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The closure of a mental hospital in Sweden

5 years of transition to district-based long-term care

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Summary. A political decision to decentralize psychiatric care in a county of Sweden was made in October 1984. This will lead to the closure of the county's only large psychiatric hospital. Short-term psychiatric care will be provided by three smaller hospitals in the county, while long-term care in hospital will cease completely and be replaced by district-based psychiatric services. All patients ($n = 199$) in the large hospital's long-term unit were studied over 5 years of the transition period. The results showed that 42% of patients were discharged during the period, mainly to other institutions. Only 8 patients were provided with alternative types of care, such as group homes. Sixty-eight per cent of all patients died, most of them before being discharged (80% of the organically demented patients and 51% of the others). The mortality rate for patients with severely impaired activities of daily living (ADL functioning) was 92% for those who were also organically demented and 84% for the others. The patients who survived the 5-year period were mainly (80%) nondemented patients with relatively well-preserved ADL functioning, but with behavioural disturbances.

Key words: ADL – Deinstitutionalization – Elderly – Mental hospital – Mortality

Introduction

A shift of psychiatric health services from large hospitals to community-based outpatient facilities is taking place in many industrialized countries. Different organizational strategies are used to accomplish the translocation of psychiatric patients. In the US, the most common strategy has been to close large psychiatric hospitals rapidly, generally within a year of making the decision. The rationale for rapid closures derived from a desire to preclude mounting opposition from staff or politicians against organizational changes (Ashbaugh and Bradley 1979). For chronic psychiatrically ill patients, such rapid closures have meant sudden transfer to other institutions, community-based residences, or their homes (Greenblatt 1978), sometimes with adverse clinical consequences (Linn et al. 1985). In Italy, it was laid down by the law in 1978 that all large mental hospitals be closed by the end of 1980 through cessation of admissions and successive transfer of inpatients to alternative housing in the community. As community mental health programmes were poorly developed (Crepet 1990), this legislative action provoked administrative and public chaos to such an extent that the closures were postponed (Perris et al. 1984).

In other countries, more gradual deinstitutionalization (Bachrach 1976), has been used to effect closures of large psychiatric hospitals. The number of new-admitted patients has been gradually reduced, and patients in large hospitals have been discharged to alternative residential facilities that concomitantly have been established in the community. The gradual deinstitutionalization of a district psychiatric hospital in Saskatchewan, Canada, was reported to be successful. A 5-year follow-up study provided evidence that its former patients were being well cared for in the community (Fakhruddin et al. 1972). Britain has also adopted the strategy of gradual deinstitutionalization and is successively closing down its mental hospitals (Wing and Furlong 1986; Clifford et al. 1991). Some investigators report, however, that alternative services for long-stay patients have not yet been developed to a sufficient extent (Thornicraft and Bebbington 1989).

Sweden, too, uses the strategy of gradual deinstitutionalization, with the active development of community-based outpatient centres. One example is St. Jörgen's Hospital, the only large psychiatric hospital in the Swedish county of Bohuslän, with 14 districts and 290,000 inhabitants. In October 1984, a political decision was made to change the aim and direction of adult psychiatric health services in the county. St. Jörgen's Hospital was scheduled to close down within a period not exceeding 10 years. The new initiative required reinforcement of noninstitutional psychiatric care, both short-term and long-term

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before the shut-down of the hospital. Its acute care (290 beds), will be moved to three existing general hospitals in the catchment area, the dementia diagnostic unit and the research and education unit to one of these hospitals. Its long-term care will cease completely and be replaced by district-based alternative types of care, such as small residential units, group homes, or/and nursing homes. At the time of the political decision, these services were neither developed nor planned. All the hospital staff (1,294 employees) were guaranteed new jobs under the auspices of the county council's health services (Dencker 1989).

The county council's decision is in line with the views on future psychiatric care established by the National Swedish Board of Health and Welfare (Socialstyrelsen 1982), which means that further closures are to be expected.

The aim of the study

The aim of this study was to obtain information of value in the planning of future closures of psychiatric hospitals. The following questions were addressed:

1. How disabled were the patients in the hospital's long-term care?
2. How many patients were discharged into the community, how many died, and how many new patients were admitted over 5 years?
3. Where did the discharge patients go?
4. How many patients remained in the hospital at the end of the 5-year period?

