might have reduced aggressive reactions during 2020.²⁷ This may explain the difference between our results and the increase in domestic violence during the COVID pandemic described in the literature.²⁸

Table 1 Primary (First) Diagnosis of the Patients in the Sample

PRIMARY DIAGNOSIS (ICD-10)	NUMBER OF PATIENTS (PERCENTAGE)
F06 other mental disorders due to brain damage and dysfunctions	4 (8.9%)
F10 mental and behavioural disorders due to use of alcohol	4 (8.9%)
F20 schizophrenia	25 (55.6%)
F21 schizotypal disorder	1 (2.2%)
F22 persistent delusional disorder	4 (8.9%)
F23 acute and transient psychotic disorders	1 (2.2%)
F24 induced delusional disorder	1 (2.2%)
F29 unspecified nonorganic psychosis	1 (2.2%)
F31 bipolar affective disorder	1 (2.2%)
F32 depressive episode	1 (2.2%)
F60 personality disorders	(4.4%)

- 26 Chaimowitz *et al.*, *Stigmatization of Psychiatric and Justice-Involved Populations During The COVID-19 Pandemic*, 110150.
- 27 Christoph U. Correll, and Nina R. Schooler, “Negative Symptoms in Schizophrenia: A Review and Clinical Guide for Recognition, Assessment, and Treatment”, *Neuropsychiatric Disease and Treatment* 16, (2020): 525.
- 28 Kurtović Mišić, Sokanović, Mišić Radanović, *Kažnjiva ponašanja fizičkih i pravnih osoba za vrijeme pandemije COVID-a 19*, 427; Harry G. Kennedy, Damian Mohan, and Mary Davoren, “Forensic Psychiatry and COVID-19: Accelerating Transformation in Forensic Psychiatry”, *Irish Journal of Psychological Medicine* 38, no. 2 (2021): 152.

4 CONCLUSION

To our knowledge, this is the first study to research the behavioural changes of forensic patients during the COVID-19 pandemic.

Contrary to the preconception that there would be only negative consequences of the tough measures that were introduced to fight the spread of the virus, we also noticed some positive effects. First of all, due to a restriction from leaving the hospital and the subsequent lower calorie intake and healthier food habits (since patients could eat only what was prepared by the hospital kitchen personnel and were not able to buy unhealthy carbohydrates), the average body mass decreased by three kilograms.

The number of patients using additional pharmacotherapy and the number of tablets used reduced during the first month of the lockdown and reached the pre-pandemic levels four months later. Nevertheless, usage of painkillers rose above the pre-pandemic levels and stayed high until the end of 2020, probably due to the reduced physical activity as well as dentist and physiotherapy unavailability.

Finally, the number of incidents on the ward dropped significantly and stayed at low levels through 2020, possibly because forensic patients found themselves in a very similar situation to all the other people in the world and possibly because emotional symptoms of flattened affect and asociality reduced possibilities of tensions and aggressive outbursts.

The major limitation of the study is that it was set in a single facility and cannot be generalised to a broader population of all the forensic patients. Furthermore, forensic psychiatry refers to different types of patients in different countries, which should be kept in mind when trying to apply the data from this study to other countries and different legal systems.

