

# THE CURRENT STRENGTH OF THE PROFESSION

## The influence of age and sex

IN PART two of this article we will consider the strength of the profession in terms of full-time equivalence.

If we assume that a full-time OO is someone who works 1,824 hours in a year (for example, 45 weeks and three days at 40 hours per week), 235 days (47 five-day weeks) or 40 hour weeks then we obtain the Full-Time Equivalent estimates for the profession given in Table 2. It is perhaps surprising that when expressed as a percentage, these figures are very close indeed to the 79 per cent obtained by Alpine (1970) for weekly hours of attendance in 1969 taking a criterion of 30 or more hours per week as representing a full-time OO. In 1969 this full time OO carried out around 1,270 sight tests per year.

Today 25 to 29 year old males undertake a median of 2,500 sight tests per annum. Taking this as equivalent to one full-time ophthalmic optician we obtain a lower figure of 72 per cent. This compares with Alpine's 1969 figure of 77 per cent assuming one FTE OO then carried out more than 23 tests per week (1,100 or more per annum). One would not expect these figures to correspond. Clearly, the establishment of the level of full-time activity in terms of GOS sight tests has to be rather arbitrary and this index completely neglects other optometric work carried out by OOs limiting its usefulness.

Since 1969 the number of OOs on FPC lists has risen by 8 per cent to 6,129 at the end of 1985, but the UK Register had only increased in size by 2 per cent to 6,331. The three hours-of-

attendance indices show a 2 to 3 per cent rise to 4,900 or 4,950 FTE OOs from the 4,820 figure by Alpine.

Alpine (1970) took no measures of inactivity, enquiring only about practitioners carrying out under five tests and attending for under six hours per week. Table 3 gives the mid-1986 estimates of inactivity of 6 to 7 per cent or 350 to 416 out of 6,176 optometrists on the Register.

### Full-time equivalence as a function of age and sex

The major factors affecting these measures of the strength of the profession are age and sex. For example, (i) opticians are not required to retire at 60 or 65 and many continue to work at lower levels of activity, (ii) women often remain on the Register even though they be totally involved with their families and (iii) some older men become completely committed to

administration or teaching.

Table 4 shows the percentage of active optometrists for the four measures of activity as a function of age and sex. According to all four, virtually all registered men under 25 years age are active and there is a gradual decline of perhaps a little less than a per cent a year so that by the age of 55 only one in 20 has carried out no work for 12 months. For those in their late 60s, 15 per cent are inactive while for those in their 70s the figure is between 20 and 25 per cent. Each measure gives similar results.

For women, the increase in inactivity with age is at first only slightly greater, but by their early 40s one in 12 of registered women are inactive compared with one in 30 of the men. There is the suggestion of a recovery amongst late 40s women but the proportion of active women is still 10 per cent less amongst women in their 50s than men.

Earlier studies have tended to assume that people remain on the Register while inactive—rather than leave it and return later. The difference

continued on page 24

*Chris French lectures at the Ophthalmic Optics Department of the University of Manchester Institute of Science and Technology.*

Table 3: Estimates of inactive optometrists on UK Register in mid-1986

	annual GOS sight tests	annual hours attendance	annual days attendance	weekly hours attendance
zero hours or tests	7% 416	6% 360	6% 350	6% 350

Figures are based upon a mid-1986 Register total of 6,176 and give estimates of the percentage and absolute number of practitioners carrying out zero GOS sight tests or having zero hours of attendance in the previous 12 month period.

Table 2: Definitions of full-time OO and estimates of effective strength of UK Register

	Alpine weekly hours attendance 1969	Alpine weekly sight tests 1969	French & Loran 1982	annual GOS sight tests mid-86	annual hours attendance mid-86	annual days attendance mid-86	weekly hours attendance mid-86
100% FTE OO	30+ hours	23+ tests		2,500 tests	1,824 hours	235 days	40 hours
UK Register	79%	77%	80%	72%	79%	80%	80%
UK Register	4,820	4,450	4,800	4,300	4,900	4,950	4,950

# STRENGTH OF THE PROFESSION

continued from page 22

between the sexes in the proportion who are active lends some support to this view.

Figure 1 shows the average number of sight tests carried out as a function of age and sex. Strictly speaking if one requires a measure of central tendency one should report medians, but in the main despite some departures from normality there is little difference. The risk of the disproportionate effect of extreme values is not a great problem here with sight test numbers and the mean remains the more important measure. This is because we are less interested here in what the typical OO does and more interested in the aggregate contribution of each group to the National total of sight tests.

