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Effectiveness of forensic outpatients' psychiatric treatment and recidivism rates: A comparison study

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ABSTRACT

It was previously shown that forensic outpatient psychiatric treatment lowers recidivism and improves mental health. However, there is no data specifically from Switzerland, a fact that has been repeatedly criticized by local policymakers in the course of healthcare planning. The present study aimed to describe two groups of mentally ill offenders referred to a Swiss forensic outpatient clinic, namely those accepted for treatment and those who were left untreated because their treatment was rejected. The recidivism rates of the two groups were then compared, to determine whether differences in recidivism rates between the two groups might be related to socio-demographic characteristics and mental health. Finally, improvements regarding general functional level and severity of psychopathology were evaluated over the course of time. A total of n = 131 mentally ill offenders were studied. After an average time at risk of 42.6 months, our preliminary results show that 18% of those accepted for treatment relapsed into delinquent activities, while 38% of the rejected offenders did so. We found no socio-demographic variable that differentiated between reoffenders in the two samples. Likewise, the prevalence of personality disorders was similar in the two groups. Regarding comorbidity, the combination of any substance abuse disorder and any personality disorder was more prevalent in the treated sample. Over the course of therapy, the treated group showed improvements regarding their general functional level and the severity of their psychopathology. This is the first study to explore the effects of therapeutic outpatient treatment of mentally ill offenders on Swiss recidivism rates.

1. Introduction

Studies indicate that offenders with a mental disorder have a higher risk of recidivism than individuals who commit an offense but do not suffer from a mental disorder (Maier, Hauth, Berger, & Sass, 2016; Seewald & Fazel, 2012). Thus, the management of offenders with a mental disorder following their release from prison is of importance to society. There are, moreover, cogent reasons for making use of outpatient forensic mental health facilities; these include safeguarding the population from future crimes, reducing the need for inpatient psychiatric beds and reducing financial and social costs (Nedopil & Banzer, 1996).

Because the rates of mental illness may vary between different countries (e.g. Maercker, Forstmeier, Wagner, Glaesmer, & Brähler, 2008, and Kessler, Sonnega, & Bromet, 1995 regarding the prevalence rate of PTSD), country-specific research is necessary. In addition, local policymakers often insist on data from their own jurisdiction when evaluating treatment services (Oliver & de Vocht, 2017). To date, only a few studies have investigated the impact of forensic outpatient care in German-speaking countries. Due to the lack of studies from Switzerland, findings from German studies will provide background information in the sections that follow. While the recidivism rate of offenders without access to outpatient care was found to be between 19 and 47% in one German study (Leygraf, 1998), there is evidence that individuals receiving outpatient treatment after release had lower rates of recidivism, which would advocate for its effectiveness. Seifert, Schiffer, and Leygraf (2003) found a recidivism rate of 9.4% after an average time at risk (TAR) of 54.5 months in a sample of 53 offenders with a mental disorder who had received outpatient treatment. Patients with a diagnosis of schizophrenia were more likely to desist from recidivism (48% non-recidivism), while those with personality disorders reoffended more frequently (31% non-recidivism). In another study from Germany, 111 offenders in outpatient care were observed (Stübner & Nedopil, 2009).

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After an average TAR of 54.3 months, the general recidivism rate was 5.4% (9.9% if suspected cases were included), 0.9% (3.6%) for violent crimes and 0.9% (2.7%) for sexual offenses. In a sample of 321 patients discharged from forensic inpatient treatment in Germany, Seifert (2010) reported that 31.5% had a new record in the Federal Central Register and 10.3% had received a conviction for a violent or sexual offense after an average TAR of 7.5 years. The author compared these results with an earlier analysis of the same data (sub-sample of 255 with an average TAR of 3.9 years) and concluded that an increasing TAR was associated with more offenses against body and life. Further, the author underlined the relatively low recidivism rate of patients diagnosed with schizophrenia. Butz, Mokros, and Osterheider (2013) investigated the effectiveness of outpatient treatment in a high-risk sample of 105 outpatients in Germany. The average TAR was 3 years and 8 months. Two patients (2%) committed a new offense, neither of which involved a violent or sexual offense. In addition, there was a significant reduction in psychopathological symptoms of the sample. Schmidt-Quernheim and Seifert (2013) found that 7 out of 225 (3.1%) forensic outpatients were re-convicted for a violent or sexual crime, with an average TAR of 4.4 years. Comparisons with offenders receiving outpatient treatment who had not relapsed by committing a crime revealed that protective factors were medication adherence, abstinence from illicit substance use, stable mental health, work or regular employment, meaningful leisure time, unproblematic financial management, and stable social relationships, but not a conflict-rich partnership.

In summary, these studies suggest that forensic outpatient care is effective in reducing recidivism rates of offenders with mental disorders, thus meeting the rehabilitative aims of the treatment team as well as the security demands of the legislator, at least in Germany. While the aforementioned studies evaluated forensic outpatient treatment in Germany, no study has yet evaluated the effectiveness of Swiss outpatient care of offenders with a mental disorder, including that provided in specialized forensic outpatient clinics. Neither has the group of offenders in such clinics been described, nor have their recidivism rates been assessed, nor has the course of therapy been evaluated. Results from other jurisdictions therefore cannot easily be generalized to Switzerland without further testing, since Switzerland represents a unique cultural entity with “its complicated federalism of central government, cantons and communes, its four official languages, its neutral status, its high proportion of migrant inhabitants and its religious divisions” (Steinberg, 2015).

This study has four aims: First, to describe offenders diagnosed with a mental disorder who were referred to a Swiss forensic outpatient clinic and received treatment, contrastively describing offenders whose referral to the same clinic was not accepted and who were therefore left untreated. This comparative description includes: socio-demographic characteristics, mental health disorders (ICD-10), and criminogenic data. Second, to compare recidivism rates between the groups of accepted and refused patients. Third, to examine whether these groups differ as to how their socio-demographic characteristics and their mental health diagnosis are related to recidivism. Fourth, to evaluate the effectiveness of forensic psychiatric treatment by measuring improvements in their general functional level and severity of psychopathology over the course of time.

2. Material and methods

2.1. Study setting

The study was carried out at the Bern Forensic Outpatients' Clinic (BFOC) under the management of the Department of Forensic Psychiatry of the University of Bern. This department is responsible for the provision of treatment to offenders in the north-western quadrant of Switzerland, both within correctional facilities, within the aforementioned forensic outpatient clinic, and for providing expert forensic testimony in criminal and civil cases. Furthermore, the department fulfills teaching requirements at the University Bern's law and medical faculty. The BFOC is one of at least six (Luzern, Basel, two in Zurich, St. Gallen, Freiburg) forensic outpatient clinics in German-speaking Switzerland and the only one permanently mandated by the legal authorities in the canton of Bern. The BFOC's clients primarily include convicted offenders with a mental disorder, both on probation living independently after release from a correctional facility or while still in the care of a residential care home after discharge from an inpatient forensic hospital. They also include suspected offenders with a mental disorder, as well as patients who have not committed a(n) (paedo-sexual) offense, but are at risk of doing so and have decided to seek mental health care on a voluntary basis. The BFOC's clients must have their legal residence in the canton of Bern, regardless of where they committed their crime. Finally, the BFOC provides individual psychiatric and psychotherapeutic care on a permanent basis and group therapy on a temporary basis.

