

A Comparative Census Study of Danish Schizophrenic Patients in 1977 and 1982

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Summary. The present register-based investigation includes all hospitalized schizophrenic patients in Denmark on census days in September 1977 and September 1982. In 1977 the rates were 107.8 and 88.1 per 100,000 inhabitants aged 15 years or more for males and females, respectively, and correspondingly 99.2 and 71.5 in 1982. The prevalence rates of first admitted on the census days had decreased slightly in the older age groups from 1977 to 1982 but were unchanged in the age groups 15–44 years. The long-stay groups were smaller but at the same time the rates of re-admitted younger males had increased. Only a few changes between the distribution of the two groups' marital status occurred and there was still a considerable excess of single and divorced among the schizophrenic patients. More patients were in day-patient care and in nursing homes and fewer were admitted as in-patients, although in 1982 56% of the males and 52% of the females were in the latter type of care. The percentage of committed patients decreased from 12.6 to 9.1 for the males and from 8.9 to 7.0 for the females. This decrease was most pronounced in the group of patients admitted because of dangerous behaviour. The results are discussed especially in relation to reductions in available beds in psychiatric institutions.

Key words: Schizophrenia – Census – Prevalence – Register

Introduction

After the psychopharmacological revolution in the late 1950s and the early 1960s changes as to psychiatric hospitalization policy according to the ideas expressed by WHO (1978) occurred in many European countries. In some, as for instance Italy (Zimmermann-Tansella et al. 1985), changes in the form of a reduction in numbers of available psychiatric beds, have been very spectacular, a process also seen in some places in the United States (De Risi and Vega 1983). In Denmark where the prevalence of available psychiatric beds is low these reductions are, however, proceeding at a much slower pace (Weeke et al. 1986). The reduction in number of psychiatric beds all over the world is commonly due to administrative decisions. Concurrent with the development which in the years from 1976 to 1982 caused a decrease in the number of beds in Danish psychiatric institutions from 243 beds to 204 beds per 100,000 inhabitants (Munk-Jørgensen et al. 1986) progress in

welfare has stagnated, and has resulted in a reduction in public budgets including those of the health authorities.

The purpose of the present study was to investigate whether during the 5-year period from 1977 to 1982 the Danish schizophrenic hospital population has changed. The period in question has been characterized by reductions in available beds, and due to the nature of their disease, the schizophrenic patients are in an exposed position with respect to such interference.

Materials and Methods

The study comprised all schizophrenic patients aged 15 years or more who were resident in Danish institutions (excluding in-patient institutions for alcoholics and child psychiatric departments):

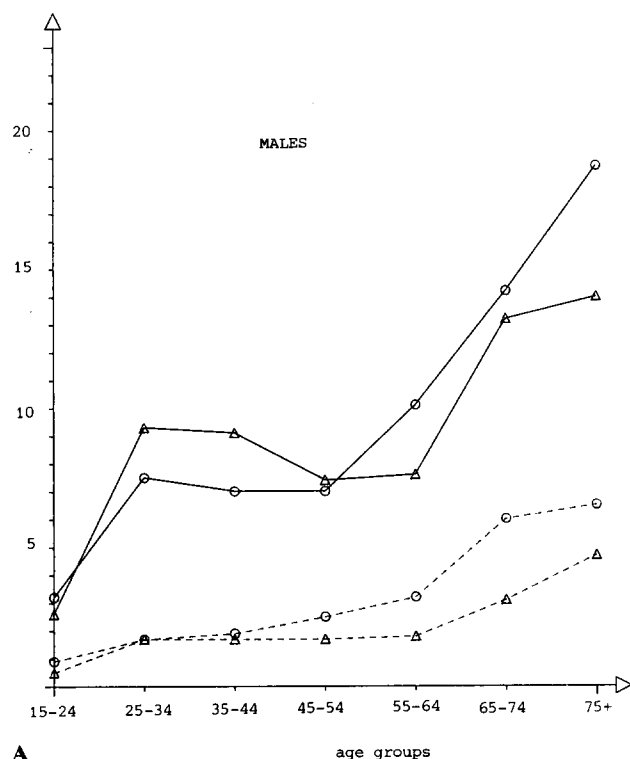
- (1) on census day 28.9.1977, 2,084 males (107.8/100,000 population at risk) and 1,774 females (88.1/100,000 population at risk),
- (2) on census day 29.9.1982, 1,987 males (99.2/100,000 population at risk) and 1,500 females (71.5/100,000 population at risk).

