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# Prognostic Implications of the Sex of Schizophrenic Patients

RAIMO K. R. SALOKANGAS

**Summary:** In two follow-up studies of a total of 175 patients, carried out approximately eight years after first hospitalization, men were under hospital care more often and for more prolonged periods than women, but used out-patient services less. At the end there were only small differences in clinical condition between the sexes, but social condition, as depicted by social adjustment, psychosexual situation and work adjustment, was clearly poorer in men than in women. This was perhaps a reflection of the men's poorer premorbid psychosocial development and social role. The differences between the sexes in the prognosis for schizophrenia are considered.

Schizophrenia can be considered as a developmental disorder in which the psychological disturbance originates and manifests itself in interplay with social development (Salokangas, 1977, 1978). Similarly the prognosis in schizophrenia consists of a number of partly intercorrelated components (Strauss and Carpenter, 1974), which are also correlated with the premorbid development (Salokangas, 1978, 1980a). In addition to clinical status and hospital treatment the patient's ability to work, interpersonal relationships, psychosexual development and social adjustment are important factors in assessing the overall prognosis for schizophrenic patients.

This broadening of the prognostic perspective also leads to an accentuation of the role of the patient's sex. In particular the prognostic components related to social interaction seem to be linked with patient's sex in a way which deserves more attention than it at present receives.

## Materials and Methods

Finland has been divided into thirteen mental health care districts, each of which is responsible for the psychiatric treatment necessary for the population in that area. The city of Turku, which in 1970 had a population of 155,000 inhabitants, constitutes one such district, and has at its disposal two psychiatric hospitals: the Kupittaa Hospital and the Psychiatric Clinic of the University of Turku. All Turku residents who need psychiatric hospital care are treated in these hospitals. (The Psychiatric Clinic was established in the summer of 1967, operating in the premises of the former Kupittaa B-division hospital; prior to that, all Turku psychiatric patients needing in-patient care were treated at the Kupittaa hospital, which at the same time functioned as a university teaching hospital.) Out-patient treatment is provided by the aftercare units of the psychiatric hospitals, by the community mental health centre, by the psychiatric out-patient department of the general hospital, and by psychiatrists in private practice. The provision and development of psychiatric treatment in Turku has been dealt with in greater detail elsewhere (Salokangas, 1980b).

The results presented here are based on two follow-up studies. In the case of the first of these, the material consisted of 100 consecutive Turku schizophrenic patients between the ages of 15 and 45 who entered hospital treatment for the first time during 1965–67, and who were followed up seven and a half years from this first admission. The second comprised all Turku schizophrenic patients in the same age bracket who entered hospital treatment for the first time in 1969; these totalled 75, and were followed up eight years after the first hospitalization.

The 1965–67 material was selected on the basis of a systematic survey of the medical records of all Turku patients aged 15 to 45 who had been admitted to hospital (the Kupittaa hospital) for the first time on 30 May 1967 or earlier, until 100 consecutive cases of schizophrenia were collected; this work was carried out by two senior psychiatrists, Professor Yrjö O. Alanen, MD and Dr Viljo Räkköläinen, MD. In chronological order the first patient had been admitted on 10 May 1965 and the last on 24 May 1967. The diagnosis of schizophrenia was based on Bleuler's (1911) concept of the illness, subdivided by the senior psychiatrists into three subcategories: (1) nuclear schizophrenia (simple, hebephrenic, paranoid, catatonic and undifferentiated schizophrenia); (2)

schizophreniform psychosis (schizo-affective psychosis or acute confusional schizophrenic psychosis); and (3) borderline psychosis (pseudo-neurotic schizophrenia). The category of nuclear schizophrenia included seven patients whose clinical picture, according to an assessment by the present author, was basically one of long-continued paranoid psychosis. The classification into these diagnostic groups was based on the criteria used by Langfeldt (1937, 1969), Achté (1961, 1967) and Hoch and Polatin (1949).

The grounds for selection of the 1969 material were the same, except that the base patient population consisted of Turku residents in the age range 15-45 years admitted to a psychiatric hospital (Kupittaa Hospital or the Turku University Psychiatric Clinic) in that year for the first time; among these the schizophrenic patients were again picked out and classified into diagnostic subcategories by the senior psychiatrists. Both patient groups thus include all 15 to 45-year-old individuals among the population of a certain area (Turku) admitted during a specified period to a psychiatric hospital for the first time for a schizophrenic disorder.