Men in their late 20s and early 30s carry out most tests. There is then a more or less continuous decline with age so that those in their late 50s and early 60s are carrying out less than three-quarters of the tests of the busiest

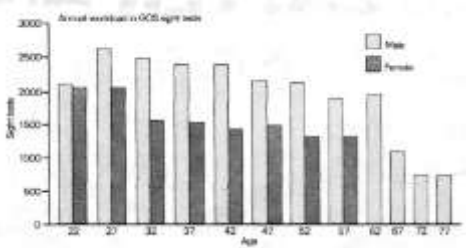


Figure 1: Average number of GOS sight tests carried out by optometrists as a function of age and sex. For men under 60 and women under 35 the SE mean was under 100 sight tests

age group. After retirement age, sight<sup>1</sup> testing drops rapidly to less than half for those in their late 60s and less than a third for those who are 70 years of age or older.

On average, women in their early 20s carry out just as many sight tests as men but from age 25 on there is a very significant fall. The difference is over 20 per cent for the late 20s and over 30 per cent for those aged 30 or over. For

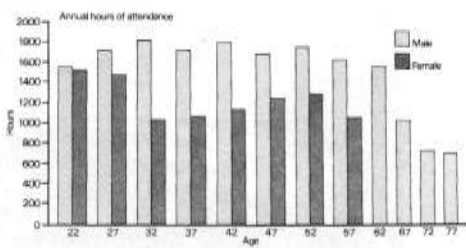


Figure 2: Average annual hours of attendance by optometrists as a function of age and sex. For men under 60 and women under 35 the SE mean ranges from 33 to 63 hours

women the biggest drop in their testing rate is from the 25-29 to 30-34 age groups and amounts to an almost 20 per cent drop. After this the decline on average only amounts to perhaps half a per cent per year.

Figure 2 shows the annual hours in attendance by practitioner's age and sex. The maximum is reached a little later than for sight tests with the 30-34

continued on page 26

# STRENGTH OF THE PROFESSION

Table 4: Proportion of active optometrists according to four criteria

Male					Female				
age	annual GOS sight tests	annual hours attendance	annual days attendance	weekly hours attendance	age	annual GOS sight tests	annual hours attendance	annual days attendance	weekly hours attendance
24	100%	100%	100%	100%	24	99%	100%	100%	97%
25-29	99%	98%	99%	100%	25-29	98%	98%	98%	97%
30-34	97%	99%	99%	99%	30-34	96%	97%	97%	98%
35-39	98%	98%	98%	98%	35-39	96%	96%	96%	97%
40-44	97%	97%	97%	99%	40-44	91%	93%	91%	93%
45-49	96%	96%	96%	99%	45-49	95%	97%	97%	100%
50-54	96%	98%	98%	98%	50-54	75%	87%	87%	86%
55-59	94%	94%	94%	93%	55-59	86%	86%	86%	87%
60-64	95%	96%	96%	94%	minimum sample of size n = 10 for percentage estimates				
65-69	85%	86%	86%	86%					
70-74	74%	75%	75%	76%					
75-79	82%	79%	79%	80%					

continued from page 24  
and 40-44 year old men putting in most hours. Women in their early 20s put in just as much time as men and once again the big drop for them occurs with the 30-34 year olds, although there is the suggestion of an increase in hours for the late 40s and early 50s.

The fall off with age is generally less marked than with the sight test measure and shortly after retirement age the average number of hours in percentage terms amongst registered men OOs is almost 60 per cent instead of less than 50.

Figures 3 and 4 show results for average weekly hours of attendance and annual days in attendance. These show similar patterns to the annual hours with again less fall off with age than for the sight test figures and with a modest increase in work amongst women in their late 40s and early 50s.

Unfortunately, it is not possible to make very meaningful comparisons between the working times for women

in optometry and those in other professions as detailed information for the latter is not always available. Seward and McEwen (1987) report that 57 per cent of working women dentists are in practice for 31 hours or more and 39 per cent work for 36 hours or more, but the age distribution of women in dentistry differs from that in optometry and they give no breakdown with age.

We can, however, compare Alpine's original (1970) FTE estimates based upon weekly hours, Alpine and Jack's revised (1978a, 1978b) figures along with those used by Bennett (1978), and French and Loran (1983). The main difference between these earlier FTE estimates and the present set appear to be a tendency to underestimate the contribution of today's ophthalmic opticians. The FTE values of women under 45 years of age are often higher by 10 per cent or more. The men's contribution also appear to be underestimated, but by a smaller amount—typically of the order of 5 per cent and then only for

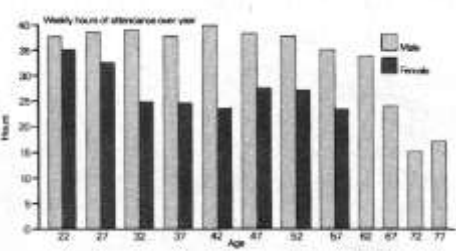
a slightly smaller age range—the 25 to 45 year olds.