Data were procured from The Danish Psychiatric Central register (Dupont 1983). The data processing was carried out in the Institute of Psychiatric Demography in collaboration with RECAU (The Regional EDP-Centre at the University of Aarhus). The statistical calculations were based on χ^2 and Student's *t*-tests.

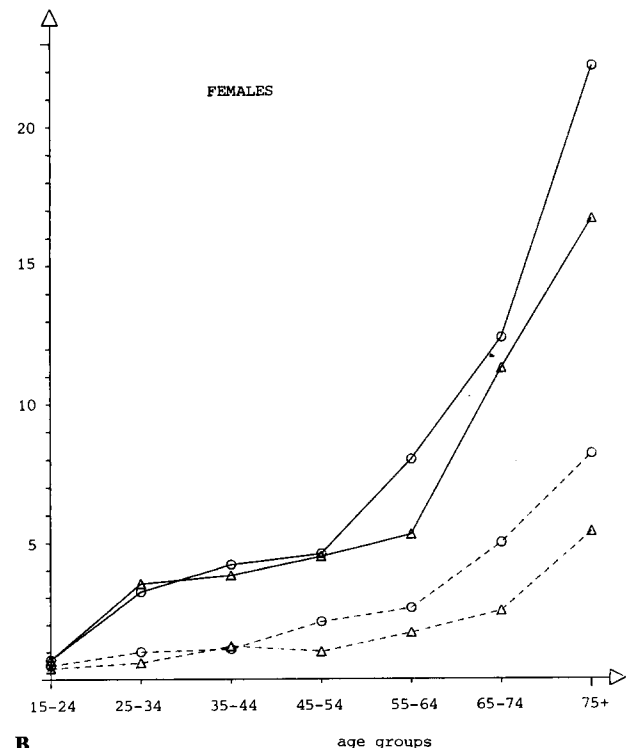
Results

In the 1982 census the mean age of the males was 49.8 years (SD = 18.6) which was significantly lower ($P < 0.01$) than in 1977 when the corresponding figure was 51.7 years (SD = 19.0). The mean age of the females was 61.3 years (SD = 18.2) and 60.4 years (SD = 19.3) in 1977 and 1982, respectively, with no significant difference.

Figure 1 shows the age-specific rates of schizophrenia in first and re-admitted in- and day-patients per 10,000 inhabitants on census days in 1977 and 1982. Comparing the two groups the same tendencies were seen among both males and females. In the age groups over 45 years the rates of both first and re-admitted patients were lower in 1982 than in 1977. In the age group 25–44 years the rates of re-admitted males in-

Rates per
10,000

A

Rates per
10,000

B

Fig. 1A, B. Institutionalized Danish schizophrenic males (A) and females (B) on census days in 1977 and 1982 distributed as to 10-year age groups and first or re-admissions. (○—○) re-admitted patients, residents in 1977; (△—△) re-admitted patients, residents in 1982; (○---○) first admitted patients, residents in 1977; (△---△) first admitted patients, residents in 1982

creased from 1977 to 1982, while no changes were seen among re-admitted females and first admitted patients of both sexes.

No obvious differences were seen by comparing the first admitted males and females. In the group of re-admitted aged 15–44 years the male rates were more than twice the corresponding female rates in both 1977 and 1982, but the difference was, however, gradually equalized by increasing age groups and in the oldest age group higher rates were seen for females than for males.

The total number of admitted males and females decreased with 4.7% and 15.4%, respectively, from 1977 to 1982. The increase in the percentage of re-admitted males from 75.6% in 1977 to 81.3% in 1982 was significant ($P < 0.01$) as was the increase in re-admitted females from 72.9% in 1977 to 78.1% in 1982 ($P < 0.01$).

Table 1 shows the material distributed into two groups of patients aged 15–44 years and 45 years and over. It is seen that the age distribution changed from 1977 to 1982 as the group of males aged 15–44 years increased compared to the age group of 45 years and above. This figure applies to the first admitted ($P < 0.01$) as well as to the re-admitted ($P < 0.01$). Similar trends were found in the female groups of first admitted ($P < 0.05$) and re-admitted ($P < 0.05$).

As seen from Table 2, the distribution of the patients as to type of care on the census days has changed from 1977 to 1982 for both the males ($P < 0.01$) and the females ($P < 0.01$). For both sexes the distribution changed as regards fewer in-patients and more patients in day-patient care and in nursing homes (including family care).