The follow-up evaluation of the patients in both groups was based primarily on a personal interview by the present author, in the case of the 1965–67 group, seven and a half years, and in the case of the 1969 group, eight years after the first hospital admission. By the time of the follow-up, 14 (8 per cent) out of the total of 175 patients had died; eight of them (4.6 per cent) had committed suicide. (One patient, however, died during the interval after the end of the follow-up period but before the evaluation interview, so that the total number of patients in Table V is 162 rather than 161.) Of the 161 subjects alive at the time of the study, 155 (96.3 per cent) were interviewed, four (2.5 per cent) refused and two (1.1 per cent) could not be reached.

The interview was based on a semistructured interview schedule, the Turku Schizophrenia Assessment Form (not available in English), which has been developed at the Turku University Psychiatric Clinic. This provides a broadly based survey of the patient's developmental conditions in childhood, his physical, psychological and social development, family conditions, events preceding the onset of illness and conditions at the time of its onset, and the clinical picture, as well as his physical, psychological and social development during the follow-up period and the psychosocial situation prevailing at the end of the follow-up. During the interval between the follow-up evaluations of the first and second patient groups, a few changes and additions were made to the form; the results reported here concerning the two groups are thus not all directly comparable. Comparisons in terms of the patient's sex, however, is not affected by these changes.

Information concerning those patients who could not be interviewed (including those who had died) was supplemented by interviews with the patient's family members and therapists. The data collected for all patients also included all medical records kept for the subjects' in-patient and out-patient treatment during the follow-up period (including information from interviews with the patients' private psychiatrists), data on sickness benefits and pensions, information from the City Department of Welfare concerning social assistance, and certain other records not referred to in this paper.

In other respects the methods and results of these follow-up studies are discussed in greater detail elsewhere (Salokangas, 1977, 1978; Räkköläinen *et al*, 1979; Salokangas *et al*, 1980).

The age structure of the material and the division into diagnostic groups is shown in Table I.

Worth noting with respect to the age structure is the

TABLE I

*Age structure and diagnostic distribution of the samples (%)*

| | 1965–67 | | 1969 | | Both samples combined | | |
|---|---|---|---|---|---|---|---|
| | Men n=39 | Women n=61 | Men n=43 | Women n=32 | Men n=82 | Women n=93 | Total n=175 |
| Age group: | | | | | | | |
| 15–24 | 38 | 31 | 53 | 31(*) | 46 | 31* | 38 |
| 25–34 | 31 | 38 | 21 | 41 | 26 | 39 | 33 |
| 35–45 | 31 | 31 | 26 | 28 | 28 | 30 | 29 |
| Diagnostic group: | | | | | | | |
| Nuclear schizophrenia | 44 | 54 | 54 | 50 | 49 | 53 | 51 |
| Schizophreniform psychosis | 41 | 25 | 16 | 28 | 28 | 26 | 27 |
| Borderline schizophrenia | 15 | 21 | 30 | 22 | 23 | 21 | 22 |

(*)$P < .10$; *$P < .05$

large proportion of men under 25. The differences between diagnostic groups, on the other hand, are slight.

## Results

In presenting the findings the main emphasis will be on comparisons between the sexes, with particular attention to systematic differences. Since the definitions of certain developmental and prognostic criteria used with the two samples differed slightly, comparisons between the samples are largely ignored here.

### *Premorbid development*

In their childhood and adolescence roughly half of the patients had displayed a tendency to social withdrawal (self-isolation, few companions, lack of friendships) and about half showed distinct neurotic symptoms. Social withdrawal was slightly more common in men than in women; in the case of neurotic symptoms the reverse was true. In the occurrence of psychotic symptoms there was no systematic difference between the sexes, but behaviour disorders and asocial behaviour in adolescence (abusive behaviour towards other children, causing disturbance at school, truancy, running away from home, excessive drinking, pilfering and other criminal behaviour) were clearly more common in men than in women (Table II).

The premorbid psychosexual development, considered as a whole, remained at a less adequate level in men than in women. Before the first admission, over 40 per cent of men had never had social relationships with the opposite sex (longer or shorter-term relationship with person of opposite sex; dating); the corresponding proportion for women was a mere 16 per cent. At the time of the first admission, fewer men than women were married. In the second sample more than two-fifths of the men, but under one-fifth of women were living with their parents at the time of the onset of illness. Those who lived with spouse or children accounted for somewhat over a quarter of the men and slightly less than half of the women (Table III).

