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SPECIAL ISSUE

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Has deinstitutionalization gone too far?

Abstract Modern social psychiatry is aiming at integration of the mentally disordered in the community instead of institutionalization – with or without institutions. No doubt, the majority of mentally disordered patients have benefitted greatly from deinstitutionalized psychiatry.

Unfortunately, in the implementation of deinstitutionalized psychiatry, there has widely been a gap between the closure of the mental hospitals and the building up of the decentralized services. Instead of organizing decentralized services and then gradually reducing the capacity of hospital treatment, things happened in many places the other way around.

With data from the nationwide Danish Psychiatric Case Register, the author documents a series of negative indicators that have appeared parallel with the deinstitutionalization process.

- 100% increase in standard mortality rate of suicides for non-organic psychotic patients
- an exponential increase of 6.7% annually in number of criminal mentally disordered
- increase in coercive activities in the wards several hundred per cent for some of the measures
- increase in bed occupancy rate from approximately 80% to 100%
- Acute admission rates between 85% and 90%
- No signs of reduction in 1 year readmission rate of first time diagnosed schizophrenics from the very stable 45%–50% which has been seen for almost 20 years.

Beyond any doubt, social psychiatric rehabilitation is needed. An increase in the capacity in the psychiatric services and fitting of the treatment models to the patients' needs so that the negative aspects we have seen can be properly handled must be on top of the agenda in the next few years.

Key words Psychiatry · Deinstitutionalization · Suicide · Coercion · Criminality · Bed occupancy rates · Readmission

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Introduction

For the introduction it must be emphasized that the author has a very positive attitude to decentralization of psychiatry, or phrased in another way to deinstitunalization of psychiatry. However, it must be an indispensable condition that deinstitutionalization/decentralization should be implemented restrictively in a way and in a tempo that it is professionally – not only proper – but also scientifically well-founded.

The political ideologically colored, and some places political ideologically motivated, restructuring has as all political and para-religious movements an inclination toward an imperialistic way of spreading, pleading excellence in contrast to early times, and other models.

The present article will not underline or exemplify the positive aspects of deinstitutionalization/decentralization; there is no doubt of its value. On the contrary, examples will be used to argue in favor of the limitations of the deinstitutionalization and decentralization with the intention of supporting a scientific-based non-political psychiatric organization. This against the tendency that has prevailed, and still is prevailing at some places, that the political level not only delimits frames and cource in psychiatriy but forgets its roles and poses as professionals.

Background

In 1987, when the debate in Denmark about decentralization of the psychiatry (read: reduction in the number of available beds) was intensified, Denmark had 5,850 available beds (excl. child and adolescence beds) corre-

Table 1 Number of persons 18 years+ with at least one day in-patient contact to psychiatric service in Denmark (crude rates per 1,000 inhabitants 18 years+)

* ICD-8
§ ICD-10
– can almost directly be compared
(–) can to a certain degree be compared
| can under no circumstances be compared

	1977*	1987*			1997§
Schizophrenia	1.16	0.95	–	F20 Schizophrenia	1.08
Manic-depressive psychoses	1.38	1.00	|	F3 Affective disorder	1.35
Organic psychoses	1.31	0.80	(–)	F0 Organic disorder	0.43
Neurosis	0.84	0.26	|	F4 Nervous	0.50
Drug/substance/alcohol abuse	1.19	1.09	(–)	F1 Abuse	0.86
Other psychoses	0.96	0.87	|	F2 (excl. F20) psych.	0.61
Personality disorders	1.16	0.81	(–)	F6 Pers. disorders	0.39
Other	0.86	0.62	|	F5, 7, 8, 9 and other	0.24
	8.86	6.40			5.46

sponding with 1.47 per 1,000 inhabitants aged 18 years and above. The number had decreased from 2.36 since 1977.

It is true, as stated by the spokesmen for reduction of beds, that an argument only about the number of beds is unusable, but when no other services are established, as was the case in Denmark in the period, it is necessary to argue only on the basis of the number of beds.

