and interventions, and it allows for consideration of alternative treatment strategies. Instead of a thick folder filled with a single jumbled chronology, our proposed display shows many coherent chronologies with timescales ranging over generations, the lifetime of the patient, the patient's clinic experience, and the last few weeks.

Patient information will soon be collected in computer systems capable of printing a fresh summary for each patient daily. Our proposal should encourage doctors and other mental health professionals to reshape, if not reinvent, psychiatric records before computer programmers cast institutional habit into silicon. ♦

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Clinical Characteristics and Health Resource Use of Men and Women Veterans With Serious Mental Illness

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In this retrospective analysis of gender-specific differences among veterans with serious mental illness, the clinical characteristics and health service utilization of 57 women and 114 men were compared. Women had fewer comorbid psychiatric illnesses than men, and substance use disorders were the most frequent comorbid psychiatric illness for both genders. Unlike nonveteran samples with serious mental illness, the veterans in this study showed no gender differences in hospital length of stay. Atypical antipsychotics, used for only suboptimally responsive illness in the study group, were prescribed for 50 percent of women with primary psychosis, compared with 15.3 percent of men with primary psychosis. The results suggest that psychosis among women veterans is more severe or refractory than that among men veterans. (*Psychiatric Services* 48:1461–1463, 1997)

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Although serious mental illnesses such as schizophrenia, schizoaffective disorder, and bipolar disorder occur in both sexes with approximately equal prevalence (1), gender-related differences exist in the manifestation of these disorders. For example, global outcome of schizophrenia appears to be better for women than for men, and women with schizophrenia generally have a better course of hospital treatment, shorter hospital stays, and less likelihood of relapse after hospital discharge (2).

Women currently represent 4.5 percent of the veteran population, al-

Table 1

Classes of medications prescribed for women and men veterans with primary psychosis

Medication class	Women (N=36)		Men (N=72)	
	N	%	N	%
Conventional antipsychotic[1]	22	61.1	63	87.5
Atypical antipsychotic[2]	18	50.0	11	15.3
Antidepressant	7	19.4	18	25.0
Anxiolytic	13	36.1	19	26.4
Mood-stabilizing agent	18	50.0	23	31.9

[1] Significant difference between women and men (χ^2=9.97, df=1, p<.01)
[2] Significant difference between women and men (χ^2=14.73, df=1, p<.01)

though this proportion is likely to increase in the coming years. Between 1973 and 1989 the percentage of women in the U.S. armed services rose from 1.6 to 10.8 percent (3).

Women with severe illness and limited capacity for full recovery are overrepresented in the population of women veterans seeking health care from Department of Veterans Affairs facilities (4). Accordingly, women who seek VA mental health care are likely to have serious mental illness.

Unlike women with serious mental illnesses in the community, women veterans with such disorders may have more severe illness or poorer outcomes than men veterans with similar disorders (4). This study analyzes gender differences in clinical characteristics and health resource utilization of veterans with serious mental illness.

Methods

A computer search identified all women hospitalized on the psychiatry service at the VA Medical Center in Brecksville, Ohio, from October 1, 1993, to September 30, 1995, with a *DSM-III-R* discharge diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder. The demographic characteristics of the population served at the center mirror those of the population served in VA centers nationwide (5).

To obtain a representative sample of male veterans, two male patients were matched for age and diagnosis with each female patient. Data on demographic characteristics, comorbid psychiatric illnesses, hospital length of stay, and prescription of psychotropic and nonpsychotropic medications were obtained through review of computerized records. Hospital charts were reviewed to confirm the diagnoses. The two groups were then compared using single-factor analyses of variance, unpaired t tests, and chi square tests.

Results

Demographic and clinical characteristics

Fifty-seven women and 114 men with serious mental illness were identified. The mean±SD age of the group was 46.3±12.7 years, with a range from 30 to 78 years.

Racial composition of the sample of women was 71.9 percent white (N=41), 24.6 percent black (N=14), and 3.5 percent Hispanic (N=2). Racial composition of the sample of men was 55.2 percent white (N=63), 43 percent black (N=49), .9 percent Hispanic (N=1), and 9 percent other race (N=1). The female and male samples differed significantly in the proportion of black and white patients (χ^2= 5.25, df=1, p<.01).

Among the women, 24 patients, or 42.1 percent, had a diagnosis of schizophrenia; 12 patients, or 21.1 percent, had schizoaffective disorder; and 21 patients, or 36.8 percent, had bipolar disorder. The proportions of the three diagnoses among men were identical with those among the women.

The patients with schizophrenia were significantly older than the patients with schizoaffective disorder, 51.3±14.6 years, compared with 42.3±7.79 years (Duncan test, df=58, p=.04). They tended to be older than the patients with bipolar disorder, who had a mean age of 43±11.05 years (Duncan test, df=67, p=.052).

