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Deinstitutionalisation in the Netherlands

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Abstract In the Netherlands mental hospitals and psychiatric departments in general hospitals kept the initiative in implementing community-based replacements for inpatient care. The goal of this study is to determine to what extent day treatment, sheltered residences and assertive home treatment were effective alternatives, rather than additions to inpatient care. All adult users and their use of intensive community- and hospital-based services between 1989 and 1997 were retrieved from the Groningen case register. Statistics about changes in the use of mental health care provisions were corrected for changes in the population as to size and age. The number of patients in day treatment, sheltered residences and in particular home treatment grew between 1989 and 1997 to a large degree, as did their average use of these services. In that same period inpatient care lost some, though not many patients, but the average length of their stay in the hospital was reduced by 33 %. Analysis of treated incidence and prevalence showed that the implementation of alternatives to hospital-based care did not attract new patients but kept patients longer in mental health care.

Key words Deinstitutionalization · Mental health services · Epidemiology · Prevalence · Incidence

Introduction

In the Netherlands, as in many other countries (Thornicroft and Bebbington 1989; Kluiter 1997 a), it has become standard policy to reduce the number of mental hospital beds in favour of a variety of community and outpatient services. The criticisms of the traditional medical model, the poor quality of the housing of psychiatric inpatients and the rising costs of mental health care were some of the more important causes to rethink Dutch mental health care in the 1970s. Initially, the Dutch government took a leading part in the innovation of mental health care. Ambulatory outpatient care was concentrated into regional institutes (RIAGGs). The main task of these institutes was psychotherapeutic and social-psychiatric treatment (Ministry of Public Health and Environmental Affairs 1974). Though they flourished in the 1980s, policy-makers acknowledged (Ministry of Welfare, Public Health and Cultural Affairs 1984; 1986) that the RIAGGs failed to cater for those with serious mental illness. As to the reduction of inpatient care, attention shifted to a regionally organised, coherent and flexible array of psychiatric services including day treatment, sheltered residences and home treatment (Ministry of Welfare, Public Health and Cultural Affairs 1993). The goal was to deliver tailor-made and community-based care and aftercare without major changes in the mental health care budget. The growth of community care was to be financed by the reduction of the expensive inpatient care in both mental hospitals and psychiatric departments in general hospitals.

Though the Dutch government supported local experiments with community care (Wiersma et al. 1994) and eliminated barriers for change in the structure of funding and insuring mental health care (Oldehinkel 1997), the implementation of innovations in mental health care was left explicitly to the service providers. In the Netherlands there has not been a government-imposed deinstitutionalization. Psychiatric hospitals were not closed but took a leading role in the provision of day and home treatment. The development of sheltered residences was initiated by patient organisations.

National statistics about admissions, capacity, patients, employees and costs all pointed at a rapid growth of the use of day treatment and sheltered residences in the early 1990s. Outpatient care and inpatient care increased much less (Bijl and Ten Have 1997; Ministry of

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Welfare, Public Health and Sports 1997). These statistics do not necessarily mean that all types of mental health care expanded without a partial replacement of inpatient care. Between 1988 and 1998 the Dutch population increased from 14.7 to 15.7 million (Statistics Netherlands 1988; 1998). In that same ten-year period the mean age of the Dutch rose from 35.8 to 37.4 years. National statistics about mental health care do not fully account for these changes in the population that may cause the growth of the volume of mental health care, thereby concealing the substitution of intensive community care for inpatient care. Because national statistics contain double counts of patients and the patients' age is unknown, corrections of these statistics for a growing and ageing population are at best incomplete.

Another problem in the interpretation of national statistics is the lack of information on patient characteristics like their history of service utilisation. The Dutch regional institutes for ambulatory outpatient care and community health care centres in the UK, the USA and Finland (Borus 1978; Sayce et al. 1991; Korkeila et al. 1998) were criticised for their tendency to stay away from long-term patients with severe and persistent mental illness and attract new and less disturbed patients. If this criticism would also hold for the apparent growth of sheltered residences, day treatment and home treatment, it will be necessary to know which patients use what types of care.