Nothing but reduction in the capacity of the psychiatric departments happened from 1977 to 1987. The reduction that had started already in the early 1970s as part of the reorganization of the psychiatric service had continued, i.e., a reduction of the capacity of the large asylums and instead establishment of psychiatric departments in general hospitals. The reorganization was started by a ministerial report from 1956. The plan was to approach psychiatriy to the other medical specialities. Physically the establishment of a number of psychiatric departments in general hospitals succeeded but at a functional level the integration plans almost failed. Instead psychiatry has drifted more and more toward the social agencies in the counties and the municipalities, a development that seems to have been started by a preoccupation with the social complications of the most severe mental illnesses. It had also been possible to close down a number of beds due to the advances by psychopharmacological treatment that made it possible to discharge many patients who formerly lived in the asylums. An initiative was supported by a new social law from 1970 that should make it possible to integrate mentally ill in society, just as neurotic and depressed patients could now be treated on an outpatient basis.

As to the enlargement of decentralized psychiatric service nothing happened from the start of the 1970s until 1987. Moreover, nother happened in several years after 1987 – which we will return to.

In 1977 the psychiatric treatment system in Denmark was in contact with 8.86 patients aged 18+ per 1,000 inhabitants. These patients were all registered in The Psychiatric Central Register with at least one day's hospitalization (Munk-Jørgensen and Mortensen 1997).

In Table 1, these patients are grouped according to main diagnoses. If the patients have been hospitalized more than once during the year and consequently might have more different diagnoses, the last one was used in the calculations. The table also shows the crude rates in accordance with the background population 18 years+.

The corresponding figures of 1987 are also shown in Table 1. During the decade from 1977 to 1987, the number of patients aged 18 years and more with at least one admission decreased by 27.8% calculated on the basis of crude rates per 1,000 inhabitants 18 years+. Especially patients with neuroses, manic-depressive conditions and organic psychoses decrease in number, but also personality disturbances and "other disturbances" contribute to the decrease, while "other psychoses", abuse conditions, and schizophrenia only decrease inconsiderably.

The figures from 1997 are different. The number of beds has further decreased to 0.97 per 1,000 inhabitants 18 years+, a decrease of 58.9% since 1977, 34.0% since 1987. The number of patients 18 years+ with at least one day of hospitalization was in 1997 5.46 per 1,000 inhabitants 18 years+, a decrease of 38.4% over a 20-year period during which time the number of beds decreased by 58.9%. The figures testify to an alteration toward short-term admissions.

The figures on the diagnostic distribution are not comparable for 1977 and 1987 on the one side with 1997 on the other, because Denmark changed the diagnostic classification system from ICD-8 to ICD-10 on January 1, 1994. However, the total rates of admitted patients are comparable. As mentioned above there has been a reduction in the number of adults with at least one in-patient-day contact from 0.89% of the population 18 years+ in 1977 over 0.64% in 1987 to 0.55% in 1997.

Coercion in psychiatry

In Denmark, the number of compulsory commitments is low, one of the lowest figures in the world, i.e., approximately 1,500 in a total population of more than 5 million, corresponding with approximately 30 per 100,000 inhabitants per year. The share of compulsory commitments of patients aged 18 years+ has been constant in the epoch of decentralization, i.e., very few as shown in Fig. 1, in the 1990s between 4 and 5%. Such commitments represent society's reaction to severe mental illness, a concern that is not the subject of the present study.

Instead, we will focus on the coercion in the psychiatric departments. Since 1990, the Danish board of health currently has received information about coercion of hospitalized psychiatric patients. Unfortunately, this data are

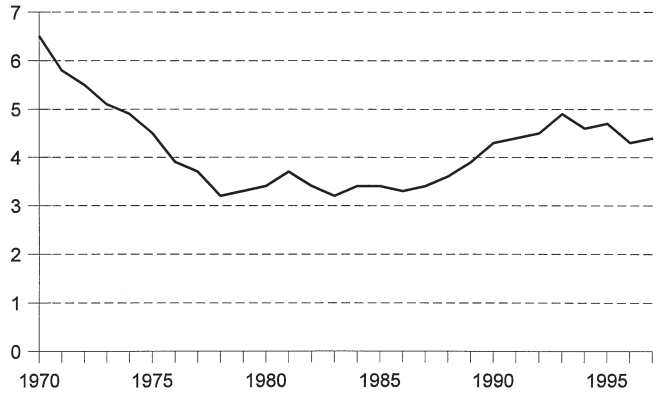


Fig. 1 Percentage of admission by compulsory, 18 years+

collected anonymously and not, as would have been obvious, linked to the person identifiable data in the Psychiatric Central Register. Otherwise, it would have been possible to analyze which type of mental illnesses was exposed to coercion, which age groups, sexes, etc. But the aggregated data are also informative, as shown in Fig. 2. At present (November 1998) the statistics on these subjects are available including 1996.