Table 3 shows the distribution as to way of admission. According to Danish legislation commitment is possible only if a person is psychotic, and dangerous to himself or others, or if treatment is urgently needed. It is, however, possible to admit a person into a mental hospital under arrest while he is subject to forensic examination, and also to sentence a person to psychiatric treatment because of crime committed in the psychotic state. From 1977 to 1982 the percentage of commitments decreased from 12.6% to 9.0% for the males ($P < 0.01$) and from 8.9% to 6.7% for the females ($P < 0.05$).

Table 4 shows that in 1982 fewer schizophrenic females were married ($P < 0.05$) and more were divorced ($P < 0.01$) than in 1977 whereas the material showed no such changes for the males. The differences between percentages of observed and expected figures were remarkable. The percentages of expected are calculated on the basis of an age standardization made on 10-year age groups.

Figures 2A and 2B show length of stay in institutions on the census day. In this study long-stay was defined as stay in hospital (as in or day-patient) for 12 months or more, whereas short-stay was admission shorter than 12 months. In both the males ($P < 0.01$) and the females ($P < 0.01$) fewer were long-stay patients in 1982 than in 1977. The number of long-stay patients with a stay in hospital for 5 years or more has decreased significantly both in males ($P < 0.01$) and females ($P < 0.01$).

Discussion

Comparison of the two census populations showed that the number of admitted in and day-patients with schizophrenia as the main diagnosis had decreased by 5% in the males and 15% in the females from 1977 to 1982. A similar decrease was also seen in the total population of hospitalized patients in the

Table 1. Institutionalized Danish schizophrenic patients on the census days in 1977 and 1982 distributed as to sex, admission and age groups

	Males				Females			
	1977		1982		1977		1982	
	15-44	45+	15-44	45+	15-44	45+	15-44	45+
First admitted	165	343	158*	213	94	387	86**	243
Re-admitted	642	934	792*	824	278	1,015	297**	872
Total	807	1,277	950	1,037	372	1,402	383	1,115

* $P < 0.01$; ** $P < 0.05$. Increase from 1977 to 1982 compared to the age group aged 45 years and above

Table 2. Institutionalized Danish schizophrenic patients on the census days in 1977 and 1982 distributed as to sex and type of care (percentages)

	Males		Females	
	1977 ($n = 2,084$)	1982 ($n = 1,987$)	1977 ($n = 1,774$)	1982 ($n = 1,500$)
In-patients	61.4	55.5	58.8	52.3
Day-patients	18.9	22.3	11.3	14.1
Nursing homes (including family care)	19.7	22.1	29.9	33.6
Total	100.0	99.9	100.0	100.0

Males: $\chi^2 = 14.94$, $df = 2$, $P < 0.01$; females: $\chi^2 = 14.84$, $df = 2$, $P < 0.01$. Decrease in number of in-patients compared to day-patients and patients in nursing homes from 1977 to 1982

Table 3. Institutionalized Danish schizophrenic patients on the census days in 1977 and 1982 distributed as to sex and way of admission (percentages)

	Males		Females	
	1977 ($n = 2,084$)	1982 ($n = 1,987$)	1977 ($n = 1,774$)	1982 ($n = 1,500$)
Voluntary	87.3	90.5*	91.0	92.7**
Commitment (dangerous behaviour)	7.3	4.7	6.5	4.0
(urgent treatment)	1.6	1.5	1.5	1.9
Forensic observation and custody	3.7	2.9	0.9	1.1
Unknown	—	0.4	0.1	0.3
Total	99.9	100.0	100.0	100.0

* $P < 0.01$; ** $P < 0.05$. Relatively more voluntary admissions in 1982 than in 1977

Table 4. Institutionalized Danish schizophrenic patients on the census days in 1977 and 1982 distributed as to sex and marital state (percentages)

