

SPECIAL ARTICLE

SUICIDE IN PROFESSIONAL GROUPS

P. H. BLACHLY, M.D.,\* H. T. OSTERUD, M.D.,† AND R. JOSSLIN‡

PORTLAND, OREGON

**EXPERIENCE** in dealing with depressive reactions and suicidal behavior in physicians caused us to inquire whether the frequency of suicide is higher among persons engaged in certain professions than in the general population. If this were found to be true, perhaps preventive measures could be taken in the form of increased education of students entering the professions regarding the symptoms of this occupational hazard.

Dublin and Spiegelman,<sup>1</sup> in a review of mortality in American physicians from 1938-42, concluded that suicide was slightly more common in physicians than in the general population (39.0 per 100,000 as compared with 37.6 per 100,000 for white males in the United States). Their data were obtained from reports submitted to the American Medical Association, and hence the frequency of suicide was probably underreported. Our inquiries to the American Medical Association revealed that it no longer keeps statistics on suicides among physicians. Unpublished data from the Mortality Statistics Branch, National Vital Statistics Division, Public Health Service, "do not show a significantly high standardized mortality ratio for 1950 for suicide for any of the professional occupations included in the Intermediate List of Occupations developed by the Bureau of Census."<sup>2</sup> The Metropolitan Life Insurance Company revealed that it had not collected information regarding suicide within professional subgroups.<sup>3</sup>

To investigate the theory that occupation may influence suicidal behavior, we first reviewed the death certificates of all persons who committed suicide in the State of Oregon in the years 1957 through 1961, a total of 1105 cases. Six months later it became possible to obtain additional data for the years 1950 through 1956 on 1569 suicides, for a twelve-year total of 2674.

RESULTS

Figure 1 shows the suicide rate per 100,000 population at different ages and compares this with the population and the actual number of suicides for each age group in the years 1957-61. The marked excess of suicides in males over females demonstrated here is well known. More striking is the pro-

gressive increase of rates in males as opposed to females, even in very advanced ages. That this is a phenomenon not restricted to Oregon is shown in Table 1, which compares national with local data.

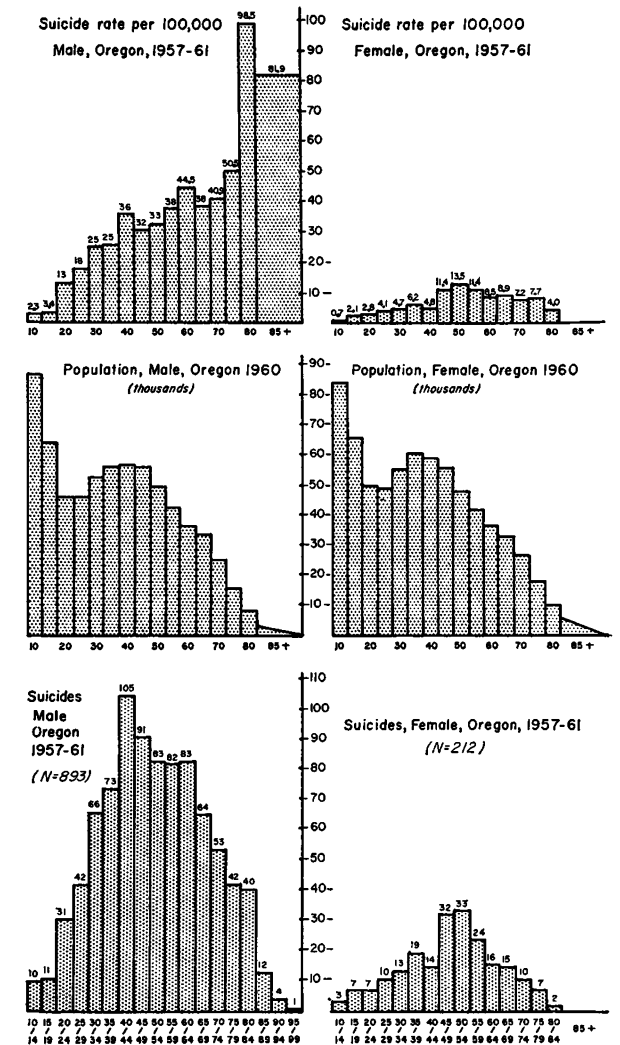


FIGURE 1. Suicide Rate, According to Population,<sup>4</sup> and Actual Suicides (Oregon, 1957-1961).

