

**PAPER****PSYCHIATRY & BEHAVIORAL SCIENCE**

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## Criminal Recidivism After Forensic Psychiatric Treatment. A Multicenter Study on the Role of Pretreatment, Treatment-Related, and Follow-Up Variables

**ABSTRACT:** This study examined associations between criminal recidivism after discharge from forensic treatment and variables related to either the time before the current forensic treatment, or the current forensic treatment, or the follow-up after discharge. Participants were treated in 12 forensic clinics according to section 63 of the German penal code. A patient was classified as a criminal recidivist when the patient or the aftercare reported that the patient was delinquent at follow-up. Patients without criminal recidivism were patients for which both perspectives (patient and aftercare) reported no delinquency at follow-up. Mann–Whitney *U*-tests and Fisher's exact tests were performed. Data to classify patients were available for  $N = 249$  patients. Fifteen patients (6%) were classified as criminal recidivists. The follow-up was  $M = 12.58$  ( $SD = 1.84$ ) months, and the criminal acts occurred  $M = 6.00$  ( $SD = 5.55$ ) months after discharge. Differences between patients with and without criminal recidivism were found in pretreatment (young age at first crime, early onset of mental disorder, previous forensic treatments), treatment-related (disorder due to psychoactive substance use, gradual release abuses, outbreaks, assaults against staff, criminal act during treatment, type of discharge, outcome ratings), as well as follow-up variables (no specified housing situation, not being abstinent from psychoactive substances, inpatient readmission, course of outpatient treatment, course of mental disorder) (all  $p < 0.05$ ). To conclude, it is important to consider variables related to the time before the current treatment, treatment-related variables, and variables related to the follow-up to identify the patients at risk of criminal recidivism after discharge from forensic treatment.

**KEYWORDS:** forensic treatment, follow-up, criminal recidivism, psychiatry, treatment process, multicenter study

Recidivism occurs among discharged forensic patients, and it is of utmost importance to identify predictors of it, for example, to improve the discharge management and to protect the society from it. Reoffending rates after discharge from secure psychiatric hospitals have been investigated in a recent review including 35 studies from 10 countries and  $N = 12,056$  patients (1). The pooled estimate was 4,484 per 100,000 person-years (95% CI: 3679–5287). The “General Personality and Cognitive Social Learning” model (GPCSL) (2,3) of criminal conduct proposes that some factors increase the risk of criminal behavior more than others. Among the minor risk factors are gender, family of origin, ethnicity, or mental health. The moderate risk factors are lack of employment, substance abuse, family/marital, and poor use of leisure time. Strong risk factors comprise procriminal companions, attitudes/cognitions supportive of criminal behavior, an antisocial personality pattern, as well as criminal behavior

history. The moderate and strong risk factors have been labeled the “Central Eight.” According to the GPCSL, the associations between the risk factors and criminal behavior are modified by external factors in the concrete situation. Meta-analytic reviews (4–7) confirmed associations between criminal behavior and the “Central Eight” according to the GPCSL. Some of these meta-analyses focused on recidivism specifically in mentally disordered offenders (6,7), which represents the patient population investigated in the current study. The meta-analysis performed by Bonta et al. in 2014 included 126 studies and 96 independent samples ( $N = 23,900$  mentally disordered offenders) and reported that the “Central Eight” predicted general as well as violent recidivism, whereas clinical variables (except antisocial personality/psychopathy) did not have much predictive value (7). Among the investigated clinical variables were psychosis, schizophrenia, mood disorder, intelligence, prior admissions, length of hospitalization, psychiatric treatment history, and personality disorder.

As it is well established that the GPCSL variables are more predictive of criminal recidivism than clinical variables, we did not distinguish between clinical variables and variables proposed by the GPCSL. Instead, we explored associations between criminal recidivism after discharge from forensic treatment and variables related to the time before the most current admission

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(pretreatment), variables related to the treatment, and variables related to the follow-up time interval after discharge. This has practical implications since it is important to know which variables should be assessed before, during, and after forensic treatment in order to identify who is at risk of criminal recidivism. We hypothesized that at least some pretreatment, and treatment-related, as well as follow-up variables are associated with criminal recidivism after discharge from forensic treatment.