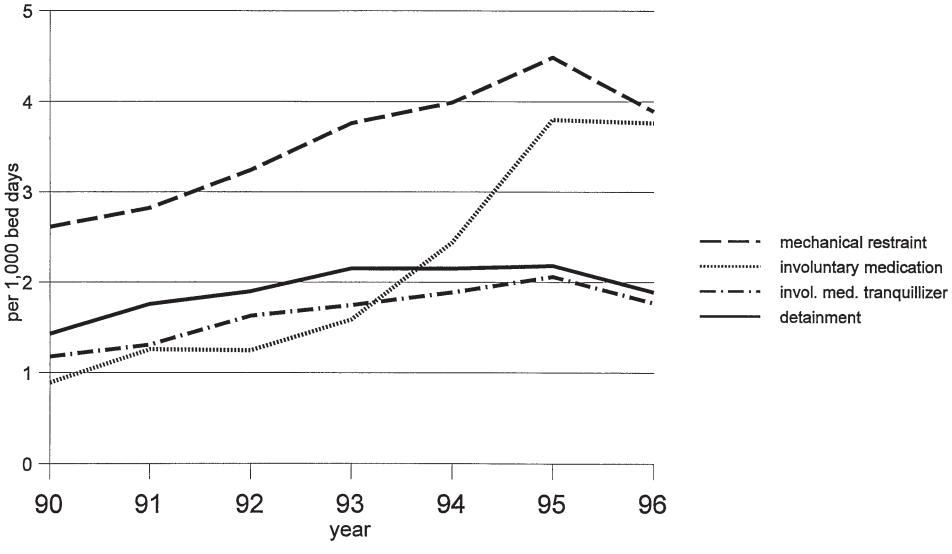
Since initiation of registration, the number of detainments reached a maximum of 2.18 per 1,000 bed days in 1995, an increase of 52% over 5 years as shown in Fig. 2. Detainment is used either with the compulsory committed patient whose case is reassessed or the voluntarily admitted patients whose state worsen to such a degree that detainment is necessary. Involuntary medication has increased from being used 0.89 per 1,000 bed days in 1990 to 3.80 and 3.76 per 1,000 bed days in 1995 and 1996, respectively, an increase of more than 300%. Unfortunately, in Danish statistics it is impossible to distinguish between closed and open wards. Consequently, bed days from both types of wards are included in the calculations, but as coercive activities almost exclusively take place in closed wards, the numbers shown in Fig. 2 are considerably underestimated as to closed wards. The National Board of Health suggests that the change in registration of forcible feeding might contribute to the increase. However, this is hardly probable as this intervention very rare occurs with respect to clinical experiences. Involuntary medicaton with tranquillizers is a special type of one-off treatment that legally is interpreted as less serious than the type mentioned above, but also this type has increased. Mechanical restraint has increased by 72% from 2.61 per 1,000 bed days in 1990 to 4.49 in 1995. In 1996, the figures were 3.89, representing an increase of 49% since 1990.

Conclusively, a striking increase is shown in all types of interventions during the period of registration. Because of the anonymous registration, the data cannot be validated. Among possible biases, the lack of registration routine in connection with the start of registration in 1990 could have caused under-registration. It seems that the increase has stopped as of 1996, and one might even hope for a decrease in years to come.

Without documentation of a possible connection, many clinicians combine the increase of coercive intervention in the psychiatric departments with increasing bed occupancy rates which will be shown later in this paper.