Referrals to the BFOC can be rejected on the basis of a number of criteria: if patients with schizophrenia spectrum disorders treated in a forensic inpatient setting are not yet medically prepared for outpatient therapy; if extra-penal resources such as probationary services, employment, housing assistance, or affordable travel are lacking or insufficient; if motivation for therapy is lacking or insufficient; or if a patient's level of functioning is deemed to be insufficient to complete the therapy. Importantly, a patient can also be rejected if their files indicate too high a recidivism risk to be successfully treated in an outpatient setting.

2.2. Sample

This study considered all referrals to the BFOC for individual forensic psychiatric treatment from 1st January 2010 to 31st December 2014, thus covering a five-year period. Those receiving group treatment only were excluded from the study. A referral rejection was not an exclusion criterion. Two sub-samples were generated. The first sample, the BFOC sample, included all referrals accepted for psychiatric and psychotherapeutic therapy at the BFOC, while the second sample, henceforth the Non-BFOC sample, was the study's comparison sample, comprising all patients whose application was rejected and who were left untreated (Fig. 1).

2.3. Procedure and design

This is a retrospective, longitudinal study. Once approval from the cantonal ethics committee was received, the files of those who met the aforementioned inclusion criteria were reviewed and relevant data was extracted. Most data were collected retrospectively from files. For the BFOC sample, client records at the BFOC were reviewed; these included court verdicts, forensic psychiatric reports, the therapists' medical history entries and other documents. For the Non-BFOC sample, files from the Probation and Parole Services were used.

The first measurement time (T) corresponds to the subject's admission date in the case of the BFOC sample, and the rejection date for the Non-BFOC sample (T1). For the BFOC sample, data regarding their mental health status was collected at half-yearly intervals (plus/minus two weeks), accounting for three additional measurement times (follow-ups; T2-T4). The criminal records for all study subjects were requested on 15th September 2016, representing the fifth and last measurement time (T5). While for the BFOC sample, data was collected at all five measurement times, for the Non-BFOC sample, data was only collected at T1 and at T5.

Data was extracted and transcribed into a digital database under the supervision of the lead researcher (first author). No researcher was involved in the patients’ treatment during the time of the study. The information was irreversibly coded to ensure privacy protection; no findings can be traced back to an individual.

2.4. Instruments

For both samples the following variables were collected:

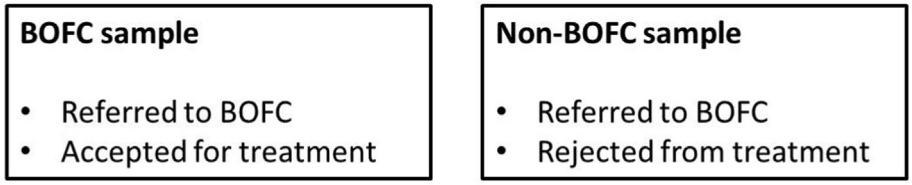

Fig. 1. Differences between the BFOC and the Non-BFOC sample.

Demographics, which included sex, age, nationality, marital status, education, living conditions, financial status, leisure activity.

Mental health disorders were assigned according to the F0–F9 codes of the International Classification of Disorders (ICD-10; World Health Organization, 1992).

Legal Status: this reported whether a subject had received a sentence or not and on what legal basis they were referred to the BFOC. Those with a sentence were defined as convicted.

Type of offense: Offense(s) were all criminal behavior as defined by the Swiss Criminal Code (SCC), classified as follows:

Sexual offenses: sexual activities with a child/with a dependent, sexual assault, rape, pornography, incest.

Violent offenses: murder, simple/serious bodily injury, threat and coercion, hostage-taking, arson.

Other types of offenses: theft, trespassing, blackmail, desecration, forgery, violations of the narcotics act, violations of the road traffic act.

General functioning: Outpatients' overall functioning was measured using the Global Assessment of Functioning (GAF; Endicott, Spitzer, Fleiss, & Cohen, 1998) score, a value between 1 and 100, with higher values indicating better performance.

Severity of psychopathology: The global severity scale (CGI-S; Gerd, 2015) was administered to assess the severity of a subject's psychopathology. This includes a 7-point response scale from 1 = "patient is not sick at all" to 7 = "patient is very seriously ill".

The recidivism rate was based on any return to criminal behavior committed by a subject after they had been referred to the BFOC and which appeared in their criminal records before 15th September 2016. It includes new convictions, not charges. Repeat offenders' crimes were classified into the same categories used for offenses, as described above.

The time at risk started after a patient's referral to the BFOC and ended either with the commission of a new crime or by 15th September 2016.

2.5. Statistical analysis

Missing data remained unresolved and are reported in the findings. Sociodemographic differences between groups missing vs. non-missing on outcome variables are reported only for the primary outcome recidivism (with 13.7% missings), since missingness for all other outcomes was below 5%. All data analyses were done using SPSS (IBM, version 24). First, a univariate and comparative analysis was completed for sociodemographics, mental disorders (ICD-10), legal status and type of offense. To measure significant differences between the samples in relation to the variables, different statistical tests were used depending on variable type and sample size (X^2-and T-tests; in cases of cell sizes below 5, Fisher's exact test was used). Second, recidivism rates were compared between the two samples, both in terms of the proportion of re-offenders and also in terms of the temporal course and rate of re-offending. The latter analysis used Kaplan-Maier survivorship functions to model the time-to-event component of the data. Recidivism was also examined in relation to gender, age, marital status, education, mental diagnoses and criminal history, using X^2-tests. Third, for the BFOC sample, a one-factorial analysis of variance with repeated measures was used to examine whether a person had improved their general functioning and psychopathology. The Mauchly's sphericity test verified that there were homogeneous sample variances and correlations between the measurements. The degrees of freedom of the significance tests were adjusted by a Greenhouse Geisser or a Huynh-Feldt correction. To test for significant differences between the measurement times, pairwise comparisons were made using post hoc tests with Bonferroni correction.

3. Results

3.1. Sample characteristics

During the five-year study period, n = 135 people were referred to the BFOC for treatment. Of these, 4 received only a group therapy program; therefore, they were excluded from the study. Thus, the sample included a total of n = 131. Of these, 84 (64.1%) were accepted for treatment at the BFOC (the BFOC sample) and 47 (35.9%) were rejected (the Non-BFOC sample). An overview of the measurement times and the sample shrinkage is provided in Fig. 2; an overview of sample size, data sources and missing values is provided in Fig. 3.

There was little difference in sample characteristics with regard to missingness on the primary outcome, recidivism (Table 1). Only nationality differed between those with and without missing data on recidivism status, with fewer participants with missing data being of Swiss nationality (44.4% vs. 78.7%, p = .006).

