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ORIGINAL ARTICLE

The primary eye care examination: Opening the case history and the patient's uninterrupted initial talking time

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KEYWORDS

Optometric case history;
Patient's talking time;
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Sight test

Abstract

Purpose: The uninterrupted initial talking time (UITT) of optometric patients was measured in response to the clinician's opening question: "Do you have any problems with your eyes or your sight?"

Methods: UITT was measured surreptitiously by the optometrist. Also noted was whether an eye/sight problem was claimed by the patient and whether or not this was subsequently confirmed by the examination.

Results: Data were collected from 822 adults, mean age 59.1 yrs (SD 17.6), range 16.0–92.0 yrs. UITT data were positively skewed; median value 28.87 s (IQR 19.81–43.03 s) and no statistically significant difference between genders ($p=0.9$). 53% of patients had completed their opening statement by 30 s, and 90% after 1 min. 75% of these individuals (age range 26–75 yrs) had a median UITT 27.82 s; younger patients (16–25 yrs) spoke for a significantly shorter time (18.39 s; $p=0.002$) and elderly patients (≥ 76 yrs) a significantly longer time (37.27 s; $p=0.003$) than the majority value. Previously unexamined patients, habitual spectacle wearers, and individuals presenting with an eye/sight problem all recorded a significantly longer UITT ($p \leq 0.006$) than their peers. The practitioner's opening question had a sensitivity of 0.54/specificity of 0.95, and a positive predictive value (PV) of 0.78/negative PV of 0.87: with a calculated value of $\kappa=0.53$, the strength of agreement between subjective claim and objective outcome could be regarded as 'moderate'.

Conclusion: These data suggest that an optometric patient's UITT of <30 s is unlikely to prove disruptive to the clinical routine.

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PALABRAS CLAVE

Historia optométrica;
Tiempo de
conversación del
paciente;
Primer examen
visual;
Prueba de visión

Examen visual en atención primaria: inicio de la historia y tiempo ininterrumpido de conversación inicial del paciente**Resumen**

Objetivo: Se midió el tiempo ininterrumpido de conversación inicial de los pacientes optométricos como respuesta a la pregunta introductoria del clínico: "¿Tiene Vd. problemas de visión, o en los ojos?"

Métodos: El optometrista midió el tiempo de modo subrepticio. También anotó si el paciente reportaba cualquier problema de visión/ojos, y si esto se confirmaba o no posteriormente mediante el examen.

Resultados: Se recolectó información de 822 adultos, con edad media de 59,1 años (DE 17,6), rango 16,0–92,0 años. Los datos del tiempo estaban sesgados positivamente; valor mediana 28,87s (IQR 19,81–43,03 s) y sin diferencia estadísticamente significativa entre sexos ($p=0,9$). El 53% de los pacientes completó el informe introductorio a los 30 s, y el 90% al cabo de 1 minuto. El 75% de estos pacientes (rango de edad 26–75 años) empleó un tiempo medio de 27,82 s; los pacientes más jóvenes (16–25 años) hablaron durante un tiempo considerablemente menor (18,39 s: $p=0,002$) y los pacientes de mayor edad (≥ 76 años) emplearon un tiempo considerablemente superior (37,27 s: $p=0,003$) que el de la mayoría. Los pacientes no examinados previamente, los portadores habituales de gafas y los pacientes con un problema de visión/ojos registraron un tiempo significativamente superior ($p \leq 0,006$) al de sus homólogos. La pregunta introductoria del médico tuvo una sensibilidad de 0,54/especificidad de 0,95, y un valor predictivo positivo (VP) de 0,78/VP negativo de 0,87: con un valor calculado de $\kappa=0,53$, el grado de la concordancia entre la queja subjetiva y el resultado objetivo podría definirse como "moderado".

Conclusión: Los resultados de este estudio sugieren que un tiempo ininterrumpido de conversación inicial de un paciente optométrico de <30 s es improbable que pueda perturbar la rutina clínica.