In a study from 1990–91, Poulsen et al. (1996) found that coercion was used on a limited number of persons. 229 (2.8%) of 8,151 inpatients were involuntarily medicated and 808 (9.9%) were mechanically restrained in the period, however, with large differences between the participating departments and a various number of events among the involved patients. The authors discuss high bed occupancy rates and limited numbers of community psychiatric services as possible factors of importance for the high occurrence of coercive activities.

Fig. 2 Coercion in Danish psychiatry



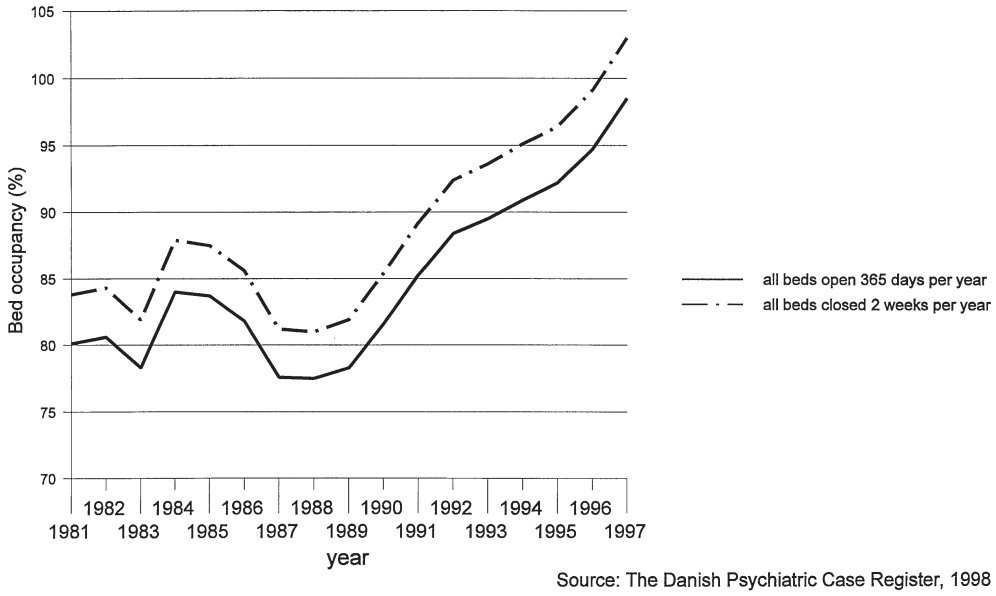


Fig. 3 Bed occupancy in Danish psychiatry 1981–97

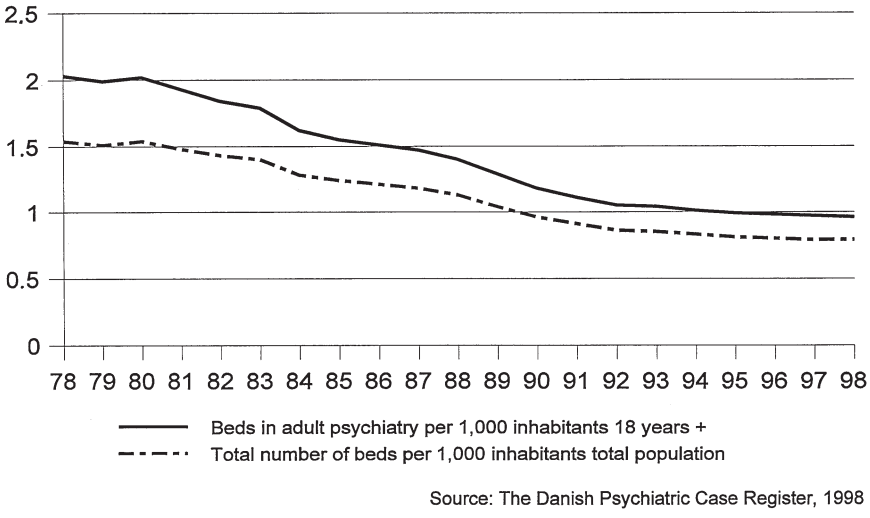


Fig. 4 Beds in Danish psychiatry

Bed occupancy

The bed occupancy percentages should preferably be below 100. Departments with acute functions must be considerably below 100% in order to be able to manage peaks. As previously mentioned, the Danish statistics do not distinguish between open and closed wards. Consequently, the following information is average figures for the whole country.