The Ethics Committee of Göteborg University approved the study. Special permission was also obtained from the Swedish Data Inspection Board to keep a register of the long-term patients, based on their dates of birth, until the hospital has closed down.

Patients and methods

The hospital

St. Jörgen's Hospital is a traditional psychiatric hospital, providing psychiatric care for the inhabitants of the county of Bohuslän on the north-western coast of Sweden. The hospital is situated at one end of the catchment area and very close to Sweden's second largest city, Göteborg, which, however, does not belong to the hospital's catchment area. The people in the county are mainly farmers, fishermen and industrial workers living in middle-sized and small towns and villages, some of which are situated on islands far away from the hospital. In 1984, at the time of the decision to close the hospital, it had eight wards for long-term care, with a total of 207 beds (on average 26 beds per ward). All long-term wards were alike in architecture and had the same number of beds. Seven of the wards housed both men and women and had staff members with a positive attitude towards pharmacological treatment and research. One ward housed only women, most of whom were demented, and its staff pursued a more restrictive policy towards reserach. Patients admitted to the hospital were housed in wards with unoccupied beds, without regard to the diagnoses.

Patients

All long-term patients resident in the hospital as of October 1985 ($n = 199$) were included in the study. On the basis of their diagnoses, they were divided into five groups: patients with organic dementia disorders (ICD numbers 290, 294); patients with chronic schizophrenia (ICD number 295); patients with other chronic psychoses: the group included patients with chronic affective and paranoid psychoses (ICD numbers 296, 297); patients with dementia associated with alcoholism (ICD numbers 291B, 291C); patients with miscellaneous chronic disorders: the group included mentally retarded patients, patients with nonpsychotic disorders and organic personality disorders (ICD numbers 300, 301, 310, 318). Background data are shown in Table 1.

Sixty-two patients were admitted in the 5 observation years because of acute psychiatric symptoms or for humanitarian reasons. Thus, the numbers of patients reported on is 199 + 62 = 261.

Methods

The study started in October 1985. Data about the patients' age, sex, length of stay and diagnosis were gathered from the medical records. The diagnoses had been made by psychiatrists on the staff. Assessments of the patients' functional disability were carried out in October 1985 using rating scales. For patients who died before October 1990, the date and place of death were recorded. For discharged patients, the place of relocation was recorded. Data about age, sex and diagnosis were gathered for residents who were admitted to the long-term unit during the observation period.

Rating scales

The GBS scale (Gottfries et al. 1982), a geriatric rating scale designed to measure dementia, was used to assess the degree of mental impairment and activities of daily living (ADL) functioning and to obtain a profile of the dementia syndrome. The scale is divided into three subscales: impairment of motor performance, intellectual impairment, and emotional impairment – and a part that measures six symptoms common in dementia (confusion, irritability, anxiety, fear-panic, depressed mood, and restlessness). The subscale "impairment of motor performance" (GBS-M) actually

Table 1. Characteristics of 199 long-term care patients in St. Jörgen's Mental Hospital

Diagnostic groups	*n*	%	Males	Females	Age (years)		Length of stay (years)	
					Median	Range	Median	Range
Organically demented	115	57.8	38	77	81	49–94	3	1–14
Schizophrenics	39	19.6	22	17	73	54–98	6	1–59
Other psychotics	18	9.0	8	10	75	61–94	10.5	1–54
Alcoholics	12	6.0	12	0	72.5	42–88	4	1–25
Miscellaneous	15	7.5	7	8	77	63–92	3	1–15
Total	199		87	112	79	42–98	5	1–59