Table 2 lists the number of suicides each year according to profession. Figure 2 presents the suicide rate for different occupations in the two samples of data, 1950-56 and 1957-61. The data were plotted separately because they were collected separately and because the variation illustrates the difficulties that one may have in drawing conclusions where small numbers are involved. They should be viewed in conjunction with Tables 3 and 4. It is striking

\*Assistant professor of psychiatry, University of Oregon Medical School.

†Associate professor of public health and preventive medicine, University of Oregon Medical School.

‡Research assistant, University of Oregon Medical School.

TABLE 1. *Suicides According to Age and Sex from Death Certificates.*

AGE	OREGON, 1957-1961						NATIONAL, 1955 <sup>s</sup>		
	MALES	FEMALES	MALES	FEMALES	MALE:FEMALE	MALES	FEMALES	MALE:FEMALE	
yr.	no. of suicides	no. of suicides	rate/100,000/yr.	rate/100,000/yr.	rate/100,000/yr.	rate/100,000/yr.	rate/100,000/yr.	rate/100,000/yr.	
10-14	10	3	2.3	0.7	3.33	0.4	0.2	2.00	
15-19	11	7	3.4	2.1	1.57	3.9	1.3	3.00	
20-24	31	7	13.4	2.8	4.43	8.7	2.6	3.35	
25-29	42	10	18.0	4.1	4.2	12.2	3.8	3.21	
30-34	66	13	25.0	4.7	5.08	12.6	5.4	2.33	
35-39	73	19	25.3	6.2	3.84	15.8	5.4	2.93	
40-44	105	14	36.2	4.8	7.5	22.0	6.8	3.24	
45-49	91	32	31.5	11.4	2.84	26.5	9.0	2.94	
50-54	83	33	32.7	13.5	2.52	33.4	10.1	3.31	
55-59	82	24	37.8	11.4	3.42	39.0	9.9	3.94	
60-64	83	16	44.5	8.5	5.19	42.5	9.7	4.39	
65-69	64	15	38.6	8.9	4.27	44.3	10.2	4.34	
70-74	53	10	40.9	7.2	5.3	44.8	8.0	5.60	
75-79	42	7	50.5	7.7	6.0	51.1	8.0	6.39	
80-84	40	2	98.5	4.0	20.0	55.2	8.1	6.81	
85-89	12	0	81.9	0.0		56.4	6.6	8.53	
90-94	4	0							
95-99	1	0							

that the average of the combined suicide rates for physicians, dentists and attorneys is more than three times that of white-collar workers, and this difference is statistically highly significant.

On the other hand it is seen that the rate for female teachers in elementary and secondary schools is only a little more than half that of all females over the age of nineteen. The rate for male teachers in the years 1957-61 was also less than that of all females over nineteen, whereas in the years 1950-56 it was 32 per 100,000. It is not known whether this reflects random variation in sampling, or if it somehow reflects the change in the hiring practices in the school systems of the state, which caused the number of male teachers to increase from 12 per cent in 1950 to 39.8 per cent in 1961. This change in numbers of male teachers began in earnest in 1953.

Professional persons destroy themselves at an age when they would be expected to be most socially productive, as seen in Table 4. They use methods of suicide to which they have ready access or with which they are most familiar. Six of 8 physicians

TABLE 2. *Suicides Each Year According to Occupation (Oregon).*

Yr.	TOTAL	PHYSICIANS	DENTISTS	ATTORNEYS	ENGINEERS	TEACHERS	REGISTERED NURSES
1950	231	0	2	2	3	1	0
1951	230	0	1	0	0	2	0
1952	233	1	1	3	1	3	0
1953	244	1	0	1	5	0	1
1954	257	0	0	1	0	3	4
1955	176	0	1	1	1	1	0
1956	198	0	1	0	3	0	0
1957	201	1	0	0	1	1	0
1958	221	2	1	4	2	0	1
1959	245	2	1	0	1	1	1
1960	235	0	0	1	0	1	0
1961	203	0	1	1	1	1	1
Total	2674	7	9	14	18	14	8

used poison, 7 of 14 attorneys used guns, and 3 used other violent means, but only 5 of 14 teachers used violent methods.