	Males						Females					
	1977 ($n = 2,084$)			1982 ($n = 1,987$)			1977 ($n = 1,774$)			1982 ($n = 1,500$)		
	Obs	Exp	Obs/exp	Obs	Exp	Obs/exp	Obs	Exp	Obs/exp	Obs	Exp	Obs/exp
Single	54.5	(19.3)	2.82	55.0	(22.6)	2.43	49.3	(12.6)	3.91	49.4	(14.0)	3.53
Married	19.5	(68.6)	0.28	18.7	(65.2)	0.28	20.2	(52.8)	0.38	17.2**	(50.9)	0.34
Widowed	10.3	(7.4)	1.39	10.1	(5.9)	1.71	14.8	(28.6)	0.52	14.3	(28.0)	0.51
Divorced	15.7	(4.6)	3.41	16.1	(6.3)	2.56	15.7	(6.0)	2.62	19.2*	(7.2)	2.67
Unknown	—	—	—	0.1	—	—	—	—	—	—	—	—
Total	100.0	99.9	—	100.0	100.0	—	100.0	100.0	—	100.1	100.1	—

* $P < 0.01$ — relatively more divorced females in 1982 than in 1977

** $P < 0.05$ — relatively fewer married females in 1982 than in 1977

Figures in brackets show the expected distribution of the material if distributed as the general population (direct age standardization used)

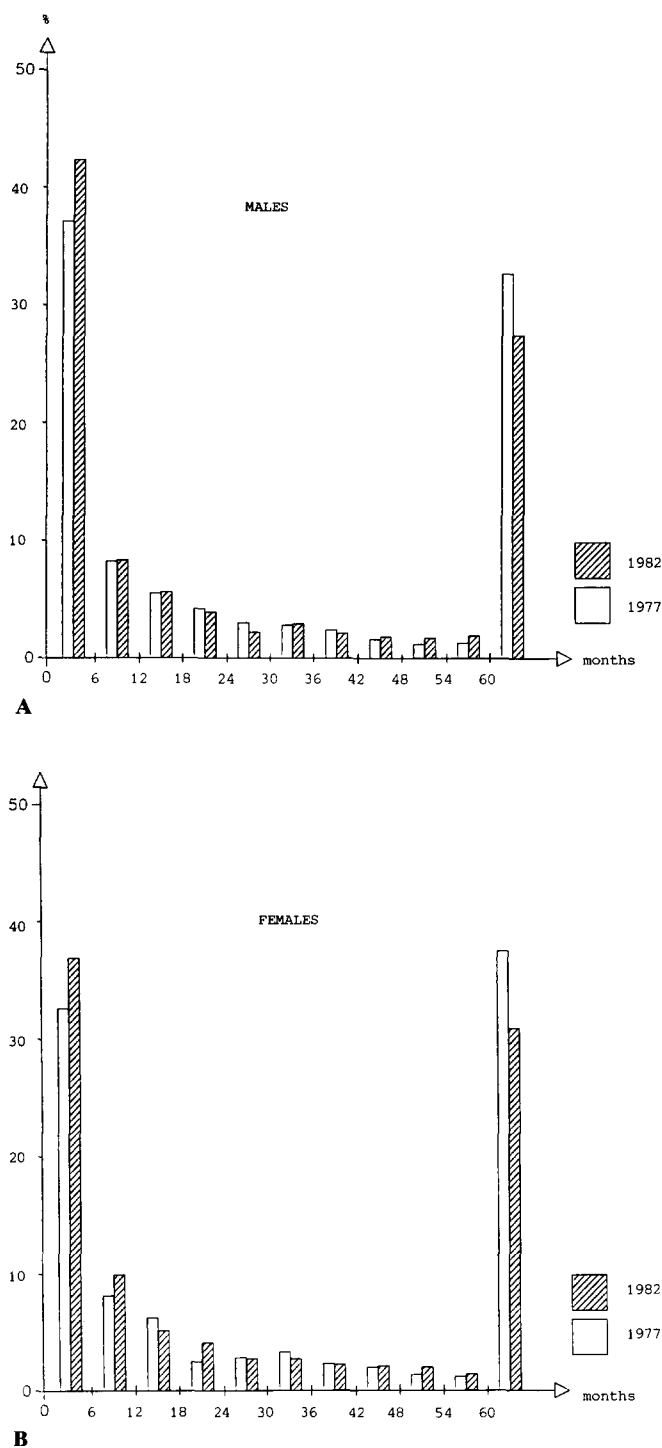


Fig. 2A,B. Institutionalized Danish schizophrenic males (A) and females (B) on census days in 1977 and 1982 distributed as to length of stay and percentage of the whole group

same period, i.e. 4.4% in males and 12.2% in females. The above mentioned decreases are coincident with a decrease of 15.4% in available beds in psychiatric institutions calculated as rates per 100,000 inhabitants (Munk-Jørgensen et al. 1986), although the total population aged 15 years and above has increased by 3.8% during the period.

