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Comparison of offenders in forensic-psychiatric treatment or prison in Germany

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ABSTRACT

Purpose: Arrangements for the management of mentally disordered offenders vary widely across countries, as do rates of imprisonment and detention in forensic-psychiatric settings of such individuals. This study aims to quantify the characteristics of offenders detained in forensic-psychiatric settings in Germany over a 15 year period from 1995 and compare these with those sentenced to imprisonment over the same period.
Methods: Using official national statistical data, the index offences, demographic characteristics and criminal histories for all individuals convicted to forensic-psychiatric detention during the study period are described together with changes over time. This group was then compared with offenders convicted to a prison sentence of at least two years in the same time period for equivalent offences.
Results: Relevant differences and similarities between the two treatment groups were identified. Compared to offenders in prison, those in forensic care were older, with a higher proportion of women and a lower proportion of those with foreign backgrounds. Significant previous offending and levels of diminished responsibility were present in both groups.
Conclusions: These findings provide data for future comparative research and indicate potential opportunities for earlier intervention to prevent trajectories into more serious offending, particularly in young people and those with mental disorder.

1. Introduction

Forensic-psychiatric institutions are part of the mental healthcare system, but are more closely related to the criminal justice system than are other healthcare institutions. Given the ongoing process of de-institutionalisation since the 1990s, there is evidence that the number of hospital psychiatric beds has decreased in most Western European countries with the possible effect of re-institutionalisation in forensic and prison facilities (Chow & Priebe, 2016).

A number of studies have examined the period from the early 1990s onwards in an attempt to establish relevant trends over time. In terms of forensic mental healthcare, these studies have shown a substantial increase in the number of forensic-psychiatric beds across Western European countries (Chow & Priebe, 2016; Priebe et al., 2008; Salize & Dressing, 2007), with the number of beds and resources allocated to forensic mental health services having steadily increased in England, Wales, Ireland, Germany, Italy, the Netherlands, Spain, and Sweden from approximately 1992 to 2004 according to one international review (Jansman-Hart, Seto, Crocker, Nicholls, & Côté, 2011). In contrast, the number of beds in general psychiatric hospitals has been shown to have reduced over a similar period: Priebe et al. (2008) found the number of conventional psychiatric inpatient beds fell by an average of 49% between 1990 and 2006 in Austria, Denmark, England, Germany, Ireland, Italy, the Netherlands, Spain & Switzerland, while the number of forensic beds increased by 110%.

In terms of prison populations, Kramp and Gabrielsen (2009) reported an increase in the number of mentally ill criminals over time in the Danish countries and observed that the crime rate among the mentally ill before 1970 was lower than the crime rate in the general population, but that the opposite has been the case in the subsequent years. There is robust evidence of high prevalence rates of mental disorders in prisons worldwide in recent years (Franke, Vogel, Eher, & Dudeck, 2019) with, for example, German long-term prisoners showing a level of mental distress comparable to that of psychiatric patients, and greater than that reported by those in forensic mental healthcare (Otte et al., 2017).

There have been attempts to disentangle the interrelation between the number of forensic and general psychiatric hospital beds, the

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number of protected housing places, and the number of prisoners. It can be argued that the specialization of psychiatry into sub-specialties has led to a 'forensification' of people who would previously have been treated as general psychiatry patients (Nedopil, 2009). It can also be argued that fewer resources will be available for non-forensic services if the proportion of resources allocated to forensic mental health increases, with two important consequences: first, it would be increasingly difficult to access mental health services unless the individual has committed an offence, and second, it would further increase the demand for forensic services, resulting in a cycle where more individuals are inadvertently forced to use the criminal justice system as an entry-point for mental health care (Jansman-Hart et al., 2011), even to the point where conventional mental health systems could effectively become forensic mental health systems if this cycle is not interrupted (Seto, Harris, & Rice, 2004). However, the exact association between these trends and their drivers remains unclear, and the often-proposed hypothesis that placements in prisons or forensic facilities have increased as a result of a decrease in general psychiatric hospital beds (the so-called Penrose hypothesis) has not consistently been confirmed (Gunn, 2000; Kramp & Gabrielsen, 2009; Muijen, 2008).

It has been suggested that these inconsistencies may arise in part from the questionable accuracy of some of the data available, and also the lack of any breakdown of total figures by patient characteristics (Chow & Priebe, 2016). The current study seeks to address this deficit by summarising national data on the characteristics of offenders detained in forensic-psychiatric settings and in prison in Germany over a 15 year period.

1.1. Criminal responsibility in the German penal system

In Germany, adult offenders who may be not fully criminally responsible are dealt with using a two-level approach to criminal responsibility:

1. Diminished responsibility: Offenders with diminished capacity (due to a severe mental disorder, a profound disturbance of consciousness or intellectual disability or any other form of severe mental abnormality) to understand the wrongfulness of their actions or to act accordingly (§ 21, German penal law) receive a mitigated prison sentence and/or are sentenced to inpatient forensic psychiatric treatment (§ 63, German penal law).
2. Insanity: Offenders who lack capacity to appreciate the wrongfulness of their actions or to act accordingly (§ 20, German penal law) are not convicted but sentenced to forensic-psychiatric treatment if the risk of serious reoffending cannot be excluded (§ 63, German penal law).

The finding of criminal responsibility is a court decision which, in almost all cases, is based on forensic psychiatric expertise. If full criminal responsibility is questionable for offences associated with substance use disorders, only diminished responsibility (not insanity) can be found. In these cases, forensic treatment is limited to two years (§ 64, German penal law). More extensive descriptions of the criminal justice system dealing with the mentally disordered in Germany can be found in Dressing, Salize, and Gordon (2007) and Konrad and Lau (2010).