Essential in the development since the start of the 1980s is the stability in the occupancy at approximately 80% as shown in Fig. 3. Subsequently, there has been a linear increase with exponential tendencies since 1992. The highest figures in the period studied were measured in 1997 with 98.5%. The figures are calculated using information from the Danish Psychiatric Central Register. The register contains date of admission and date of discharge for all admission; therefore, it is possible to calculate the total number of bed days utilized in the year. Reports from each department show the number of beds as of January 1. Subsequently, the percentage of bed occupancy can be calculated as

$$\frac{\text{number of bed days} \times 100}{\text{number of beds} \times 365}$$

The figures calculated in this way are probably too low as a number of the departments are not in use from time to time, especially during holidays, summer, Christmas, Easter, and weekends. Supposing that all departments in Denmark are out of use on an average of 2 weeks per year, the treatment year will be on 349 days (365 – 10 weekdays and 6 weekend-days). This increases the average percentage of occupancy as shown in Fig. 3.

This manner of calculation, as shown in Fig. 3, would show inflated figures in cases where patients are not in the department, e.g., in weekends, on holiday etc., but are not registered as being absent.

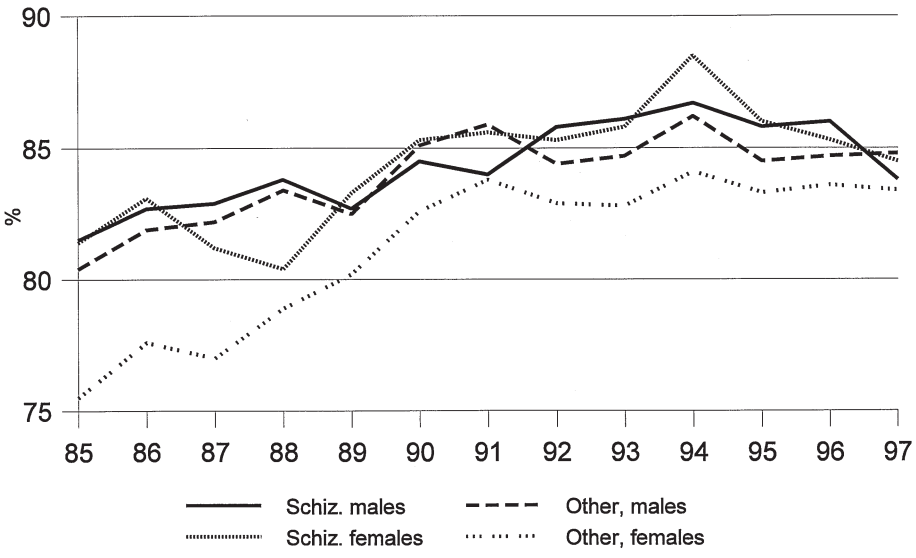


Fig. 5 Acute admissions to psychiatric departments in Denmark

Source: The Danish Psychiatric Case Register, 1998

The figures would also be too high if new departments were established during the year. However, this has not happened during the study period as shown in Fig. 4. On the contrary, every year the number of beds has decreased in proportion to the size of population.

Acute admission

The percentage of the acute admissions of all admissions to inpatient treatment in psychiatric departments is very high – between 85 and 90%. These percentages have been stable in the 8 years since 1990, without differences between males and females, or schizophrenic patients and others. It is impossible exactly to assess whether the high acute rate is an advantage or a disadvantage, whether it expresses a well-functioning or a poorly functioning psychiatric hospital service. An acute admission must be a certain traumatical event, while it on the other hand must be an advantage to be admitted without delay when needed. No data exists to answer the question whether an elective admission would have been possible, well-planned, instead of an acute admission, if the percentage of bed occupancy had not been as high as described above. It might also be the case that it is the character of mental illnesses which relapse and worsen, arise acutely and consequently demand acute admission.

