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Background Characteristics of Judicious and Injudicious Prescribers in New Jersey

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ABSTRACT: Six background characteristics of 79 male physicians found by the New Jersey State Board of Medical Examiners to have indiscriminately prescribed Schedule II medications from 1979 through 1983 were compared with those same characteristics estimated for 10 397 physicians not reported to have indiscriminately prescribed Schedule II medications during 1979. Doctors of osteopathy (D.O.s) had a rate of injudiciously prescribing Schedule II drugs approximately 3.5 times that of medical doctors (M.D.s), and separate analyses, by type of physician, were thus conducted. However, the D.O.s who were members of the American Osteopathic Association (AOA) were approximately 4.25 times less likely to be injudicious prescribers than those who were not AOA members. Age, location, and graduation from a foreign medical school were found to differentiate injudicious M.D. prescribers. The implications of the results for developing continuing medical education programs for physicians are discussed.

KEYWORDS: psychiatry, medical personnel, prescribers

During the past decade there has been substantial interest in detecting impaired physicians as soon as possible. Although there is considerable debate about whether or not physicians who injudiciously or indiscriminately prescribe medications should be considered impaired, there is evidence that perhaps 12% of injudicious prescribers are drug abusers or alcoholics themselves [*1*].

The American Medical Association (AMA) and American Osteopathic Association (AOA) have sought more effective methods for detecting potentially injudicious prescribers, and research has attempted to identify the decisional processes and perceptual mechanisms that physicians weigh in prescribing medications [*2*]. Some medical societies have even developed guidelines to aid in screening for injudicious numbers of prescriptions. For example, one New York City community became suspicious of physicians writing more than two prescriptions per month for Schedule II substances unless the physician specialized in weight control, in which case more than ten prescriptions for controlled substances would trigger suspicion [*3*].

The computerization of pharmacy records has facilitated the early identification of indiscriminate prescribing patterns [*2*], and there is evidence that injudicious prescribing patterns may be largely attributable to the physician's lack of perception of what his or her actual number of prescriptions are. Rosser [*4*] found that there was a significant gap be-

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tween what an injudicious prescriber believed that he or she was prescribing and what his or her actual prescription rate was. Once a physician was made aware of such gaps through computerized reports, however, the number of controlled substances prescribed decreased rapidly.

Lack of awareness is only one of the factors associated with indiscriminate prescribing. Chambers, White, and Lindquist [5], in reviewing physicians' attitudes and prescribing practices with respect to minor tranquilizers, described inadequate training as an important factor in injudicious prescribing and recommended that physicians who have been practicing for a number of years should receive additional training in the use of psychotropic medications. However, Hadstall et al. [6] have reported that a physician's prescribing of psychotropic medications is unpredictable, whereas Bass [7] had described tranquilizer use as being associated with previous use, higher frequency of visits, female gender, and marital separation.

If there is little consensus about the psychosocial characteristics related to injudicious prescribing, there is even less information about the prevalence and incidence of injudicious prescribers. It is estimated that between 1 and 2% of practitioners are indiscriminate prescribers of controlled dangerous substances [8]. With approximately 500 000 practicing physicians and 135 000 practicing dentists, the number of injudicious prescribers may range between 6 350 and 12 700. However, the number of dosage units attributable to such a cohort of practitioners probably exceeds that number of dosage units prescribed by the 98 to 99% of the judicious prescribers. Unfortunately, the rate of injudicious prescribers may be much higher than that previously estimated.

The purpose of the present study is to compare selected background characteristics of judicious and injudicious prescribers drawn from the State of New Jersey to determine whether or not any specific characteristics differentiate between them.