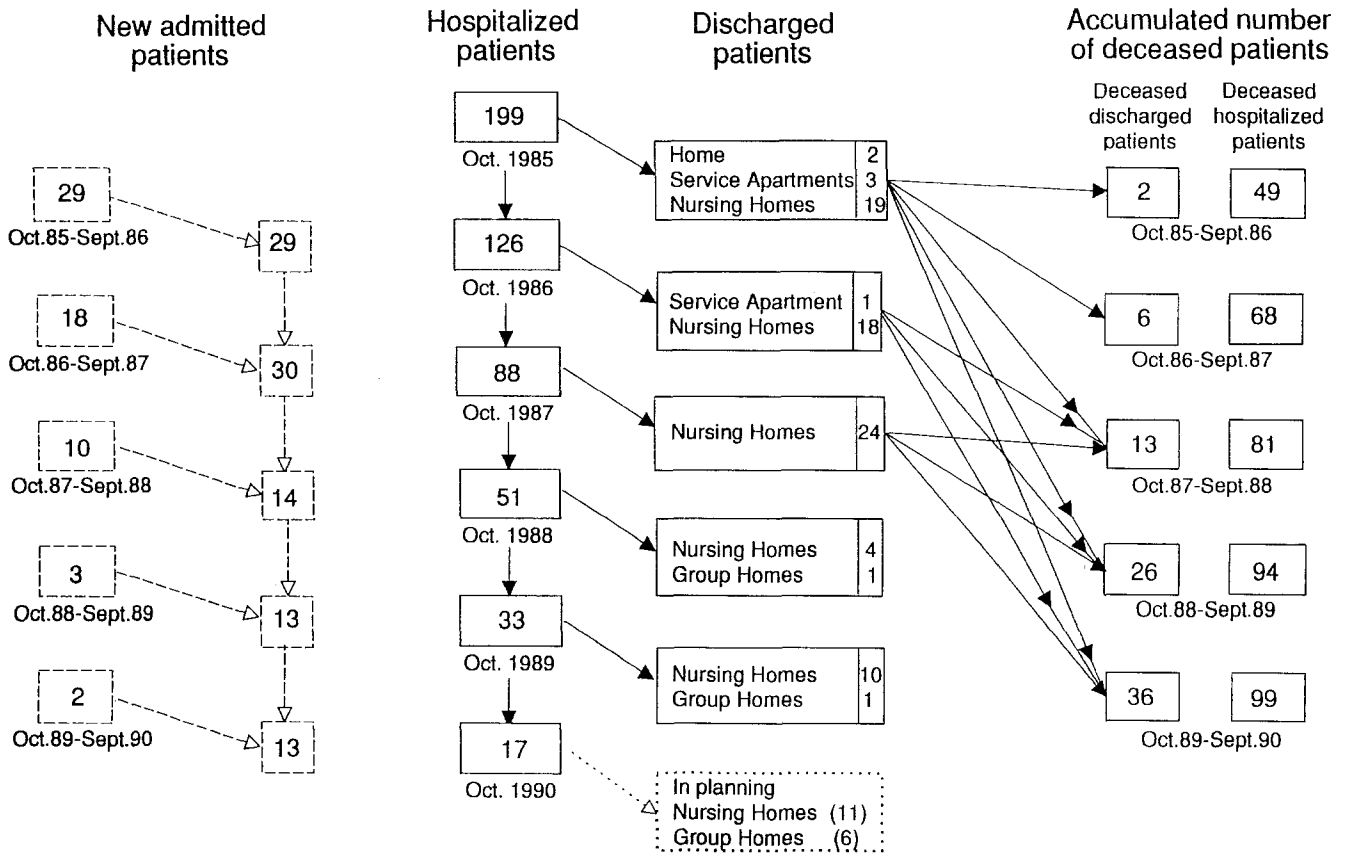

Fig. 1. Chart of the translocation of hospitalized long-term patients over a 5-year period during the closing down of a psychiatric hospital

measures ADL functioning (eating, dressing, physical activity, spontaneous activity, personal hygiene and control of bowel and bladder), and in this paper it is used as an ADL scale. Each item is rated on a seven-point scale, ranging from 0 to 6, with 0 representing normal functioning or absence of symptoms. Descriptively, 0–<2 is defined as none to mild, 2–<4 as moderate, and 4–6 as severe impairment. The validity and reliability of the scale is well documented (Bråne 1989).

To test the validity of the GBS-M scale in its capacity as an ADL scale, it was compared with Katz's ADL Index (Katz et al. 1963) which is the most widely used scale for measuring ADL functioning. A group of 42 elderly psychatrically ill patients were rated by two independent raters (registered nurses), each using one of the two scales. Analysis of the ratings showed good agreement between the two scales ($r = 0.93$). All ratings in the present study were made by registered nurses who worked in the hospital and were specially trained in performing GBS ratings. The reliability of GBS ratings performed by registered nurses has been tested and found satisfactory (Bråne 1989).

