

# Prescribing of tranquilizers to women and men

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One of the products of recent social phenomena has been a concern about sexism in medical practice.<sup>1-6</sup> Cooperstock<sup>7,8</sup> has focused particular attention on the relative excess of psychotropic drug use among women as compared with men. Numerous studies have shown that twice as many women use psychotropic agents.<sup>9-16</sup> Indeed, these reports are so consistent that Cooperstock<sup>7</sup> has attributed a certain immutability to the 2:1 ratio. She has postulated that this apparent excess in the use of psychotropic agents is related both to a social bias of physicians and to the behaviour of women. Her viewpoint has received support from within the medical profession and from the Ontario Status of Women Council.<sup>17,18</sup>

Generally the use of prescription and nonprescription drugs is about 50% higher among women than among men.<sup>10,14,15</sup> This pattern parallels the differences in the prevalence of illness and the use of health care services between women and men.<sup>12,15,17-22</sup>

Many physicians have argued empirically that more psychotropic drugs are prescribed to women because they see more women with emotional illness. This claim has been supported by studies that have shown that psychiatric illness is about twice as common in women as in men.<sup>17,18,20,23,24</sup> Also, twice as many women attempt suicide,<sup>25</sup> and in Great Britain women have more days of certified disability for mental illness.<sup>26</sup>

Thus, the difference between women and men in their use of psychotropic agents is proportional to the reported prevalence of psychiatric illness in both sexes. It would therefore be logical to expect that in a group of women and men reported to have the same psychiatric illnesses the rates at which psychotropic agents are prescribed would be the same for the two sexes. However, this logic is untested.

We undertook at the Hotel Dieu Family Medicine Centre of Queen's University, Kingston, Ont., a review of the charts of a sample of women and men reported as having the same psychosocial illnesses to determine if there was any difference between the proportions of women and men treated with anxiolytic agents. Comparison data were also collected for a sample of women and men reported as having the same infections to determine if there was any difference between the proportions of women and men treated with antibiotics.

We assumed that if there was no difference in the sex-specific prescribing rates the reported differences in the prevalence of psychiatric illness alone would be

sufficient to explain differences in rates of tranquilizer prescribing.

## Methods

The Family Medicine Centre houses the full-time teaching teams of the department of family medicine of Queen's University. There were nine such teams operating during the study period. Each team included a faculty physician (a man), a nurse (or nurse-practitioner) and one to three residents at various levels of graduate training. The residents were assigned to each team for 2 to 4 months on a rotational basis.

Patients were identified from a computerized diagnostic index covering the period July 1, 1976 to June 30, 1977. The diagnosis reports had been coded by the International Classification of Health Problems in Primary Care.<sup>27</sup> A few subdivision rubrics were created to meet local needs.<sup>28</sup> The accuracy of the coding was 95% during the study period.

The patients were divided into two groups. The "psychosocial" group included patients aged 15 to 64 years who had presented with anxiety neurosis, unspecified anxiety, hysterical or hypochondriacal neurosis, tension headache, sexual problems, alcohol abuse or psychosis, marital problems, or family disruption or other family-related problems. The "infection" group included patients aged 15 to 64 years who had presented with acute sinusitis, acute bronchitis, influenza, or cellulitis or a boil or abscess.

The drugs considered in the psychosocial group were diazepam, oxazepam and chlordiazepoxide, and all antibiotics were considered in the infection group.

Various studies have shown that women are given prescriptions for tranquilizers twice as often as men. It has been alleged that physician bias is one factor leading to this excess. A retrospective study was undertaken of a sample of women and men reported as having the same psychosocial diagnoses to determine if there was any difference between the proportions of women and men treated with anxiolytic drugs. The records of 926 patients with psychosocial diagnoses seen during a 12-month period were reviewed. The prescribing rate for selected drugs was 35.9/100 women and 27.1/100 men. Adjustment for age increased the difference between the sexes slightly, but adjustment for number of visits had no appreciable effect. The higher rate of anxiolytic prescribing to women was statistically significant for those aged 25 to 44 years. There was no significant difference in the rate with which antibiotics were prescribed to women and men with selected infections. These data provide further evidence that women and men with psychosocial illnesses are treated differently.

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**Table I—Age/sex distribution of patients with specified psychosocial problems, and age/sex-specific prevalence rates for those problems**

Age group (yr)	Female		Male		Female/male prevalence ratio
	No. of patients	Prevalence (%)*	No. of patients	Prevalence (%)*	
15-24	145	15.4	49	9.4	1.6
25-44	278	26.7	124	18.0	1.5
45-64	215	35.5	115	25.0	1.4
<b>Total</b>	<b>638</b>	<b>27.9</b>	<b>288</b>	<b>17.1</b>	<b>1.6</b>

\*Rate per 100 of the attending population.