TABLE II

*Psychiatric symptoms and behaviour disorders in the patients' childhood and adolescence (%)*

| | 1965–67 | | 1969 | |
|---|---|---|---|---|
| | Men n=39 | Women n=61 | Men n=43 | Women n=32 |
| Neurotic symptoms | 49 | 51 | 49 | 63 |
| Psychotic symptoms | 8 | 12 | 16 | 9 |
| Social withdrawal | 44 | 41 | 60 | 47 |
| Behaviour disorders or asocial behaviour | 44 | 12*** | 33 | 3*** |

***P <.001

TABLE III

*Special features in premorbid development (%)*

| | 1965–67 | | 1969 | |
|---|---|---|---|---|
| | Men n=39 | Women n=61 | Men n=43 | Women n=32 |
| No social relationships with the opposite sex | | | 43 | 16** |
| Married at the time of hospitalization | 23 | 31 | 30 | 40 |
| Living at the time of hospitalization: | | | | |
| (a) with parents | | | 42 | 19* |
| (b) with spouse | | | 28 | 44 |
| Difficulty in adjustment to working life | 55 | 28** | 77 | 58(*) |

(*)P <.10, *P <.05, **P <.01

In education the differences between the sexes were slight, but in adjustment to working life they were considerable. Of the second sample, as many as three-quarters of the men had shown difficulty in work adjustment (frequent job changes, quarrels with fellow-workers or superiors, dismissals from jobs, prolonged periods of unemployment) before admission, compared to slightly over one-half of women. At the time of the first admission unemployment was about three times as common in men as in women. The housewives who had lost their jobs outside the home and/or wanted to get a job were classified as unemployed, while the housewives who did homework and did not want to get a job outside the home were classified as employed.

The premorbid psychosocial development considered as a whole was poorer in both samples in men than in women (P <.05). Asocial traits, poor psychosexual development and associated bonding ties with the family of origin, and poor adjustment to working life differentiated the development of men most clearly from that of women.

### *Follow-up period*

As we have already seen, in terms of diagnostic groups no clear differences were found between the sexes. Likewise in terms of the extent of symptoms, the disturbance was found to be of equal severity in men and women; in certain areas symptoms were actually slightly more common in women. The extent of drug therapy during the first admission and the length of the first hospital stay were of the same order of magnitude in the two sexes.

Considerably larger differences occurred in the

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treatment provided during the follow-up period. Men were admitted clearly more frequently and for more prolonged periods than women; in the second sample the extent of hospital treatment for men was double that for women. Out-patient treatment services, on the other hand, were used by men considerably less commonly and for shorter periods than by women; out-patient treatment received over the follow-up period as a whole was assessed as satisfactory (frequency of out-patient visits corresponding to need of treatment due to patient's disorder and variations in it) for a distinct majority of women, compared to considerably under one-half of men. These differences in the extent of hospital and out-patient care remained more or less constant throughout the follow-up period.

At the end of the follow-up period, there was a difference between the sexes in clinical status; recovered and symptom-free cases accounted for almost one-third of women, but for less than one-fifth of men. This difference was found for both samples. A larger difference occurred in working ability, which, particularly in the case of the second sample, was clearly poorer in men. Partly due to their poorer working ability, men had needed social assistance more often than women. Social adjustment (vagrant lifestyle, excessive drinking, fights, frequent job changes and criminal behaviour were the most frequent indications of social maladjustment) and functional capacity (ability to lead an independent life and take care of oneself—cf. Elosuo, 1967) were likewise better in women at the end of the follow-up. Only one-third of the men were married, another one-third were still living with their parents and in many cases supported by them, and somewhat under one-fifth were in institutions or without housing arrangements. In the case of women, living with a spouse was more common and living with parents or in an institution less common than in men (Table VI).

## Discussion

In the analysis of the results attention is drawn to two things in particular. First, the prognosis as a whole was clearly poorer for men than for women; the difference between the sexes was especially prominent in the case of the prognostic components relating to interpersonal interaction and social competence, men having already

TABLE IV

*Treatment during the follow-up period, calculated per patient*

| | 1965–67 | | 1969 | |
|---|---|---|---|---|
| | n=39 | n=61 | n=43 | n=32 |
| First hospital treatment (days) | 37 | 38 | 127† | 80 |
| Under hospital care (days) | 262 | 208 | 463 | 202* |
| Under hospital care (per cent of follow-up period) | 10 | 8 | 16 | 7 |
| Number of admissions | 5.0 | 4.0 | 4.9 | 3.3 |
| Visits to out-patient unit per year | 2.7 | 3.7 | 6.5 | 12.1(*) |
| Duration of sustained out-patient treatment (per cent of follow-up period) | 37 | 53* | 33 | 45 |
| Out-patient treatment assessed as satisfactory (%) | 33 | 59** | 41 | 72** |

(*)P <.10, *P <.05, **P <.01

†When a male patient who remained permanently in the hospital after the first admission is excluded from the figure, the average duration of the first hospitalization for men was 61 days.

