

A report is presented on the smoking habits of the medical profession in the Irish Republic based on a questionnaire study. Findings are compared with the general population and with those of doctors in the United Kingdom.

# Smoking Habits of the Medical Profession in the Republic of Ireland

## Introduction

The smoking habits of the medical profession have been studied in various parts of the world. Doll and Hill<sup>1,2</sup> determined the smoking pattern of doctors resident in the United Kingdom. The mortality of these doctors in relation to smoking habit was ascertained ten years later<sup>3</sup> and provided unique evidence of the benefits to be derived from abandoning smoking, particularly cigarette smoking. Snegireff and Lombard<sup>4</sup> enquired into the smoking habits of physicians in Massachusetts and a five-year follow-up study<sup>5</sup> indicated that the proportion of physicians who did not smoke had increased from 34.1% to 44.5%. The smoking practice of doctors in New Zealand was examined by Gardiner and Taylor<sup>6</sup> who showed that 60.7% did not smoke and they compared smoking habits of the medical profession in New Zealand with those of Massachusetts and the United Kingdom.

It was decided to study the smoking habits of the medical profession in the Republic of Ireland and attitudes to various aspects of smoking. It would be of value for the purpose of health education if it could be shown that doctors as a group are abandoning smoking, especially cigarette smoking, or are smoking less than the general population. A doctor can influence his patients profoundly when it comes to decisions affecting health. The doctor who smokes will inevitably lessen the effect of any campaign of public education concerning the consequences of the habit and will find it more difficult to help patients who need to stop smoking.<sup>7</sup>

## Study Population and Method

A questionnaire together with an explanatory letter, signed by one of us (GJB), and a post-paid addressed envelope was enclosed in each of the 2,552 copies of the November 1967 issue of the Irish Medical Times, which is a medical newspaper sent without charge to every doctor in this country.

Replies were fairly constant over the following months and had virtually ceased by June 1, 1968. At this time 932 (36.5%) questionnaires had been returned. On June 22, 1968 a further questionnaire together with a signed (GJB) explanatory letter and post-paid addressed envelope was sent directly to non-respondents, and by May 1, 1969 all replies had ceased. The second letter had elicited a further 705 questionnaires. A total of 1,637 (64.1%) questionnaires had now been received but 57 (2.2%) were not included in the study since they either belonged to doctors who had retired, or had been returned by a relative of a

Geoffrey J. Bourke, M.A., M.D., D.P.H., D.I.H.; Keith Wilson-Davis, B.A. (Econ.) M.B.C.S., D.S.A.; and R. Douglas Thornes, M.D., Ph.D.

doctor who had died. They also included five blank questionnaires two of which were accompanied by letters condemning such investigations.

This now meant that 1,580 (61.9%) completed questionnaires were available for analysis. It was decided at this stage to compare the age, sex, and specialty of the doctors who returned questionnaires with these same attributes in the known structure of the profession in this country.<sup>8</sup> When this was done it was found that the sample of 1,580 was representative of the profession as a whole for age (mean age of sample: 48.27 years; mean age of profession: 47.81 years;  $P > 0.05$ ), sex ( $\chi^2 = 0.089$ , d.f. = 1,  $0.70 > P > 0.60$ ), and specialty (males  $\chi^2 = 16.108$ , d.f. = 13,  $0.30 > P > 0.20$ ; females:  $\chi^2 = 4.838$ , d.f. = 7,  $0.70 > P > 0.60$ ). Doll and Hill<sup>3</sup> had found that non-respondents were more likely to be heavier cigarette smokers than respondents, and more recently<sup>9</sup> a higher proportion of cigarette smokers among non-respondents has been reported, so in this study an intensive follow-up of a 1 in 3 random sample of the 915 non-respondents was undertaken. Of the 305 persons in the sample, 285 questionnaires (93.4%) were completed. The results of this non-respondent sample did not differ significantly from the main sample for age, sex, specialty, and smoking habit and will be the subject of a further paper. The remaining twenty questionnaires related to doctors who had retired (2), had died (4), were unknown at the address given (10), while one doctor was suffering from a long-term illness in hospital. Three doctors refused to give the required information.

A pre-coded questionnaire was used. In addition to name, address, sex, specialty,\* and age, questions were asked to determine if respondents were currently smokers of tobacco; had previously smoked but had given up; or had never smoked regularly. A smoker was defined as a person who on average smoked as much as one cigarette a day, ¼ ounce of tobacco a week, or two cigars a week.