Figure 3 depicts the number of suicides in each month, 1950-61. It shows the often reported rise of suicides in the spring, but this phenomenon seems to be limited to men. Oregon women apparently have little preference for month, with the possible exception of June and September. There was no obvious

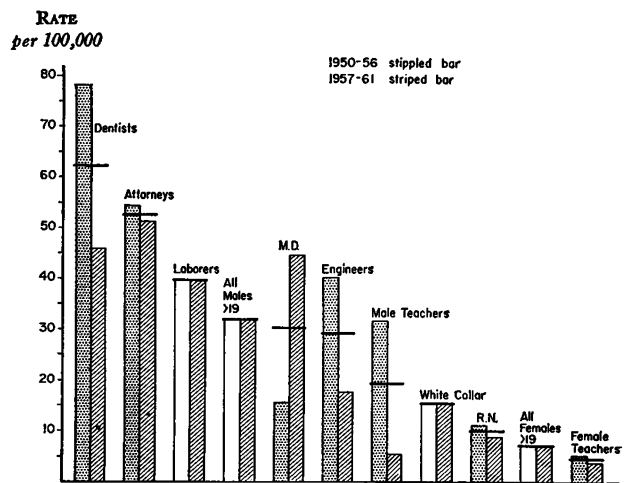


FIGURE 2. *Suicides According to Occupation (Oregon, 1950-1961).*

monthly preference for professional groups. It is of interest that in Australia the highest suicide rates occur in the months of November and December.<sup>8</sup>

We have no way of detecting how many actual suicides went unreported or were concealed. If these data are in error we expect that they err on the side of underreporting, for we should expect that physicians, dentists and attorneys would be more skilled in concealing their suicides than the general public.

TABLE 3. *Suicides According to Age and Sex (Oregon, 1957-61).*

GROUP	POPULATION*	SUICIDES	SUI- CIDES/YR.	RATE/ 100,000
Entire state	1,768,675	1,105	221.0	12.5
Males, total	879,951			
Males >19 yr. of age	529,349	872	174.4	32.4
Females, total	888,736			
Females >19 yr. of age	544,082	202	40.4	7.3

## DISCUSSION

Factors leading to suicide are exceedingly complex.<sup>9,10</sup> We want to emphasize that investigations indicate that virtually all persons who commit suicide are psychiatrically ill, that suicide is preventable and that it occurs at the most productive age for professional workers.<sup>8,11,12</sup> The method of suicides is somewhat predictable on the basis of the means that are most available or with which the person is most familiar.

It is known that affective illness is more common among members of the upper classes and among offi-

cers than enlisted men.<sup>13</sup> Among college students suicide attempts are more common in the best students, and uncommon in poor ones.<sup>14</sup> Dorpat and Ripley,<sup>15</sup> in a careful review of 114 consecutive suicides in the Seattle area, found that clinical signs and symptoms of depression had been present in all cases. Although actual loss of a family member by death had been present in only 27 per cent of the suicides this, combined with loss of health and other types of losses (often symbolic), made important losses an almost universal finding.

It is apparent that attorneys, dentists and physicians are engaged in activities that are highly independent. Other groups that share this characteristic and in which suicide is purportedly high, but for which we have no data, are brokers, commission salesmen and prostitutes. All these professions are characterized by marked dependence on individual performance, emphasis on individual prestige and frequent rivalry with other persons of the same profession in a setting in which such a rivalry may not be overtly expressed. The businessman is in much the same situation, but he is more likely to sell a