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Introduction

It is probably the case that the majority of optometric appointments originate with the patient's receipt of a recall mailing from the practice. Typically patient attendance is for a vision-related assessment and professional advice regarding the provision of a refractive appliance. However, unfamiliar visual symptoms can provoke anxiety and might also result in the making of an appointment for an examination.

At the point of attendance the patient might well have more than a single vision-related issue they wish to raise, but may not necessarily broach what they perceive as the most serious one first.¹ It is the optometric professional's task when opening the case history to solicit the chief or current concern(s) underlying the patient's visit.² To this end, a suitably 'open' initial question is usually addressed to the patient,^{2–4} who should then ideally be allowed to make a temporally unrestrained verbal response. But it can be precisely at this opening stage that the consultation can go awry: the fear acknowledged anecdotally by many practitioners is that, if given free rein, the patient's monologue will likely be lengthy, often straying off topic and potentially disruptive to the clinic's appointment schedule.

Is there any evidence to support this apparent belief in a latent garrulity of many of our patients? Specifically within optometry there appears to be none. The study to be reported here investigated for the first time the

unrestrained initial talking time statistics of patients attending for a routine eye examination at an optometric practice in the UK.

Methods

In this investigation the uninterrupted initial talking time (UITT) in response to the question "Do you have any problems with your eyes or your sight?" was recorded covertly from patients attending for a routine sight test at the author's optometric practice. The study adhered to the tenets of the Declaration of Helsinki.

Subjects

Patients were taken *seriatim* as they presented for a routine sight test over a ten-month period between February and November 2012 inclusive. Care was taken that there was no duplication of individuals within the subject pool. So far as the author could judge, all socio-economic groups were included in the data set. Four patient groups were excluded from the data collection exercise: specifically, these comprised school-aged children and teenagers aged <16 yrs, the physically or mentally infirm, very elderly patients aged >95 yrs, and a very small number of patients for whom English was not the first or native language. The reason for exclusion was that all four of these subject groups usually

attended for a sight test with a relative or carer, which latter person understandably tended to intervene to a variable degree on their charge's behalf: under these circumstances the accurate determination of spontaneous talking time would be difficult or ambiguous especially if, as is often the case, the third party sought to introduce or impose their own observations or queries on proceedings.⁵

At the point of recording the subject was not aware that their response was being timed. Subsequently verbal permission to include an individual subject's anonymous talking time results in the data set was sought on completion of the sight test; agreement was unanimous. Demographic and other material collected in connection with the study population (patient gender, age, sight test interval, binocular visual acuity) was all non-attributable in analysis, preserving patient confidentiality.

Examination setting

All the material collected for this report was obtained in the course of routine eye examinations at the author's independent community-based optometric practice. All sight tests were undertaken by a single experienced clinician (the author) who had been continuously registered with the UK optical professional legislative body (General Optical Council) for thirty-five years at the point of data collection.

Talking time recording

The stopwatch facility on a digital wristwatch (Casio Model W-86-1VQES: manufacturer's stated measurement resolution ± 0.01 s) was used to record patient talking time.

It is the author's habit, once the patient is seated in the consulting room and after the usual social preliminaries have taken place, to start the eye examination with a general and open-ended question to elicit the reason for the visit.^{3,4} This initial enquiry is intended to be applicable to, and comprehensible by, the majority of patients irrespective of their age, circumstances and whether they have attended the practice before or indeed whether they have previously had an eye examination. At the point when the patient began their answer to the opening question the stopwatch was activated surreptitiously by the author, and only stopped when it became clear that the patient had concluded their response. During the recording period the author engaged in active listening: this included making eye contact with the speaking patient between note taking, nodding, making non-verbal facilitations and waiting briefly for the patient so that the latter felt that they were making an unhurried response.