\*If more than one specialty, respondent was invited to indicate the one which took up the greater proportion of time; if a choice of specialty had not yet been made the respondent was asked to indicate the specialty which it was intended to pursue.

**Table 1—Smoking Habit by Age and Sex of Medical Profession and General Population**

| Sex    | Smoking habit | Age in Years |          |              |       |          |              |     |          |              |       |          |              |
|--------|---------------|--------------|----------|--------------|-------|----------|--------------|-----|----------|--------------|-------|----------|--------------|
|        |               | 25-34        | Sample % | Population % | 35-59 | Sample % | Population % | 60+ | Sample % | Population % | Total | Sample % | Population % |
| Male   | Smoke now     | 49           | 40.8     | 60.2         | 505   | 50.1     | 67.9         | 105 | 45.3     | 73.0         | 659   | 48.5     | 67.6         |
|        | Used to smoke | 32           | 26.7     | 8.8          | 325   | 32.3     | 14.3         | 99  | 42.7     | 13.0         | 456   | 33.6     | 12.7         |
|        | Never smoked  | 39           | 32.5     | 31.0         | 177   | 17.6     | 17.8         | 28  | 12.0     | 14.0         | 244   | 17.9     | 19.7         |
|        | Total         | 120          | 100.0    | 100.0        | 1,007 | 100.0    | 100.0        | 232 | 100.0    | 100.0        | 1,359 | 100.0    | 100.0        |
| Female | Smoke now     | 6            | 25.0     | 43.0         | 44    | 26.2     | 45.4         | 9   | 31.0     | 25.0         | 59    | 26.7     | 38.6         |
|        | Used to smoke | 2            | 8.3      | 4.3          | 35    | 20.8     | 8.6          | 12  | 41.4     | 6.0          | 49    | 22.2     | 7.5          |
|        | Never smoked  | 16           | 66.7     | 52.7         | 89    | 53.0     | 46.0         | 8   | 27.6     | 69.0         | 113   | 51.1     | 53.9         |
|        | Total         | 24           | 100.0    | 100.0        | 168   | 100.0    | 100.0        | 29  | 100.0    | 100.0        | 221   | 100.0    | 100.0        |

Smokers were asked the amount smoked and the type of smoking at time of reply. Ex-smokers were asked when they ceased to smoke. Further, enquiry was made as to whether or not authoritative or professional opinion regarding the relationship between smoking and health, was responsible for the respondent stopping, reducing, or changing to another form of smoking. Those who replied in the affirmative to this latter question were asked to indicate the action taken and the one health effect which concerned them most.

Each doctor was asked if he/she personally considered smoking injurious to health and if applicable to specialty if he/she advised all patients, only those with certain conditions, or if advice was not given, to avoid smoking cigarettes. If advice was offered only to patients with certain conditions respondents were asked to state these conditions.

## Results

### Smoking Habit of Profession and General Population

In Table 1 the smoking habits of the medical profession and the general population<sup>10</sup> by age and sex are demonstrated. In each age group with the exception of the 60 years and over females, there is a higher proportion of smokers among the general population than among the medical profession. Among male doctors 48.5% now smoke as compared with 67.6% of men in the population ( $P < 0.001$ ) and 26.7% of female doctors are current smokers as compared with 38.6% of the female population ( $P < 0.001$ ).

It must be mentioned, however, that the definition of smoking for the general population (i.e., smoker of cigarettes or pipe by self-definition or at least one cigar of any size a week) probably inflates the current smoking habits and may contribute to some extent to the higher proportion of men and women in the population who smoke as

compared with the sexes in the doctor population. It will be seen (Table 2) that among male doctors a considerably lower proportion (44.3%) smoke cigarettes only, as compared with men in the general population (69.3%); there are more mixed smokers (cigarettes and other; pipe and cigars) and cigar only smokers among male doctors, while pipe smoking is virtually identical in the two populations. It is clear then that the reason there is a higher proportion of smokers in the general male population is due to a higher proportion in this population smoking cigarettes. Similarly the reason why there is a higher proportion of female smokers in the general female population is due to an excess of cigarette smokers in this population. It was then necessary to examine more closely the difference in definition of cigarette smoking before concluding that the proportions were in fact significantly different. Data from the general population indicate that 3.3% of males were placed in a cigarette-smoking category of 0-2 cigarettes a day, so a proportion of males in this category may be smoking less than the study definition of a smoker. If, however, it were assumed that half the males in the general population in this category smoked less on average than one cigarette a day a significant difference remains ( $P < 0.005$ ). A similar examination of the female data does not affect the significant result either ( $P < 0.01$ ). Hence, it was concluded that the difference in definition of cigarette smoking did not influence the significant result.