Statistical methods

Nonparametric statistical methods were used. The Wilcoxon rank sums test was employed for comparisons between groups. Fisher's exact test was used for differences between the sexes. The survival distribution in time in each group was estimated using the Kaplan-Meier method, and statistically compared using the log rank test (Cox and Oakes 1984). The Cox proportionals hazard model (Cox and Oakes 1984) using a forward stepwise procedure (Harrell 1983) was employed to identify factors that had potential to predict time of death. Factors used in this study were age, gender, length of stay and ADL status. A critical value of $P < 0.05$ was adopted.

Results

The first 2 years after the decision to close the hospital (1984) was largely a period of planning and reorganization. A group of consultants, consisting of a psychiatrist, an almoner, and a psychologist, was formed in September 1985. Its commission was to provide the districts in the county with information about the patients in the hospital: how many and how disabled they were, and what type of care they needed. The group was also involved in the placement of new patients who were temporarily admitted to the hospital during the close-down period, and in the planning and development of district-based alternative psychiatric services. In May 1986, a shortage of managerial staff resulted in an unplanned closure of one long-term ward with 27 beds. The patients were moved to the other long-term wards. In December 1986, it was decided that the methods of gradual deinstitutionalization would be adopted, and a timetable for the relocation of patients was drawn up. The number of new-admitted patients would be reduced, but not completely restricted. The schedule included the closure of two wards in May and November 1987, respectively, one ward in May 1988, one ward in May 1989, two wards in May and November 1990, respectively, and the last ward in May 1991. The relocation was carried out according to schedule.

In October 1985, there were 199 long-term patients distributed over eight wards, on average 25 patients to each ward. Between October 1985 and October 1990, 135 (68%) patients died, 99 (73%) in the hospital and 36 (27%) after being discharged. Eighty-three (42%) patients were discharged, 2 to their homes, 4 to service apartments, 75 to nursing homes, and 2 to group homes. Seventeen patients remained in the hospital. It was planned that 6 of these patients would form a group and move to a group home and that the other 11 patients would be relocated to nursing homes. Figure 1 shows the distribution of patients over each year between October 1985 and October 1990. Over the observation years, 62 new patients were admitted, all of whom were considered deserving cases; 69% were organically demented. In October 1990, there were 30 long-term patients distributed over two wards, on average 15 patients to each ward. Since the results of the ratings revealed few and small differences between the subgroups of patients with chronic schizophrenia, other chronic psychoses, dementia associated with alcoholism and miscellaneous chronic disorders, these subgroups were combined. Thus, in the further data analysis two groups are discussed: patients with organic dementia disorders (here called the demented patients) and patients with chronic psychiatric disorders (here called the psychiatrically ill patients).

The demented patients

In October 1985, there were 115 demented patients in the long-term unit, who, on average, were suffering from severe impairment of intellectual functions and moderate impairment of ADL functioning and emotional functions and who were severely confused (Table 2). Between October 1985 and October 1990, 92 (80%) patients died, 68 (74%) in the hospital and 24 (26%) after being discharged. Forty-four (38%) were discharged, 39 to nursing homes, 2 to service apartments, 2 to their homes, and 1 to a group home. In October 1990, 3 demented patients remained in the hospital.

For the deceased demented patients ($n = 92$), the baseline mean score in 1985 was 4.00 (SD 1.67) on impairment of ADL functioning, 4.47 (SD 1.36) on intellectual impairment, and 4.12 (SD 1.57) on emotional impairment. The symptom of confusion was severe and that of irritability moderate, while the other four symptoms on the GBS scale were absent or mild.

For the demented patients still living in October 1990 ($n = 23$), the baseline mean score in 1985 was 2.47 (SD 1.76) on impairment of ADL functioning, 3.86 (SD 1.65) on intellecutal impairment and 3.43 (SD 1.64) on emotional impairment. The symptom of confusion was severe and the symptoms of irritability and anxiety moderate, while the other three symptoms on the GBS scale were absent or mild.