One can talk with little confidence of the older women practitioners. There are currently only a dozen or so women practitioners on the Register born between 1920 and 1924, and 1915 and 1920 and only half a dozen between 1910 and 1915, and 1905 and 1910 (Table 1). Only five all told replied in these age groups so it is clear that it would not be safe to generalise about their work patterns.

Regarding older men, Alpine and Jack (1978b) reduced the FTE values for those over 65 years of age to compensate for their less strenuous work-style with fewer tests per hour worked. This can be assessed by comparing the sight tests FTE with the attendance FTEs. Differences are modest amongst the under 45s and only increase to 10 per cent or more amongst the over 50s. One might speculate that this is partly due to the added non-testing responsibilities that older optometrists take up with supervising, managing and so on, although no doubt a suspicion must remain that a more relaxed pattern of working is mainly responsible. Certainly, the difference becomes marked amongst the over 65s where the GOS FTE figure is three-quarters or less of the corresponding attendance FTE value.

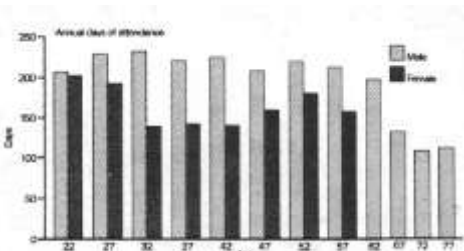
The sight test FTE statistic would appear to take too narrow a view of an optometrist's work, but the straight attendance FTE does not allow for the fact that older optometrists work less intensely. A compromise is to use the attendance FTE up to retirement age

Figure 3: Average weekly hours of attendance by



optometrists as a function of age and sex. For men under 60 and women under 40 the SE mean was one hour

Figure 4: Average annual days of attendance by



optometrists as a function of age and sex. For men under 60 and women under 35 the SE mean ranges from three to seven days

continued on page 29

# STRENGTH OF THE PROFESSION

**Table 5: Months elapsed before return to work after birth—as a function of mother's age in 1986 and child's birth order**

	months off	1st child	months off	2nd child	months off	3rd child
	Median	Valid N	Median	Valid N	Median	Valid N
age						
24	.	4	.	1	.	1
25-29	4	43	6	13	.	1
30-34	6	118	6	67	7	14
35-39	6	57	5	49	5	10
40-44	6	35	13	32	21	10
45-49	6	31	12	28	.	6
50-54	3	12	2	11	.	3
55-59	18	11	.	7	.	5
65-74	.	2	.	1	.	1
all ages	6	313	6	209	8	51

Where samples are smaller than 10, median figures have been omitted.

continued from page 26

and take the average of the attendance and sight tests FTE for those over retirement age.

Allowing for the different ages on recruitment, it is estimated that the average male currently has a working life of 36 full-time years, while the average female working life is 72 per cent of this or 26 full-time years.

## Time off work for giving birth

Perhaps the most 'Visible' index of the fact that women do not work as long as men is provided by the time they take off at the birth or adoption of children. Informal observations of such withdrawals have led some people to argue that the contribution of women to optometric work has been over-estimated. This confirms the need here for a formal analysis.

The systematic estimation of these intervals adds nothing to the Full Time Equivalents already calculated, but it is

also of interest to see how they compare with figures provided for other occupational groups. Table 5 shows the median time off work in months for first, second and third children as a function of the current age of the mother. There is the possibility of a very slight tendency for withdrawals to be longer for second and third children, and older women, despite the dozen women in the 50 to 54 age group. Such trends have been suggested by Martin and Roberts (1985) for non-professionals and Seward and McEwen (1987) for dentists but it is important to note that even if the trends are statistically significant (and this would probably depend upon adjusting the data of young women to take account of those who while off work at the time of the survey would be likely to return shortly) they are unlikely to be substantial.

The overall median time off work for all births is six months (see Table 8) amongst registered women with 57 per cent of women in the survey taking six months or less. Martin and Roberts (1985) reported as many as 26 per cent

of one group ('other intermediate non-manual') taking six months or less off work, but the average for women in general was 14 per cent and even with teachers the proportion was only 22 per cent. This appears to confirm the expectation that amongst professionals, where there is ample opportunity for part time work, employment amongst women is greatly enhanced. Of course if significant numbers of women left the Register at the time of the first birth and never returned then the above 57 per cent estimate would need to be reduced.