1.2. Aims of the current study

This study aims to provide a summary of the characteristics of offenders detained in forensic-psychiatric settings in Germany over a 15 year period, and to compare this group with those individuals sentenced to imprisonment over the same period. Although this was designed as a descriptive study, we anticipated finding a difference between the two groups in terms of gender, age, criminal history and in the proportion having diminished responsibility. Specifically, we hypothesised that, compared to those in prison, individuals in forensic-psychiatric treatment (FT) would: (a) be older, since disorders such as schizophrenia which lead to placement in FT tend to develop in late adolescence or early adulthood for men and somewhat later for women; (b) have a higher proportion of women, given that there is some evidence that women are perceived as more deserving of treatment and so might be expected to be treated more leniently (e.g. Spohn & Beichner, 2000); (c) have a higher proportion of individuals with diminished responsibility, given the nature of the forensic-psychiatric system, and (d) have fewer individuals with a previous conviction.

2. Material and methods

2.1. Data collection

Data presented here covered all court decisions documented by the judicial authorities from the eleven federal states ('Bundesländer') of former West Germany. These data are centrally stored at the Federal Statistical Office and were made available to the researchers under conditions of data protection law requirements. We analysed data on all convictions to forensic-psychiatric inpatient treatment in Germany from 1995 to 2009, providing key characteristics of offenders, as well as convictions to imprisonment of 2 years or more.

In our data collection and analysis, we adopted the following procedure in an attempt to avoid some of the limitations in previous research outlined above and to allow more meaningful future comparisons between countries and/or periods:

1. Only official data of the Federal Statistical Office ('Statistisches Bundesamt') were used to maximise accuracy.
2. Instead of counting the number of occupied beds, we used the number of court decisions per year ordering forensic-psychiatric hospital treatment. This was chosen because the number of occupied forensic beds ('prevalence') is a somewhat unreliable indicator of variation in the number of forensic patients, as the number of forensic beds itself is influenced both by the number of sentences ordering forensic treatment ('incidence') and the length of stay in forensic institutions, the latter depending again on a number of factors (e.g. social/political need for security, general mental health structures, legal requirements).
3. Along with the number of forensic orders we also provide the number of prison sentences for the same period (i.e. 1995 to 2009). This allowed consideration of possible relationships between general trends in criminal behaviour and the frequency of crimes committed by mentally ill persons.
4. Relevant types of crimes are differentiated.
5. Basic characteristics of offenders are presented.

During the period from 1995 to 2009 the courts rendered verdicts in 14,100,329 cases. As the presented results are based on the total populations of offenders in forensic treatment and in prison and not on samples thereof, no inferential statistics were applied and only descriptive statistical measures (frequencies, percentages, and means) were used. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

2.2. Types of crimes

We categorised crimes into eleven statutory offence categories, the first nine of which are taken directly from German penal law categories:

1. Homicide (including murder and manslaughter)
2. Bodily harm (e.g. grievous bodily harm but excluding homicide)
3. Other violent offences (e.g. affray, robbery)
4. 'Structural' violent offences (e.g. procuration, incitement to commit criminal offences)

5. Arson
6. Sexual offences against adults
7. Sexual offences against children/adolescents
8. Property offences (e.g. theft, fraud)
9. Other offences pertaining to German penal law
10. Drug offences
11. All offences pertaining to other German law codes

According to German law, sentencing to forensic treatment requires a serious crime to have been committed by the mentally disordered person. By excluding crime categories which rarely lead to a sentence of forensic treatment pursuant to § 63 StGB (< 5% of all cases), we generated 'key offence categories' relevant to the majority of offenders in forensic treatment. This resulted in six categories of crimes:

1. Homicide
2. Bodily harm
3. Other violent offences
4. Arson
5. Sexual offences against adults
6. Sexual offences against children or adolescents

To allow a meaningful comparison of forensic patients with prison inmates, we used only sentences of more than two years of imprisonment in the prisoners' group to ensure severe crimes were comparable.

The following characteristics of offenders were provided within the datasets:

1. Age at offence (years: up to 16, 17–18, 19–21, 22–25; then 5-years categories from 26–30 to 66–70)
2. Gender (female, male)
3. Criminal responsibility (fully responsible, diminished responsibility, not criminally responsible)
4. German nationality (yes/no)
5. Criminal record (previous convictions: yes/no)

2.3. Court rulings

Of all 14,100,329 court decisions from the years 1995 to 2009, 12,019 cases (0.09%) received an order of forensic treatment. Sentences of at least two years of imprisonment occurred in 1.2% of all court decision (170,182 cases). Fig. 1 shows the frequencies of the various sentences. The shaded boxes contain the groups upon which the following comparisons are based (i.e. offenders sentenced to forensic treatment and offenders with prison sentences exceeding two years of imprisonment).

2.4. Trends over time

As visual inspection of the temporal frequencies of offender characteristics revealed no abrupt rises or declines, it was deemed appropriate to use linear distribution fittings to represent trends over time (see Fig. 2 for examples). Values calculated from these linear regressions are presented for the years at the start and end of the study period (i.e. 1995 and 2009). The yearly frequencies of some of the characteristics within the forensic treatment group were too small to allow the endpoints of the linear fitting to be calculated. These cases are marked by footnotes in the tables below.