## Methods

### Participants

Participants were  $N = 364$  patients discharged from 12 forensic psychiatric clinics. The clinics are all located in Bavaria, Germany, and treat patients sentenced to forensic treatment according to section 63 of the German penal code. In Germany, offenders with psychiatric disorders are sentenced to forensic hospitals either according to section 63 or to section 64 of the German penal code. Section 64 is applied if the criminal act is related to a substance abuse disorder, whereas section 63 is applied if the criminal act is related to another psychiatric disorder such as schizophrenia or personality disorder.

### Definition of Criminal Recidivism

In case the patient or the aftercare reported delinquency in the follow-up interval, the patient was classified as a criminal recidivist. To be classified as a patient without criminal recidivism, the patient as well as the aftercare had to state that there was no delinquency in the follow-up interval. Delinquency was defined as any conduct that is relevant under criminal law (i.e., including punishable violations of instructions issued by the court)—regardless of official registration and/or sanctioning. As both sources (patient/aftercare) were necessary to classify patients with and without criminal recidivism, the classification was possible only for  $n = 249$  patients, since both sources were not available for  $n = 115$  patients.

### Measures

The following variables were assessed in a quality management documentation that was used in all participating clinics.

- Variables related to the time before the forensic treatment: Amount of the freedom penalty, gender, previous delinquency, migrant background, education, job training, occupation before current treatment, context of growing up until 16 years old, distress in original family, abnormalities in childhood, previous time in prison, criminal record, age at first crime, age at first conviction, onset of mental disorder, previous inpatient treatments, and previous forensic treatments
- Variables related to the forensic treatment
  - a Variables related to the beginning of the forensic treatment: Age at admission, type of crime preceding the sentence to the current forensic treatment, life sentence, mental disorder. Mental disorder was categorized into the following categories: mental and behavioral disorders due to psychoactive substance use (F1 according to ICD-10); schizophrenia, schizotypal, delusional, and other nonmood psychotic disorders (F2 according to ICD-10); disorders of adult personality and behavior (F6 according to ICD-10); and other disorders.

- b Variables related to the process of the forensic treatment: Duration of current forensic treatment, gradual release abuses (i.e., violations against the gradually relaxed regulations such as coming late from day release; these violations do not result in police activities), outbreaks (i.e., going AWOL [absent without leave] and these violations result in police activities), assaults against staff, assaults against patients, substance abuse during treatment, and criminal act during forensic treatment.
- c Variables related to the end of the forensic treatment: Age at discharge, type of discharge (regular conditional release [i.e., end of forensic commitment with obligations as defined by the court and clinical staff fully approves that the treatment can be terminated], formal release with therapeutic agreement [i.e., end of forensic commitment with obligations as defined by the court and clinical staff approves that the treatment can be terminated but considers the treatment as not fully adequately completed], formal release without therapeutic agreement [i.e., end of forensic commitment with obligations as defined by the court and clinical staff does not approve that the treatment can be terminated]), obligations to comply with after discharge (e.g., abstinence of alcohol and/or drugs, drug screening, outpatient treatment, self-help group), need of guardian, need of probation officer, occupation at discharge, housing situation at discharge, medication at discharge, and ratings of the treatment outcome (social behavior, disorder)
- Variables related to the follow-up after the forensic treatment: Financial situation at follow-up, change of family status during follow-up, current family status at follow-up, abstinence from psychoactive substances since discharge, consuming psychoactive substances during follow-up, occupational situation at follow-up, housing situation at follow-up, medication, help-seeking behavior, inpatient readmission, outpatient readmission, outpatient treatment (course and amount of contact), and course of mental disorder (rated by a trained interviewer who interviewed the patient and the aftercare).

### Statistics

SPSS 23 was used for all statistics. Frequencies ( $n$ ), percentages (%), means ( $M$ ), and standard deviations ( $SD$ ) were calculated as descriptive statistics. Associations between criminal recidivism (dichotomous variable: yes/no) and variables related to the time before, during, or after forensic treatment were evaluated with Mann–Whitney  $U$ -tests (numeric variables) or Fisher's exact tests (nominal variables). All statistical tests were performed two-tailed, and the significant value was set to  $p < 0.05$ .

## Results

The follow-up interval was  $M = 12.58$  ( $SD = 1.84$ ) months. Of the  $n = 249$  patients with patient and aftercare information, criminal recidivism was identified in  $n = 15$  patients (6%). The criminal acts occurred on average  $M = 6.00$  ( $SD = 5.55$ ) months after discharge.