TABLE 4. *Suicides According to Occupation (Oregon).*

OCCUPATION	NO. IN STATE*	NO. OF SUICIDES	SUICIDES/ YR.	RATE/ 100,000/YR.	AVERAGE RATE	AGES yr.	METHOD
Physician:							
1950-56	1,777	3	0.28	15.75	30.29	31, 49, 82	Poisoning (2); gunshot (1).
1957-61	2,230	5	1.0	44.84		37, 41, 45, 46, 49	Poisoning (4); gunshot (1).
Dentist:							
1950-56	1,091	6	0.85	77.91	62.03	24, 37, 47, 49, 59, 75	Poisoning (2); gunshot (2); jump (1); carbon monoxide inhalation (1).
1957-61	1,301	3	0.60	46.15		36, 65, 91	Poisoning (1); wrist slashing (1); drowning (1).
Attorney:							
1950-56	2,086	8	1.14	54.65	53.18	39, 45, 47, 48, 55, 61, 65, 65	Gunshot (2); hanging (1); jump (1); carbon monoxide inhalation (4).
1957-61	2,320	6	1.2	51.72		38, 43, 54, 62, 64, 67	Gunshot (5); hanging (1).
Engineer:							
1950-56	4,996	14	2.0	40.03	28.67	31, 35, 41, 41, 42, 44, 46, 46, 48, 49, 53, 70, 76, 76	Gunshot (4); poisoning (1); hanging (3); carbon monoxide inhalation (4); cyanide poisoning (1); chloroform inhalation (1).
1957-61	5,774	5	1.0	17.31		30, 44, 48, 50, 64	Gunshot (2); poisoning (2); carbon monoxide inhalation (1).
Registered nurse:							
1950-56	6,282	5	0.71	11.30	10.07	37, 39, 45, 47, 51	Poisoning (3); gunshot (2).
1957-61	6,782	3	0.60	8.84		39, 41, 50	Poisoning (1); wrist slashing (1); plastic-bag suffocation (1).
Teacher, male:							
1950-56	2,656	6	0.85	32.00	19.30	28, 35, 46, 59, 76, 83	Gunshot (1); carbon monoxide inhalation (2); hanging (1); miscellaneous (2).
1957-61	6,069	2	0.40	6.6		68, 69	Carbon monoxide inhalation (2)
Teacher, female:							
1950-56	10,623	4	0.57	5.36	4.38	33, 50, 65, 68	Poisoning (2); gunshot (1); carbon monoxide inhalation (1).
1957-61	11,891	2	0.40	3.4		55, 59	Carbon monoxide inhalation (1); hanging (1).
White-collar worker:							
1957-61	221,001	173	34.6	15.7	15.7		
Laborer:							
1957-61	344,703	673	134.6	39.0	39.0		

\*Figures for physicians, dentists & registered nurses obtained from respective state boards of registration, & figures for attorneys from Oregon Bar Association; figures for teachers obtained from Oregon Education Association, & others obtained from U. S. Census.<sup>1</sup>

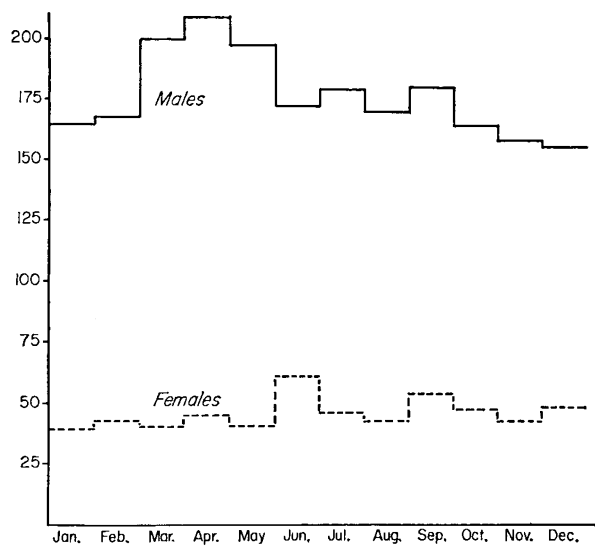


FIGURE 3. *Suicides According to Month (Oregon, 1950-1961).*

product than himself. When he has difficulties he may be able to blame them on his product.

Does teaching contribute to a low suicide rate? It is possible that the continuing contact with healthy, growing children in a situation where one may regulate his emotional involvement may have a preventive effect on the development of depression. The results of the teachers' efforts show many more pupils who make gains than losses. This is not at all true for physicians, dentists and attorneys, and neither do they have the emotional buffer provided by a hierarchy such as a school system. It is well known that alcoholism is a factor in about 20 per cent of suicides.<sup>8,15</sup> It is common knowledge that some professional persons can drink and still hold a practice, whereas this is not possible for teachers working in a good school system.

Many personality traits that characterize a good attorney, physician or dentist are also traits that

seem to predispose to depression. Among such traits are careful control of emotional expression, compulsive attention to details, conscientiousness and prolonged deferral of gratification. The extensive training required in effect may result in a series of short-term gratifications followed by long-term privation or loss. The graduating college senior may feel great for the short time until he becomes a lowly freshman medical student. The graduating medical student at last has "arrived" until he begins his internship. After completing his residency the doctor is often depressed by the fact that his fantasies of material and social reward are undercut by the realities of professional competition and economics. Since the growth of wish-fulfilling fantasies is often proportional to the extent of the deprivation (the starving man dreams of filet mignon, not hamburger) it may be found that the most thoroughly trained and skillful doctor becomes depressed. The addition of a few losses in such areas as marriage, physical health, economics or important patients may be sufficient to tip the balance toward severe depressive illness. Mild symptoms may include cynicism, irritability or excessive work (to compensate for or deny the losses). Depending on other factors, more serious depression may be evidenced by alcoholism, sexual indiscretion or dysfunction, use of tranquilizers, barbiturates or narcotics. Physiologic malfunctions such as insomnia, bowel disturbances and headaches are common. Fearing further loss of self-esteem, depressed physicians and attorneys are especially loath to seek personal psychiatric help. Before seeking such help, the dentist or physician may compound his problem by self-medication.