BIBLIOGRAPHY

1. Arbanas, Goran. "Dynamic Group Psychotherapy in Forensic Psychiatry." *Psihoterapija* 34, no. 1 (2020): 31-49.
2. Barten, Dennis G., Gideon H. P. Latten, and Frits H. M. van Osch. "Reduced Emergency Department Utilization During the Early Phase of the COVID-19 Pandemic: Viral Fear or Lockdown Effect?". *Disaster Medicine and Public Health Preparedness* 16, no. 1 (2022): 1-4.
3. Beaglehole, Ben, Caroline Bell, John Beveridge, and Chris Frampton. "Psychiatric Admissions Fall Following the Christchurch Earthquakes: An Audit of Inpatient Data". *Australian & New Zealand Journal of Psychiatry* 49, no. 4 (2015): 346-350.
4. Brooks, Victoria. "COVID-19's Effects on Emergency Psychiatry". *Current Psychiatry* 19, no. 7 (2020): 33-39.
5. Buzina, Nadica, Vlado Jukić, and Goran Arbanas. "Kazneno-pravni aspekti forenzičke psihijatrije". In: *Hrvatska psihijatrija početkom 21. stoljeća*, ed. Vlado Jukić, 330-336. Zagreb: Medicinska naklada, 2018.
6. Chaimowitz, Gary A., Casey Upfold, Luiza P. Gea, Aamna Qureshi, Heather M. Moulden, Mini Mamak, John McDonald, and Wilson Bradford. "Stigmatization of Psychiatric and Justice-Involved Populations During the COVID-19 Pandemic". *Progress in Neuropsychopharmacology & Biological Psychiatry* 106, (2021): 110150, 10.1016/j.pnpbp.2020.110150.

7. Correll, Christoph U., and Nina R. Schooler. "Negative Symptoms in Schizophrenia: A Review and Clinical Guide for Recognition, Assessment, and Treatment". *Neuropsychiatric Disease and Treatment* 16, (2020): 519-534, 10.2147/NDT.S225643.
8. Criminal Code, Official Gazette, no. 125/11, 144/12, 56/15, 61/15, 101/17, 118/18, 126/19, 84/21.
9. Dressing, Harold, Hans Joachin Salize, and Harvey Gordon. "Legal Frameworks and Key Concepts Regulating Diversion and Treatment of Mentally Disordered Offenders in European Union Member States". *European Psychiatry* 22, no. 7 (2007): 427-432.
10. Drogin, Eric Y. "Forensic Mental Telehealth Assessment (FMTA) in the Context of COVID-19". *International Journal of Law and Psychiatry* 71, (2020): 101595.
11. Fovet, Thomas, Florence Thibaut, Pierre Thomas, and Camille Lancelevee. "French Forensic Mental Health System During the COVID-19 Pandemic". *Forensic Science International: Mind and Law* 1, (2020): 100034, 10.1016/j.fsimpl.2020.100028.
12. Goncalves-Pinho, Manuel, Pedro Mota, Joao Ribeiro, Silveria Macedo, and Alberto Freitas. "The Impact of COVID-19 Pandemic on Psychiatric Emergency Department Visits – A Descriptive Study". *Psychiatric Quarterly* 92, no. 2 (2020): 621-631, 10.1007/s11126-020-098s7-z.
13. Gruber, Ema, Esta Sušić, Katica Rendulić, and Brigitta Marković. "Terapijska zajednica odjela forenzičke psihijatrija zatvorske bolnice Zagreb". *Kriminologija & socijalna integracija: časopis za kriminologiju, penologiju i poremećaje u ponašanju* 21, no. 2 (2013): 143-153.
14. Gulati, Gautam, and Brendan D Kelly. "Domestic Violence Against Women and the COVID-19 Pandemic: What is the Role of Psychiatry?". *International Journal of Law and Psychiatry* 71, (2020): 101594, 10.1016/j.ijlp.2020.101594.
15. Gurpegui, Manuel, Jose M. Martinez-Ortega, Luis Gutierrez-Rojas, Juan Rivero, Cristina Rojas, and Dolores Jurado. "Overweight and Obesity in Patients with Bipolar Disorder or Schizophrenia Compared with a Non-Psychiatric Sample". *Progress in Neuro-Psychopharmacology & Biological Psychiatry* 37, no. 1 (2012): 169-175.
16. Haker, Helene, Christoph Lauber, Tina Malti, and Wulf Rossler. "Is There an Impact of Global and Local Disasters on Psychiatric Inpatient Admissions?". *European Archives of Psychiatry and Clinical Neuroscience* 254, no. 1 (2004): 330-334.
17. Hoyer, Carolin, Anne Ebert, Kristina Szabo, Michael Platten, Andreas Meyer-Lindenberg, and Laura Kranaster. "Decreased Utilization of Mental Health Emergency Service During the COVID-19 Pandemic". *European Archives of Psychiatry and Clinical Neuroscience* 271, no. 2 (2021): 377-379, 10.1007/s00406-020-01151-w.
18. Kennedy, Harry G., Damian Mohan, and Mary Davoren. "Forensic Psychiatry and COVID-19: Accelerating Transformation in Forensic Psychiatry". *Irish Journal of Psychological Medicine* 38, no. 2 (2021): 145-153.
19. Kolar, Dusan. "Psychiatric Emergency Services and Non-Acute Psychiatric Services Utilization During COVID-19 Pandemic". *European Archives of Psychiatry and Clinical Neuroscience* 271, no. 2 (2021): 391-392.
20. Kurtović Mišić, Anita, Lucija Sokanović, and Nina Mišić Radanović. "Kaznjiva ponašanja fizičkih i pravnih osoba za vrijeme pandemije COVID-a 19: između kaznenog, prekršajnog i upravnog prava". *Zbornik radova Pravnog fakulteta u Splitu* 58, no. 2 (2020): 419-439.
21. Law on Protection of Persons with Mental Difficulties, Official Gazette, no. 74/14.
22. Manu, Peter, Lorena Dima, Matisyahu Shulman, Davy Vancampfort, Mark De Hert, and Christoph U. Correll. "Weight Gain and Obesity in Schizophrenia: Epidemiology, Pathobiology, and Management". *Acta Psychiatrica Scandinavica* 132, no. 2 (2020): 97-108, 10.1111/acps.12445.
23. Ropac, Darko, Ina Stašević, and Goranka Rafaj. "Neki epidemiološki pokazatelji u pandemiji COVID-19 u Republici Hrvatskoj tijekom 2020". *Acta Medica Croatica* 74, (2020): 299-305.