The calculations are corrected for administrative admissions, which are transferrals from one department to another (in Denmark such transferrals are registered as a discharge from the first department and an admission to the second, if the two departments are parts of different administrative units), transferrals from one hospital to another in the same course of illness, etc. If these administrative admissions that are always elective had been included in the calculations, the percentage of the acute admissions would have been a few percent lower.

Suicides

Mental illnesses have always had an increased mortality due to a very high frequency of suicides, and a co-mortality caused by other illnesses. These cirumstances were recently documented by Harris and Barraclough (1997, 1998). In Denmark, there are unique possibilities for such studies due to our person identifiable registration, e.g., in the Psychiatric Central Register, the National Patient Register, the Register of Cause of Death, etc. From 1992 to 1993 the present author chaired a committee under the Danish Ministry of Health (Sundhedsministeriet 1994). The purpose of the committee was to analyze the development in occurrence of suicides in Denmark. Preben Bo Mortensen, Department of Psychiatric Demography in Aarhus, who was a member of the committee made the calculations of which the development in standard mortality ratio in functional psychoses is shown in Fig. 6.

In the Psychiatric Central Register all persons, who in 5 four-year periods from 1970–1987 were diagnosed with a functional psychosis for the first time and were admitted to a psychiatric department as inpatient, were identified. The patients concerned were followed in 4 years in the Danish Register of Cause of Death, and data of those who had committed suicide were extracted and a standard mortality ratio was calculated, sex specific and age standardized as to the background population. It was shown that this short-term suicide risk ratio (4 years) increased from about 20 to about 40, thus, approximately 100%. Interpretation of these findings is complicated. Some of the complicating factors are, firstly, the number of newly diagnosed first time psychotic cases in the Danish psychiatric hospital service during the period in question decreased parallel with the decrease of the capacity of the hospital services, and secondly, the rate of suicides in the background population has decreased since 1980. However,