3.2. Sociodemographics

Table 2 illustrates characteristics of the BFOC and the Non-BFOC samples. A total of 71 (84.5%) of the BFOC and 44 (93.6%) of the Non-BFOC sample were males, while the average age was 37 years for the BFOC and 40 years for the Non-BFOC sample. For the BFOC sample, the age group of 30- to 39-year-olds was the most prevalent (32.1%), followed by 20- to 29-year-olds (29.8%), 40- to 49-year-olds (23.8%), 50- to 59-year-olds (8.3%), 60- to 69-year-olds (3.6%) and over the age of 70 (2.4%). For the Non-BFOC sample, the most common age group was 40–49 (38.3%), followed by 20–29 (19.1%), 30–39 (17%), 50–59 (14.9%), over 70 (6.4%) and 60–69 (4.3%). The two samples had statistically significant differences in their living circumstances ($X^2 = 14.071$, p = .015): the BFOC sample more often lived in a supervised facility (21.4%), while the Non-BFOC sample more often lived in a facility not further specified ("other"; 23.5%). Table 3 presents the legal status of the two samples.

3.3. Mental health disorders

Personality disorders (F6) accounted for more than half of the diagnoses in the two samples (BFOC sample: 52.4%; Non-BFOC sample: 54.5%). In the BFOC sample, a total of 47.6% had a substance disorder (F1), as did 27.3% in the Non-BFOC sample. A schizophrenic disorder (F2) was found in 17.9% and 18.2%, respectively. Affective disorders (F3) accounted for 14.3% in the BFOC sample and 12.1% in the Non-BFOC sample. The remaining diagnoses were less frequent (<10%). There was one statistically significant group difference: cannabis-related disorders (F12) were diagnosed more frequently in the BFOC than in the Non-BFOC sample (26.2% versus 0%; $X^2 = 10.644$ p < .001; Table 4).

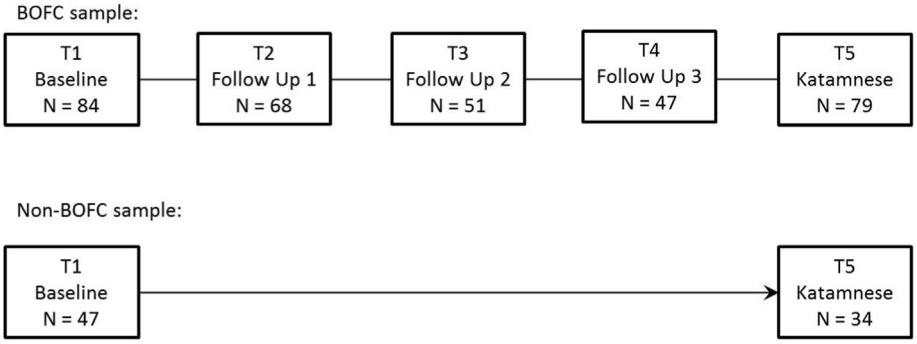

Fig. 2. Overview of measurement time points and sample size.

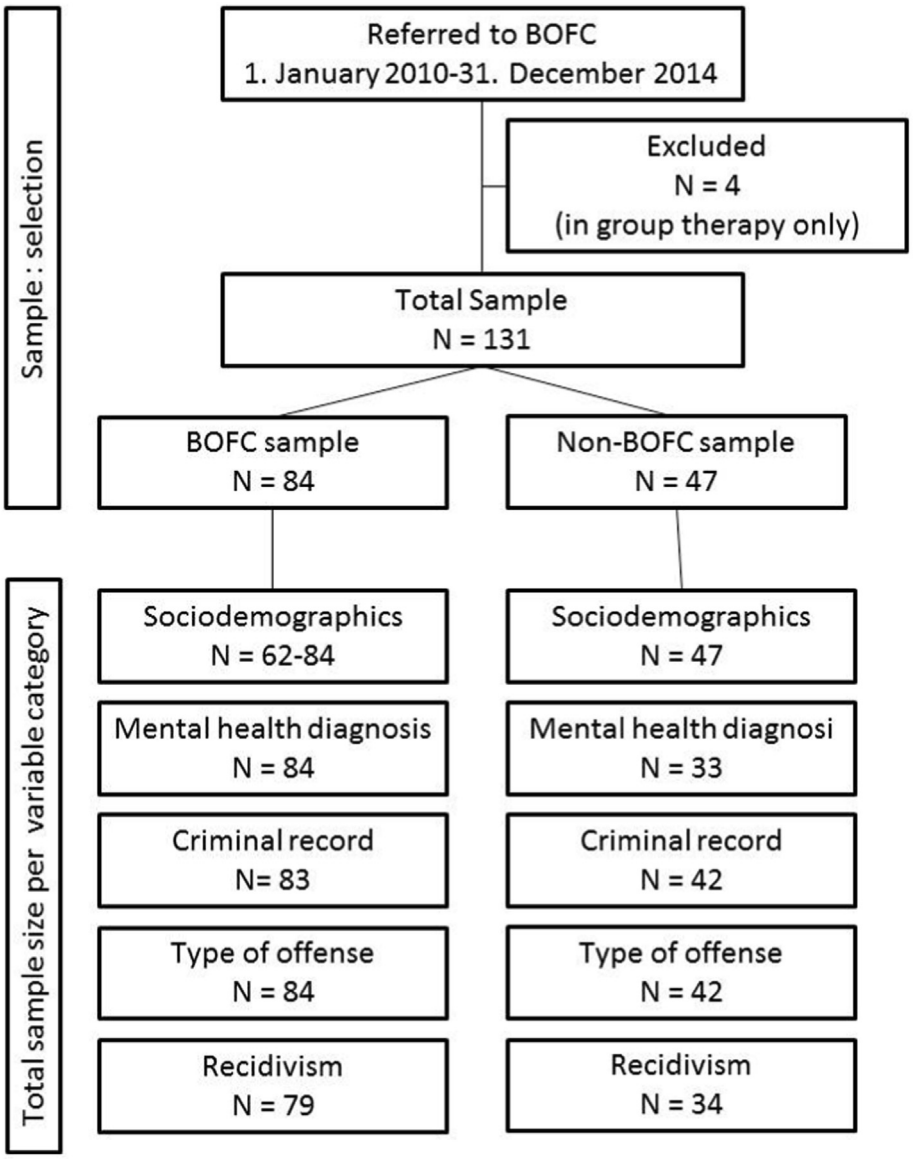

Fig. 3. Flow diagram of sample selection and sample size per variable.

Table 5 presents the comorbidity analyses. In the BFOC sample, the combination between any substance disorder (F1) and any personality disorder (F6) was most prevalent (23.8%), while this combination was not present in the Non-BFOC sample ($X^2 = 11.578$, $p = .003$). All other combinations were less frequent in the two samples (<10%). There was a statistically significant difference between the samples regarding the combination of substance disorder (F1) and behavioral and emotional disorders with onset in childhood and adolescence (F9; BFOC sample: 7.1%, Non-BFOC sample: 0%; $X^2 = 6.738$, $p = .034$).

Table 1
Difference in sample characteristics by missingness in recidivism status.