The variables found to be associated with criminal recidivism are summarized in Table 1 and described in the following text.

### Associations Between Criminal Recidivism and Variables Related to the Time Before the Forensic Treatment

Significant differences between patients with and without criminal recidivism were found in three variables: age at first

TABLE 1—Variables associated with criminal recidivism during the follow-up.

Before	Beginning	Process	End	Follow-up
Young age at first crime	Mental and behavioral disorder due to psychoactive substance use	Gradual release abuses	Type of discharge	No specified housing situation at follow-up
Early onset of mental disorder		Outbreaks	Ratings of treatment outcome	Being not abstinent from psychoactive substances since discharge
Previous forensic treatments		Assaults against staff		Inpatient readmission
		Criminal act during forensic treatment		Course of outpatient treatment
				Course of mental disorder

Variables relate either to the time before the current forensic treatment, the beginning, the process, the end of it, or the follow-up period.

crime ( $U = 1141.50$ ;  $p = 0.03$ ), onset of mental disorder ( $U = 826.50$ ;  $p < 0.01$ ), and previous forensic treatments ( $U = 1341.00$ ;  $p = 0.03$ ). The patients with criminal recidivism were younger at the first crime ( $M = 19.20$  [ $SD = 5.89$ ] vs.  $M = 26.10$  [ $SD = 12.24$ ]), had an earlier onset of the mental disorder ( $M = 16.86$  [ $SD = 6.25$ ] vs.  $M = 24.69$  [ $SD = 11.05$ ]), and had more previous forensic treatments ( $M = 0.93$  [ $SD = 1.49$ ] vs.  $M = 0.24$  [ $SD = 0.54$ ]).

#### *Associations Between Criminal Recidivism and Variables Related to the Beginning of the Forensic Treatment*

Patients with a mental and behavioral disorder due to psychoactive substance use (F1 according to ICD-10) showed more often criminal recidivism than patients without such a disorder (FET:  $p = 0.04$ ). About 9.6% of the patients with a F1 diagnosis showed criminal recidivism versus 3.0% of the patients without a F1 diagnosis.

#### *Associations Between Criminal Recidivism and Variables Related to the Process of the Forensic Treatment*

Gradual release abuses ( $U = 1158.50$ ;  $p = 0.01$ ), outbreaks ( $U = 1178$ ;  $p < 0.01$ ), assaults against staff ( $U = 1437$ ;  $p < 0.01$ ), and criminal act during forensic treatment (FET:  $p < 0.01$ ) were significantly different between patients with and without criminal recidivism. Compared to the patients without criminal recidivism, the patients showing criminal recidivism showed more gradual release abuses ( $M = 1.43$  [ $SD = 3.18$ ] vs.  $M = 0.42$  [ $SD = 1.55$ ]), more outbreaks ( $M = 0.47$  [ $SD = 0.64$ ] vs.  $M = 0.09$  [ $SD = 0.36$ ]), and more assaults against the staff ( $M = 0.87$  [ $SD = 2.59$ ] vs.  $M = 0.10$  [ $SD = 0.88$ ]). Moreover, more patients with criminal recidivism in the follow-up were in the group of patients with a criminal act during forensic treatment than in the group of patients without a criminal act during forensic treatment (38.5% vs. 4.2%).

#### *Associations Between Criminal Recidivism and Variables Related to the End of the Forensic Treatment*

There was a significant difference in type of discharge (FET:  $p = 0.03$ ): 25% of the patients discharged as formal release without therapeutic agreement showed criminal recidivism, 17.6% of the patients discharged as formal release with therapeutic agreement showed criminal recidivism, and 3.6% of the patients discharged regularly conditionally showed criminal recidivism. Formal release is specified in section 67d(6) of the German penal code, and regular release is specified in section 67d(2) of

the German penal code. Furthermore, the treatment outcome was rated as worse for the patients showing future criminal recidivism (outcome social behavior: FET:  $p = 0.01$ ; outcome disorder: FET:  $p = 0.03$ ). With regard to social behavior outcome, 33.3% of the patients rated as not improved showed criminal recidivism, 8.5% of the patients rated as moderately improved, and 3.1% of the patients rated as very improved. With regard to disorder outcome, 16.7% of the patients rated as not improved showed criminal recidivism, 6.3% of the patients rated as moderately improved, and 3.3% of the patients rated as very improved.