TABLE V

*Psychiataric symptoms at the end of follow-up (%)*

| | 1965–67 | | 1969 | | Both samples combined | | |
|---|---|---|---|---|---|---|---|
| | Men n=35 | Women n=57 | Men n=39 | Women n=31 | Men n=74 | Women n=88 | Total n=162 |
| No symptoms | 17 | 33 | 18 | 29 | 18 | 32* | 26 |
| Neurotic symptoms | 26 | 17 | 23 | 23 | 24 | 19 | 21 |
| Occasional mild psychotic symptoms | 34 | 25 | 31 | 32 | 32 | 27 | 29 |
| Continuous/florid psychotic symptoms | 23 | 25 | 28 | 16 | 26 | 22 | 24 |

*P <.05

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TABLE VI

*Patients' psychosocial adjustment and functioning during follow-up (%)*

| | 1965–67 | | 1969 | |
|---|---|---|---|---|
| | Men | Women | Men | Women |
| During follow-up period: | n=39 | n=61 | n=43 | n=32 |
| On sick-leave or pension, per cent of follow-up period | 38 | 35 | 41 | 26(*) |
| Social assistance received | 46 | 8*** | 35 | 22 |
| At the end of follow-up: | n=35 | n=57 | n=39 | n=31 |
| Unable to work (assessed by the author) | 43 | 26* | 42 | 16* |
| On pension | 37 | 32 | 54 | 32(*) |
| Difficulty in social adjustment | 23 | 9(*) | 36 | 7** |
| Functional capacity impaired | 43 | 23 | 54 | 36 |
| Married | 23 | 40(*) | 33 | 50 |
| Living with parents | | | 33 | 13* |
| Living in institutions or without permanent living arrangements | | | 18 | 3* |

(*)P <.10, *P <.05, **P <.01, ***P <.001

functioned socially more poorly than women before the onset of the actual illness. Secondly, men used out-patient treatment services less than women, but stayed in hospital care for considerably longer periods than women.

Both findings may have been affected by the difference in the age structure of the male and female patient population. Men who had developed schizophrenia at a young age were over-represented, particularly in the second sample, and their prognosis was particularly poor. In a study conducted by the WHO (1979), the prognosis for men whose illness began while they were still young also appeared poorer than average. On the other hand, we know that men tend to develop schizophrenia at a younger age than women; thus it is possible that a sex difference arising from the age at onset of illness is merely thrown into stronger relief in the present study.

Schizophrenia and its often associated character deviance, particularly the tendency toward social withdrawal, affect the male social role, which involves greater activity and the need to demonstrate competence, considerably more adversely than the female role, the passive aspects of which are merely accentuated by the illness. This is seen particularly clearly in psychosexual development, which has been found almost without exception—as in the present study too—to be poorer in men than in women. The delayed and partly arrested psychosexual development is, in tern, productive in men of a more binding relationship to the parents. Since these close bonds often also involve pathological features (Alanen, 1968, 1980), they may further worsen the prognosis for these men, whose illness has begun at an early age.

The large amount of hospital treatment received by the men in the second sample is at least partly explained as an attempt on the part of the treatment system to disengage the patient, often precisely the male patient, who is still bound closely to the childhood home. As the treatment system, however, was not supported by any special form of social rehabilitation, its chances of helping patients to become independent and capable of functioning on their own remained at a relatively modest level, even in cases where some disengagement from the parents at the psychological level may have taken place in the course of hospital care. In a considerable proportion of male patients, the inability to meet the expectations involved in the male role took the form of asocial behaviour, which further hampered social competence and often made treatment difficult.