When the ex-smoker category is examined (Table 1) it is seen that for each age group for both sexes a greater proportion of doctors have relinquished the smoking habit. 12.7% of the male and 7.5% of the female general population have abandoned the smoking habit as compared with respective percentages for male and female doctors of 33.6% ( $P < 0.005$ ) and 22.2% ( $P < 0.001$ ). Separate analysis indicates that cessation of smoking among the medical profession has been very constant over the years; there is no evidence to indicate the appearance of higher proportions

**Table 2—Current Smoking Habit by Age and Sex of Medical Profession and General Population**

| Sex    | Smoking habit        | Age in Years |          |              |       |          |              |     |          |              |       |          |              |
|--------|----------------------|--------------|----------|--------------|-------|----------|--------------|-----|----------|--------------|-------|----------|--------------|
|        |                      | 25-34        | Sample % | Population % | 35-59 | Sample % | Population % | 60+ | Sample % | Population % | Total | Sample % | Population % |
| Male   | Cigarettes ONLY      | 27           | 55.1     | 85.5         | 213   | 42.2     | 73.3         | 52  | 49.6     | 50.6         | 292   | 44.3     | 69.3         |
|        | Cigarettes and other | 5            | 10.2     | 8.8          | 79    | 15.6     | 15.0         | 27  | 25.7     | 16.5         | 111   | 16.8     | 14.0         |
|        | Pipe ONLY            | 8            | 16.3     | 4.4          | 73    | 14.5     | 8.9          | 12  | 11.4     | 32.4         | 93    | 14.1     | 14.8         |
|        | Cigars ONLY          | 4            | 8.2      | 1.3          | 101   | 20.0     | 1.5          | 10  | 9.5      | 0.5          | 115   | 17.5     | 1.3          |
|        | Pipe and Cigars      | 5            | 10.2     | 0.0          | 39    | 7.7      | 1.3          | 4   | 3.8      | 0.0          | 48    | 7.3      | 0.6          |
|        | Total                | 49           | 100.0    | 100.0        | 505   | 100.0    | 100.0        | 105 | 100.0    | 100.0        | 659   | 100.0    | 100.0        |
| Female | Cigarettes ONLY      | 6            | 100.0    | 100.0        | 37    | 84.1     | 99.0         | 9   | 100.0    | 100.0        | 52    | 88.1     | 99.4         |
|        | Cigarettes and other | 0            | 0.0      | 0.0          | 1     | 2.3      | 0.5          | 0   | 0.0      | 0.0          | 1     | 1.7      | 0.3          |
|        | Cigars ONLY          | 0            | 0.0      | 0.0          | 6     | 13.6     | 0.5          | 0   | 0.0      | 0.0          | 6     | 10.2     | 0.3          |
|        | Total                | 6            | 100.0    | 100.0        | 44    | 100.0    | 100.0        | 9   | 100.0    | 100.0        | 59    | 100.0    | 100.0        |

of ex-smokers after the publication of the two reports on smoking and health.<sup>7,11</sup>

In the never smoked group at each age among males, with the exception of those in the 25-34 year group, a higher proportion of the general population had never smoked. In the general population 19.7% of men and in the medical profession 17.9% of male doctors had never smoked ( $P < 0.005$ ). Among females a higher proportion of doctors in the two age groups below sixty years had never smoked while in the sixty years of age and over group a higher proportion of the general population had never smoked. In the female populations the differences in the proportions between the two never smoked categories is not significant ( $P < 0.20$ ).

*Current Smoking Habit of Doctors and Specialty*

As previously noted, 48.5% of all male doctors smoke. When the smoking habits of the different specialties within the male medical profession are examined only two significant results arise. A smaller proportion of doctors who are specialists in Medicine currently smoke as compared with the population of doctors as a whole ( $P < 0.001$ ) and a higher proportion of general practitioners currently smoke ( $P < 0.05$ ). Data for women doctors were too small for meaningful analysis by specialty.