Subsequently (and of no relevance to the UITT investigation) supplementary closed or specific questions followed the timed initial period in the usual manner such that a full history and symptoms routine was completed as the preface to the sight testing routine and related ocular tissue examination.²⁻⁴

Supplementary data

As an adjunct to the measurement of talking time, a note was made of individual patient age and gender, and a record

of their habitual and optimal binocular log MAR visual acuity at 6 m. Where possible, the time elapsed since each individual's previous formal sight test was also determined: where a patient had previously been examined at the practice the inter-test period could be established accurately on the basis of clinical records. In the case of persons new to the practice, unless the patient brought with them a dated optical prescription form or similar documentation, this test interval was of necessity based on the patient's recollection of the previous examination event (acknowledged as not necessarily a reliable indication of elapsed time).⁶

Statistical analysis

All data from the study were downloaded into a Microsoft (*Office 2011 for Mac*) EXCEL workbook, facilitating initial descriptive analysis. Subsequent statistical testing was undertaken using STATISTICA/Mac software (v.4.1: StatSoft, Inc., Tulsa, OK, USA).

Data were assessed for normality of distribution using the Shapiro–Francia W' test⁷: this procedure clarified the decision as to whether parametric or non-parametric statistical testing was appropriate for data analysis. Parametric material are summarised herein by mean and standard deviation (SD), non-parametric results by median and interquartile range (IQR). Statistical analysis of independent (unpaired) data utilised the t test for parametric material, or the Mann–Whitney U test if non-parametric. Analysis of variance (ANOVA) testing was used for multiple group comparison of parametric data, or the Kruskal–Wallis ranks analysis for multi-group distribution-free material. A result on all statistical tests of a 2-tailed p value < 0.05 was considered significant.

In a second strand to the analysis, each patient's response to the optometrist's opening question enquiring whether or not they believed that they had an eye/sight problem was dichotomised as 'Yes' or 'No': subsequently the result of that individual's sight test was similarly categorised as to whether or not it indicated a visual problem was present. After the termination of the study these two series of dichotomous data were cross-correlated and entered into a 2×2 contingency table to derive a quantitative estimate of the extent of agreement between subjective impression and objective outcome in this sample of individuals.^{8,9}

Results

Over the ten-month study period, data were collected from a total of 822 patients: 51.7% of subjects were female. Group mean age was 59.1 yrs (SD 17.6): males 59.2 yrs (SD 17.4) and females 59.0 (SD 17.7). Age distributions between genders were not statistically significantly different, either for the total group (age minimum 16 yrs/maximum 92 yrs: $p = 0.8$) or when partitioned across eight decade-wide age groups from 16–25 yrs to ≥ 86 yrs ($p \geq 0.9$).

Distance (6 m) binocular log MAR visual acuity (VA) distributions were also not statistically significantly different between genders: group mean habitual (presenting) VA was $+0.02$ log MAR (SD 0.10) or 6/6.3 Snellen ($p = 0.08$), mean optimal (best corrected) VA was -0.02 log MAR (SD 0.10) or 6/5.7 Snellen ($p = 0.1$), representing a mean VA