Comparisons between the two subgroups of demented patients, those who had died and those who were still living at the end of the 5-year observation period, showed (October 1985) no significant differences in age or sex, but in length of stay in the hospital ($P < 0.02$); the deceased demented patients had stayed longer than the liv-

Table 2. Baseline results of GBS ratings (means, SD) of long-term patients in 1985

Diagnostic groups	Impairment of motor performance (ADL functioning)	Intellectual impairment	Emotional impairment	Symptoms common in dementia					
				Confusion	Irritability	Anxiety	Fear-panic	Depressed mood	Restlessness
Organically demented	3.69, 1.79	4.35, 1.44	3.98, 1.60	4.50, 1.79	2.38, 1.77	1.59, 1.77	1.20, 1.35	1.64, 1.24	1.64, 1.92
Schizophrenics	2.35, 1.71	2.66, 1.63	3.63, 1.50	2.87, 2.05	2.33, 1.46	1.18, 1.57	1.10, 1.48	1.49, 1.59	1.87, 2.13
Other psychotics	3.06, 1.71	2.33, 1.71	2.49, 1.46	2.39, 2.03	2.17, 1.42	1.44, 1.46	1.17, 1.38	2.00, 1.57	1.33, 2.14
Alcoholics	1.99, 1.44	2.10, 1.48	1.92, 1.17	2.33, 1.61	3.00, 1.04	1.08, 1.00	1.33, 1.23	1.50, 0.90	0.92, 1.24
Miscellancous	2.74, 1.62	2.29, 1.60	2.40, 1.21	2.67, 1.80	2.60, 1.45	2.87, 1.19	2.00, 1.60	2.27, 1.67	1.27, 1.16

ing (median 3 and 1 years, respectively). The results of the ratings showed that, at baseline, the deceased patients were significantly more impaired in ADL functioning ($P < 0.0007$) and emotional functions ($P < 0.03$) than the other group at baseline. There were also significant differences in the results of ratings on the symptom of anxiety, the deceased demented patients having lower scores at baseline ($P < 0.04$).

Eighty per cent of the demented patients died in the 5-year period, and the death rate for demented patients with severely impaired ADL functioning (GBS-M ≥ 4) was as high as 92%.

The psychiatrically ill patients

In October 1985, there were 84 psychiatrically ill patients in the long-term care unit, who, on average, were suffering from moderate impairment of ADL functioning, intellectual, and emotional functions. Symptoms of confusion and irritability were moderate, while the other four symptoms on the GBS scale were absent or mild (Table 2). Between October 1985 and October 1990, 43 (51%) patients died, 31 (72%) in the hospital and 12 (28%) after being discharged. Thirty-nine (46%) patients were discharged, 36 (92%) to nursing homes, 2 to service apartments, and 1 to a group home. In October 1990, 14 psychiatrically ill patients were still in the hospital.

For the deceased psychiatrically ill patients ($n = 43$), the baseline mean score in 1985 was 3.00 (SD 1.68) on impairment of ADL functioning, 2.53 (SD 1.64) on intellectual impairment, and 3.02 (SD 1.46) on emotional impairment. Symptoms of confusion and irritability were moderate, while the other four symptoms on the GBS scale were absent or mild.

For the psychiatrically ill patients still living in October 1990 ($n = 41$), the baseline mean score in 1985 was 2.00 (SD 1.7) on impairment of ADL functioning, 2.30 (SD 1.5) on intellectual impairment, and 2.80 (SD 1.6) on emotional impairment. Symptoms of confusion and irritability were moderate, while the other four symptoms on the GBS scale were absent or mild.

Comparison between the two subgroups of psychiatrically ill patients, those who had died and those who were still living at the end of the 5-year observation period, showed (October 1985) no significant differences in length of stay or sex, but in age ($P < 0.001$), the deceased psychiatrically ill patients being older than the living patients (median 75 and 71 years, respectively). The results of the ratings showed that, at baseline, the deceased patients were significantly more impaired in ADL functioning ($P < 0.003$) than the other group.

Fifty-one per cent of the psychiatrically ill patients died in a 5-year period, and the death rate for psychiatrically ill patients with severely impaired ADL functioning (GBS-M ≥ 4) was as high as 84%.

Predictors of death among long-term psychiatric patients

Figure 2 shows Kaplan-Meier survival curves over a 5-year period for the groups of demented and psychiatrically ill patients. There was a significant difference in mortality between the groups ($P < 0.0001$): a considerably larger number of psychiatrically ill patients survived. The Cox model selected ADL status as the most potential factor for predicting death over a 5-year period among both the demented and the psychiatrically ill patients, high-risk patients being those with a high degree of dependence in ADL. Other predictors of death were male gender in the demented group and advanced age in the psychiatrically ill group.