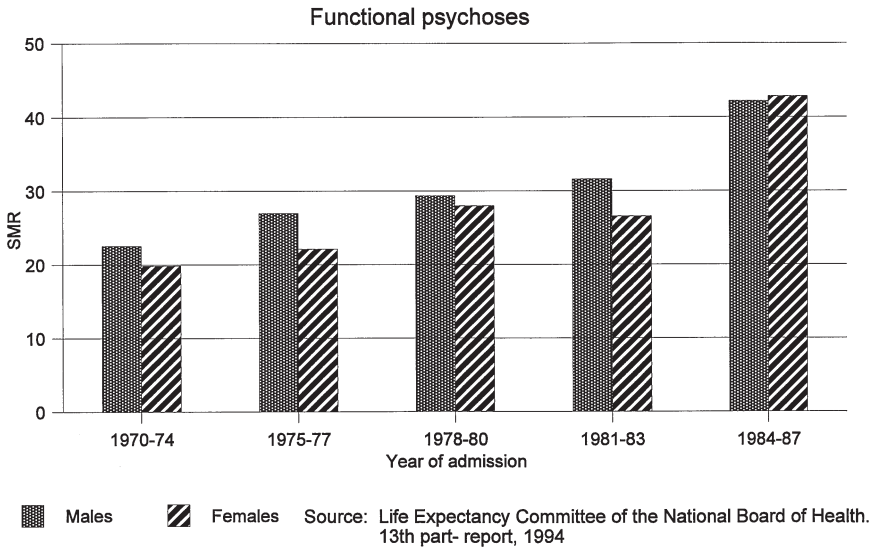


Fig. 6 Standard Mortality Ratio, suicide

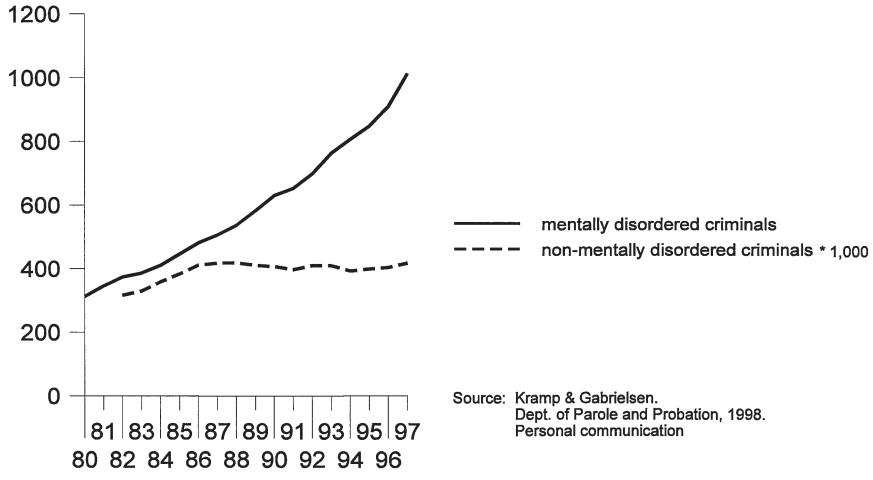


Fig. 7 Crime in Denmark 1980–97

none of the factors can explain the doubling of the suicide SMR, shown in the figure. On a later occasion Mortensen and one of his diploma students showed that the risk of suicide of schizophrenic patients during the 5 days following immediately after the discharge increased 2.1 times compared with the risk at admission (Rossau and Mortensen 1997). Furthermore, this is put into perspective of the increase of number of discharges of schizophrenic patients from about 3,500 in the start of the 1970s to about 7,000 at the start of the 1990s, corresponding with 0.9 and 1.7 schizophrenia discharges per 1,000 total adult population, or almost a doubling of the number of high risk periods.

Forensic psychiatric patients

In 1980, almost 300 mentally ill persons were under the supervision of the Department of Parole and Probation in Denmark. At the beginning of 1997, the number had increased to 1,000. The growth rate is exponential with 6.7% per year. The increase could theoretically be explained by an increasing influx of new criminally insane or by a longer duration of surveillance. The Danish forensic psychiatrist Peter Kramp and statistican Gorm Gabrielsen who made the study could, however, show that the duration of surveillance had not increased. Consequently, the exponential growth of the curve is exclusively caused by an increasing number of mentally ill persons who commit crime. Almost half of the forensic psychiatric patients suffers from schizophrenia. Eighty percent of the criminally insane are convicted of assault. Thus, the treatment system is still not able to protect this group against committing crimes (Kramp and Gabrielsen 1996). As can be seen from Fig. 7, the increase is seen exclusively in mental disorders; no increase is seen in non-mentally disordered since the mid-1980s.

From the beginning of the 1970s until today the number of schizophrenia bed days in the psychiatric hospital service has decreased from about 1.3 million bed days to about 500,000 bed days, i.e., more than 60%. In the same period, the capacity to the social psychiatric institutions has increased very little. This means that 2,000 schizophrenia person years each year stay in other places than in

an institution under its protection. Such a deinstitutionalization has, of course, advantages, but parallel with the development we see a growing number of mentally ill persons, especially schizophrenics, who succumb to committing crimes. And this is not an inconsiderable percentage as it is almost 500 of the 18,000 schizophrenic patients, or more than 2.5% of the schizophrenics in Denmark.

Schizophrenia relapse rates

It is well-known that one should avoid psychotic relapses by all means both from a biological point of view and because it is extremely important not to take the schizophrenia patients out of society for longer periods as this causes secondary handicaps to accumulate.

In many countries, organization of the psychiatric service is directed against the schizophrenic patients' needs, thus, also in Denmark. Consequently, a radical decrease in relapse rates among schizophrenic patients could be expected. However, this has not happened. Munk-Jørgensen has recently studied these conditions by use of the Psychiatric Central Register (Munk-Jørgensen, accepted for publication).

All psychiatric patients in Denmark diagnosed with schizophrenia for the first time ever in the period from 1970–1996 were followed for exactly one year from the day they were discharged from the hospitalization during which they were diagnosed with schizophrenia. All who are readmitted during this follow-up year represent the relapse rate for the year in question 1970–96. Readmissions within a period of 3 days after discharge are excluded in order to avoid administrative admissions during which a patient is transferred from one department to another or is discharged too early.

The results show that the readmission percentage not has gone down as expected, rather it has increased from 30% in the mid-1970s to a maximum of 45% in 1997 for females and from 45% to 50% in males.