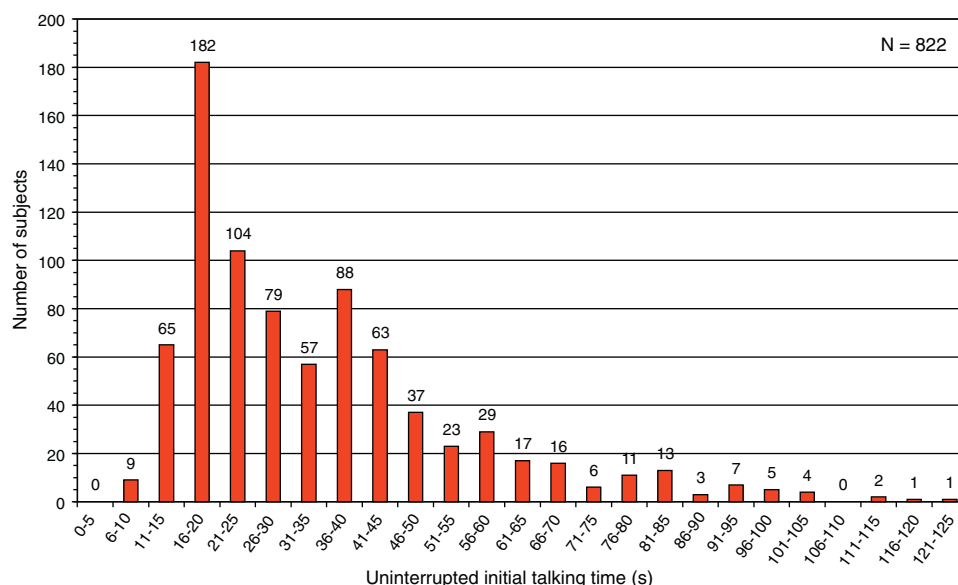


Figure 1 Distribution of the uninterrupted initial talking time (UITT: 5 s increments) of optometric patients in response to the clinician's opening question: "Do you have any problems with your eyes or your sight?" Group $N = 822$ (52% female).

improvement of $-0.04 \log \text{MAR}$ (SD 0.05) or 2 log MAR chart letters ($p = 0.3$).

Taken across all 822 subjects the UITT data produced a highly positively skewed (skew +1.43) leptokurtic distribution (kurtosis +5.11; Fig. 1). This is a predictable outcome, given that UITT values could only be positive. That these UITT data were not sampling a normal distribution was confirmed by a significance value of $p = 0.0001$ for the Shapiro–Francia test statistic ($W = 0.66$). Minimum speech time was 9.19 s and the maximum was 125.44 s (in both cases male patients). Results for male subjects (median 29.42 s) compared to females (median 28.74 s) were not statistically significantly different ($p = 0.4$), so in the subsequent analysis and discussion the combined-gender UITT results will be considered.

To direct the relevance of this talking time material to the practising optometrist, four categorisations of the UITT data were undertaken: specifically, by age group, whether the sight test was routine or prompted by symptoms, whether the patient had previously been examined and finally, whether the patient was a habitual spectacle wearer. *Prima facie* these considerations might each be anticipated to influence the duration of an optometric patient's opening statement.

Addressing these categorisations in turn, first of all the UITT data were partitioned across eight decade-wide patient age groupings, from 16–25 yrs to ≥ 86 yrs (Table 1). A multi-group comparison indicated a statistically significant difference ($p = 0.0001$) in talking time across the eight age groups. Repeat group and pair-wise testing indicated that the material could be divided into three age-defined bands: 16–25 yrs vs ≥ 76 yrs ($p = 0.0001$), 16–25 yrs vs 26–75 yrs ($p = 0.002$), 26–75 yrs vs ≥ 76 yrs ($p = 0.003$). Young adults (16–25 yrs) took a shorter time (median 18.39 s) to respond to the practitioner's opening question, and elderly patients (≥ 76 yrs) a longer time (37.27 s), compared to the majority of patients (26–75 yrs) who spoke for 27.82 s.

Those patients who were attending for a sight test with a real or perceived vision-related problem (e.g., deteriorating sight or headache) spent longer (35.81 s) over their initial response than asymptomatic patients (28.05 s: $p = 0.006$).

Patients who had not previously attended for an examination, or who could not recall any sight assessment since reading a letter chart with the school nurse or similar, spent longer (32.80 s) responding to the opening question than previously-examined patients who were attending the practice for a recall test (28.05 s: $p = 0.003$).

Finally, patients who did not wear a (distance) optical correction took a slightly shorter time (24.79 s) over their spoken response than habitual spectacle wearers (30.44 s: $p = 0.003$). This UITT material is enumerated in Table 1 and displayed in Fig. 2.

An assessment of the predictive veracity of the patient's response to the practitioner's opening question regarding the possibility of any eye/sight problems has been attempted, based on the numerical data categorised in Table 2 correlating subjective claim *versus* objective outcome. It can be seen that total agreement was present in 105 (true positive) plus 598 (true negative) cases, i.e., 703/822 or 85% instances. However, a proportion of agreement will occur by chance: the expected agreement for the "Yes" category is $[194 \times 135]/822$ or 31.86, and for "No" is $[628 \times 687]/822$ or 524.86. Thus, the summed chance agreement is 556.72 cases; expressed as a proportion of the total number of cases (822), this corresponds to a value of 0.68. Maximum agreement would be 1.00 (and no agreement better than chance would be zero), so the calculated agreement better than chance (kappa), $\kappa = [0.85 - 0.68]/[1.00 - 0.68] = 0.53$, with a 95% CI of 0.45–0.61, indicating a moderate level of agreement between patient claim and clinical outcome to this initial 'open' query.