These difficulties in interpreting national statistics, which are caused by a lack of person related data, are common in many countries (Haug and Rössler 1999). Except for Denmark with its nation-wide Psychiatric Case Register (Munk-Jørgensen 1999), in most countries detailed analysis of the effects of changes in mental health policy has to be based on local case registers. In this study the Groningen psychiatric case register was used to determine whether and to what extent in recent years:

- Less people used inpatient care facilities,
- The length of stay in inpatient care decreased,
- More patients used both hospital- and community-based care,
- Day treatment, home treatment and sheltered residences were all contributing to the partial replacement, if any, of inpatient care,
- The growth of day treatment, home treatment and sheltered residences was caused by attracting new and less disturbed patients.

Methods

The Groningen case register covers all contacts of the 450,000 inhabitants of the province of Drenthe with local mental health care providers except for psychotherapy in private practices, which constitutes only a very small part of Dutch outpatient care (Bijl and Ten Have 1997). All contacts are linked to each patient in the database by a unique case identifier. In this way each patient's career in mental health care can be followed from 1986 to, at present, 1997.

The generalisation of case register data to the rest of the Netherlands is not as straightforward as a statistical inference from nation-wide sample or population data would be. The province of Drenthe is a semi-rural area with slightly lower prevalence and incidence than the other two Dutch case registers found in their highly urbanised areas Rotterdam and Maastricht (Kooi et al. 2000), in particular for the patients in outpatient clinics. The early work of the largest provider in the register area in day and home treatment for patients with serious mental illness shows in the comparison of local and nation-wide trends in mental health care statistics. Nation-wide counts of patients on 31 December 1990 and 1 January 1997 in all psychiatric hospitals, including forensic psychiatry and specialised drug abuse clinics, and psychiatric departments of general hospitals are available for adults (Bijl and Ten Have 1997; Ten Have and Bijl 1998). These counts cannot be interpreted as point-prevalences due to double counts, the lacking counts of, for instance, patients in home treatment and the problems with adequate corrections of the nation-wide counts for the growth and increasing mean age of the Dutch population. These calculations were replicated for the province of Drenthe (Table 1). They show that the Netherlands is lagging somewhat behind compared to Drenthe with regard to the replacement of inpatient care.

On the one hand this means that Drenthe differs to some extent from other parts of the Netherlands in the locally available array of mental health services and its use. On the other hand these differences are limited because the Dutch mental health care is regulated at a national level as to funding, quality control and policy development. For that reason the findings based on the Groningen case register is an acceptable estimate of current national trends in Dutch mental health care, even though a national case register would be the only way to obtain precise estimates.

The main objective of mental health care reform in the Netherlands is to reduce full-time hospitalisation in mental hospitals and psychiatric departments of general hospitals in order to enable the patient to live an independent life with as little social and economic exclusion as possible. For children who usually live with their parents and older patients that are increasingly dependent on care in psychogeriatric homes, the general pursuit of inclusion focused on the improvement of housing and life in the institution rather than the provision of community-based care. Accordingly, sheltered residences, day care and home treatment have been stimulated and researched (Kluiter et al. 1995; Kluiter 1997 b) in psychiatric services for adult patients. Analyses of case register data were therefore limited to the 20- to 64-year-old patients in inpatient care and its alternatives: day treatment, sheltered residences and home treatment.

The oldest entries in the case register date back to the first of January 1986. Incidence in 1989 can therefore only be established for the previous three years. In order to avoid artefacts in the comparisons between years, the treated incidence in 1990 and later years were also defined as the number of patients that were not in care at any moment in the preceding three years.

Table 1 Counts of adult inpatients, patients in day treatment and in sheltered residences on 31 December 1990 and 1 January 1997 in the Netherlands and in the case register area

	The Netherlands			Case register area		
	31 Dec. 1990	1 Jan. 1997	Growth	31 Dec. 1990	1 Jan. 1997	Growth
Inpatients	24440	24620	1 %	703	636	–10 %
Patients in day treatment	4880	8990	84 %	192	358	86 %
Patients in sheltered residences	3610	5480	52 %	67	126	88 %

For the register area detailed population statistics are available (Statistics Netherlands 1986–1996; 1997–1998). These showed considerable changes in the adult population (20–64 years of age). Population size in the register area grew from 262,000 in 1989 to 281,000 in 1997. In that same period, the mean age of adults rose from 40.0 to 41.3. The use of mental health care depends both on population size and age (Pijl et al. 2000). Since this study focuses on deinstitutionalisation, demographic changes were controlled for. Though one could refer to age groups in every table, a less cumbersome method is the standardisation of the population for any year between 1989 and 1997 as to size and age. Weighting patients and other inhabitants created a fixed annual population of 1000 adults with the average age distribution in the aforementioned research period. The case weights for each combination of year *y*, age *a* and sex *s* (W_{yas}) were derived from the population size for that combination (N_{yas}), the mean size of the age by sex-group concerned across years ($N_{.as}$) and the mean size of the total population ($N_{...}$): $W_{yas} = N_{.as} / N_{yas} / N_{...} \times 1000$.