3. Results

3.1. Age

3.1.1. Age at time of offence

Overall, offenders in forensic-psychiatric treatment (FT) were on average about five years older than offenders with a sentence of at least two years of imprisonment. The greatest age differences appeared within the offence categories "bodily harm" (FT cases being approximately nine years older than those in prison) and "other violent offences" (see Table 1). Sexual offenders, however, diverted from the general trend: forensic patients in the category "sexual offences against children or adolescents" were younger than those in prison: for the category "sexual offences against adults" the mean age was similar between the two enforcement groups. Considering all offences over the 15-year period, only the forensic group showed a shift in age over time. In 2009, this group was, on average, approximately one year older than in 1995.

3.1.2. Offenders up to 21 years old vs. older [adult] offenders

As a comparison of arithmetic means may not always reveal differing underlying distributions, we compared younger and older offenders based on a threshold age of 21 years. Clear differences were discernible in the proportions of younger vs. older offenders between the two enforcement groups. While younger offenders accounted for just under 10% within the forensic group, over one fifth (21.8%) of prisoners were younger than 21 years. The proportion of younger to older offenders in forensic treatment is roughly 1:10, whereas in prison the ratio is around 1:3.

Within the FT group, the proportions of younger offenders were uniformly rather low and relatively evenly distributed across the different offence categories (range 7.3%–12.3%) (Table 2). In the prison group, however, younger offenders were particularly represented in the two categories of violent offences: "bodily harm" (30.3%) and "other violent offences" (23.6%).

Overall, younger offenders were responsible for nearly one third (32.2%) of all bodily harm offences, but younger offenders in forensic treatment contributed only 1.9% of these cases.

The most prevalent offences in those aged 21 years or less in both groups were those that involved violence, accounting for > 80% of the younger offenders in prison and for about 50% of the younger offenders in forensic treatment. Substantial proportions of younger offenders who received a prison sentence were involved in bodily harm (30.7%) and other violent offences (52.4%). Older patients in forensic treatment were especially involved in arson (36.5% of all arson offences), bodily harm and homicide (21.6% and 15.6% of all these offences).

3.1.3. Changes in the proportions of younger offenders from 1995 to 2009

For all key offences, the proportion of all younger offenders (age ≤ 21 yrs.) was 16.2% in 1995 and increased to 23.9% in 2009. The absolute number of all convicted younger offenders rose from 836 cases in 1995 to 1372 cases in 2009 (ca. + 64%). Table 3 contains the absolute numbers of sentenced key offences of the years 1995 and 2009 and the percentage changes for this period.

While the number of younger offenders increased in both enforcement groups, the number of older offenders rose in the FT group only (+53.4%), but decreased slightly in the prison group (−5.5%). Thus the total number of older offenders remained almost unchanged (1995: 4321; 2009: 4374). The decrease of homicides is mainly attributable to a decrease of older offenders receiving prison sentences. The number of younger homicide offenders did not change substantially.

3.2. Gender

Over the entire period the proportion of women in FT sentenced for any of the key offences (9.6%) is considerably higher than for those in the prison group (3.1%; Table 4). For all offence categories with the exception of sexual offences, the proportions of women in forensic treatment are higher than for those in prison.

From 1995 to 2009, the number of male offenders in prison increased by 6.1% whereas the number in forensic treatment increased by 53.0%. In both groups, the increases in the number of female offenders were greater (+8.9% and +97.3%). Table 5 contains the proportions

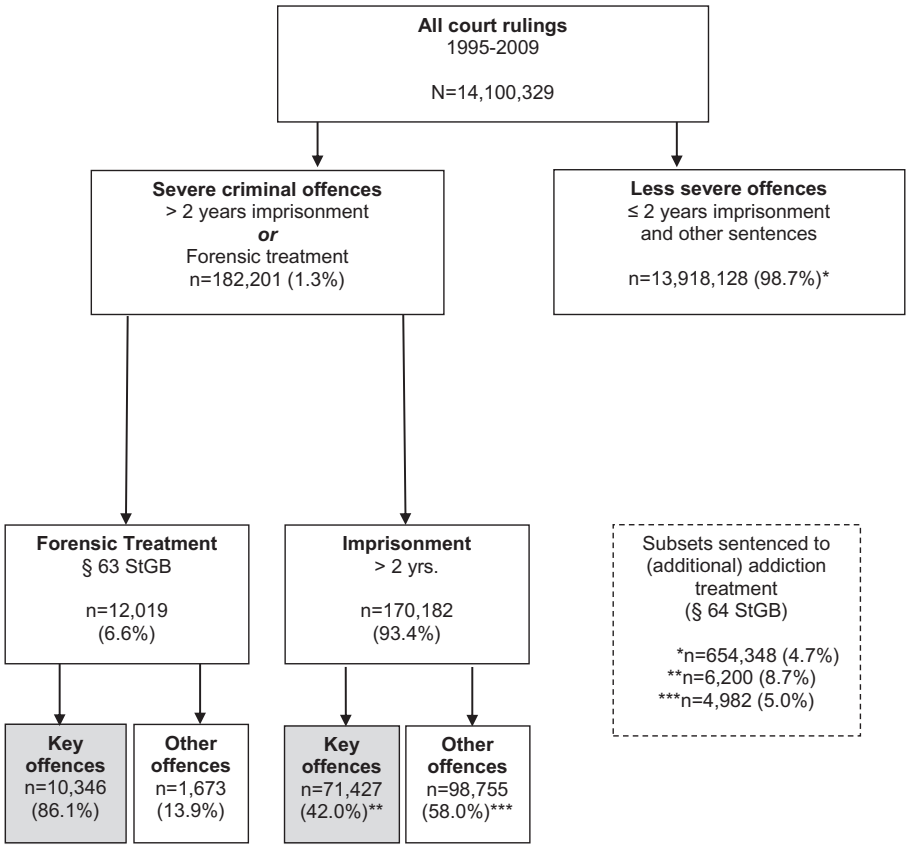

Fig. 1. Sentences to forensic treatment and imprisonment in Germany, 1995 to 2009.