Column-based calculations from Table 2 establish a sensitivity value of 0.54 (95% CI 0.47–0.61) and a specificity of

Table 1 Descriptive statistics of UITT (s) *versus* optometric patient grouping (refer to Fig. 2).

Subject grouping	N	% of N	% female	Age (yrs)		UITT (s)		
				Mean	±SD	Median	95% CI	IQR
<i>All subjects</i>								
–	822	100	51.7	59.1	17.6	28.87	26.93–30.78	19.81–43.03
<i>Gender</i>								
Male	397	48.3	–	59.2	17.4	29.42	26.72–32.13	19.84–42.87
Female	425	51.7	–	59.0	17.7	28.74	26.01–32.70	19.72–43.37
<i>Age group (yrs)</i>								
16–25	53	6.4	52.8	20.0	2.5	18.39	17.71–20.34	16.38–21.55
26–35	36	4.4	77.8	31.1	3.8	28.80	24.35–33.48	22.79–35.76
36–45	95	11.6	32.6	42.1	3.6	30.41	26.11–40.17	21.79–44.79
46–55	136	16.5	55.1	51.0	3.0	26.13	23.86–30.33	19.92–39.60
56–65	169	20.6	59.8	61.2	3.0	25.90	22.88–29.56	18.17–41.48
66–75	176	21.4	45.4	70.6	2.7	29.91	26.11–35.22	20.12–44.45
76–85	141	17.2	48.2	80.1	2.7	37.27	34.91–39.09	20.69–43.37
≥86	16	1.9	87.5	88.8	2.3	37.28	33.59–47.51	33.90–46.40
<i>Combined ages (yrs)</i>								
16–25	53	6.4	52.8	20.0	2.5	18.39	17.71–20.34	16.38–21.55
26–75	612	74.5	51.5	56.9	12.2	27.82	26.11–29.90	20.06–43.43
≥76	157	19.1	52.2	81.0	3.8	37.27	35.51–39.08	21.33–43.85
<i>Reason for sight test</i>								
Routine	687	83.6	52.8	59.2	17.3	28.05	26.09–30.33	19.33–42.22
Symptoms	135	16.4	45.9	58.8	18.8	35.81	28.03–38.79	22.00–47.13
<i>Appointment type</i>								
On recall	695	84.5	53.2	52.3	17.4	28.05	26.72–31.00	19.20–42.76
New	127	15.5	43.3	60.3	17.1	32.80	23.60–37.37	23.60–48.59
<i>Distance spectacles</i>								
Not worn	210	25.5	57.1	44.3	17.5	24.79	22.54–28.11	18.40–39.19
Habitually worn	612	74.5	49.8	64.2	14.5	30.44	28.11–33.89	20.07–44.36

Table 2 Patient claim *versus* clinical outcome in response to the optometrist's opening question: "Do you have any problems with your eyes or your sight?"

		Examination confirms eye/sight problem		Total
		YES	NO	
Patient claims eye/sight problem	YES	A. TRUE POSITIVE N = 105	B. FALSE POSITIVE N = 30	135
	NO	C. FALSE NEGATIVE N = 89	D. TRUE NEGATIVE N = 598	687
Total		194	628	822

Sensitivity = $A/(A+C) = 105/194 = 0.54$; specificity = $D/(B+D) = 598/628 = 0.95$; false positive rate = $1 - \text{specificity} = 0.05$. Positive predictive value = $A/(A+B) = 105/135 = 0.78$; negative predictive value = $D/(C+D) = 598/687 = 0.87$. Prevalence of a confirmed eye/sight problem = $194/822 = 0.24$.