	Recidivism status non-missing N = 113 N(%)	Recidivism status missing N = 18 N(%)	X^2-/T-test
Female gender, N (%)	14 (12.4)	2 (11.1)	0.024
Age in years, M (SD)	37.9 (11.0)	40.1 (12.8)	−0.739
Swiss nationality, N (%)	89 (78.7)	8 (44.4)	10.227**
Civil Status, N (%)			0.621
Single	52 (46.0)	9 (50.0)	
Steady partnership	19 (16.8)	2 (11.1)	
Married	15 (13.3)	3 (16.7)	
Divorced	18 (15.9)	6 (16.7)	
Education, N (%)			4.072
Incomplete compulsory schooling	4 (3.5)	2 (11.1)	
Complete compulsory schooling	25 (21.1)	5 (27.8)	
Vocational certificate	8 (7.1)	0 (0.0)	
Apprenticeship certificate	51 (45.1)	7 (38.9)	
Matura	2 (1.8)	0 (0.0)	
University degree	8 (7.1)	1 (5.6)	
Living situation, N (%)			4.275
Alone	35 (31.0)	6 (33.3)	
With partner	19 (16.8)	3 (16.7)	
In a commune	8 (7.1)	0 (0.0)	
With parents/siblings	11 (9.7)	3 (16.7)	
In a supervised facility	19 (16.8)	1 (5.6)	
Other	10 (8.9)	3 (16.7)	
Financial situation, N (%)			6.830
Very bad	46 (40.7)	6 (33.3)	
Bad	31 (27.4)	4 (22.2)	
Medium	12 (10.6)	0 (0.0)	
Good	3 (2.7)	2 (11.1)	
Leisure Activity, N (%)			6.521
No	7 (6.2)	1 (5.6)	
Yes, regularly	14 (12.4)	0 (0.0)	
Yes, irregularly	50 (44.3)	5 (27.8)	

Statistical significance: **p < .01.

Table 2
Characteristics of the samples.

	BFOC sample N = 84 N(%)	Non-BFOC sample N = 47 N(%)	X^2-/T-test
Female gender, N (%)	13 (15.5)	3 (6.4)	2.324
Age in years, M (SD)[1)]	37.0 (11.1)	40.4 (11.3)	1.611
Swiss nationality, N (%)[2)]	71 (84.5)	44 (93.6)	1.073
Civil Status, N (%)[3)]			2.156
Single	43 (51.2)	18 (48.6)	
Steady partnership	16 (19.0)	5 (13.5)	
Married	10 (11.9)	8 (21.6)	
Divorced	15 (17.9)	6 (16.2)	
Widowed	0	0	
Education, N (%)[4)]			2.549
Incomplete compulsory schooling	5 (6.2)	1 (3.1)	
Complete compulsory schooling	19 (23.5)	11 (34.4)	
Vocational certificate	6 (7.4)	2 (6.3)	
Apprenticeship certificate	43 (53.1)	15 (46.9)	
Matura	2 (2.5)	0	
University degree	6 (7.4)	3 (9.4)	
Living situation, N (%)[5)]			14.071*
Alone	27 (32.1)	14 (41.2)	
With partner	16 (19.0)	6 (17.6)	
In a commune	8 (9.5)	0	
With parents/siblings	10 (11.9)	4 (11.8)	
In a supervised facility	18 (21.4)	2 (5.9)	
Other	5 (6.0)	8 (23.5)	
Financial situation, N (%)[6)]			4.534
Very bad	40 (51.9)	12 (44.4)	
Bad	22 (28.6)	13 (48.1)	
Medium	11 (14.3)	1 (3.7)	
Good	4 (5.2)	1 (3.7)	
Very good	0	0	
Leisure Activity, N (%)[7)]			2.941
No	7 (11.3)	1 (6.7)	
Yes, regularly	9 (14.5)	5 (33.3)	
Yes, irregularly	46 (74.2)	9 (60.0)	

Notes. [1)] Sample 1: n = 1 missing value, Sample 2: n = 3 missing values, [2)] Sample 2: n = 13 missing values, [3)] Sample 2: n = 10 missing values, [4)] Sample 1: n = 3 missing values, sample 2: n = 15 missing values, [5)] Sample 2: n = 13 missing values, [6)] Sample 1: n = 7 missing values, sample 2: n = 20 missing values, [7)] Sample 1: n = 22 missing values, sample 2: n = 32 missing values. Statistical significance: *p < .05.

3.4. Criminal history

In the BFOC sample, n = 59 (70.2%) had committed at least one offense before the index offense, and of these, n = 5 (8.5%) were women and n = 54 (91.5%) were men. In the Non-BFOC sample, this applied to n = 25 (53.2%), with 2 (8.0%) being women and 23 (92.0%) being male. There were no statistically significant differences between the two samples regarding offenses committed before the index offense.

3.5. Index offense

In the BFOC sample, n = 49 (58.3%) had committed "another" crime, n = 47 (56.0%) a violent crime, and n = 32 (38.1%) a sexual crime. In the Non-BFOC sample, n = 20 (47.6%) had committed "another" crime, while n = 19 (45.2%) had committed a violent crime and n = 16 (38.1%) a sexual crime. Some subjects had committed more than one type of crime; thus, multiple answers were possible. No statistically significant group difference was found. In the BFOC sample, men and women differed from each other regarding sexual offenses (men: n = 31, 43.7%; women: n = 1, 7.7%; $X^2 = 6.028$, p = .014).

3.6. Recidivism

The mean Time at Risk was 42.6 months (SD = 19.53, range: 1.4–79.4 months), corresponding to three years and 6.5 months. It was statistically significantly longer for the BFOC group (45.5 ± 19.7 months) than for the Non-BFOC sample (35.8 ± 17.6 months, p = .016). There were n = 18 cases with recidivism data completely missing (no criminal record was available), n = 5 of which in the BFOC sample. A further four persons known to have relapsed had missing dates of reoffending, leading to their exclusion from survival analysis.

The recidivism rate was 17.7% (n = 14) in the BFOC sample and 38.2% (n = 13) in the Non-BFOC sample. This difference was statistically significant ($X^2 = 5.501$, p = .029). In the BFOC sample, 16.5% had a new "other" offense record, 5.1% a violent offense and 2.5% sexual offense. This corresponds to 35.3% "other", 14.7% violent, and 5.9% sexual offenses in the Non-BFOC sample.

Survival analysis showed statistically significantly different survivorship functions between the two groups (Log-rank test: p = .006; Wilcoxon test: p = .01; Fig. 4). Individuals in the Non-BFOC sample had higher temporal rates of recidivism (0.12 re-offenses per person-year, 95% C.I. 0.07–0.21) compared with the those in the BFOC sample (0.04 re-offenses per person-year, 95% C·I. 0.02–0.07).

Table 6 presents data on the interaction group (only re-offenders) by sociodemographics. As can be seen, no sociodemographic variable differentiates the BFOC from the Non-BFOC sample. Regarding the interaction group compared by mental health diagnosis (see Fig. 5), according to Fisher's exact test, no statistically significant differences between reoffenders in the BFOC and the Non-BFOC samples were found.

Table 3
Current legal status of samples.