of female offenders for the years 1995 and 2009 within the offence types and, by way of comparison, the total (female plus male) percentage changes. Regarding the changes over time, the proportion of women in prison remained relatively stable except for those women convicted of homicide. Therefore, the frequency changes in most of the offence categories were similar in women and men in the prisoners group. Only with homicide convictions did the absolute number of convicted women in prison rise slightly (1995: 44; 2009: 48; +4.5%) despite the general decrease (−28.6%) in the prison group and the relative share of women increased from 6.5% to 9.3%. The number of homicides leading to forensic treatment changed only slightly from 1995 to 2009 (+3.3%), but the proportion of females rose by 43.2%.

In both groups, bodily harm offences increased considerably from 1995 to 2009. In the prison group, the proportion of women rose (+117.8%) in approximate correspondence with the overall increase of both sexes in prison (+136.2%). In the forensic treatment group, the overall treatment orders due to bodily harm offences nearly tripled during the period under consideration (+188.7%), but the number of women in forensic treatment increased fourfold from 8.5 to 35.5. In 2009, in the bodily harm category there was an even greater absolute number of female offenders sentenced to forensic treatment than sentenced to prison (35.5 vs. 29.4).

In contrast, high proportions of women were involved in arson offences in the forensic group. Over the years, the proportion of women remained constant in this group and increased slightly in the prison group. Absolute numbers of women were substantially higher in the forensic treatment than in the prison group both in 1995 and 2009.

3.3. Diminished criminal responsibility

Offenders with diminished criminal responsibility pursuant to German law may either receive prison sentences or forensic psychiatric treatment orders. Over the study period, nearly one third of offenders in forensic treatment and nearly one fifth of the prison offenders were found to be of diminished responsibility at the time of the index offence (Table 6). The most prominent offences committed by those with diminished responsibility were sexual offences in the FT group and homicides in the prison group.

Over the period under consideration, there was an absolute and relative decrease of diminished responsible offenders in prison (Table 6). The absolute number of these offenders in prison (all key offences) decreased from 1024 in 1995 to 792 in 2009 (−22.7%). Although the absolute numbers of offenders with diminished responsibility increased slightly in the FT group, the proportion of these offenders declined because of the absolute increase of offenders not criminally responsible.

3.4. Percentage of foreigners

In the years 1995 to 2009 the mean percentage of foreigners (i.e. those not having German nationality) living in Germany was 8.9% with only small variations over the time period (Bundesamt für Migration und Flüchtlinge, 2009). The proportion of non-German nationals in forensic treatment was smaller than in the prison group both overall and for each offence category (Table 7). However, the forensic treatment group showed an increase in the percentage of foreigners within all of the offence categories, while in prison the proportion of foreigners decreased for all offence categories (with the exception of sexual offences). The proportions of foreigners became more similar in the two groups over the years.