0.95 (0.93–0.97), with a low false positive rate of 1–0.95 or 0.05. Thus, in relation to the optometric population investigated here, only 54% of patients who presented believing that they had an eye/sight problem were shown (on the basis of the subsequent sight test) to be correct in their supposition, whereas 95% of individuals who claimed no problem were correct in their belief. The opening question thus appears in this instance to be rather better at correctly excluding those persons who did not have an eye/sight problem than identifying those persons who did.

An alternative row-based analysis of Table 2 derives predictive values (PV): thus, the proportion of patients with a vision problem who asserted this (the positive PV) is 0.78, and that proportion of patients without a vision problem who stated this (the negative PV) is 0.87.

Discussion

The salient finding of this optical practice-based survey should reassure optometrists that overly-loquacious patients are unlikely to present and disrupt the clinician's routine or the practice's appointment schedule. A median UITT of approximately 30s might be set in the context of the duration of a contemporary optometric examination, which in

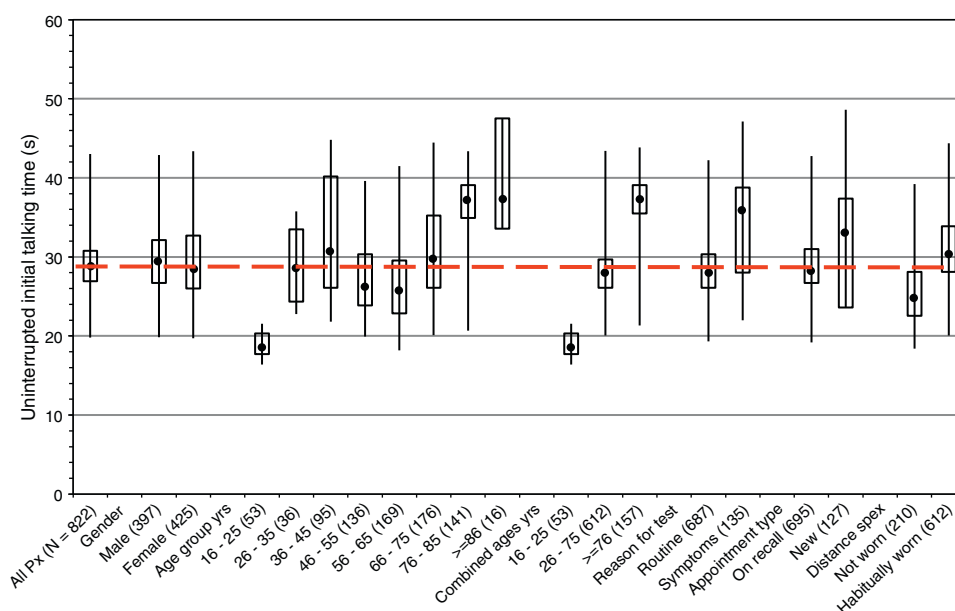


Figure 2 The distribution of the UITT (s) data within six patient groupings as specified along the abscissa: in each case is shown the median value (black spot), 95% CI associated with the median estimate (box), and the IQR (whisker). The horizontal dashed red line across the plot indicates the group ($N=822$) median UITT value (28.87 s).

the UK could be of the order of 20–30 min with an average length of 25 min.¹⁰

This outcome is in accord with talking time results recorded across the wider medical discipline where, contrary to the expectation of many clinicians, patients are apparently generally reluctant to speak excessively and with few exceptions will respect the doctor's time.^{11,12}

That optometric talking time is independent of gender aligns with a similar conclusion reached for patients attending both specialist and general medical practice.^{13,14} One might anticipate that elderly patients would take longer over their invited initial statement compared to younger persons, also in accord with observations obtained in medical practice^{13,14}; similarly individuals presenting with a perceived eye/sight-associated problem would likely talk longer than asymptomatic patients. While this new evidence base apparently confirms both of these suppositions, crucially, the extended talking time in such cases is unlikely to be clinically significant: 99% of all patients in this optometric population had completed their opening statement by 2 min.