	BFOC sample N = 84 N(%)	Non-BFOC sample N = 47 N(%)
Article 59	15(17.86)	4(8.51)
Art. 60	0	1(2.13)
Art. 61	1(1.19)	0
Art. 63	39(46.43)	13(27.66)
Order	9(10.71)	1(2.13)
Voluntary	16(19.05)	12(25.53)
Other	3(3.57)	1(2.13)
Missing	1(1.19)	15(31.91)

Notes.: According to the Swiss Criminal Code, a measure is ordered if a penalty alone is not sufficient to counter the risk of further offenses being committed by the offender, if the offender requires treatment or if treatment is required in the interests of public safety, and if the requirements of a therapeutic measure according to Articles 59–61, 63 or for a secure measure according to 64 are fulfilled. Article 59 describes an inpatient therapeutic measure for an offender suffering from a serious mental disorder; Article 60 describes inpatient treatment due to an addiction to psychotropic substances; Article 61 describes inpatient treatment in an institution for young adults, if the offender was under 25 years of age at the time of the offense and if s/he is suffering from a serious developmental disorder, and Article 63 describes outpatient treatment either due to a serious mental disorder or an addiction. The competent authority may order the offender to be treated temporarily as an inpatient if this is required in order to initiate the outpatient treatment. The period of inpatient treatment may not exceed two months; the total duration of outpatient treatment may not normally exceed five years. (Swiss Criminal Code, 21st of December, (1937) (Status as of 1 July 2020) Available online at https://www.admin.ch/opc/en/classified-compilation/19370083/index.html). accessed September 7th, 2020.

3.7. Course of therapy: general functional level and severity of psychopathology

Among those in treatment at the BFOC, general functional level was measured using GAF scores. Comparing the individual measurements over time a statistically significant difference in the functional level was found ($F(2.436, 112.054) = 6.597$, $p = .001$, $n2 = 0.125$, $n = 47$, see Fig. 6) one and a half years after the onset of outpatient care ($M = 0.426$, $SD = 0.121$). According to Cohen (1988), the effect size $f = 0.38$ corresponds to a medium effect.

Regarding the severity of psychopathology, measured by CGI, there was a statistically significant improvement ($F(1.862, 85.646) = 6.732$, $p = .002$, $n2 = 0.128$, $n = 47$, see Fig. 7). When individual measurements were compared over time, patients who had received outpatient care for one and a half years showed a significant improvement in their symptom severity ($M = 0.617$, $SD = 0.179$).

4. Discussion

This is the first study aiming to describe forensic psychiatric outpatients in Switzerland, assess their recidivism rates and effects of their course of treatment over time. Comparisons were made between those referred to a specialized forensic outpatient clinic (established by the Department of Forensic Psychiatry of the University of Bern), termed the Bern forensic outpatient clinic sample (BFOC sample), and those referred for treatment but not accepted (Non-BFOC sample).

This retrospective, longitudinal study covered all referrals, i.e. 131 participants, to the above-mentioned outpatient unit over five years (2010–2014). When the BFOC sample was compared with the Non-BFOC sample, the recidivism rate in the former was statistically significantly lower, both in terms of the percentage of re-offenders (18% vs. 38%) as well as in terms of the temporal rate of re-offending (0.04 vs 0.12 re-offenses per person per year). Statistically significant improvements regarding the general functioning level and the severity of psychopathology were also detected in the BFOC sample.

Table 4
Mental health disorders according to the ICD-10.

	BFOC sample N (%)	Non-BFOC sample N (%)[1)]	X^2
F1	40 (47.6)	9 (27.3)	4.029
Mental and behavioral disorders due to psychoactive substance use			
F10	20 (23.8)	6 (18.2)	.434
F11	4 (4.8)	4 (12.1)	2.014
F12	22 (26.2)	0	10.644***
F13	4 (4.8)	0	1.627
F14	7 (8.3)	5 (15.2)	1.197
F16	1 (1.2)	0	.396
F17	1 (1.2)	0	.396
F18	1 (1.2)	0	.396
F19	11 (13.1)	1 (3.0)	2.608
F2	15 (17.9)	6 (18.2)	.002
Schizophrenia, schizotypal and delusional disorders			
F20	11 (13.1)	4 (12.1)	.020
F21	1 (1.2)	0	.396
F22	3 (3.6)	1 (3.0)	.021
F3	12 (14.3)	4 (12.1)	.094
Mood disorders			
F31	0	2 (6.1)	5.179
F32	7 (8.3)	1 (3.0)	1.046
F33	4 (4.8)	1 (3.0)	.174
F34	1 (1.2)	0	.396
F4	7 (8.3)	5 (15.2)	1.197
Neurotic, stress-related and somatoform disorders			
F40	2 (2.4)	0	.799
F41	1 (1.2)	0	.396
F42	0	2 (6.1)	5.179
F43	3 (3.6)	3 (9.1)	1.484
F45	1 (1.2)	0	.396
F5	2 (2.4)	0	.799
Behavioral syndromes associated with physiological disturbances			
F50	2 (2.4)	0	.799
F6	44 (52.4)	18 (54.5)	.045
Disorders of adult personality and behavior			
F60	16 (19.0)	3 (9.1)	1.727
F61	14 (16.7)	4 (12.1)	.376
F62	1 (1.2)	0	.396
F63	5 (6.0)	0	2.052
F64	0	1 (3.0)	2.567
F65	16 (19.0)	8 (24.2)	.392
F7	2 (2.4)	2 (6.1)	.972
Mental retardation			
F70	2 (2.4)	2 (6.1)	.972
F8	3 (3.6)	1 (3.0)	.021
Disorders of psychological development			
F81	1 (1.2)	1 (3.0)	.477
F84	2 (2.4)	0	.799
F9	12 (14.3)	1 (3.0)	3.039
Behavioral and emotional disorders with onset usually occurring in childhood and adolescence (F90–F98)			
F90	9 (10.7)	0	3.830
F91	2 (2.4)	1 (3.0)	.040
F95	1 (1.2)	0	.396

Notes. [1)] N = 14.

In general, a series of sociodemographic parameters pointed to a number of socio-economic disadvantages in the lives of participants. In both samples, more than a third had not completed an apprenticeship, and most had rated their financial situation as bad or very bad. Less than a third were living with a life partner; most were living alone or in a supervised facility. About half of the individuals in each sample were single, only about a third were in a steady relationship or married. By comparison, according to the Federal Bureau of Statistics, in 2016, 43.7% of the (male) Swiss general population was in a registered partnership or married (Federal Bureau of Statistics, 2017). The lower rates of cohabitation with a life partner in the present sample may suggest deficits in interpersonal relationship skills, which is coherent with the finding that personality disorders were overrepresented in both groups. There was also a statistically significant group difference in the living situations of the BFOC and non-BFOC groups. The BFOC sample were more often

Table 5
Comorbidity analysis (ICD-10).