Results

Patients may use more than one type of care within any given period of time. For all odd years from 1989 to 1997, patients were categorised in accordance with their use of inpatient care, day treatment, sheltered residences, home treatment or some combination of these services in a calendar year (Table 2).

Most patients used just one type of care in any one calendar year. The inpatients who did not use any community care in the same year were the only group decreasing in size. The number of patients in community care increased in all categories. Among them were a growing number of inpatients who did not solely depend on the hospital but also used some type of community care within a year. Day treatment was the commonest alternative to inpatient care during the research period. The number of patients in home treatment stands out because of its rapid growth from zero in 1989 to over 1.13 per thousand in 1997 (0.82 ‰ + 0.31 ‰ + a number of patients in the category 'Other combinations').

In addition to the shift from inpatient care to community care a considerable increase of the total number of patients was found. This finding raised the question whether community care expanded mental health care rather than serve as a substitute for inpatient care. For that reason the treated prevalence and incidence were expressed as the numbers of patients in a particular year that either were or were not in care in a three-year period prior to their first contact with mental health services in that year. After correcting these numbers for population growth and ageing an increase of the treated incidence between 1989 (1.32‰) and 1997 (1.45‰) was found. This increase was outweighed by a growing number of existing patients (from 4.31‰ to 5.92‰) that predominantly caused the increase of the treated prevalence. This means that there are not many more people depending on psychiatric services, but they depend on them for a larger part of their life.

Though the growth of community care did not coincide with a large increase in new patients, specific types of community care may have attracted new and less disturbed patients. In the Groningen case register there are no direct indicators of the course and the seriousness of a patient's mental illness. We can retrieve a patient's career in mental health care and other patient characteristics that will allow for a description of the kind of patients using inpatient care, day treatment, sheltered residences, home treatment or a combination of these provisions. For each of these groups of patients in 1997, we calculated (Table 3) how many patients were in care in the previous three years, were at some time compulsory admitted in this period, how long they were in care on average between 1994 and 1996 and how many patients were recently diagnosed as having non-organic psychotic disorders (ICD–9 codes 295–299).

The results showed that a larger part of the patients in community care had previous experience with mental health care than was the case for inpatients. So, patients in community care are certainly not newer than inpatients, though patients in day treatment were less disturbed considering the low number of compulsory admissions, their comparative short use of inpatient and community care and the low number of psychotic disorders. The low number of compulsory admissions in the sheltered residence group may have been caused by the ability of sheltered residences to temporarily intensify care when a relapse occurs. Also, timely voluntary admissions are more likely in the mild yet regular sur-

Table 2 Number of patients per year in intensive community- and hospital-based care per thousand in the 20- to 64-year-old population

	Year					Growth between 89–97
	1989	1991	1993	1995	1997	
N/1000 of 20–64 year old inhabitants, of which (‰) were in:	262	268	274	278	281	
Inpatient care only	4.44	4.60	4.52	3.93	3.39	−1.05
Day treatment only	0.66	0.62	0.80	1.04	1.40	+0.74
Sheltered residences only	0.13	0.15	0.18	0.24	0.33	+0.20
Home treatment only	0	0	0.02	0.40	0.82	+0.82
Inpatient care and day treatment	0.39	0.35	0.43	0.59	0.72	+0.33
Inpatient care and sheltered res.	0.01	0.04	0.05	0.07	0.06	+0.05
Inpatient care and home treatment	0	0	0.04	0.21	0.31	+0.31
Other combinations	0.01	0.01	0.06	0.16	0.34	+0.33
All patients	5.64	5.77	6.11	6.64	7.37	+1.73
No. of patients	1478	1548	1672	1842	2071	