**Table II—Age/sex distribution of patients with specified infections, and age/sex-specific prevalence rates for those infections**

Age group (yr)	Female		Male		Female/male prevalence ratio
	No. of patients	Prevalence (%)*	No. of patients	Prevalence (%)*	
15-24	33	3.5	17	3.3	1.1
25-44	99	9.5	46	6.7	1.4
45-64	45	7.4	42	9.1	0.8
<b>Total</b>	<b>177</b>	<b>6.8</b>	<b>105</b>	<b>6.3</b>	<b>1.1</b>

\*Rate per 100 of the attending population.

**Table III—Age/sex distribution of patients receiving prescriptions for anxiolytic agents in the psychosocial group**

Age group (yr) and sex	No. of patients		$\chi^2$	P value	Prescribing rate (%)	Female/male prescribing ratio
	Tranquillizer not prescribed	Tranquillizer prescribed				
15-24						
Female	114	31	0.06	0.8	21.4	1.2
Male	40	9				
25-44			6.49	0.01	37.8	1.6
Female	173	105				
Male	94	30			24.2	
45-64			2.35	0.13	43.3	1.3
Female	122	93				
Male	76	39			33.9	
<b>Total</b>						
Female	409	229			35.9	1.3
Male	210	78			27.1	

**Table IV—Numbers of patients receiving prescriptions for anxiolytic agents, and age/sex-specific prescribing rates for those agents, by number of visits per patient**

No. of visits	Female		Male		Female/male prescribing ratio
	No. of patients	Prescribing rate (%)	No. of patients	Prescribing rate (%)	
1	301	22.6*	157	14.0*	1.6
2	152	39.5	59	37.3	1.1
3	69	49.3	27	44.4	1.1
4+	116	57.8	45	48.9	1.2
<b>Total</b>	<b>638</b>	<b>35.9</b>	<b>288</b>	<b>27.1</b>	<b>1.3</b>

\*Difference significant at P < 0.001.

The patients' records were reviewed by one nurse with a structured abstraction form. The date of the patient's first visit for an illness episode (defined as a clinical manifestation requiring its own discrete assessment or management or both), even if it was before July 1, 1976, was recorded. Patients were followed up until a drug was prescribed or until June 30, 1977, whichever was earlier. Data from these forms were keypunched and entered onto a magnetic tape for analysis.

The statistical significance of the differences in proportions was evaluated by the chi-square test. Prescribing rates were expressed per 100 patients in the same age, sex and diagnostic group.

## Results

A total of 4257 patients aged 15 to 64 years attended the Family Medicine Centre between July 1, 1976 and June 30, 1977. Tables I and II show the age and sex distribution of the 926 patients (638 women and 288 men) in the psychosocial group (one chart could not be located) and the 282 patients (177 women and 105 men) in the infection group, as well as the prevalence rates for the study diagnoses.

The prevalence of psychosocial problems was 1.6 times greater in the women than in the men, and it increased with age in both sexes. Although the prevalence was higher for the women in each age group, the relative difference between the sexes decreased with age. After the diagnosis of alcohol abuse had been excluded the distribution of diagnoses for women and men in the psychosocial group did not differ significantly.

Within the psychosocial group 229 women (35.9%) and 78 men (27.1%) received anxiolytic drugs (Table III). The prescribing rate for women was 1.3 times higher than that for men. With adjustment for age

the rate rose slightly, to 1.4. The differences in the proportions of women and men receiving anxiolytic drugs were significant ( $P = 0.01$ ) only for the patients aged 25 to 44 years, among whom the prescribing rate was 1.6 times higher for the women. There was no significant difference in prescribing patterns within any one diagnostic category.

The prescribing rate for anxiolytic agents was consistently higher for women than men for any given number of visits to the Family Medicine Centre (Table IV), but after the first visit the relative difference between the sexes did not change appreciably as the number of visits per patient increased. Of the patients who visited only once, a significantly ( $P < 0.01$ ) greater proportion of women were given a prescription for an anxiolytic agent. The association between increasing number of visits and higher prescribing rates was significant ( $P < 0.001$ ) for both women and men. The female/male prescribing ratio fell only slightly (by 0.05) when adjustment was made for the number of visits. In the psychosocial group the average number of visits for male patients tended to approach that for female patients with advancing age (Table V).