A caveat that might be attached to these optometric results concerns the specific source of the data: all participating patients were seen in a community-based primary care setting. While the composition (age and gender) and visual acuity levels (habitual and optimal) of the clinical group closely reflect values noted previously for a self-selecting optometric patient population,^{15,16} caution should be exercised in generalising these outcomes to secondary or tertiary ophthalmic care locations because the patient profile will almost certainly differ between levels of care or specialisation. Again, evidence from the wider medical literature lends support on this point.⁵ General medical patients seen in primary care practice have been recorded

as taking <30 s (e.g., mean uninterrupted talking times of 28 s in two studies)^{14,17} to complete their initial statement, a result apparently similar across languages and cultures (and, coincidentally, close to the median value found for optometric patients in this present study). Such general medical patients will tend to comprise a broad selection of cases and in many instances (perhaps as high as three in four)¹¹ will be attending for a recheck appointment at the physician's request in connection with a previously diagnosed problem: this latter point bears comparison with the approximately 80% of optometric patients in the present study who were symptomless and principally attending for a sight test because they had been mailed a routine recall notice. In contrast, general medical cases referred to a secondary hospital or tertiary specialist clinic will, by definition, be more difficult cases with complex histories and, perhaps not surprisingly, voice lengthier opening statements (e.g., mean 92 s/median 59 s,¹³ and mean 100 s/range 70–130 s⁵).

The optometric patients in the study reported here were intentionally allowed to complete their opening statements without any interruption from the practitioner. Again, the consensus of the medical literature on this topic indicated that this was the preferred approach (and perhaps especially desirable in the present study given that no prior information existed for guidance as to anticipated talking time of optometric patients). Medical practitioners who truncated a patient's opening exposition might have been denying themselves access to relevant information which, in retrospect, could have been germane to subsequent case handling and yet would not have detained the practitioner for very much longer at the opening of the examination.^{11,12}

Notwithstanding an individual clinician's tolerance to allowing a temporally unrestrained verbal response from

their patients, the importance of an appropriate and open question at the start of the (optometric) examination has been stressed.²⁻⁴ But how much predictive reliance can the examining optometrist put solely on the patient's answer to the initial open question, given the calculated 'moderate' degree of agreement found here between patient claim and clinical outcome?^{8,9} With the prevalence of a confirmed eye/sight problem in the present clinical population calculated to be 0.24 (=194/822: 95% CI 0.21–0.27) the patient's initial response might be regarded as useful but not a definitive indication of a visual problem. Supplementary and more specific questioning, and of course the result of the completed examination, will be necessary to establish or refute this.^{1,4} And, as the medical literature has indicated, a full response to the initial open question should be allowed to maximise the likelihood of any subjective leads being revealed in advance of the clinical examination.^{1,11,12} The optometrist's initial question should intentionally be a broad or 'catch-all' opener to the individual case history, so perhaps it should not be a surprise that the confirmed prevalence of *non-specific* (i.e., any) eye/sight problems indicated herein is relatively high at 24%. As has previously rather pithily been observed, "Unfortunately, diseases are rare"¹⁸: the prevalence of specific ocular conditions frequently is low, and the efficiency of the sight test as an exercise for detecting (asymptomatic) disease has recently been questioned.¹⁹

In conclusion, and notwithstanding these several considerations, now that an evidence base exists of talking time material sourced from community located optometric practice, the recommendation is that the patient's opening response should be allowed (within reason) to proceed uninterrupted: given a sympathetic audience the patient's initial verbal statement will likely articulate his/her concerns and possibly improve subsequent case handling.

Conclusions

These preliminary data from optometric practice suggest that allowing a patient to respond uninterrupted to the clinician's open question at the start of the sight test typically does not result in garrulity. This information might reassure optometrists that neither their clinical routine nor the practice's appointment schedule is likely to be disrupted by an overly-loquacious patient at the opening of the primary eye care examination. More importantly, and as the relevant medical literature has indicated, by permitting the patient to make a full verbal response an early opportunity is presented to both parties to identify concerns or issues which can subsequently be investigated by more direct questioning, fostering the patient-practitioner relationship from the outset.

Conflict of interests

The author has no financial or conflict of interests to declare.

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