Mental health disorder pair	Total sample[1)] N (%)	BFOC sample N (%)	Non-BFOC sample[1)] N (%)	X^2 (p)
F1 and F2	8 (6.8)	8 (9.5)	0	3.703 (.157)
F1 and F3	7 (6.0)	5 (6.0)	2 (6.1)	5.212 (.074)
F1 and F4	2 (1.7)	1 (1.2)	1 (3.0)	3.038 (.219)
F1 and F5	0	0	0	–
F1 and F6	20 (17.1)	20 (23.8)	0	11.578 (.003)
F1 and F7	1 (0.9)	1 (1.2)	0	2.524 (.283)
F1 and F8	1 (0.9)	1 (1.2)	0	3.909 (.142)
F1 and F9	6 (5.1)	6 (7.1)	0	6.738 (.034)
F2 and F3	1 (0.9)	0	1 (3.0)	3.121 (.210)
F2 and F4	4 (3.4)	1 (1.2)	3 (9.1)	5.158 (.076)
F2 and F5	0	0	0	–
F2 and F6	4 (3.4)	2 (2.4)	2 (6.1)	1.036 (.596)
F2 and F7	1 (0.9)	0	1 (3.0)	2.599 (.273)
F2 and F8	1 (0.9)	1 (1.2)	0	.452 (.798)
F2 and F9	1 (0.9)	1 (1.2)	0	1.339 (.512)
F3 and F4	2 (1.7)	1 (1.2)	1 (3.0)	.504 (.777)
F3 and F5	1 (0.9)	1 (1.2)	0	.505 (.777)
F3 and F6	7 (6.0)	6 (7.1)	1 (3.0)	1.065 (.587)
F3 and F7	0	0	0	–
F3 and F8	0	0	0	–
F3 and F9	2 (1.7)	2 (2.4)	0	1.992 (.369)
F4 and F5	1 (0.9)	1 (1.2)	0	1.551 (.460)
F4 and F6	5 (4.3)	3 (3.6)	2 (6.1)	.656 (.720)
F4 and F7	0	0	0	–
F4 and F8	0	0	0	–
F4 and F9	1 (0.9)	1 (1.2)	0	.475 (.789)
F5 and F6	2 (1.7)	2 (2.4)	0	.905 (.636)
F5 and F7	0	0	0	–
F5 and F8	0	0	0	–
F5 and F9	0	0	0	–
F6 and F7	2 (1.7)	1 (1.2)	1 (3.0)	.574 (.751)
F6 and F8	3 (2.6)	2 (2.4)	1 (3.0)	.044 (.978)
F6 and F9	7 (6.0)	6 (7.1)	1 (3.0)	.813 (.666)
F7 and F8	0	0	0	–
F7 and F9	0	0	0	–
F8 and F9	3 (2.6)	2 (2.4)	1 (3.0)	4.777 (.092)

Note. 1) N = 14 missings.

living in a supervised facility, while the Non-BFOC sample more often had another living situation unknown to the researchers. It remains unclear whether this group difference influenced the results. Housing instability has been found to contribute to drug abuse and associated mental health disorders (Rezansoff, Moniruzzsaman, Clark, & Somers, 2015); thus it remains imperative that future studies investigate the living situations of those rejected for treatment at the BFOC further and consider how this may affect their psychosocial functioning and recidivism.

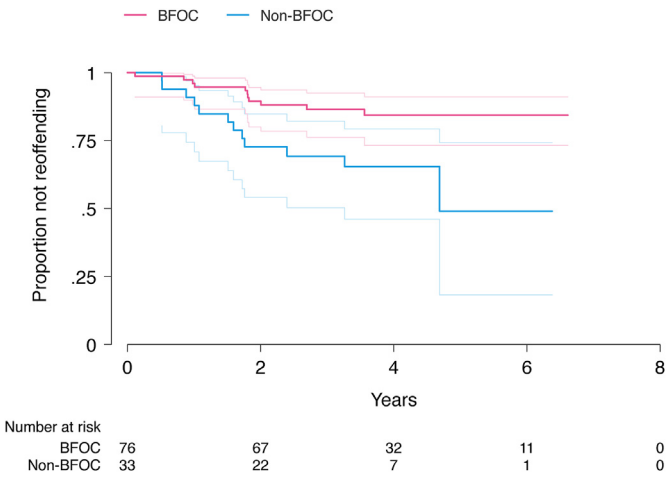

Fig. 4. Survival analysis of recidivism in the BFOC and Non-BFOC sample.

Table 6
Interaction group (only re-offenders) by sociodemographics.

	BFOC sample (only re-offenders (N = 14)	Non-BFOC sample (only re-offenders) (N = 13)	X^2-/T-test
Female gender, N (%)	1 (7.1)	0	.964
Age in years, M (SD)	33.4 (11.6)	38.7 (9.3)	1.295
Swiss nationality, N (%)[1)]	13 (92.9)	6 (75.0)	1.378
Civil Status, N (%)[2)]			2.250
Single	9 (64.3)	3 (42.9)	
Steady partnership	1 (7.1)	1 (14.3)	
Married	1 (7.1)	2 (28.6)	
Divorced	3 (21.4)	1 (14.3)	
Education, N (%)[3)]			3.958
Incomplete compulsory schooling	1 (7.1)	0	
Complete compulsory schooling	2 (14.3)	2 (33.3)	
Vocational certificate	1 (7.1)	0	
Apprenticeship certificate	9 (69.2)	3 (50.0)	
Matura	0	0	
University degree	0	1 (16.7)	
Living situation, N (%)[2)]			4.125
Alone	4 (28.6)	1 (14.3)	
With partner	2 (14.3)	2 (28.6)	
In a commune	2 (14.3)	0	
With parents/siblings	3 (21.4)	1 (14.3)	
In supervised facility	1 (7.1)	0	
Other	2 (14.3)	3 (42.9)	
Financial situation, N (%)[4)]			.067
Very bad	9 (64.3)	4 (66.7)	
Bad	3 (21.4)	1 (16.7)	
Medium	2 (14.3)	1 (16.7)	
Leisure Activity, N (%)[5)]			2.036
No	2 (18.2)	0	
Yes, regularly	3 (27.3)	3 (60.0)	
Yes, irregularly	6 (54.5)	2 (40.0)	

Notes. 1) N = 5 missings; 2) N = 6 missings; 3) N = 8 missings; 4) N = 7 missings; 5) N = 11 missings. Statistical significance: *p < .05.

About nine out of ten participants regularly participated in some sort of leisure activity. This is of forensic interest because Schmidt-Quernheim and Seifert (2013) found that this factor may predict recidivism. However, in the present study it was not possible to differentiate between those who re-offended, and those who did not from the level of their leisure activity. This may be explained in part by the small sample size. The sample size of n = 27 for individuals who relapsed may be too small to make statistically meaningful comparisons with those who did not relapse, with a sample size of n = 104. Secondly, there may be

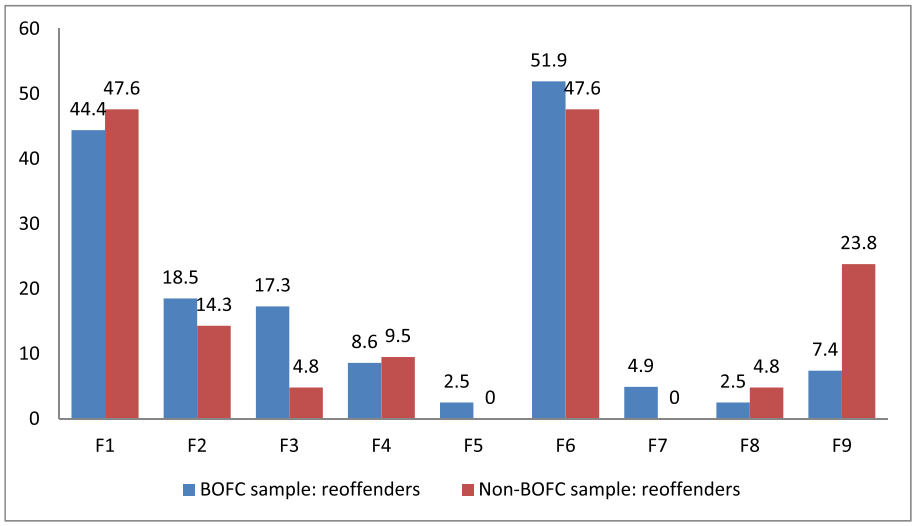

Fig. 5. Interaction between mental health disorders and reoffending group.