#### *Associations Between Criminal Recidivism and Variables Related to the Follow-Up After the Forensic Treatment*

Significant differences between patients with and without criminal recidivism emerged for the following variables:

- Housing situation at follow-up (FET:  $p = 0.02$ ): The patients living in a housing situation not specified showed more criminal recidivism compared to the patients living in specified housing situations (alone, with partner/family, living community, homeless): 40% versus  $\leq 6\%$ .
- Abstinence from psychoactive substances since discharge (FET:  $p < 0.01$ ): More patients with criminal recidivism were among the patients being not abstinence than among the patients being abstinence. Patient rating: not abstinent 45.5% versus abstinent 6.0%; rating of aftercare: not abstinent 41.7% versus abstinent 5.3%. Note that abstinence since discharge was only rated for the patients with problematic substance abuse.
- Inpatient readmission (FET:  $p < 0.01$ ): Patients with inpatient readmission showed more often criminal recidivism than patients without inpatient readmission (39.3% vs. 2.1%).
- Course of outpatient treatment (FET:  $p = 0.04$ ): Within the sample with an unstable course of the outpatient treatment, 33.3% of the patients showed criminal recidivism; within the sample with increasing contacts with the outpatient treatment, 14.3% of the patients showed criminal recidivism; and within the sample with a reduction of the contacts with the outpatient aftercare, 0% showed criminal recidivism.
- Course of mental disorder (FET:  $p < 0.01$ ): 35% of the patients with a deterioration of the mental disorder showed criminal recidivism, 4.0% of the patients with a stable course of the mental disorder showed criminal recidivism, and 0% of the patients improving their mental disorder showed criminal recidivism.

## Discussion

In the current study, patients with versus without criminal recidivism in the first year after forensic treatment were

compared in pretreatment, treatment-related, and follow-up variables. Our hypothesis was confirmed that pretreatment, treatment-related, and follow-up variables were significantly associated with criminal recidivism. Before the current forensic treatment, age of first crime, onset of mental disorder, and previous forensic treatments were risk factors of criminal recidivism during the follow-up. At beginning of the forensic treatment, a mental and behavioral disorder due to psychoactive substance use was a risk factor of criminal recidivism. During the process of the treatment, gradual release abuses, outbreaks, assaults against staff, and criminal act during treatment were risk factors of criminal recidivism. At the end of the treatment, a formal release (especially without therapeutic agreement) and a worse treatment outcome were risk factors. During the follow-up, a not specified housing situation, no abstinence since discharge, inpatient readmission, an unstable course of outpatient aftercare, and a poor course of the mental disorder were associated with criminal recidivism. The results that no abstinence during the follow-up as well as a mental and behavioral disorder due to psychoactive substance use at admission were risk factors of criminal recidivism correspond to findings of other studies reporting substance abuse being associated with the risk of criminal recidivism (2–4,6,7). Substance abuse is also one of the “Central Eight” (3). Other “Central Eight” variables such as lack of employment, family/marital were, however, not significantly related to criminal recidivism in the present study. Furthermore, several “Central Eight” variables were not assessed such as poor use of leisure time, procriminal companions, attitudes/cognitions supportive of criminal behavior. This is a limitation of the study at hand. A further shortcoming is that the follow-up interval comprised only one year and that no psychometrically sound questionnaires or structured/standardized interviews were used to assess the data. Besides questionnaires and interviews, physiological variables might be complementary data sources to predict criminal recidivism (8). Another limitation is that a relatively high percentage of the total sample could not be assigned to the categories criminal recidivism versus no criminal recidivism due to missing data. We only classified patients with both patient and aftercare information on the patient’s criminal recidivism.

This limits the generalizability of the results. Yet, it can also be seen as a strength of the study that both perspectives were included in the definition of criminal recidivism. Other studies classified criminal recidivism based on central registries (e.g., criminal justice registry), and this approach might underestimate the true rate of criminal recidivism. A strength of the present study is that potential predictors were assessed longitudinally at different time points, for example, at pretreatment, during the treatment, and at follow-up. Another strength is the rather high external validity/generalizability of the results due to the multi-center design including 12 clinics. Yet, the fact that 32% of the patients had to be excluded from this study limits the external validity/generalizability. Practical implications are that it is important to assess variables related to the time before the current treatment, variables related to the current forensic treatment, and variables related to the follow-up in order to identify the patients with a higher risk of criminal recidivism after discharge in the follow-up.

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