3.5. Previous criminal convictions

The data presented in Table 8 are based on the dichotomous

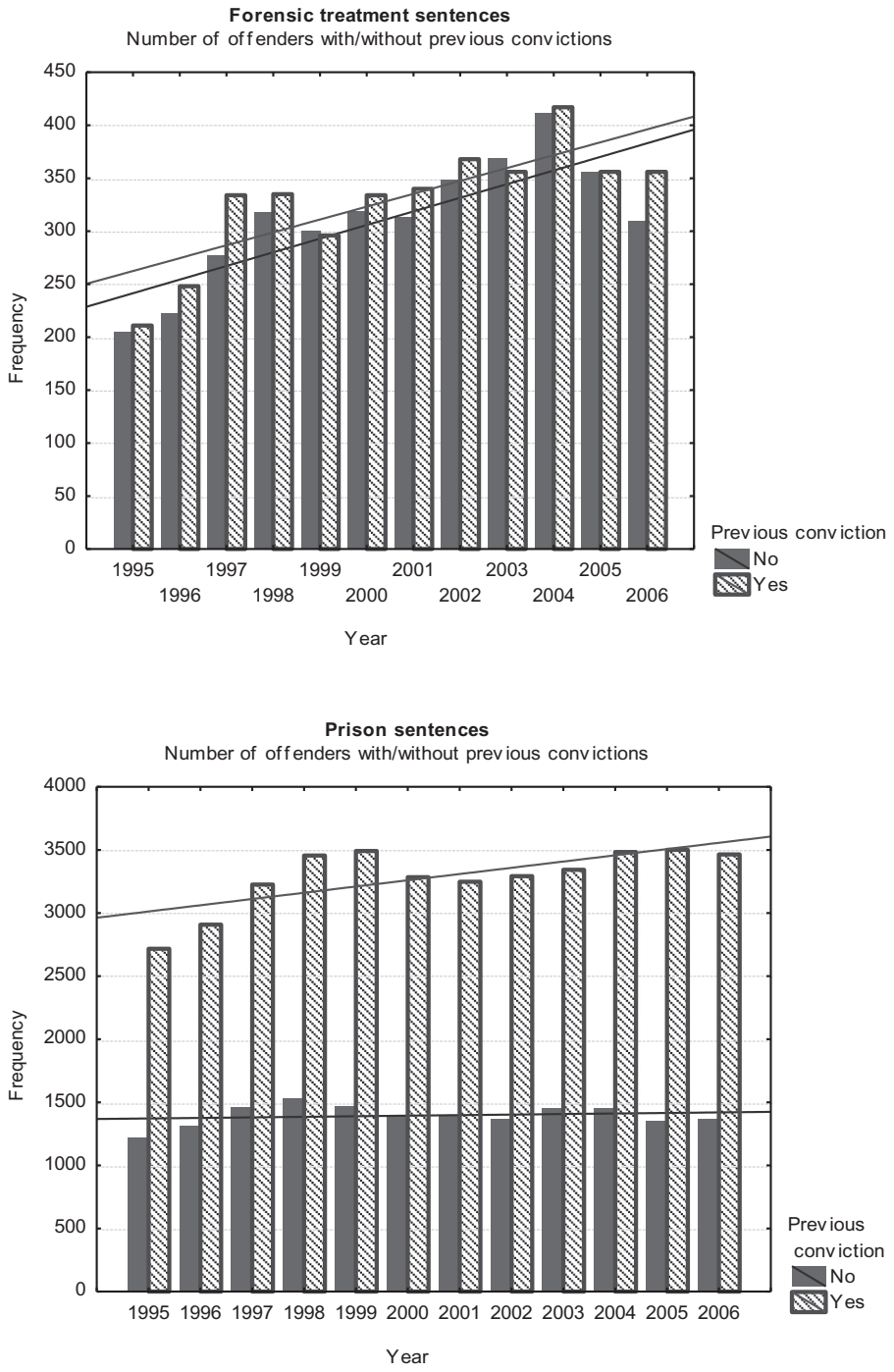

Fig. 2. Example of linear fitting over the years: Number of previously convicted offenders in forensic treatment and in prison.

criterion of having a previous criminal conviction irrespective of the nature of previous offences. A high percentage of offenders in the FT and prison groups had previous convictions (Table 8; column 1995–2006). Other than for sexual offences against children or adolescents, the proportion of previously convicted offenders is higher in prison.

The two groups differed in the trends over the period from 1995 to 2006. In the prison group, the absolute number of offenders with previous convictions increased by 18.1%, while the absolute number of those without previous convictions grew by only 3.5% (from 1372 to 1420 cases). In the FT group, however, there was little difference in absolute numbers between those with (+51.3%) and those without a previous conviction (+58.6%; from 242 to 383, see Fig. 2), so the proportion of previously convicted offenders in forensic treatment was somewhat smaller in 2006 than in 1995.

The falling numbers of homicide offences leading to a prison sentence can be equally attributed to offenders with and without a previous conviction. In forensic treatment, the slightly decreasing number of homicide offenders with previous convictions was counterbalanced by an increase of offenders without a previous conviction, leading to a nearly identical absolute number of homicides over the years.

Table 1
Age at offence, offenders in forensic treatment (FT) and in prison (PR).

	Age at offence (categories, yrs.) 1995–2009				In-, decrease of age categories at offence (± yrs. 1995 vs. 2009)	
	Age categories (M; sd)		Median		FT	PR
	FT	PR	FT	PR		
All key offences	38.0 (12.4)	32.6 (11.2)	35	30	+1.2	± 0.0
Homicide	39.4 (13.2)	36.4 (12.2)	35	35	+2.2	+3.0
Bodily harm	38.4 (12.1)	29.3 (10.5)	35	25	−1.1	−1.7
Other violence	35.2 (11.1)	29.5 (9.0)	35	25	+2.2	−0.1
Arson	38.5 (12.9)	34.8 (11.5)	35	35	+3.6	+0.2
Sexual offence against an adult	36.1 (11.8)	36.0 (10.9)	35	35	+1.6	+1.6
Sexual offence against a child or adolescent	40.5 (13.5)	44.1 (11.4)	40	45	+1.4	+1.7

4. Discussion

To the best of our knowledge, this is the first attempt to provide an overview of forensic treatment orders in Germany, using more differentiated data than previously available and providing a comparison with those individuals sentenced to imprisonment. This data will be useful for further comparative studies in the field, particularly as the presented results are based on the total populations of offenders in forensic treatment and in prison. We found clear similarities as well as relevant differences in the characteristics of offenders in forensic treatment and correspondent offenders in prison. Trends over time also differed between the two groups.

In terms of sociodemographic characteristics, offenders in forensic treatment were older than those in prison, in keeping with our initial hypothesis. Although reasons for this age difference cannot be identified directly from the data collected, psychotic disorders such as schizophrenia which are particularly prevalent in forensic-psychiatric settings (e.g. Coid, Hickey, Kahtan, Zhang, & Yang, 2007; Nijman, Cima, & Merckelbach, 2003) tend to develop in late adolescence or early adulthood for men and somewhat later for women. Given these are the disorders which typically lead to placement in forensic treatment, this represents a plausible explanation for the average age being greater in the FT group than in the prisoner group.

Although the proportion of offenders aged 21 years or younger was lower in forensic treatment, the opposite was true for those with sexual offences, in particular for those with offences against children. Although such offenders are generally convicted at an older age compared to other types of offenders, possibly due to the high proportion of unreported crime (e.g. Finkelhor, Hotaling, Lewis, & Smith, 1990), it is

Table 3
Frequencies[a] of older and younger offenders in forensic treatment and in Prison.