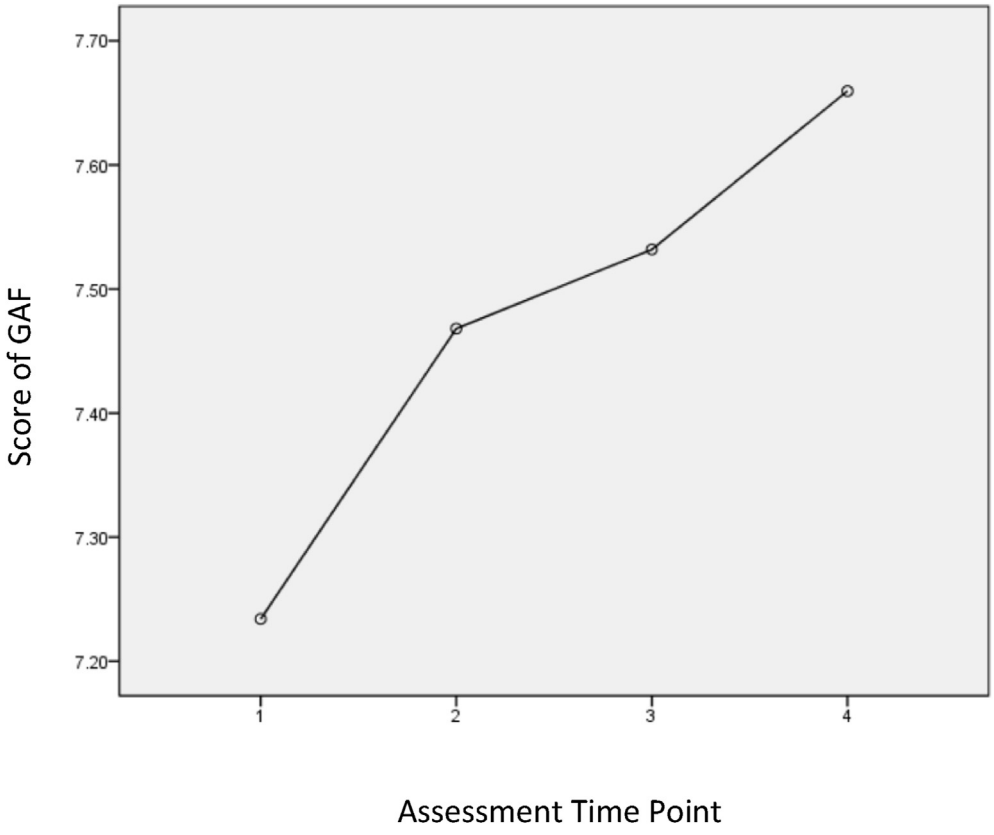

Fig. 6. Semi-annual assessment of general functioning using GAF (Global Assessment of Functioning).

country-specific differences that do not allow for the simple generalization of the findings from other jurisdictions to Switzerland.

With regard to mental health disorders, substance abuse (F1 disorder) was most prevalent in the BFOC sample (48%), followed by specific or combined personality disorders (F60 and F61: 36%), disturbed sexual preference F65: 19%), schizophrenic disorder (F2: 18%), and affective disorders (F3: 14%). This finding contrasts with those in other studies, where schizophrenic disorders were most frequent (65%: Stübner & Nedopil, 2009, p. 59%: Butz et al., 2013, p. 57%: Schmidt-Quernheim & Seifert, 2013, p. 45%: Seifert, 2010), followed by personality disorders (32%: Seifert, 2010, p. 24%: Schmidt-Quernheim & Seifert, 2013). Several reasons may explain this discrepancy. Firstly, it might point to the difficulty that arises from comparisons between different countries. It may well be that the prevalence rates of mental health disorders vary country-specifically, as reported outside of the forensic context (e. g. PTSD: Kessler et al., 1995; Maercker et al., 2008). If there are differences regarding these rates, then therapeutic goals and strategies regarding forensic outpatients would differ in Switzerland compared with other countries. Secondly, the different study samples may not be comparable because, for example, rural or urban settings may impact results (Peen, Schoevers, Beekman, & Dekker, 2010). Thirdly, and most likely, the nature of forensic services provided, the legal requirements for entering

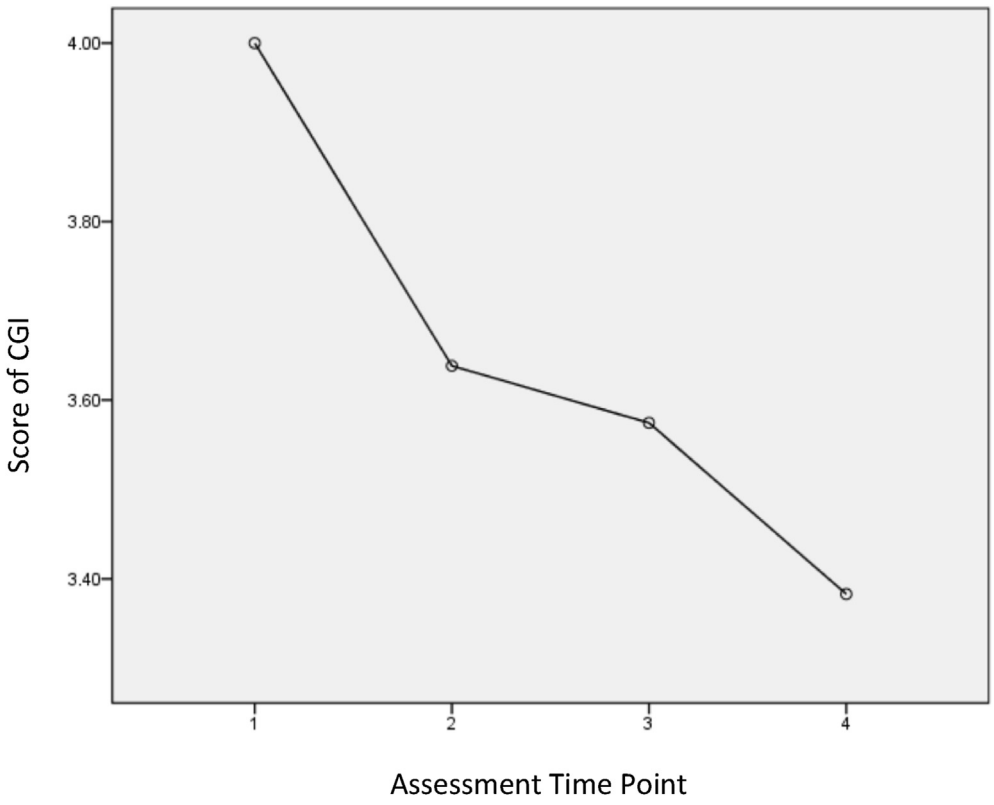

Fig. 7. Semi-annual assessment of severity of psychopathology using CGI (Clinical Global Impression scale).

outpatient treatment and the specific entry criteria of clinics investigated might have been differed. The influence of the legal framework should not be underestimated. For example, there are many overlaps between German and Swiss criminal law; however, a "therapeutic measure" for offenders with a mental disorder that can be carried out entirely in an outpatient setting exists only in Switzerland (Krammer, Weber, Warnke, & Liebrenz, 2018).