Table 3 Relations between type of care used in 1997 and patient characteristics

Patients in 1997 in:	Existing case in 1994–1996	Comp. admission in 1994–1996	Months in care in 1994–1996	Psychotic disorders ICD-9 295-299	N
Inpatient care only	74 %	3 %	10.2	45 %	953
Day treatment only	88 %	0.8 %	9.2	25 %	394
Sheltered residences only	89 %	1.1 %	22.6	68 %	93
Home treatment only	90 %	4.9 %	14.2	56 %	230
Inpatient care and day treatment	73 %	1 %	6.3	45 %	203
Inpatient care and sheltered res.	94 %	5.7 %	18.5	88 %	17
Inpatient care and home treatment	83 %	9.2 %	11.3	60 %	86
Other combinations	97 %	3.6 %	21.9	63 %	95
All patients	80 %	2.8 %	11.3	45 %	2071

veillance in the sheltered residence in comparison with patients living independently. In every other respect, both sheltered residences and home treatment catered for seriously ill patients.

The evaluation of the deinstitutionalisation in the Netherlands does not end with the finding that the number of patients in community care increased while the number of inpatients decreased. The goal of substituting community care is not just to reduce the number of inpatients but their length of stay in the hospital as well. For that reason the part of a year (in months) the average patient was in inpatient care, day treatment, sheltered residences and home treatment was analysed (Table 4).

The average length of stay per year and per patient in the hospital decreased from 3.9 months to 2.7 between 1989 and 1997 (–33 %). The combined effect of both the reduction of inpatients and their shorter mean length of stay can be derived by the multiplication of the number of patients and their mean length of stay, and subsequent division by the adult population size. In 1989 there were 1.85 occupied beds per 1000 population, in 1997 this number had decreased by 12 % to 1.63 per 1000. The average lengths of stay per patient in day treatment, sheltered residences and in particular home treatment all grew to such an extent that the increased use of community care proved larger than the reduction of the time in the hospital. The total mean length of stay per year, no matter what type of care was used, rose accordingly from 5.5 to 6.4 months a year between 1989 and 1997 (+16 %). Of course, one has to take into account that mental health care in 1989 consisted for 72 % (3.9/5.5) of hospital-based care. By 1997 the average patient spent more time in community care (58 %) than in the hospital (42 %).

From records of weekend and other leaves of all patients in the largest mental hospital in the register area we estimated that the average inpatient was present at the hospital for 90 out of a hundred days. In a period of 100 days in day treatment the average patient attended just 35 days in 1989. This figure rose to 40 in 1997 due to an increased use of hospital-based day treatment. A study of the implementation of home treatment in that same hospital (Kluiter 1997 b) showed that there were 33 visits in a 100-day period. The presence and absence in sheltered residences could not be retrieved, but a conservative estimate would be the average presence of 90 % in the hospital. Though these figures do not cover all the differences between inpatient care, day treatment, sheltered residences and home treatment, we can use them as weights in the recalculation of trends in the average volume of care per patient in order to make at least some adjustment to the decreasing intensity of mental health care. The annual use of mental health care by the average patient (Table 4) was adjusted accordingly (Table 5), so as to determine the number of days per year a patient had actually some kind of contact with the providers. The weight for day treatment was allowed to vary over time in order to account for the changes within this mental health provision. The results of this simulation showed that the increasing total length of all treatment episodes in a year did not cause more contacts with care

Table 4 Mean volume of care in months per year for 20- to 64-year-old patients (no outpatients)

Mean number of months in	Year					Growth between 89–97
	1989	1991	1993	1995	1997	
Inpatient care	3.9	4.1	3.9	3.3	2.7	–1.3
Day treatment	1.2	1.1	1.2	1.6	1.7	+0.5
Sheltered residences[a]	0.3	0.3	0.3	0.5	0.6	+0.3
Home treatment	0	0	0.1	0.7	1.4	+1.4
All types of care	5.5	5.5	5.6	6	6.4	+0.9
No. of patients	1478	1548	1672	1842	2071	

[a] While living in sheltered residences patients may have used other community- or hospital-based services. This overlap (with a maximum mean of 3.7 days in 1997) was left out of the mean annual length of stay in sheltered residences.