The statistics for women dentists appear very similar with those taking six months or less amounting to 51 per cent for the first break, almost 60 per cent for their second break and 57 per cent for their third (Seward and McEwen, 1987). Seventy per cent of women optometrists had periods off work of less than 12 months compared with 75 per cent of women dentists.

continued on page 30

# STRENGTH OF THE PROFESSION

continued from page 29

## Conclusions

The strength of the profession in mid-1986 was close to what it was in 1969 at 79 per cent or 4,850 full-time optometrists. The 1969 FTE 00 carried out 1,270 GOS tests per annum compared with his 1986 counterpart's 2,160. For the birth of a child 57 per cent of women optometrists take six months or less off work before returning. This is very similar to the pattern amongst women dentists.

This is the present. To use the FTE figures derived in this article to calculate the future strength of the profession one also needs to examine Register recruitment and loss rates including likely patterns of retirement.

## Acknowledgements

This article is based upon part of the Optometric Manpower and the Need for Vision Care report recently submitted to the GOG. This research was supported financially by the General Optical Council, John H Chapman Opticians, the Co-Operative Wholesale Society Optical Group, G C Bateman Opticians, Pilkington Ophthalmic Division, Davis-Watson Opticians, Bausch and Lomb, the Central (Local Optical Committee) Fund, and the Federation of Ophthalmic and Dispensing Opticians.

## References

- ALPINE R L W (1970), An analysis of the structure of the UK ophthalmic optical professions, General Optical Council.
- ALPINE R L W and JACK A B (1978a), The adequacy of present recruitment to the optical professions, *OPTICIAN*, 175, March 31, 17(pp6).
- ALPINE R L W and JACK A B (1978b), The adequacy of present recruitment to the optical professions—appendix, *OPTICIAN*, 175, April 14, 27 (pp5).
- ALPINE R L W and JACK A B (1979), The appropriateness of present recruitment rates to the optical professions—supplementary report, *The Ophthalmic Optician*, 19, 933-935.
- BENNET A G (1978), Some comments on the Alpine-Jack report on professional manpower, *The Ophthalmic Optician*, 18, 679-684.
- BOLT D E (1983), Medical Manpower in the Year 2000, British Medical Association.
- British Dental Association Council (1986), Manpower subcommittee second report, (Chairman D G Lloyd), BDA.
- Department of Education and Science (1986), Projections of demand for higher education in Great Britain 1986-2000, London: HMSO.
- Department of Health and Social Security (1983), Dental manpower: report of the departmental study group on dental manpower, London: DHSS.
- Department of Health and Social Security (1985), Report of the advisory committee for medical manpower planning, London: HMSO.
- DEX S (1984), Women's work histories: an analysis of the women and employment survey, Department of Employment Research Paper 46, HMSO.
- FRENCH C N and LORAN D E C (1983), Optometry manpower up to the year 2000 and beyond—Part 1: The past and present, *The Ophthalmic Optician*, 23, 421 (pp6).
- JOSHI H (1984), Women's participation in paid work: further analysis of the women and employment survey, Department of Employment Research Paper No 45, HMSO.
- MALLIER A T and ROSSER M J (1986), Women and economy: a comparative study of Britain and the USA, London: MacMillan.
- MARTIN J and ROBERTS C (1984), Women and employment—a lifetime perspective: the report of the 1980 Department of Employment/Office of Population censuses and surveys women and employment survey, London: HMSO.
- Ministry of Agriculture, Fisheries and Food (1985), Manpower review of the veterinary profession in the United Kingdom, Ministry of Agriculture, Fisheries and Food, Department of Agriculture and Fisheries for Scotland, Department of Agriculture for Northern Ireland, and Welsh Office Agriculture Department.
- PETERS H B (1987), Demographics, *Journal of Optometric Education*, 12, 104-108.
- Pharmaceutical Society (1986), Survey of Pharmacists 1985, *The Pharmaceutical Journal*, March 1, 265-266.
- REES J A (1983), A survey of the aims and ambitions of male and female pharmacy students, *The Pharmaceutical Journal*, October 1, 380.
- SEWARD M H and MCEWEN E M (1987), The provision of dental care by women dentists in England and Wales in 1985: a ten year review, The London Hospital Medical College Dental School.
- SILVERSTONE R and WILLIAMS A (1979), Recruitment, training, employment and careers of women chartered accountants in England and Wales, *Accounting and Business Research*, Spring, 105-121.
- The Institute of Chartered Accountants in England and Wales (1986), The pattern of student education and training, digest of statistics, ICA.
- UCCA (1986), Statistical supplement to the 23rd report 1984-5, Cheltenham: Universities Central Council on Admissions.