Information on the prescribing of antibiotics to patients in the infection group is summarized in Table VI. There were no significant prescribing differences in this group; 53.7% of the women and 43.8% of the men received antibiotics.

## Discussion

If physicians were to manage female and male patients similarly, no difference would be expected in the sex-specific prescribing rates. In fact, women aged 25 to 44 years with the same diagnosis received prescriptions for anxiolytic agents significantly more often than men. Although the same tendency appeared in the other age groups the differences were not significant. By comparison, there was no significant difference between the sexes in the rates with which antibiotics were prescribed for the patients with infections, although the greatest difference again appeared in those 25 to 44 years old.

From an extensive review of the literature on the prescribing of psychotropic agents Cooperstock<sup>8</sup> found that "male consumption rises steadily with increasing age", but that women "in the middle years" are most often given prescriptions for these drugs. These findings are compatible with my finding that the widest and only significant difference between the sexes oc-

Table V—Age- and sex-specific rates of visiting the Family Medicine Centre for the psychosocial group

Age group (yr)	Mean no. of visits per patient		Female/male ratio
	Female	Male	
15-24	2.2	1.5	1.5
25-44	2.4	2.0	1.2
45-64	2.7	2.5	1.1
Total	2.4	2.1	1.1

Table VI—Age/sex distribution of patients receiving prescriptions for antibiotics in the infection group

Age group (yr)	Female		Male		Female/male ratio
	No. receiving antibiotics	Prescribing rate (%)	No. receiving antibiotics	Prescribing rate (%)	
15-24	15	45.5	7	41.2	1.1
25-44	58	58.6	19	41.3	1.4
45-64	22	48.9	20	47.6	1.0
Total	95	53.7	46	43.8	1.2

curred in patients aged 25 to 44 years.

These data are open to criticism because there is no assurance that the psychosocial illnesses were qualitatively and quantitatively similar in the women and men, despite the fact that the same diagnoses were made. However, even this criticism admits to a potential bias regarding gender: that an illness labelled as a psychosocial problem in a woman is apt to be labelled as some sort of somatic problem in a man. Regardless of whether men with somatic problems actually receive tranquilizers, the very act of diagnosing the problem differently indicates a difference in the approach to each sex.

The discrepancy in the prescribing rates between women and men may have arisen from differences in either diagnostic definition or therapeutic indications; however, these data still support the claim that female and male patients with psychosocial illnesses are treated differently. This difference probably arises from attitudes and behaviour of both patients and physicians.

Certainly because of the greater openness of women, their increased willingness to seek help, and the direct relation between their levels of anxiety and their consulting rates,<sup>29-33</sup> women may be more likely to receive a different form of management. Men, on the other hand, are more reluctant to seek help and may be more resistant to accepting it, especially in the area of psychosocial illness. Distressed men, especially the younger ones, may see self-sufficiency or alcohol use<sup>34</sup> as more socially acceptable. It may be significant that such differences between the sexes seemed to narrow with advancing age. The female/male ratio for both prevalence of psychosocial diagnoses and frequency of visits to the Family Medicine Centre fell steadily for each successive age group.

Cooperstock<sup>8</sup> identified only social bias as a factor influencing physicians' prescribing of psychotropic agents to women and men. In their investigation of physical complaints among women and men Armitage and colleagues<sup>6</sup> suggested that "physicians justifiably take into account differential risks when evaluating symptoms".

While the possibility of social bias cannot be denied, the main difference in rates of prescribing at the initial visit may indicate that physicians are more inclined with men than with women to rule out physical problems before prescribing tranquilizers. On the other hand, this finding could also be interpreted as indicating that women are more open about the nature of their problem or that men are slower to accept therapy with anxiolytic agents.

The only thing that stands out clearly is that women and men with psychosocial problems are managed differently. The net result is that physicians prescribe anxiolytics more frequently to women. In this issue of the Journal (starting on page 1225) Bass and Baskerville reach a similar conclusion in their study of patients presenting with symptoms suggesting psychosocial illness. However, the causes and appropriateness of this difference cannot be evaluated from the current evidence.