	Absolute numbers of sentences 1995 and 2009 Change (%)			
	Forensic treatment		Prison	
Age of offenders (years)	≤21	> 21	≤21	> 21
All key offences	44.5/86.0	492.9/756.0	791.7/1285.9	3828.2/3617.8
	+93.4%	+53.4%	+62.4%	−5.5%
Homicide	8.5/8.7	106.8/112.8	78.5/74.2	599.3/420.6
	+2.4%	+5.7%	−5.4%	−29.8%
Bodily harm	7.1/33.2	118.7/336.1	129.3/507.9	343.6/628.8
	+370.5%	+183.2%	+292.8%	+83.0%
Other violence	13.9/13.8	89.3/118.0	498.0/590.4	1799.9/1491.3
	−0.7%	+32.1%	+18.6%	−17.2%
Arson	3.7/11.3	55.7/93.1	11.1/25.9	94.8/109.6
	+277.1%	+67.0%	+133.7%	+15.6%
Sexual offence against an adult	8.0/9.5	67.4/57.1	67.8/70.6	632.5/526.6
	+18.1%	-15.2%	+4.1%	−16.7%
Sexual offence against a child or adolescent	3.3/6.8	55.0/38.9	7.1/16.9	358.2/440.9
	+107.9%	−29.3%	+138.0%	+23.1%

[a] Absolute frequencies for 1995 and 2009 based on linear distribution fitting.

Table 2
Offenders ≤21 years vs. > 21 years old, in forensic treatment and in prison.

	Forensic treatment		Prison	
	Absolute frequency		Absolute frequency	
	Total row % (Total column %)		Total row % (Total column %)	
	Age ≤ 21 yrs.	Age > 21 yrs.	Age ≤ 21 yrs.	Age > 21 yrs.
All key offences n = 81,773	979	9367	15,582	55,845
	1.2% (100%)	11.5% (100%)	19.1% (100%)	68.3% (100%)
Homicide n = 10,570	129	1647	1145	7649
	1.2% (13.2%)	15.6% (17.6%)	10.8% (7.3%)	72.4% (13.7%)
Bodily harm n = 15,785	302	3411	4779	7293
	1.9% (30.8%)	21.6% (36.4%)	30.3% (30.7%)	46.2% (13.1%)
Other violence n = 34,610	208	1555	8163	24,684
	0.6% (21.2%)	4.5% (16.6%)	23.6% (52.4%)	71.3% (44.2%)
Arson n = 3059	133	1116	277	1533
	4.3% (13.6%)	36.5% (11.9%)	9.1% (1.8%)	50.1% (2.7%)
Sexual offence against an adult n = 10,796	131	934	1038	8693
	1.2% (13.4%)	8.7% (10.0%)	9.6% (6.7%)	80.5% (15.6%)
Sexual offence against a child or adolescent n = 6953	76	704	180	5993
	1.1% (7.8%)	10.1% (7.5%)	2.6% (1.2%)	86.2% (10.7%)

Table 4
Proportion of women in forensic treatment and in prison, 1995 to 2009.

	Proportion of women (%) (N = Absolute number male + female offenders)	
	Forensic treatment	Prison
All key offences	9.6% (N = 10,346)	3.1% (N = 71,427)
Homicide	15.2% (n = 1776)	7.7% (n = 8794)
Bodily harm	8.9% (n = 3713)	2.7% (n = 12,072)
Other violence	6.7% (n = 1763)	3.0% (n = 32,847)
Arson	2.6% (n = 1249)	4.8% (n = 1810)
Sexual offence against an adult	0.4% (n = 1065)	0.4% (n = 9731)
Sexual offence against a child or adolescent	0.3% (n = 780)	0.9% (n = 6173)

possible that the negative publicity around these offences increases the likelihood of offenders being admitted to forensic care where they will receive treatment but where their length of stay is potentially indefinite. It is also possible that sex offenders in forensic treatment are more likely to experience intellectual disability and thus have become institutionalized earlier in their life than sex offenders in prison. While the increase of age by one age-category in the forensic group over time reflects the increasing age of the total German population during the same period (age ≥ 40: 47.7% in 1995, 56.9% in 2009, Destatis Statisches Bundesamt, 2018), the general likelihood of offending in the prison group remained highest and unchanged over the time of the study in the younger aged groups, particularly for violent offences. Given the high percentage of individuals with previous offences, it is possibly that those within the forensic group previously spent time in prison and were only admitted to forensic care at a later stage of their criminal career, possibly because their disorder became more prominent and hence diagnosable at this point. However, longitudinal studies would be required to confirm such trajectories.

In keeping with our second hypothesis, the proportion of female offenders in forensic treatment was around three times higher than in prison even though the percentage of female offenders was low in both groups. These findings are in keeping with previous studies showing the relatively high proportion of mentally disordered women in forensic treatment for severe offences (Chang, Larsson, Lichtenstein, & Fazel, 2015; Elbogen & Johnson, 2009; Fazel, Gulati, Linsell, Geddes, & Grann, 2009; Monahan et al., 2001). Some authors have suggested a gender bias in sentencing favouring women in countries such as North America (e.g. Sarnikar, Sorensen, & Oaxaca, 2007; Spohn & Beichner, 2000) and in the UK where women who appear before the courts are proportionately more likely to receive a psychiatric disposal (e.g. Maden, 1996). It is possible that a similar process has operated in Germany with women perceived as more deserving of forensic psychiatric treatment and warranting more lenient sentences or disposals that emphasize treatment over punishment.,).

The percentage of foreigners (i.e. non-German nationals) in forensic treatment was about one third lower than in prison, but still greater than the proportion in the general population. In contrast, Coid et al. (2000) found in a large UK sample that ethnic minority groups were overrepresented in both prison and forensic populations. They attributed this to socioeconomic deprivation as well as the type and severity of illness. The possibility that non-nationals may be less often subject to

Table 6
Numbers and proportions of offenders with diminished responsibility[a], 1995–2009; years 1995 and 2009.