Method

Prescribers

Injudicious—The New Jersey State Board of Medical Examiners can mandate continuing education courses for practitioners considered to be injudiciously prescribing, and 79 physicians who were involved in direct patient care were considered by the board for such continuing education between 1979 and 1983. There were no women, and all of the physicians were eligible for a Mini-Residency in Prescribing Controlled Dangerous Substances conducted by the University of Medicine and Dentistry of New Jersey, School of Osteopathic Medicine. The course encompassed 114 h, and continuing education credits could be earned for the 5 weeks of instruction. The instructors were drawn from a variety of medical and legal agencies in New Jersey, and there was practicum experience in a collaborating hospital. Upon successful completion of the course an evaluation and certification would be sent, only upon written authorization of the participating physician, to any person, regulatory agency, or professional organization that the participant chose. The purpose of the course was to present the participants with highly qualified experts lecturing on a broad range of topics concerning drug use, misuse, and abuse. Although there were no guarantees, some of the participants had obviously enrolled in the course to demonstrate to their licensing boards and the courts their intentions to avoid injudicious prescribing in the future.

The present study grew out of the curricula development search that encompassed the above Mini-Residency Program. In the attempt to gather information on the background characteristics of physicians that might indicate potential for indiscriminate prescribing practices, no research could be found addressing such a problem with New Jersey physicians. Only the study reported above by Johnston [1] discussed a few potential background characteristics of physicians related to injudicious prescribing, and this study was limited to medi-

cal doctors (M.D.s) practicing in Indiana. There was no research about injudicious prescribing by doctors of osteopathy (D.O.s), and D.O.s represented approximately 10% of the primary care physicians in New Jersey [9].

Judicious—The 79 injudicious prescribers represented 5 years' worth of physicians sanctioned by the New Jersey State Board of Medical Examiners between 1979 and 1983, but there were no readily available sources of background information about judicious primary care prescribers during these same years. The most current information about the characteristics of M.D.s was presented in the *Characteristics of Physicians: New Jersey, December 31, 1979* [10]. The AOA, on the other hand, published annual directories which contained similar information. Therefore, rather than attempt to estimate the numbers of individual, male primary care physicians practicing as M.D.s in the 5-year interval, it was decided to assume that the number of male physicians had remained constant across the 5-year interval.

Survey data from the *Characteristics of Physicians: New Jersey, December 31, 1979* [10] and the *1979-80 Yearbook and Directory of Osteopathic Physicians, 71st ed.* [9] were employed to estimate the background characteristics of the 10 476 male primary-care M.D.s and 847 male primary-care D.O.s practicing medicine in New Jersey in 1979. The former survey contained information about M.D. ages, practice locations by county, specialty board certifications, and graduations from foreign medical schools. The latter survey also gave similar data about D.O.s, along with statuses of AOA membership, and the New Jersey Association of Osteopathic Physicians and Surgeons (NJAOPS) supplied information about all of the D.O. practice locations by county as well as all of the information about the injudicious physicians.

Results

Table 1 describes the background characteristics of the judicious and injudicious prescribers, and the chi-square (χ^2) tests for independence that were used to determine whether or not the rates of the injudicious and judicious prescribers differed according to selected characteristics. Since the expected numbers of physicians within some classifications (for example, geographical region) fell below 5%, the magnitudes of the chi-square values should be weighed cautiously. Age was also dichotomized for statistical analysis purposes to increase the expected numbers of physicians per cell.

Table 1 reveals that 0.8% of the male primary care physicians were injudicious prescribers. However, Table 1 also indicates that only 0.6% of the M.D.s were injudicious prescribers, whereas 2.1% of the D.O.s were. The D.O.s were approximately 3.5 times as likely to have been reported as injudicious prescribers than M.D.s. Since the type of physician was significantly related to judicious and injudicious prescribing, separate chi-square analyses were conducted by each type of physician.

Age—The M.D.s <55 years old (0.3%) were less likely than the M.D.s ≥ 55 years old (1.4%) to have prescribed injudiciously (Table 1). The older physicians were approximately 4.7 times as likely to have been sanctioned for injudicious prescribing than the younger physicians. Age did not differentiate between judicious and injudicious D.O.s.

Practice Region—The judicious and injudicious prescribers were compared by whether or not their practices were located in northern, central, or southern counties of New Jersey. Injudicious M.D.s practicing in northern counties (0.4%) were far less frequent than those practicing in the central (0.9%) and southern (1.0%) counties (Table 1). The rates for injudicious M.D.s in the central and southern counties were over two times higher than those in the northern counties. Geographical region did not discriminate between the D.O. physicians.