Interestingly, the BFOC sample had high rates of the dual diagnosis F1 and F6 (23.8%), i.e. any substance abuse disorder combined with any personality disorder. This combination was not present in the Non-BFOC sample (0%) and this difference was statistically significant. It is unclear why this difference was present, although it is possible that there are unique dual diagnosis needs of those in forensic outpatient treatment. If so, this would impact group comparability at present.

The recidivism rates argue in favor of the effectiveness of the treatment in the BFOC. Of those accepted for treatment (BFOC sample), 18% re-offended, while this figure rose to 38% in those rejected for treatment (Non-BFOC sample). While the fact that average time at risk in the BFOC group was 10 months less than in the Non-BFOC group is likely to explain some of this difference, the results of the survival analysis take into account differences in time at risk and they confirm lower recidivism among the BFOC group. The recidivism rate in the Non-BFOC group corresponds to the rate of released prisoners without forensic aftercare in Germany (40% after an average TAR of 5 years; Jokusch & Keller, 2001). Additionally, Swiss Federal Statistical Office data on reconviction rates for a crime or misdemeanor within three years of release show a rate of 28.7% for offenders with no previous criminal history, 23.4% for offenders with one previous conviction and 59.2% for offenders with at least two previous convictions, the latter being comparable to the majority of the BFOC and non BFOC groups in terms of criminal history, but uncorrected for rate of mental disorder (Federal Bureau of Statistics, 2019).

Currently, the average time at risk has lasted approximately 3.5 years. Based on Seifert (2010), who found that half of the recidivism occurred within two years following prison release, this might be considered a reasonable amount of time for recidivism to take place, validating the present results. Nevertheless, some recidivism may still occur at a later time (14%: Gretenkord, 2001, p. 25%: Jokusch & Keller, 2001) and it is possible that if an even longer time at risk had been applied, the current results would have been different.

No sociodemographic variable differentiated re-offenders from the BFOC sample and re-offenders from the Non-BFOC sample. However, it is likely that this is due to low sample sizes ($n = 14$ re-offenders in the BFOC sample and $n = 13$ in the Non-BFOC sample). Therefore, future studies with larger re-offending sample sizes are warranted.

We also found that improvements in both the general functioning level (GAF) and the severity of psychopathology (CGI) reached statistical significance over the course of treatment. On average, the statistically significant change occurred one and a half years after the onset of treatment. The improvement in level of functioning as indicated by GAF corresponds to a finding recently published by Nitschke et al. who reported a noticeable but weak improvement after two years of treatment in a forensic prevention outpatient clinic (Nitschke, Sünkel, & Mokros, 2020). These findings both suggest that it is crucial for the duration of outpatient treatment to cover a sufficiently long period. However, because there was no such data for the comparison group in our study, it is also possible that other factors explain the improvements.

This study focused on deficits and problem areas. Based on the Good Lives Model approach (GLM; e. g. Ward & Brown, 2004), treatment ought to add to the repertoire of functioning rather than simply address deficits. In fact, positive psychology, i.e. concentration on strengths instead of weaknesses, is widely missing in forensic treatment and future studies should explore the efficacy of such an orientation.

Despite the considerable similarity in the demographic variables of our sample at baseline, significant differences in criminal recidivism were observed. This suggests not only that forensic psychiatric-psychotherapeutic outpatient care leads to clinical and legal prognostic improvement, but also that the importance of initial screening prior to admission should not be overestimated and more patients should be

given access to outpatient forensic services, when possible.

This study has several limitations. Firstly, the sample sizes are small, and statistical power therefore limited. This leads to potentially valid findings not being detected by our study. Secondly, the study design was retrospective, although a prospective design would have been more desirable. Thirdly, due to the rejection criteria applied, there was a selection bias against severe cases in the BFOC sample, so that the lower recidivism risk found in our study might not be a treatment effect, but pre-existing. This possibility becomes particularly salient in light of the fact that patients could also be rejected if their recidivism risk was judged to be too high to be successfully dealt with in an outpatient setting. Nevertheless, a higher proportion of the BFOC sample (79% vs. 53%) had a criminal history, indicating a potentially higher recidivism risk in this group at baseline (the difference was not statistically significant, though). The reversal of this relationship at follow-up, with the Non-BFOC group ending up having higher recidivism rates, might thus constitute evidence in favor of a treatment effect in the BFOC group. Furthermore, it remains unknown whether those rejected for treatment received treatment elsewhere. Fourthly, there is a likelihood of bias affecting both groups, for example in regard to living situation. It might be argued that comparing recidivism outcomes between a homeless person and a person living in a supervised facility cannot provide meaningful information on the impact of outpatient psychiatric and psychotherapeutic treatment on recidivism. However, there are very few indicators pointing in the direction that group differences can be explained by differences in housing only. While homelessness is a well-known mediator for offending and is often experienced by individuals with mental disorders, it is unlikely that the Non-BFOC sample was disproportionally affected by homelessness in this Swiss study (Whittaker, Flatau, Swift, Dobbins, & Burns, 2016). Unlike in the UK and some North American countries, the rate of homelessness among individuals with a severe mental disorder is very low in Switzerland. Lauber et al. found a rate of 1.6% among Swiss psychiatric inpatients compared to data from the UK that reported 20.5% and the United States, 35% (Lauber, Lay, & Rössler, 2005). Additionally, it must be pointed out that probation services are mandatory for all individuals (BFOC and non BFOC sample) who are undergoing court mandated treatment ("therapeutic measures"), compare Table 3. Probation services are quite comprehensive in Switzerland and regulated by guidelines published by intercantonal authorities (Pruin & Weber, 2018). Social services provided can be material (money, housing, food, etc.) or intangible (information, contacts, advice, etc.). As a temporary intervention agency, the probation service strives for a self-sustaining setting, i.e. it involves and coordinates other specialized agencies and authorities and clarifies case management, making it further unlikely that group differences are due to a lack of basic necessities, such as housing (Strafvollzugskonkordat der Nordwest-und Innerschweiz, 2015). Fifthly, a longer time at risk, as previously mentioned, might have led to a difference in recidivism rates.

Despite these limitations, this is the first study in Switzerland to evaluate forensic outpatient treatment and thus lays the groundwork for the future planning of treatment strategies and the allocation of resources in this population group in Switzerland. The results point to the effectiveness of ambulatory outpatient treatment for offenders with mental disorders and advocate for forensic aftercare.

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Declaration of competing interest

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