One may well ask, if loss of satisfaction derived from independent performance is so important to physicians, dentists and attorneys, how one accounts for the high suicide rates in countries like Denmark that are socialized! The answer may lie in the analysis of what is lost, as shown so clearly by the

TABLE 5. *Suicide and Homicide Rates in Various States, 1958.*<sup>18</sup>

SUICIDE LOW* — HOMICIDE LOW*			SUICIDE HIGH — HOMICIDE HIGH			SUICIDE HIGH — HOMICIDE LOW			SUICIDE LOW — HOMICIDE HIGH		
STATE	SUICIDE RATE	HOMICIDE RATE	STATE	SUICIDE RATE	HOMICIDE RATE	STATE	SUICIDE RATE	HOMICIDE RATE	STATE	SUICIDE RATE	HOMICIDE RATE
R. I.	3.8	0.8	N. M.	10.8	5.6	N. D.	10.8	0.8	W. Va.	4.9	5.0
Utah	7.1	1.4	Va.	10.9	7.7	Conn.	11.0	1.7	Miss.	6.7	9.5
Del.	8.3	2.9	D. C.	11.7	10.4	Wisc.	11.2	1.1	S. C.	6.9	7.7
Mass.	8.4	0.9	Fla.	13.4	10.7	Ind.	11.3	2.9	Ark.	7.4	6.9
N. Y.	8.5	2.9	Ariz.	13.8	6.4	S. D.	11.7	0.9	La.	7.8	7.9
Pa.	8.8	2.4	Nev.	24.3	7.4	Ohio	11.8	3.3	Ala.	8.1	11.4
Minn.	8.9	1.2				Ore.	12.3	2.2	Ga.	9.0	10.4
Mich.	9.5	2.8				Kan.	12.3	2.6	Okla.	9.1	5.0
Nebr.	9.8	2.8				Ia.	12.5	1.3	Tex.	9.2	7.8
Ill.	10.2	4.3				N. H.	12.9	0.3	Md.	9.5	5.6
Idaho	10.3	1.5				Wash.	13.2	2.3	N. C.	10.1	8.1
						Maine	14.2	1.6	Ky.	10.3	6.2
						Mont.	15.1	2.7	Tenn.	10.5	8.2
						Ver.	15.9	1.9			
						Wyo.	15.9	2.9			
						Cal.	16.8	4.0			

\*National average: suicide, 10.7; homicide, 4.5. Mo. suicide rate average.

studies of Hendin on suicide in Denmark<sup>16</sup> and Sweden.<sup>17</sup> Danish men who committed suicide were more concerned with loss of a love object than they were with work or performance. Swedish men tended to commit suicide over frustration caused by failure to live up to their high expectations of work performance. A retrospective study of the individual dynamics of each case in a professional person would be useful to confirm our opinion.

Two other points are worthy of comment. It is widely known that some countries have high suicide rates (Japan, 25.3 per 100,000, and Denmark, 23.3 per 100,000) and others have low rates (Ireland, 2.3 per 100,000, and Italy, 1.7 per 100,000). It is appreciated much less that variation between the states in this country is almost as great as that between foreign countries, ranging from a high of 24.3 per 100,000 for Nevada to 3.8 per 100,000 for Rhode Island (Table 5).

It is a psychiatric cliché that suicide rates are inversely proportional to homicide rates. A certain fatalism is often expressed to the effect that a depressed person will either kill himself or others. That this is not necessarily true is shown by Table 5, which lists states in four categories, those with high suicide and low homicide, low suicide and high homicide, low suicide and low homicide and high suicide and high homicide rates. Although the usual inverse proportion is present in 30 states it is not present in the others. Perhaps a more useful suggestion is that persons of certain cultures learn that emotions can be expressed to greater or lesser extent. In cultures where emotions may be expressed by violence this violence may be effected by either suicide or homicide, and the inverse-proportion rule may hold. In other cultures violence of any kind may not be condoned, and one will find both low suicide and low homicide rates.

Returning to the occupational groups, physicians, dentists and attorneys again differ markedly from teachers in the extent to which they are exposed to persons who undergo or have experienced severe physical violence. Do they learn more effectively that death is a way of solving personal problems?