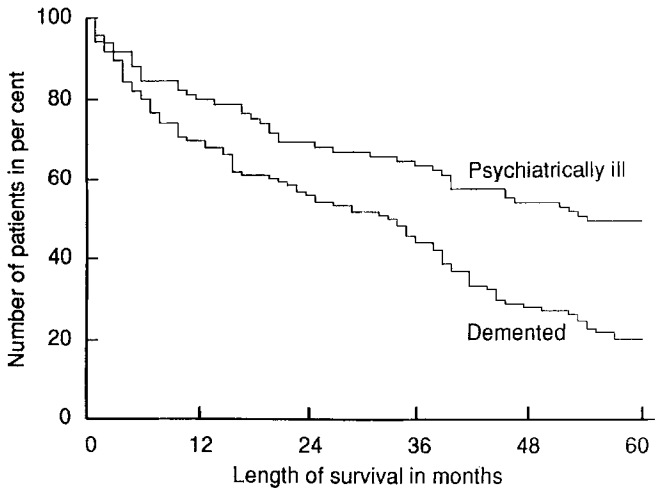

Fig. 2. Kaplan-Meier survival curves for survival distribution in time for demented ($n = 115$) and psychiatrically ill ($n = 84$) patients

Discussion

It has to be stressed that the hospital studied was not selected to be representative of Swedish psychiatric hospitals. As it provided psychiatric services for a mixed rural and urban population, the diagnostic distribution may be different from that in a hospital serving a big-city catchment area.

For the ratings we chose the GBS scale, which has been constructed in the hospital's research unit. It is an observer rating scale and, therefore, suitable for a patient group consisting of mainly elderly people, most of whom were suffering from dementia and/or disturbed ADL functioning. Besides, the nurses in the hospital were well trained in the use of the scale.

The study was carried out after the decision was made to close the hospital by staff members who would soon have to leave their work at the hospital, and this could introduce a bias. However, results of a questionnaire survey showed that most of the staff members had accepted the decision (Dencker 1989). The circumstances were about the same in the American study by Lawton et al. (1977).

With the political decision to close down the hospital, a winding-up period of maximum 10 years was appointed in October 1984. The schedule drawn up by the management of the hospital was based on an estimated winding-up period of 5.5 years, starting December 1986. In Oc-

tober 1990, 6 years after the political decision to close down, only 17 (8.5%) of the 199 patients included in the study were still hospitalized. Six of these, who belonged to the psychiatrically ill group, formed a commune together with their staff, but remained on their ward in the hospital while waiting for removal to a group home due for completion in January 1991. The other 11 patients were to be discharged to nursing homes within a few months.

The psychiatric hospitals were originally built for care of psychotic patients, thus offering facilities suiting the need of rehabilitation, care and recreation of this type of patients. This study shows, however, that more than half (56%) of the patients housed in the hospital were organically demented, that is, they constituted a type of patient with needs different from those of psychotics. In a British study (Levene et al. 1985), 34% of the patients in a mental hospital were demented, and the figure was 20% in an American study (Lawton et al. 1977). These differences suggest that care of demented patients in psychiatric hospitals may be more frequent in Sweden than in other countries.

Forty-two per cent of the long-term patients in our study were discharged from the hospital in the observation years. The only two who were returned to their homes were demented men who had temporarily been admitted to the hospital to relieve their families. Four patients (two demented and two psychiatrically ill) were discharged to service apartments, but within a year they were moved to nursing homes. One of these patients, who was psychiatrically ill, was housed in three different places before the final placement. One possible explanation of the first unsuccessful relocation of these patients is that the service apartment staff were not sufficiently trained in caring for psychiatrically disabled patients. Another possibility is that the environment of service apartments is not well adapted for this type of patient.

Most of the psychiatrically ill patients were relocated to an already existing psychiatirc nursing home, with staff trained in psychiatric care. It is not possible to judge whether this type of care was the best solution for these patients, as their behavioural or psychotic disturbances were not measured in this study. However, another study of the same patients showed that 79% had moderately to severely disturbed behaviour (Dencker and Gottfries 1991a), a figure that is in line with an English study which also reported that a sizeable proportion of hospitalized nondemented mentally ill patients showed behavioural disturbances to an extent that would set them apart in a community setting (Curson et al. 1988).