Specialty—Only one of the injudicious D.O. prescribers was a specialist, and the majority of D.O. practitioners are in general family practice [9]. However, twelve (19.7%) of the injudicious M.D. prescribers were boarded in at least one specialty. The nonboarded M.D.s

TABLE 1—*Characteristics of judicious and injudicious prescribers.*

Characteristics	No. of Judicious Prescribers, (%)	No. of Injudicious Prescribers, (%)	Total, (%)	χ^2	Degrees of Freedom
Type of Physician:					
M.D.	9568	61	9629		
	(91.3)	(0.6)	(91.9)		
D.O.	829	18	847		
	(7.9)	(0.2)	(8.1)		
Total	10 397	79	10 476	21.19[a]	1
	(99.2)	(0.8)	(100.0)		
Age—M.D.:					
<55 years	6786	22	6808		
	(70.5)	(0.2)	(70.7)		
≥55 years	2782	39	2821		
	(28.9)	(0.4)	(29.3)		
Total	9568	61	9629	33.89[a]	1
	(99.4)	(0.6)	(100.0)		
Age—D.O.:					
<55 years	656	10	666		
	(77.4)	(1.2)	(78.6)		
≥55 years	173	8	181		
	(20.4)	(1.0)	(21.4)		
Total	829	18	847	4.51	1
	(97.8)	(2.2)	(100.0)		
Region—M.D.:					
Northern	5817	26	5843		
	(60.4)	(0.3)	(60.7)		
Central	2015	18	2033		
	(20.9)	(0.2)	(21.1)		
Southern	1736	17	1753		
	(18.0)	(0.2)	(18.2)		
Total	9568	61	9629	8.50[b]	2
	(99.3)	(0.7)	(100.0)		
Region—D.O.:					
Northern	230	5	235		
	(27.2)	(0.6)	(27.8)		
Central	67	1	68		
	(7.9)	(0.1)	(8.0)		
Southern	532	12	544		
	(62.8)	(1.4)	(64.2)		
Total	829	18	847	0.16	2
	(97.9)	(2.1)	(100.0)		
Specialty—M.D.:					
Yes	4957	12	4969		
	(51.5)	(0.1)	(51.6)		
No	4611	49	4660		
	(47.9)	(0.5)	(48.4)		
Total	9568	61	9629	23.79[a]	1
	(99.4)	(0.6)	(100.0)		
Foreign Medical School—M.D.:					
Yes	4103	18	4121		
	(42.6)	(0.2)	(42.8)		
No	5465	43	5508		
	(58.8)	(0.4)	(57.2)		
Total	9568	61	9629	3.90[c]	1
	(99.4)	(0.6)	(100.0)		

TABLE 1—*Continued.*

Characteristics	No. of Judicious Prescribers, (%)	No. of Injudicious Prescribers, (%)	Total, (%)	χ^2	Degrees of Freedom
AOA Member—D.O.:					
Yes	642	8	650		
	(75.8)	(0.9)	(76.7)		
No	187	10	197		
	(22.1)	(1.2)	(23.3)		
Total	829	18	847	8.98[a]	1
	(97.9)	(2.1)	(100.0)		

[a] $p < 0.001$.
[b] $p < 0.01$.
[c] $p < 0.05$.

(1.0%) were more likely to be injudicious prescribers than the boarded ones (0.2%) (Table 1). Nonboarded M.D.s were five times more likely to be injudicious prescribers than boarded M.D.'s.

Foreign Medical School—None of the D.O.s had graduated from a foreign medical school, but 0.4% of the injudicious M.D. prescribers had graduated from a foreign medical school, whereas 0.8% had not (Table 1). The nonforeign-trained M.D.s were approximately twice as likely to be described as injudicious prescribers as the foreign-trained ones.

AOA Membership—Table 1 also indicates that membership in the AOA differentiated between injudicious and judicious prescribers: injudicious prescribers were 4.25 times as likely not to be AOA members than the judicious prescribers.