	Forensic treatment % 1995–2009 (% 1995 / % 2009)	Prison % 1995–2009 (% 1995 / % 2009)
All key offences	3376 32.6% (40.1% / 27.9%)	13,621 19.1% (22.2% / 16.1%)
Homicide	402 22.6% (23.9% / 21.4%)	2666 30.3% (36.3% / 22.1%)
Bodily harm	759 20.4% (22.2% / 19.8%)	2540 21.0% (26.8% / 18.6%)
Other violence	606 34.4% (44.1% / 26.7%)	5715 17.4% (18.4% / 16.3%)
Arson	386 30.9% (33.7% / 29.4%)	474 26.2% (26.9% / 25.6%)
Sexual offence against an adult	648 60.9% (66.9% / 54.0%)	1653 17.0% (21.0% / 12.3%)
Sexual offence against a child or adolescent	575 73.7% (75.0% / 72.1%)	573 9.3% (14.6% / 5.0%)

[a] In FT all other offenders are not criminally responsible; in prison all other offenders have full criminal responsibility.

Table 5
Proportions of women in forensic treatment and in prison, years 1995 and 2009.

	In-/decrease of all sentences (%)		Female offenders	
	1995–2009 (fem. + male offenders)		Absolute number[a] (percent change of absolute numbers) Percent female 1995/2009	
	Forensic treatment	Prison	Forensic treatment 1995/2009	Prison 1995/2009
All key offences	+53.9%	+4.0%	44.6/88.0 (+97.3%) 8.3%/10.5%	138.8/151.2 (+8.9%) 3.0%/3.1%
Homicide	+5.4%	−27.0%	14.8/21.2 (+43.2%) 12.8%/17.4%	44.0/46.0 (+4.5%) 6.5%/9.3%
Bodily harm	+193.6%	+140.4%	8.5/35.5 (+317.6%) 6.7%/9.6%	13.5/29.4 (+117.8%) 2.9%/2.6%
Other violence	+27.7%	−9.4%	7.9/7.8 (−1.3%) 7.6%/5.9%	68.9/63.3 (−8.1%) 3.0%/3.0%
Arson	+75.8%	+28.0%	13.3/22.7 (+70.7%) 22.4%/21.2%	4.8/6.8 (+41.7%) 4.5%/5.0%
Sexual offence against an adult	−11.7%	−14.7%	0.0/0.7 (–) 0.0%/1.1%	4.0/1.6 (−60.0%) 0.6%/0.3%
Sexual offence against a child or adolescent	−21.5%	+25.3%	0.0/0.0 (–) −/−[b]	3.6/4.0 (+11.1%) 1.0%/0.9%

[a] Absolute frequencies for 1995 and 2009 based on linear distribution fitting.
[b] Only one female FT order in yrs. 1999 and 2002 each, all other yrs. no FT orders for women.

Table 7
Absolute and relative numbers of foreigners[a], 1995–2009; years 1995 and 2009.

	Forensic Treatment			Prison		
	Foreigners, absolute numbers[b]			Foreigners, absolute numbers[b]		
	Per cent (%)			Per cent (%)		
	1995–2009	1995	2009	1995–2009	1995	2009
All key offences	1985	78.1	186.6	22,500	1560.4	1439.6
	19.2%	14.5%	22.2%	31.5%	33.8%	29.4%
Homicide	446	25.8	33.7	3187	259.2	165.8
	25.1%	22.4%	27.7%	36.2%	38.2%	33.5%
Bodily harm	809	18.3	89.6	3756	178.1	322.7
	21.8%	14.5%	24.3%	31.1%	37.7%	28.4%
Other violence	375	19.2	30.8	11,392	841.8	677.1
	21.3%	18.6%	23.4%	34.7%	36.6%	32.5%
Arson	154	6.5	14.0	319	23.7	18.9
	12.3%	10.9%	13.1%	17.6%	22.4%	13.9%
Sexual offence against an adult	164	5.7	16.1	3234	224.2	207.0
	15.4%	7.6%	24.2%	33.2%	32.0%	34.7%
Sexual offence against a child or adolescent	37	-[c]	-[c]	612	33.4	48.2
	4.7%	-	-	9.9%	9.1%	10.5%

[a] Defined as non-German nationals.
[b] Absolute frequencies for 1995 and 2009 based on linear distribution fitting.
[c] No cases in years 1995, 1996 and 2009; < 10 cases in any other year.

expert witness reporting may also be a factor. The methodology in the current study does not allow conclusions to be drawn as to the reasons for this difference, and this needs to be investigated further in future research.

The higher proportion of offenders with diminished criminal responsibility (33%) in the FT group was as anticipated. However, the corresponding proportion of prisoners with diminished responsibility (19%) is still substantial and is in keeping with other reports of high prevalence rates of mental disorders in prison populations worldwide (e.g. Franke et al., 2019). No conclusions can be drawn on how this vulnerable group is treated in prison, although the challenge of meeting the needs of mentally disordered offenders in a prison setting is widely recognised, and no less so in Germany where factors such as the special problems of migrants and the shortage of professional staff are recognised as particularly significant (Lehmann, 2012).

The proportion of previously convicted offenders in forensic treatment was lower than in prison, as anticipated. Given the likely higher prevalence of psychosis in the prison group in the current study, this is in keeping with other reports that forensic patients with psychosis are more likely to be first offenders than are those without psychosis (e.g. Nijman et al., 2003). However, the proportion with previous convictions was surprisingly high in the FT group (51%), indicating potentially missed opportunities of earlier interventions with mental disordered persons to prevent at least some of the later severe offences.