Women had significantly fewer comorbid psychiatric illnesses than men, a mean±SD of .77±1.07 comorbid illnesses, compared with 1.33±1.28 (t=–2.82, df=167, p<.01). Substance use disorders were the most frequent comorbid psychiatric illness for all veterans in the sample. Women were significantly less likely than men to have a comorbid diagnosis of alcohol abuse, 21.2 percent, compared with 38.6 percent (χ^2= 5.29, df=1, p<.05).

Resource utilization

The mean length of psychiatric hospitalization during the study period was 60.8±76 days for the women and 55.1±81.7 days for the men, not a significant difference. There were no gender differences in length of stay among patients with a comorbid substance use disorder and those without. The mean number of psychiatric hospitalizations during the study period was similar for women and men, 2.07±1.92 and 2.08±2.05, respectively.

The only significant gender difference in prescription of medication was for neuroleptic medication in the treatment of patients with primary psychotic disorders such as schizophrenia and schizoaffective disorder. Data on prescription of specific classes of medication are shown in Table 1.

Conventional antipsychotic medications, such as haloperidol, were more likely to be prescribed for men than for women with primary psychotic disorders. Atypical antipsychotic medications were more likely to be prescribed for women. The atypical antipsychotics available for clinical use at this facility were clozapine, for treatment-refractory psychosis, and risperidone, for suboptimally responsive or treatment-intolerant psychosis. Investigational antipsychotics were prescribed for two women and two men with suboptimally responsive psychosis as part of pharmacologic research protocols.

Discussion

Although data from this study must be interpreted with caution due to small sample size, lack of structured

interviews to control for diagnostic biases, and retrospective design, some preliminary inferences may be proposed. As reported by Rothman (6), black women are underrepresented in samples of women veterans who use VA services. The racial composition of the population of women with serious mental illness who use VA services may change as women who entered the service in the more recent past become eligible for mental health care through the VA.

In this sample, schizophrenia was the most frequent diagnosis among women. Dvoredsky and Cooley (4) also reported that schizophrenia was the most common psychiatric diagnostic category of women discharged from VA hospitals. In the sample described here, women had fewer comorbid psychiatric illnesses than men. This difference appears to be due to the fact that substance use disorder, which was the most frequent comorbid psychiatric illness in the total sample, was significantly more common among men than among women.

Substance use among patients with serious mental illness has been associated with increased length of hospital stay, poorer compliance with medication, and added costs. Although men with schizophrenia might be expected to have a longer mean hospital stay than women, this sample did not show this difference, due to the increased likelihood of comorbid substance use disorder. Some authors have suggested that substance use disorder may be underdiagnosed in VA populations, particularly among women veterans (7).

In contrast to reports based on nonveteran populations that suggest shorter hospital stays for women with schizophrenia, length of stay was not significantly different for men and women veterans in this sample. The women in this sample may have remained hospitalized as long as the men because their psychotic symptoms were more severe than those of women with serious mental illness in non-VA settings or because psychosis in women veterans with serious mental illness is more refractory to treatment. Another possibility is that hospitalization was extended to provide more treatment and increase the stabilization of symptoms before discharge.

In this sample men and women with bipolar disorder had no significant difference in length of stay or number of hospitalizations. Winokur and associates (8) also reported no gender differences in number of hospitalizations in a long-term follow-up of patients with bipolar disorder.

Only 15.3 percent of the men with psychosis in this sample received atypical antipsychotics, compared with 50 percent of the women with psychosis. As atypical antipsychotics are used at our facility only for suboptimally responsive or treatment-intolerant psychosis, these data suggest that women veterans with schizophrenia or schizoaffective disorder may have psychosis that is particularly severe or treatment refractory, compared with that of men veterans. Use of novel antipsychotics at our facility is controlled by a multidisciplinary committee using set criteria, thus making prescribing bias among individual physicians unlikely.

Treatment-refractory psychosis may be associated with the peri- or postmenopausal status of a substantial number of the women in this sample, particularly women with schizophrenia, who were the oldest group. The retrospective study design prevented precise identification of peri- or postmenopausal women. The mean age of women who received antipsychotic medication was 48.3 years, with no significant age difference between those treated with atypical versus typical antipsychotics. Based on the suggestion that estradiol functions as a dopamine antagonist (9), a decrease in estrogen levels, seen in menopause, may be associated with increased dopaminergic activity and worsening of psychotic symptoms. In addition, postmenopausal women may be less responsive to neuroleptic medications and less tolerant of their adverse effects (10).

Conclusions

If women veterans with serious mental illness have psychosis that is more severe or refractory than male veterans with serious mental illness, it will be important to plan for care that addresses specific areas of illness or disability. For example, atypical antipsychotic agents may have a unique role in the management of psychosis in women veterans with serious mental illness. In light of the continuing growth of the population of women veterans, additional and prospective studies are needed to further assess needs of women veterans with serious mental illness. ♦

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