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## References

1. SCULLY D, BART P: A funny thing happened on the way to the office: women in gynecology textbooks. *Am J Sociol* 1972; 78: 1045-1050
2. LENNANE KJ, LENNANE RJ: Alleged psychogenic disorders in women — a possible manifestation of sexual prejudice. *N Engl J Med* 1973; 288: 288-292
3. HOWELL MC: What medical schools teach about women. *N Engl J Med* 1974; 291: 304-307
4. LEWIS CE, LEWIS MA: The potential impact of sexual equality on health. *N Engl J Med* 1977; 297: 863-868
5. BRONSTEIN BB: Sexism in the doctor's office. *Obstet Gynecol* 1976; 47: 495
6. ARMITAGE KJ, SCHNEIDERMAN LJ, BASS RA: Response of physicians to medical complaints in men and women. *JAMA* 1979; 241: 2186-2187
7. COOPERSTOCK R: Psychotropic drug use among women. *Can Med Assoc J* 1976; 115: 760-763
8. Idem: A review of women's psychotropic drug use. *Can J Psychiatry* 1979; 24: 29-34
9. COOPERSTOCK R, SIMS M: Mood-modifying drugs prescribed in a Canadian city: hidden problems. *Am J Public Health* 1971; 61: 1007-1016
10. CHAITON A, SPITZER WO, ROBERTS RS, DELMORE T: Patterns of medical drug use — a community focus. *Can Med Assoc J* 1976; 114: 33-37
11. PARISH PA: The prescribing of psychotropic drugs in general practice. *J R Coll Gen Pract* 1971; 21 (suppl 4): 1-77
12. WHITFIELD MJ: A study of prescribing in general practice, 1969-1970. *J R Coll Gen Pract* 1973; 23: 168-182
13. WILKS JM: The use of psychotropic drugs in general practice. *J R Coll Gen Pract* 1975; 25: 731-744
14. DIXON AS: Drug use in family practice: a personal study. *Can Fam Physician* 1978; 24: 345-356
15. KOHN R, WHITE KL: *Health Care. An International Study*, Oxford U Pr, London, 1976
16. BATTER MB, LEVINE J, MONHEIMER DL: Cross-national study of the extent of anti-anxiety/sedative drug use. *N Engl J Med* 1974; 290: 769-774
17. *Morbidity Statistics from General Practice: Second National Study, 1970-71*, Office of Population Censuses and Surveys, HMSO, London, 1974
18. MARSLAND DW, WOOD M, MAYO F: Content of family practice. *J Fam Pract* 1976; 3: 37-68
19. DIXON AS: Survey of a rural practice: Rainy River 1975. *Can Fam Physician* 1976; 22: 693-703
20. *The National Ambulatory Medical Care Survey: 1973 Summary. United States May 1973-April 1974*, US Dept of Health, Education, and Welfare, Public Health Service, health resources administration, National Center for Health Statistics, Rockville, Md, 1975
21. STANDISH S, BENNETT BM, WHITE K, POWERS LE: *Why Patients See Doctors*, U of Wash Pr, Seattle, 1955
22. PETERSON OL, ANDREWS LP, SPAIN RS, GREENBERG BG: An analytical study of North Carolina general practice, 1953-1954. *J Med Educ* 1965; 31 (Dec): 1-165
23. ROWE IL: Prescription of psychotropic drugs by general practitioners: 1. General. *Med J Aust* 1973; 1: 589-593
24. DENSEN PM, BALAMUTH E, DEARDORFF NR: Medical care plans as a source of morbidity data. *Milbank Mem Fund Q* 1960; 38: 48-101
25. WEISSMAN MM: The epidemiology of suicide attempts, 1960 to 1971. *Arch Gen Psychiatry* 1974; 30: 737-746
26. *On the State of the Public Health for the Year 1976*, Dept of Health and Social Security, HMSO, London, 1977
27. *International Classification of Health Problems in Primary Care*, American Hospital Association, Chicago, 1975
28. ANDERSON JE, LEES REM: Optional hierarchy as a means of increasing the flexibility of a morbidity classification system. *J Fam Pract* 1975; 6: 1271-1275
29. NATHANSON CA: Illness and the feminine role: a theoretical review. *Soc Sci Med* 1975; 9: 57-62
30. PHILLIPS DL, SEGAL BE: Sexual status and psychiatric symptoms. *Am Sociol Rev* 1969; 34: 58-72
31. MAZER M: People in predicament: a study in psychiatric and psychosocial epidemiology. *Soc Psychol* 1979; 9: 85-90
32. BANKS MH, BERESFORD SA, MORRELL DC, WALLER JJ, WATKINS CJ: Factors influencing demand for primary medical care in women aged 40-44 years: a preliminary report. *Int J Epidemiol* 1975; 4: 189-195
33. MORRELL DC, WALE CJ: Symptoms perceived and recorded by patients. *J R Coll Gen Pract* 1976; 26: 398-403
34. MELLINGER GD, BALTER MB, MANHEIMER DI, CISON IH, PARRY HJ: Psychic distress, life crisis and use of psychotherapeutic medications. *Arch Gen Psychiatry* 1978; 35: 1045-1052