*Current Smokers: Type of Smoking Habit of Medical Profession and General Population*

The type of smoking habit among current smokers is shown in Table 2. The trend among both sexes is for a smaller proportion of doctors to smoke cigarettes only, and with the exception of pipe smoking (males), forms of smoking other than cigarette only smoking are more common among the medical profession. Nearly 70.0% of men in the general population smoke cigarettes only as compared with 44.3% of the male medical profession ( $P < 0.001$ ); also a higher proportion of women in the general population smoke cigarettes only as compared with women doctors ( $P < 0.001$ ). The percentage of pipe smokers in the two male populations is almost identical. A higher proportion of male doctors smoke cigarettes and other tobacco ( $P < 0.01$ ) and cigars only ( $P < 0.001$ ) and pipe and cigars ( $P < 0.001$ ). The female doctor percentages for mixed cigarette smoking differ significantly from the female general population in this category ( $P < 0.001$ ) as does cigar only smoking ( $P < 0.001$ ).

*Current Smokers: Average Daily Cigarette Consumption of Medical Profession and General Population*

The average daily cigarette consumption for current smokers is shown in Table 3. Males in the general

**Table 3—Current Cigarette Smoking (Average daily consumption) of Medical Profession and General Population**

|         |                         |                         |             |
|---------|-------------------------|-------------------------|-------------|
| Males   | Medical profession 18.3 | General population 20.3 | $P < 0.001$ |
| Females | Medical profession 18.2 | General population 14.0 | $P < 0.001$ |
|         | $P > 0.90$              | $P < 0.001$             |             |

population smoke a significantly greater number of cigarettes than male doctors ( $P < 0.001$ ), while female doctors smoke more than women in the general population ( $P < 0.001$ ). Again, the average number of cigarettes smoked daily is very similar for doctors of both sexes ( $P > 0.90$ ) but males in the general population smoke a greater number of cigarettes daily than women in this population ( $P < 0.001$ ).

Separate analysis indicates that male doctors in the age group 35-59 smoke significantly more ( $P < 0.001$ ) cigarettes daily (20.5) than the average for all male doctors (18.3), and doctors 60 years of age and over smoke less ( $P < 0.001$ ) than the male doctor average. Among female doctors the variations between age are not significant except for the 60 years and over category; doctors in this age category smoke more (22.3;  $P < 0.05$ ) than the female doctor average (18.2).

#### *Doctors' Smoking Habit: Influence of Authoritative and Professional Opinion*

As one might expect a higher proportion (71.9%) of male current smokers were uninfluenced by authoritative opinion regarding the relationship between smoking and health as compared with ex-smokers (50.2%) of the same sex ( $\chi^2 = 54.485$ , d.f. = 1,  $P < 0.001$ ); among women, however, no such difference was found ( $\chi^2 = 2.874$ , d.f. = 1,  $0.10 > P > 0.05$ ).

Of the 185 (28.1%) male current smokers who were influenced 158 (85.4%) reduced their quantity, 22 (11.9%) stopped temporarily, and 5 (2.7%) changed their habit (2 changed from plain cigarettes to filter tips; 1 from cigarettes to pipe; 1 from cigars to pipe; 1 from pipe to cigars). Ninety per cent approximately of those who smoked cigarettes reduced their quantity as compared with around 50.0% of smokers of tobacco other than cigarettes. Of the female current smokers who were influenced, all 14 were cigarette smokers and they reduced the quantity they had been smoking.

Current and ex-smokers who were influenced by professional and authoritative opinion were concerned chiefly about three conditions, cancer of the lung, chronic bronchitis, and coronary heart disease. There was small variation between the type of smoking habit and concern regarding health effect in both sexes. Other health effects mentioned included cancer of the upper respiratory and digestive tracts, pulmonary tuberculosis, and peptic ulcer.

#### *Smoking and Injury to Health*

Approximately 96.0% of doctors are of the opinion that smoking is injurious to health. Current and ex-smokers of both sexes are agreed about this. There is little difference in the proportion regarding smoking as injurious to health when looked at by age group or by type of smoking habit.