Apart from certain improved social circumstances for some of the patients – and a terminological change in some counties from patient to user – schizophrenic patients have not achieved improved treatment measured by readmission rates (i.e., relapse rates). Unfortunately, it is well known that optimal biological treatment with high compliance supplemented with cognitive treatment and social care can bring the relapse percentage down to 20 (Kissling 1991). The study mentioned above is thoroughly described in L'encephale (Munk-Jørgensen, accepted for publication). The negative Danish results are obviously similar for the other Western European countries as well as for the USA; only it is possible in Denmark to show the figures due to the use of the Psychiatric Central Register.

Need for treatment patterns and decentralization

The examples below show some typical implications of community psychiatry. In the Danish rural county, Viborg, the responsibility of the psychiatric treatment was transferred from the authority of health to the social service on January 1, 1991. The purpose was to decentralize psychiatric treatment.

However, the change resulted in patients without social network, those with the lowest social level of function, and those who imposed the largest burden upon their relatives to receive less treatment in the new decentralized community psychiatry than was the case during the former organization. After the decentralization, the patients were more often admitted to the centralized mental hospital at a distance of approximately 100 kilometres from the local organization (Søgaard et al. 1995a). It is paradoxical that social psychiatric burdened patients are transferred to centralized inpatient treatment after a decentralized social psychiatric organization has been established in order to offer social psychiatric treatment to the patients in the community.

The study also showed that a considerable misdiagnosing before the reorganization of psychiatriy, i.e., that many psychotic and depressive patients who were not recognized but instead diagnosed as alcohol or drug abusers, were rendered visible, however, at the expense of a considerably longer waiting time for treatment (Søgaard and Søndergaard 1996).

When a catchment area changes psychiatric treatment organization, the responsible authorities must be prepared for an increased number of patients in need for treatment. Already in 1961, it was demonstrated that establishment of new services will be used by patients who hitherto have not had their needs satisfied: Roemer's law (Roemer 1961). This was recently documented in three studies from Denmark. Knudsen (1994) found an increase in the one-day-prevalence in Copenhagen, the Danish capital, after the establishment of community psychiatry. In the provincial town, Aarhus in Denmark, Valbak and co-workers found a slight increase of the prevalence rates (Valbak et al. 1992), while Søgaard and co-workers found an increase in the one-day prevalence from 2.3 to 3.3 per 1,000 after the establishment of the community psychiatric service (Søgaard et al. 1995b). Steady state will always regulate according to more incident cases than before the introduction of the new service. This is distinctly shown in the Danish Samsø project, described by Munk-Jørgensen (1985).

One might be tempted to believe that reorganization from hospital-based to community-based psychiatry is cost-saving; however the opposite is the case, as shown by Goldberg et al. (1996).

It seems surprising that after 2–3 decades of decentralized psychiatry Roemer's law is still not routinely included when new services are planned. Deinstitutionalization and community psychiatry are not new treatments that create openings for a reduction in the number of prevalent cases, but only "new" organizational structures.

Epilog

Evidence like that presented in the present article resulted in an intense discussion at the Danish Psychiatric Soci-

ety's general assembly on February 28, 1997. The general assembly agreed with a large majority (more than 90% of the delegates) upon a resolution to the responsible authorities (copied below in the author's translation). Such a resolution is for Denmark a drastic remedy as we have a tradition of a clear distinction between the political level, the civil service level, and the professional level. Consequently, it is rare that the professionals (the physicians) apply directly to the political level bypassing the civil service level. The resolution was sent to the Ministry of Health, the Medical Board of Health, and the public via the media and it ran as follows:

"Overcrowding and coercion in psychiatric departments are unacceptable. The development during recent years within the psychiatric treatment service has caused a severe deterioration in the treatment of many psychiatric patients. An important factor is the closing of a large number of available psychiatric beds. This has caused an unacceptable increase in the use of coercion and a continuous overcrowding in the psychiatric departments. In the same period, the number of suicides among psychiatric patients has increased compared with the average population. In an attempt to reverse this development, we must earnestly request an early reestablishment of 500 psychiatric beds, half in the Copenhagen area and half in the rest of the country."

The result of the resolution is seen in Fig. 4.

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