In this paper we have not discussed the probable fundamental differences in personality that distinguish persons who decide to become dentists, attorneys or physicians from those who choose teaching.<sup>4,19</sup>

#### SUMMARY

All cases of suicide in Oregon in the years 1950-61 were reviewed to determine whether the frequency

of suicide is higher in some professional groups than in others. It was found that the suicide rate among physicians, dentists and attorneys was about three times that of white-collar workers, whereas the rate of teachers in elementary and secondary schools was lower than average. Factors that may contribute to this difference include increased emphasis on independent performance, more prolonged deferral of gratifications during the long period of training, the learning of violence and preprofessional personality traits. Note is made of the marked difference in suicide rates between various states — a difference almost as great as that between foreign countries having the highest and lowest rates.

We are indebted to Richard H. Wilcox, M.D., and Miss Marion Martin, of the Oregon State Board of Health, for aid in the review of death certificates, to Richard F. Thompson, Ph.D., for statistical advice and to Miss Barbara West for tabulation of data.

#### REFERENCES

1. Dublin, L. I., and Spiegelman, M. Longevity and mortality of American physicians, 1938-1942: preliminary report. *J.A.M.A.* **134**:1211-1215, 1947.
2. Guralnick, L., chief, Mortality Statistics Branch, National Vital Statistics Division, United States Public Health Service, Washington, D. C. Personal communication.
3. Quint, J. V., Supervisor, Occupation & Accident Statistics, Metropolitan Life Insurance Company, Madison Ave., New York 10, New York. Personal communication.
4. Roe, A. *The Psychology of Occupations*. 340 pp. New York: Wiley, 1956.
5. United States Public Health Service, National Office of Vital Statistics. *Vital Statistics — Special Reports: National summaries*. Vol. 46. Table 2. *Death Rates for 64 Selected Causes, by Age, Color, and Sex: United States, 1955*. Washington, D. C.: United States Department of Health, Education, and Welfare, 1955. Pp. 158 and 159.
6. United States Census Bureau. *U. S. Census of Population: 1960: General population characteristics, Oregon*. 78 pp. Table 16. *Age by Color and Sex, for State, by Size of Place, 1960, and Urban and Rural Residence, 1950*. Washington, D. C.: Government Printing Office, 1961. (Final report PC [1]-39-B.) P. 39-27.
7. *Idem*. *U. S. Census of Population: 1960: General, social, and economic characteristics, Oregon*. 168 pp. Table 57. *Occupation Group of Employed Persons, by Sex, for State, Urban and Rural*. Washington, D. C.: Government Printing Office, 1961. (Final report PC [1]-39-C.) P. 39-99.
8. Dax, E. C. Prevention of suicide. *M. J. Australia* **1**:46-49, 1961.
9. Meerloo, J. A. M. *Suicide and Mass Suicide*. 153 pp. New York: Grune, 1962.
10. *The Cry for Help: Foreword by Robert H. Felix*. Edited by N. L. Farberow and E. S. Schneidman. 398 pp. New York: McGraw, 1961.
11. Bennett, A. E. Prevention of suicide. *California Med.* **81**:396-401, 1954.
12. Capstick, A. Recognition of emotional disturbance and prevention of suicide. *Brit. M. J.* **1**:1179, 1960.
13. Noyes, A. P., and Kolb, L. C. *Modern Clinical Psychiatry*. Fifth edition. 694 pp. Philadelphia: Saunders, 1958. Pp. 353 and 354.
14. Braaten, L. J., and Darling, C. D. Suicidal tendencies among college students. *Psychiat. Quart.* **36**:665-692, 1962.
15. Dorpat, T. L., and Ripley, H. S. Study of suicide in Seattle area. *Compr. Psychiat.* **1**:349-359, 1960.
16. Hendin, H. Suicide in Denmark. *Psychiat. Quart.* **34**:443-460, 1960.
17. *Idem*. Suicide in Sweden. *Psychiat. Quart.* **36**:1-28, 1962.
18. United States Public Health Service, National Office of Vital Statistics. *Vital Statistics of the United States, 1958*. Section 6. *Mortality Statistics*. Table 6-5. *Death Rates for 59 Selected Causes: United States, each division and state, 1958*. Washington, D. C.: Government Printing Office, 1959. (6-34-35.)
19. Kole, D. B. Study of intellectual and personality characteristics of medical students. Unpublished thesis, University of Oregon Medical School, 1962.