In the present work the most pronounced result was the increase in the fraction of the whole group of schizophrenic patients constituted by younger re-admitted males (25–44 years)

compared with those aged 45 years and above. These males represented more than twice the rate of the corresponding females. Only slight differences were seen in the rates of first admitted, especially in the younger age groups, both by comparing the sexes and the two census populations. The sex differences in the re-admission rates were in accordance with results from cohort studies from which it is known that schizophrenic males compared with females in the course of the disease are re-admitted at an earlier stage (Angermeyer et al. 1982), are admitted more frequently (Angermeyer et al. 1982; Watt and Szulecka 1979), for longer periods (Salokangas 1983) and with a greater utilization of beds (Munk-Jørgensen 1986).

Decreases in the total long-stay groups in Denmark (all diagnoses) (Weeke et al. 1979) and in other countries (Mann and Cree 1976; McCreadie et al. 1983; Häfner and an der Heiden 1983) are especially found in the group of schizophrenic patients, changes which are, however, coincident with an increasing number of re-admissions (Salokangas 1980) because of this group's continuous need of care (Munk-Jørgensen 1986).

In the present investigation it was found that the decrease in number of long-stay patients between the two census days was mainly in the group of patients admitted for more than 5 years. The increasing discharge of schizophrenic patients (Weeke et al. 1986) has been followed by an increase in re-admissions, mainly among younger males. Some of these re-admissions might indicate the existence of "revolving door patients" (Weinstein et al. 1973) which probably have similarities with the group of patients, called "young adult chronic patients" in countries with drastic reductions in available beds in psychiatric institutions (Bachrach 1982).

In Denmark the number of patients in day-patient and nursing home care has increased in proportion to the number of in-patients indicating the general trend in the last 10 years (Weeke et al. 1986; Dupont 1985). Formerly it was the custom to use family care, but in 1977 and 1982 only 0.5% and 0.4%, respectively, received such care. In the present investigation the patients in nursing homes and the few in family care were elderly, and all were staying in homes which are branches of mental hospitals. Many younger patients were in family care, but as these are under the Social Welfare, which gives no information to the Psychiatric Central register (Munk-Jørgensen et al. 1986), it is impossible to state the exact number of this group. Both for epidemiological research and planning of treatment this lack of information is causing much inconvenience.

The distribution as to marital status, characterized by many single or divorced and few married, was unchanged in the total male group but the relation observed/expected had decreased in the single and divorced males due to changes in the background population. Changes were, however, seen in the females, as this group from 1977 to 1982 showed fewer married and more divorced patients. For both groups combined the figures showed an increase in divorced patients but this trend is similar in the background population; still the relation observed/expected in 1982 was more than 2.5. Olbrich and Bojanovsky (1981) in an investigation of divorced in-patients found that several of the patients admitted within a year after their divorce were schizophrenics who relapsed and were in need of a long-term hospital stay. The distribution of the patients as to marital status in the present study is well-known from other studies (Pokorny and Overall 1970; Robertson

1974; Eaton 1975; Watt and Szulecka 1979). The phenomenon that a considerable predominance of single schizophrenics is found is described in another way by Overall (1971), who says that never married patients presented more emotional withdrawal and thinking disturbances. Such a characteristic is in accordance with the symptomatology seen in Danish schizophrenic patients who are diagnosed by a rather narrow concept (Munk-Jørgensen 1986).

The percentage of committed schizophrenic patients in mental hospitals has decreased significantly for both sexes. In particular the number of patients committed because of dangerous behaviour has decreased but this is in accordance with tendencies seen among the total number of committed patients in Denmark (Adserballe et al. 1985). The increased discharge of schizophrenic patients might cause an increase in commitments, but this seems to be prevented by, for instance, re-admissions.

In conclusion, the hospital prevalence of schizophrenic patients follows the same trends as the total population of psychiatric patients. The rates of long-stay patients decreased and to a high degree day-patient treatment has replaced in-patient admissions indicating that the group of schizophrenic patients in spite of their serious disease has "footed the bill" as to reductions in available beds. On the other hand the re-admission rates of younger schizophrenic males has increased reflecting that the Health System complies with the need of this group. It also may give rise to optimism that the reduction of beds and the implied discharge of schizophrenic patients have not caused an increase in commitments.

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