Another important sex difference concerned treatment behaviour. It seems as though men had regressed for prolonged periods to hospital care, while women used out-patients services regularly. This difference in treatment behaviour may have affected the differences found for prognosis. Hospital treatment has, in fact, been found to have the effect of weakening social skills and thereby impairing social functioning (Wing and Brown, 1970; Brown *et al,* 1966). The differences in treatment behaviour probably reflect the different attitudes of men and women toward receiving help and their differing ability to maintain a treatment relationship. It is easier for women than for men to seek help at an early stage when difficulties arise, and it is thereby possible, at least in a certain number of cases, to avoid admission through the use of out-patient treatment services. Men, on the other hand, often delay seeking

help until admission, with the ensuing disruption of social life, cannot be avoided. It is also possible that a psychiatric disorder, together with the resultant loss of functional capacity, involves relatively more severe damage to self-esteem for men than for women, in whom the gap between personal goals and the level of psychological functioning does not become as wide as in men.

Psychodynamic consideration of the second sample showed that in men more often than in women the life situation at the time of the onset of illnes involved a threat to the patient's ability to cope, and a doubt as to his ability to manage the situation in the face of increased demands. In women, on the other hand, the onset of illness was more often related to interpersonal conflicts manifested at the emotional level, and more often than men they gained insight into their illness. In men, behaviour, including treatment behaviour, is in fact characterized by an either/or attitude—either complete success or complete failure—where—as women adjust more easily to the situation and seek help as required by the situation at any given time.

In terms of the prognosis based on clinical symptoms alone, no large difference was found between the sexes. This may explain why in most studies in which fairly narrow prognostic definitions have generally been used, no sex difference in prognosis has been found. In some studies, on the other hand, the analysis of a possible difference between the sexes has not been thought of as meaningful to begin with; possible differences may thus have passed unnoticed. It should furthermore be noted that particularly in American studies, alcoholics and drug abusers have quite often been excluded from the samples at the very beginning. Such a procedure tends to exclude from the study larger numbers of men with a poor social prognosis, compared to women. Likewise in studies in which a large proportion of patients are lost to follow-up, those with a tendency toward asocial behaviour are more likely than others to be lost.

The social prognosis, and its link with the sex of the schizophrenic patient, may also be related to social change and local socioeconomic conditions. No sex differences in prognosis, social prognosis included, have been found for patients hospitalized in the first half of the century (Lindelius, 1970; Bleuler, 1972; Ciompi and Müller 1976; Ciompi, 1980). Possible differences may have been lost through prolonged follow-up periods and in part through restricted prognostic criteria. In more recent follow-up studies, on the other hand, the social prognosis has been found to be poorer both for men with actual schizophrenia and for those with borderline schizophrenia, compared to women (Affleck *et al,* 1976; Lo and Lo, 1977; Bland and Orn, 1978; Nyman, 1978).

Social change, the employment situation and the level of social security are also reflected in the patients' job situations and thereby in their working ability; this effect would seem to be partly dependent on sex. The increased demands of working life have been felt perhaps most strongly in men's occupations, where there are fewer unskilled jobs. In Finland this is seen in the fact that, while the general level of unemployment is about 6 per cent, there is at the same time a shortage of manpower in certain highly skilled occupations. It is difficult for schizophrenic patients, partly with their low level of education, to gain and keep a foothold in working life and thereby maintain their working ability. Particularly for men whose illness begins at an early age, the prognosis with respect to working capacity seems poor.

A study of new pensions granted for psychosis in Finland in 1968 showed that young men (those aged 16 to 34) received such pensions about 1.5 times as often as women of the same age (Suominen, 1975). Parallel findings have been obtained in Sweden. In the 1960s the increased extent of hospital treatment for men, at the same time as the need for hospital care in women continued to decline, seemed to be associated with the increased demands of working life (Lassenius *et al,* 1973). Assessments of working capacity are also bound up with sex roles, which may to a certain extent be reflected in research findings (cf Brown *et al,* 1966). For example, a certain number of female patients are able to fulfil their functions as housewives and mothers, but would hardly succeed in the free labour market. For men, on the other hand, it is not easy to adopt the role of the father who stays at home taking care of the children and household, while his wife works.

In the view of the present author, the social prognosis, relating to the level of interpersonal interaction and social competence, is crucial—perhaps, indeed, more important than the clinical prognosis—in assessing the subsequent adjustment and functioning of schizophrenic patients. Since it seems to be in many ways linked with the sex of the patient, men and women patients should be observed separately, as well as together.

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Raimo Salokangas, M.D., M.Sc., *Senior Fellow in the Academy of Finland, The Psychiatric Clinic of Turku, Kurjenmäentie 4, SF–20700 Turku 70, Finland.*

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