Looking at developments over the 14 years period of this study may provide indications of societal factors influencing criminal behaviour as a whole. Similar trends could be detected when younger vs. older offenders were compared: the number of younger offenders grew considerably from 1995 to 2009 in forensic treatment and in the prison group, especially for bodily harm offences and arson. This may reflect a general societal trend of reduced constraints in expressing specific forms of violence, especially among younger people. Furthermore, diminished responsibility was granted less frequently within both prison and forensic treatment sentences over the observed period, and it may

Table 8
Absolute numbers and percentages of offenders with previous convictions, 1995 to 2006; years 1995 and 2006.

	Forensic treatment Number previously convicted[a] (Percentage)			Prison Number previously convicted[a] (Percentage)		
	1995–2006[b]	1995	2006[b]	1995-2006[b]	1995	2006[b]
All key offences[c]	3951	262.4	396.1	39,414	3012.3	3556.7
	51.3%	52.1%	50.8%	70.2%	68.7%	71.5%
Homicide	481	41.3	38.8	3567	328.8	265.7
	35.8%	38.2%	35.7%	50.7%	51.2%	52.7%
Bodily harm	1356	54.7	171.3	7088	364.0	817.4
	52.2%	48.9%	55.9%	81.9%	79.0%	85.7%
Other violence	818	64.0	72.3	20,273	1654.8	1724.1
	62.2%	64.1%	64.3%	77.3%	77.4%	80.7%
Arson	393	21.2	44.3	990	64.8	100.2
	42.1%	42.9%	43.6%	70.0%	67.8%	74.8%
Sexual offence against an adult	516	46.3	39.7	5112	425.0	427.0
	59.5%	70.2%	55.9%	63.9%	67.2%	63.4%
Sexual offence against a child or adolescent	387	34.9	29.6	2384	175.1	222.3
	60.3%	66.0%	58.3%	49.5%	52.1%	48.9%

[a] Absolute frequencies for 1995 and 2006 based on linear distribution fitting.
[b] Data were only recorded until 2006.
[c] Missing data: 239 cases (3.0%) in forensic treatment and 1354 cases (2.3%) in prison.

be speculated that a change in legal practice has taken place resulting in an increasing likelihood of offenders receiving forensic treatment orders as opposed to prison disposals.

There were also opposing trends over the observation period in the two groups. For example, the mean age of forensic offenders rose but remained constant in the prison group. The number of older homicide offenders in forensic treatment remained relatively constant, while it decreased considerably in the prison group. This again raises the question as to whether more specific prevention measures could be developed by psychiatric or social services to protect mentally disordered individuals from becoming severe offenders. In this context it may be helpful in future research to analyse possible regional differences in homicide rates together with regional psychiatric service structures.

Especially for women with a mental disorder, there seems to be a further increase of the likelihood of offending over the years, as the data shows an increase in both the absolute number and the proportion of forensically treated women. This is particularly the case for homicide and bodily harm offences. In prison, bodily harm was the only category of offences committed by women to increase notably, but to a much lesser degree than those in the forensic group. As noted above, an increased sensibility on part of general psychiatric services of the violence risk of their patients may be required. The findings of Sanders, Milne, Brown, and Bell (2000) that only 13% of all admissions at a general psychiatric ward had been asked about interpersonal violence as compared to a figure of 94% who had been asked about suicidality may still be pertinent here, especially for women who are usually perceived as less aggressive than males. Contact with general psychiatric services may provide opportunities for criminal prevention (Hodgins & Klein, 2017).

Opposing trends over time were also observed with regards to the number of foreigners receiving forensic treatment compared to those in prison: the number of foreigners in forensic treatment rose substantially over the study period whereas the number in prison fell slightly. This may indicate societal changes that have increased accessibility of general psychiatric services for foreigners, but it may also be the result of psychiatric expert reports being carried out more thoroughly, so that mental disorders are better identified in foreigners despite, for example, language problems.

This study has two important limitations. First, data was restricted to a limited number of offender characteristics. Future studies would benefit from a more comprehensive characterisation of offenders, especially with regards to diagnoses and other disorder-related data (such as severity and duration of the disorder, and previous treatments) as exemplarily set by the Canadian National Trajectory Project (Crocker et al., 2015). This would be helpful for health services research to identify national and regional changes in the offence-risk of mentally disordered persons and to target and adjust the scope of services. Second, the data collected did not allow description of the trajectories of specific individuals. Longitudinal research would be required to achieve this.

5. Conclusion

This study compares offenders receiving forensic treatment with offenders sentenced to imprisonment in Germany over a 15-year period. The data presented is derived from total populations rather than samples, and so may be particularly useful for future comparative studies. The following differences were observed between the two groups:

- overall, offenders in forensic treatment were older than those in prison; however, the opposite was true for those convicted of sexual offences.
- the proportion of female offenders in forensic treatment was around three times higher than for those in prison, in keeping with previous studies.
- the proportion of foreigners (i.e. non-nationals) in forensic treatment was about one third lower than in prison.
- a significant proportion of prisoners (19%) were reported as having diminished criminal responsibility.
- just over half of those in forensic treatment had a history of previous convictions.

In terms of trends over the 15-year study period, there was:

- a substantial increase in the number of foreigners in forensic treatment, whereas the number in prison fell slightly.
- a substantial increase in the number of women in forensic treatment, particularly for those convicted of homicide and bodily harm; here, the increase in the number of women convicted of bodily harm offences was considerably greater in the forensic group than was the increase in the prisoner group.
- the number of younger offenders increased considerably in both groups, particularly for those convicted of bodily harm and arson offences.

Declaration of Competing Interest

None.

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