Discussion

The rate of male injudicious prescribers who were directly involved in patient care was less than 1%. D.O.s were more likely to be described as injudicious prescribers than M.D.s. None of the injudicious prescribers was female. The interpretation of such results, however, is guarded since correlational studies cannot specify causality. The differential rate of injudicious prescribing between the M.D.s and D.O.s might reflect genuine differences in prescriptive practices and training or simply reflect a greater likelihood that D.O.s will be found "guilty" of indiscriminate prescribing than M.D.s. The absence of injudicious female prescribers may be attributable to their few numbers, but may also be related to differential standards being applied to the sexes.

The finding that older M.D.s were more likely to be described as injudicious prescribers than younger prescribers supports the previous observations made by Chambers et al. [5]; older physicians may have not remained current with respect to the prescribing of psychotropic medications.

The age difference between the D.O.s and M.D.s may simply reflect the increased number of years that the M.D.s experience in becoming boarded specialists. Only one of the D.O.s was a boarded specialist, and the generalist M.D.s were more likely than the specialist M.D.s to have been sanctioned for indiscriminate prescribing. Perhaps this pattern of results indicates that physicians in general practice are at a higher risk for injudicious prescribing, and the higher rate for D.O.s merely reflects that the majority of D.O.s are generalists involved in family practice.

It may also be possible that the higher prevalence of D.O.s represents the types of patients

that D.O.s treat as opposed to M.D.s. For example, D.O.s are often the physicians of choice by patients with muscular pains, such as those associated with the lower back. The prescribing of diazepam to alleviate pain may become routine for physicians continually treating such conditions, and the potential for injudicious prescribing is thus increased substantially above that experienced by a physician who is routinely treating infectious diseases.

The finding that M.D.s in the northern counties of New Jersey were less likely to be reported by the Board of Medical Examiners as injudicious prescribers may suggest judgmental differences about what constitutes injudicious prescribing across the state, but this result may also reflect regional professional biases. As Table 1 clearly demonstrates, 72.2% of the D.O.s practice in the southern and central counties, whereas 60.7% of the M.D.s practice in the northern counties.

The implications of AOA membership for the D.O.s and foreign medical school graduation for the M.D.s are particularly interesting. One might have assumed that physicians trained abroad where different attitudes toward prescribing Schedule II drugs may prevail would have been at more risk for injudicious prescribing than those trained within the United States. However, the foreign-trained M.D.s were found to be less likely to be injudicious prescribers than the nonforeign-trained ones. The relationship between AOA membership and injudicious prescribing may suggest that physicians who maintain their professional affiliations are less at risk for injudicious prescribing than those who do not maintain professional affiliations.

The overall implications of the present results for the development of continuing education programs for physicians about the prescribing of Schedule II medications certainly suggest that M.D.s and D.O.s may require different curricula. Each professional association should conduct more detailed research to identify the unique problems in injudicious prescribing described by its own members. The reliance on previously collected aggregate data here prohibited the asking of more comprehensive questions about either type of physician. For example, would nonforeign-trained older M.D.s, who were generalists practicing in central and southern counties of New Jersey, display the same rate of injudicious prescribing as the D.O.s? Unfortunately, such refined analyses were not permissible given the structure of the present aggregate data and the small number of injudicious physicians that emerged over the five years. National surveys may be the only data collection method capable of generating a sample large enough for comprehensive analysis.

Beyond highlighting the possible difference in prescribing practices between M.D.s and D.O.s, the present results have supported previous evidence that older physicians may require further education in the use of controlled substances [5]. Younger physicians would also benefit from hearing more about variations in prescribing controlled substances. Since such substances are employed across a wide spectrum of medical conditions, any curriculum should address at least the uses of these medications for pain control, sleep disorders, alcoholism, drug abuse, and general psychiatric interventions. The epidemiology, bioethics, and pharmacology of injudicious prescribing may also be important topics. However, busy physicians whose patient loads have restricted their abilities to attend as many continuing education courses as they might wish to attend should definitely be made aware of the most currently accepted prescribing methods employed by their peers, not to mention the present governmental and legal requirements.

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