24. Wasser, Tobias, Lori Hauser, and Reena Kapoor. "The Management of COVID-19 in Forensic Psychiatric Institutions". *Psychiatric Services* 71, no. 10 (2020): 1088-1090.
25. World Health Organization (WHO). *The ICD-10 Classification of Mental and Behavioural Disorders*. Genève: World Health Organization, 1993.

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Sažetak

PROMJENE U TJELESNOJ TEŽINI, POTROŠNJI LIJEKOVA I AGRESIVNOM PONAŠANJU U FORENZIČKIH PACIJENTA TIJEKOM COVID-19 PANDEMIJE

Glavni je cilj ovog istraživanja bio procijeniti promjene u ponašanju forenzičkih pacijenata (onih koji su ocijenjeni kao nebrojivi i upućeni na prisilno forenzičko liječenje) tijekom razdoblja COVID-19 epidemioloških mjera. Tijekom 2020. na Zavodu za forenzičku psihijatriju Klinike za psihijatriju Vrapče liječilo se 82 bolesnika, od kojih je 45 boravilo na Zavodu tijekom cijele godine. Podatci su dobiveni iz njihovih kartona i sestričkih lista o njihovoj tjelesnoj težini, dodatno propisanoj terapiji i incidentima na Zavodu. Tijekom *lockdowna* zbog COVID-19 pandemije, tjelesna težina forenzičkih bolesnika uvelike se smanjila u prvim tjednima *lockdowna* i ostala takva do kraja 2020. Usporedno s veljačom u 2020., u travnju iste godine bolesnici su trošili manje dodatnih antipsihotika, benzodijazepina, hipnotika i analgetika. U lipnju 2020. potrošnja tih lijekova se vratila na prepandemijsku razinu, osim antipsihotika. U kolovozu 2020. potrošnja analgetika povećala se iznad prepandemijske potrošnje. Broj je incidenata tijekom *lockdowna*, u odnosu na prethodnu godinu, bio manji.

Ključne riječi: *COVID-19; forenzička psihijatrija; tjelesna težina; farmakoterapija.*

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