#### *Patients and Cigarette Smoking*

In Table 4 is shown the action taken by doctors with regard to cigarette smoking and their patients. There is

**Table 4—Advice to Patients to Avoid Smoking Cigarettes**

|               | All patients | %    | Certain patients | %    | Do not advise | %   | Total | %     |
|---------------|--------------|------|------------------|------|---------------|-----|-------|-------|
| Smoke now     | 226          | 37.9 | 315              | 52.8 | 56            | 9.3 | 597*  | 100.0 |
| Used to smoke | 199          | 51.7 | 149              | 38.7 | 37            | 9.6 | 385†  | 100.0 |
| Never smoked  | 203          | 56.9 | 124              | 34.7 | 30            | 8.4 | 357   | 100.0 |
| Total         | 628          | 46.9 | 588              | 43.9 | 123           | 9.2 | 1339  | 100.0 |

\*121 did not reply or not relevant to specialty

†120 did not reply or not relevant to specialty

**Table 5—Smoking Habits of Medical Profession (Male) in United Kingdom (1966) and Republic of Ireland 1968-69**

| Smoking habit          | Republic of Ireland 1968-69 Males % | United Kingdom 1966* Males % |
|------------------------|-------------------------------------|------------------------------|
| Smoke now              |                                     |                              |
| Cigarettes only        | 21.5                                | 21.1                         |
| Cigarettes & other     | 8.2                                 | 8.7                          |
| Pipe only; cigars only |                                     |                              |
| Cigars & pipe          | 18.8                                | 18.9                         |
|                        | 48.5                                | 48.7                         |
| Used to smoke          | 33.6                                | 33.6                         |
| Never smoked           | 17.9                                | 17.7                         |
| Total                  | 100.0                               | 100.0                        |

\*Doll, 1969

not a significant difference between the advice offered by male and female doctors ( $\chi^2 = 2.667$ , d.f. = 2,  $0.30 > P > 0.20$ ). Of the 1339 doctors who replied to this question, 628 (46.9%) advise all patients against cigarette smoking; 588 (43.9%), patients with certain conditions; while 123 (9.2%) do not advise patients at all. A greater proportion of non-smokers (ex-smokers and those who never smoked) advise all patients as compared with current smokers. Current smokers tend to be more selective by advising patients with certain conditions ( $\chi^2 = 38.091$ , d.f. = 2,  $P < 0.001$ ), and this is especially seen among doctors who currently smoke cigarettes. The proportions of non-smokers and current smokers who do not advise patients about cigarette smoking are very similar.

A separate analysis indicates that in rank order, bronchitis (acute and chronic), coronary heart disease, peptic ulcer, and peripheral vascular disease are the conditions for which doctors of both sexes most commonly advise patients to avoid cigarette smoking. Again, replies from current smokers and non-smokers were very similar.

## *Smoking Habits of Medical Professions (Male) in United Kingdom and the Republic of Ireland*

Table 5 compares the smoking habits of the male medical profession in the Republic of Ireland 1968-9 with those of the profession in the United Kingdom,<sup>12</sup> and a striking resemblance between the habits of the profession in the two countries is seen.

### **Discussion**

This study of the smoking habits of the medical profession shows that a lower proportion of doctors of both sexes currently smoke compared with men and women in the general population. Analysis of current smoking habit indicates that the lower proportion is due to less doctors smoking cigarettes only. Pipe smoking in men is very similar in both groups and all other forms of tobacco smoking are more common among the doctors.

Four hundred and fifty-six (28.9%) doctors now smoke cigarettes. The male average daily consumption is lower than that of the general population; but female doctors smoke more cigarettes than women in the general population. Cigarette smoking, of course, with its greatly increased death rates among males, and to a lesser extent among females, is the type of smoking causing most concern since death rates among cigar and pipe smokers are not appreciably altered.<sup>13</sup>

When ex-smokers are considered and approximately 90.0% of doctors who used to smoke have stopped for over a year, almost three times as many doctors of each sex have ceased to smoke as compared with men and women in the general population. The results also point to the fact that over the years the proportion abandoning the smoking habit has been constant, which suggests that publication of the reports on Smoking and Health<sup>7,11</sup> had little real impact on medical personnel as far as cessation of smoking was concerned. While it is encouraging to see that more doctors have abandoned smoking as compared with the population at large, this requires careful interpretation. Relatively low proportions of smokers in professional groups have been reported,<sup>14,15,16</sup> and Lynch<sup>17</sup> has pointed out in his study of the smoking habits of medical and non-medical staff at Edinburgh University that if medical graduates have stopped smoking more than the general population, this is because they are graduates rather than because they are medical.