Eventually, all the demented patients were or will be relocated to district-based traditional somatic nursing homes. Some of the nursing homes had a psychogeriatric ward for demented patients and employed staff with psychogeriatric training. In other nursing homes, the relocated demented patients were mixed with the originally "somatic" nursing home patients, and some staff with psychogeriatric training were employed. The question whether this solution was satisfactory needs to be addressed. We know from another study that demented patients in psychiatric hospitals have more disturbed behaviour than demented patients in nursing homes (Dencker and Gottfries 1991a). Other investigators (Linn et al. 1985; Sandman 1986) support our view that demented patients with behavioural problems require their own, specially trained staff to receive the type of care they need.

Nearly all discharged patients in the present study were moved to existing traditional institutions, and only two patients (one from each diagnostic group) were provided with a new type of psychiatric health service: group homes tailored, respectively, to patients with organic dementia and to those with chronic psychiatric disorders. However, additionally, 6 patients who remained in the hospital in 1990 were to be moved to a group home, so a total of 4% of the long-term patients will benefit from this new type of care. It should be noted that Swedish group homes differ from the group homes described by Wing and Furlong (1986), in that they are highly staffed (even at night) with people specially trained in caring for psychiatrically ill patients. This type of psychiatric health service was developed in the districts during the closing-down period, and "new patients" were probably the first who were selected to try it.

The 5-year mortality was 68% for patients in long-term care at St. Jörgen's Hospital, 51% for psychiatrically ill patients, and 80% for organically demented patients. In a Canadian study (Fakhruddin et al. 1972), the 5-year mortality for elderly psychiatrically ill patients (excluding patients with organic dementia disorders) was 46%. Goldfarb (1969), who studied mortality among elderly institutionalized patients in homes for the aged, nursing homes and state hospitals, found that 73% died over a 5-year period, and the figure for patients with organic brain syndromes was 81%.

In our study, the psychiatrically ill patients who died during the 5-year period were the oldest and the most severely impaired in ADL functioning. The greatest differences between deceased and still living psychiatrically ill patients were found in the measurements performed in 1985 of four of the six ADL functions: eating, physical activity (e.g. walking), spontaneous activity, and control of bowel and bladder. At that time, the patients still alive in 1990 could manage these activities without help, in contrast to the patients who died in the observation period.

In the demented group, the patients who died during the 5-year period had the most severely impaired ADL functioning and the longest stay in the hospital. As dementia is a progressive disorder, the length of stay reflects the severity of the dementia. The demented patients who died during the observation period were, in 1985, significantly more disabled in all ADL activities measured than the demented patients who were still alive at the end of the period, and needed help of others to perform their ADL. A previous study of the same patients (Dencker and Gottfried, 1991b) showed that about 29% of hospitalized demented patients die per year, and the figure amounts to 46% for those who are also severely impaired in ADL functioning (a score of 4 or above on

the GBS-M scale). Our results provide evidence that ADL disability is an important factor for predicting death in elderly institutionalized patients, which is in line with findings in other studies (Goldfarb et al. 1966; Brauer et al. 1978; Donaldson et al. 1980; Donaldson and Jagger 1983) using different ADL scales.

Since it has been shown that the degree of dependence in ADL proved to be a potential factor for predicting time of death in both the demented and psychiatrically ill group, further studies need to be carried out to ascertain whether one or more of the activities of daily living are stronger predictors for death than others.

Conclusions

This study reflects the process of emptying the long-term care unit of a psychiatric hospital scheduled to close within 10 years, and shows that relocation of a large number of patients can be carried over 7.5 years, including a 2-year planning and reorganization period. However, most of the discharged patients were relocated to existing institutions, only 4% to a new type of district-based alternative living arrangement, which might suggest that the transition period was too short for appropriate new services to be developed.

Among the 199 patients, 58% had organic brain syndromes, and 80% were moderately to severely impaired in ADL functioning. During the 5 observation years, 42% were discharged and 68% died (80% of the latter belonged to the demented group). Sixty-two new patients were admitted in the observation years, mainly for humanitarian reasons.

Based on our data, it can be concluded that a group of hospitalized psychiatric patients that survives a 5-year period, and for which adequate new services ought to be planned and established, will include about 80% nondemented individuals with relatively well-preserved ADL functioning, but with moderate to severe behavioural disturbances.

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