Table 5 Estimated annual number of days with at least one contact between the average 20- to 64-year-old patient (no outpatients) and care providers

Type of care		Year					Growth between 89–97
		1989	1991	1993	1995	1997	
Inpatient care	No. of days	108	111	107	90	73	−35
	Applied weight	0.90	0.90	0.90	0.90	0.90	
Day treatment	No. of days	13	12	13	18	20	+7
	Applied weight	0.35	0.35	0.37	0.40	0.40	
Sheltered residences[a]	No. of days	8	8	9	13	16	+8
	Applied weight	0.90	0.90	0.90	0.90	0.90	
Home treatment	No. of days	0	0	1	7	14	+14
	Applied weight	0.33	0.33	0.33	0.33	0.33	
All types of care	No. of days	129	132	131	128	123	−6
No. of patients		1478	1548	1672	1842	2071	

[a] While living in sheltered residences patients may have used other community- or hospital-based services. This overlap (with a maximum mean of 3.7 days in 1997) was left out of the mean annual length of stay in sheltered residences.

providers. Instead, the increased use of day treatment and home treatment with its low contact rates resulted in a small decrease of the average annual amount of mental health care.

Discussion

Day treatment, sheltered residences and home treatment all grew to a large degree, both in numbers of patients catered for as in terms of the volume of care per patient. Day treatment was the commonly used alternative to inpatient care throughout the years between 1989 and 1997, but home treatment developed much more rapidly. In that same period inpatient care lost some, though not many patients. A growing number of them used both hospital- and community-based care, thereby reducing the average length of stay in the hospital considerably.

The gradual replacement of a part of inpatient care coincided with a large growth in mental health care utilisation. Patients stayed in care longer. The treated incidence grew a little but there were no signs of community care attracting more new patients than hospital-based care. In fact, patients in community care more often had a previous history in mental health care than inpatients had.

The finding that patients spent an increasing part of the year in care can be explained by the substitution of community care for inpatient care. Community care was meant to provide a less intensive alternative to the costly hospital admission with its around the clock care. When correcting for the low contact rate in community care, a small reduction of the amount of care an average patient received in a year was found. The effective substitution of community care might also explain why patients stay in mental health care for an increasing part of their life. In the 1980s the choice in many areas for treatment and/or housing of the patients with severe mental illness was limited to inpatient care, some day treatment facilities for less disturbed patients and ambulatory outpatient care. When the patient was unable to live an independent life without intensive treatment, protection and supervision, the main alternative was a traditional hospital admission with its severe effects on social stigma and exclusion from social and economic activities. This may have been a strong motive for both patients and professionals to minimise the number of admissions to the hospital and the length of stay in the hospital. Since community care explicitly aims at inclusion in society, the participants in a decision on the optimal type of care for a patient in need of close monitoring and support may now more readily opt for intensive psychiatric treatment.

In general, policy documents of the Dutch government state that improvement of care by increased community care should be financed with the savings through reduced inpatient care. The lengthening of careers in mental health care was foreseen only to some extent. Home treatment was expected not just to partially replace inpatient care, but to reach out to patients just barely managing their life without assistance. Because the growth of the number of patients in home treatment is smaller than the increase of the number of existing patients, home treatment cannot account for the accumulation of patients remaining in mental health care for an increasing part of their life. The growing number of existing patients in the register area is therefore a new issue that deserves further attention by Dutch researchers and policy makers.

Outcome studies and cost-effectiveness studies have shown encouraging results for Dutch community care in the past (Wiersma et al. 1994; 1995). However, the results of experimental and implementation studies cannot be generalised to the present large scale and prolonged use of mental health services outside the hospital (Ruggeri and Tansella 1995). In a few years time cohort-studies should be able to clarify trends in long-term patterns of use of mental health services. Naturalistic outcome and cost-effectiveness studies are necessary for the evaluation of the recent lengthening of careers in mental health care.

Negative consequences of Dutch deinstitutionalisation are highly improbable. The decrease of psychiatric

beds has been slow in comparison to the United States and a large part of Europe except for Switzerland (Bachrach 1996; Barbato 1998; Haug and Rössler 1999; Goldberg 1999; Munk-Jørgensen 1999; Vásquez-Barquero and García 1999). The current volume of inpatient care in the Netherlands is still one of the highest in Europe. In the Netherlands deinstitutionalisation was not the result of a major change in the mental health care system but a, perhaps overly, careful change in psychiatric services mainly by the traditional providers, the mental hospitals. This way of reforming mental health care may be slow but keeps the decrease in inpatient care in tune with the build-up of decentralised care in the community.

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