It is to be expected that ex-smokers were more influenced by authoritative reports on smoking and health than current smokers; this, however, was so for males but not for female members of the medical profession. The reaction to reports of this nature among current smokers influenced appears to be one of reducing the quantity smoked or of stopping temporarily but apparently has a minimal effect on changing the type of smoking. Only three cigarette smokers changed their smoking habit, two changed to filter-tip cigarettes while one started pipe smoking. Pipe smoking has an appreciably lower risk than cigarette smoking but there is evidence that some reduction in the risk of lung cancer can be achieved by cigarette smokers switching to filter tips.<sup>18</sup> Doctors who were influenced

were chiefly concerned about three conditions associated with smoking namely, cancer of the lung, chronic bronchitis, and coronary heart disease. Platt<sup>19</sup> has pointed out that although cigarette smoking is well-known to be the main cause of lung cancer in Great Britain, and to contribute to the development of much respiratory and cardiovascular disease the knowledge has had little effect in persuading people to stop smoking.

A large majority of doctors of both sexes agree that smoking is injurious but about 4.0% do not regard smoking as deleterious to health. This 4.0% is composed chiefly of cigarette smokers, and one wonders if they have read the evidence incriminating cigarette smoking as a cause of ill-health and death. The study of Spelman and Ley<sup>20</sup> offers a further explanation, namely that cigarette smokers may deceive themselves about the risks they take; in their enquiry 30.0% of heavy smokers expressed the view that lung cancer was frequently cured by treatment, whereas less than half this percentage of non-smokers and light-smokers held this view.

When it comes to offering advice to patients, non-smokers are more inclined to advise all patients against cigarette smoking while current smokers tend to be more selective and advise patients with certain conditions only. The principal conditions for which advice is given are bronchitis, coronary heart disease, peptic ulcer, and peripheral vascular disease. The same proportion of smokers and non-smokers do not advise any patients. Green and Horn<sup>21</sup> have shown that the general public look to their doctor for help on smoking problems, and most people consider that it is the doctor's duty to convince his patients to stop smoking and to set a good example by not smoking himself; almost three-quarters of the doctors agreed that it is the physician's responsibility to set a good example by not smoking cigarettes.

It has been shown that the smoking habits of the profession in the Republic of Ireland are very similar to those of doctors in the United Kingdom.<sup>12</sup> The results are encouraging but they are far from ideal in a profession which is in a special position not only to read and appreciate the scientific evidence on the hazards of smoking, particularly cigarette smoking, but who also in their daily practices witness the tragic consequences of the habit.<sup>7</sup> If it is accepted that doctors can influence greatly the smoking habits of their patients and that a doctor who smokes cannot with conviction advise his patients, or indeed the public, not to smoke, then obviously a great deal more health education of doctors is required before engaging in widespread and expensive health education programmes among the general population.

### **Summary**

The smoking habits of a sample of the medical profession in the Republic of Ireland, representative for age, sex, and specialty, were ascertained by questionnaire. The results show that a significantly lower proportion of doctors of both sexes currently smoke as compared with men and women in the general population. The lower proportion is due to less doctors smoking cigarettes only, but with

the exception of pipe smoking in men which is very similar in both groups, all other forms of smoking are more common among the profession. Approximately three times as many doctors have ceased to smoke as compared with the general population. Four hundred and fifty-six doctors (28.9%) now smoke cigarettes and the average daily consumption for doctors is compared with that of the general population.

The views of doctors were obtained on the influence of authoritative reports on smoking and health on their smoking habits; if they considered smoking injurious to health; and whether or not they advised patients to avoid smoking cigarettes. The smoking habits of the male profession in the Republic of Ireland are compared with those of doctors in the United Kingdom.

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Dr. Bourke is Associate Professor of Epidemiology and Community Health, University College, Dublin. Mr. Davis was formerly Head of the Survey Unit, Economic and Social Research Institute, Dublin, and is presently Head of the Social Statistics Laboratory, University of Strathclyde, Scotland. Dr. Thornes is Professor of Experimental Medicine, Royal College of Surgeons in Ireland, Dublin. This paper was submitted for publication in October, 1970.