Survey of practice-related stress among United States and European ophthalmologists

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Several recent reports have highlighted a high level of stress in practicing physicians, and a call for greater intervention to help doctors cope with their practice responsibilities [1–6]. Practice-related stress may lead to physician ‘burnout’, family problems, reduced quality of patient care, depression, and professional impairment through illicit drug or alcohol abuse [1, 2, 5–9].

Little is known about practice-related stress among ophthalmologists specifically. However, a recent report by Viviers and associates noted a high level of stress among Quebec ophthalmologists [4]. The authors noted that work overload and organizational deficiencies, combined with little professional recognition, were overburdening ophthalmologists. The authors called for intervention by the provincial authorities to help improve practice conditions [4].

The purpose of this study was to survey the extent, causes and treatment of practice-related stress among United States (US) and European ophthalmologists.

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The authors have full control of all primary data, and agree to allow Graefe’s Archive for Clinical and Experimental Ophthalmology to review data upon request. Clinical Trial registration was not applicable.

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Physician selection

The survey was conducted from the administrative office of PRN Pharmaceutical Research Network, LLC in Charleston, South Carolina, USA between June and August 2010.

The US and European physician lists were compiled from www.yellowpages.com. Names were selected in decreasing order by the most populated cities in the US or by the most populated countries in the European Union until 2,500 names and corresponding e-mail addresses were obtained separately for each continent. Every fifth ophthalmologist was chosen in alphabetical order until 500 names were reached for each continent. It is worthy of note that 100 of the European email addresses were no longer functional.

The survey was developed internally at PRN Pharmaceutical Research Network, LLC by one of the authors (WCS). Questions were based on issues derived from personal discussions by one of the authors (WCS) with ophthalmic colleagues in Europe and the US, as well as recent legal healthcare changes in the US.

All analyses for this paper were two-way, with a significance level set at 0.05. All analyses were between the results of European and US physicians and were carried out using appropriate statistical tests as required [10, 11].

Physician characteristics

The complete survey is listed on the journal’s website at the end of the online version of this manuscript. There were 68 physicians responding in the US out of 500 surveys sent (14%), and 65 from Europe out of 400 surveys sent (16%).

There were no significant differences between the characteristics of physicians in the US and Europe in terms of type of ophthalmic practice, age, gender and hours worked per week ($P>0.11$). However, there was a

difference in the amount of time taken off work, with Europe having more physicians taking 5–6 weeks of vacation ($P<0.0001$).

Stress factors

The extent of practice stress noted by physicians was equal between the two continents, being 6.1 ± 5.0 in the US and 5.8 ± 4.2 in Europe (range 0–10, $P=0.89$). However, factors causing stress differed between continents. Physicians in the US noted ‘patient care’ as the most common stress-related factor, whereas both ‘patient care’ and ‘hospital/clinic administration’ were cited in Europe ($P=0.009$, Table 1).

Recent changes in healthcare worsened stress in 48 (71%) of responding physicians from the US and 52 (80%) in Europe ($P=0.21$). The most common causes of stress in Europe were changes in ‘hospital and clinic administration’ and ‘local/national government’. In contrast, in the US, changes in ‘financial reimbursement’ and ‘local/national government’ ($P=0.005$) were most common.

Accordingly, many physicians in the US and Europe noted that the changes in healthcare had caused them to ‘change their practice plans’ [in 44 (65%) and 39 (60%) respondents respectively ($P=0.73$)]. The most common change in the US was ‘an increased size of the practice’ whereas in Europe it was ‘later retirement’.

Stress alleviation

Most ophthalmologists indicated they used techniques to alleviate practice-related stress for which the primary tool in both continents was recreational activities (Table 1, $P=0.25$). As a secondary means to alleviate stress, European physicians most commonly noted ‘nothing’ or ‘recreational activities’ and in the US ‘recreational’ or ‘religious activities’ ($P=0.058$).

The mean efficacy of the primary measure to alleviate stress (range 0–10) was 6.8 ± 2.1 in the US and 6.7 ± 2.2 in Europe ($P=0.83$). With regard to differences in efficacy of activities, most were similar in perceived efficacy except that religious activity as a primary stress-relieving activity in the US was 8.2 ± 1.5 , and was statistically better than recreational activities (6.8 ± 2.0 , $P=0.04$). The secondary measure to alleviate stress was rated essentially as effective as the primary measure ($P=0.78$).

Medicine as a career

When asked what advice they would give a medical student considering becoming a physician, there was a borderline difference between continents ($P=0.057$), with 51% in the US versus 28% in Europe saying ‘definitely become a physician’, versus 25% in Europe and 16% in the US indicating to them to ‘choose a different career’.

Table 1 Stress factors

	Total (<i>n</i> =133)	United States (<i>n</i> =68)	Europe (<i>n</i> =65)	<i>P</i> -value
What are the practice-related stress-factors? ^a				0.009
None	5	3	2	
Patient care	79	43	36	
Dealing with hospital/clinic administration	60	22	38	
Dealing with hospital/clinic personnel	49	23	26	
Dealing with local/national government	40	24	16	
Dealing with employees	30	19	11	
Cash flow	27	16	11	
Legal environment	25	20	5	
Other	27	18	9	
What do you do first to alleviate stress?				0.25
Nothing	15	5	10	
Recreational activities	94	50	44	
Mental relaxation techniques	6	2	4	
Religious activities	12	9	3	
Indicate religious preference				
Christian	9	7	2	
Muslim	1	1	0	
Medical assistance	1	1	0	
Other	4	1	3	

^a denotes more than one answer was allowed

Conclusions

This survey found that many physicians on both continents, feel at least some stress in their practices which was caused most often by patient care responsibilities. However, in Europe perceived stress was caused to an equal extent by hospital/clinic related administrative factors. Causes of patient care related stress are poorly defined, especially among ophthalmologists, but have been described generally among all specialties as resulting from: making difficult diagnoses, threat of litigation, demanding work load, lack of control, and lack of reward [12–14].

Further, most physicians noted that recent changes in healthcare had worsened stress. In the US, changes in local/national government or financial reimbursement were cited as the most common causes whereas in Europe changes in ‘hospital and clinic administration’ and ‘local/national government’ were noted. Governments have long been involved in health care delivery in both continents. At the time of this survey, the popular press had noted that the passage of medical reform in the US in March 2010 would cause many physicians, of all specialties, to reduce or stop their practice. In our survey, approximately half of the ophthalmologists indicated they would change their practice plans. However, the most common reaction from the respondents was to increase the size of their practice.

In Europe, little indication was found, at the time of this survey, in the popular press that indicated pan-continental issues that explained the increased government-related stress [15, 16]. Nonetheless, such stress might have arisen from various local factors specific to each administrative region in Europe.

On both continents, the most common measure taken to relieve stress (about 70%) by ophthalmologists was recreational activities, which was rated approximately 6/10 effective. Stress relief from physical exercise and religious activity has been described before for patients [17]. However, only exercise has been studied in physicians to our knowledge, and was found helpful in at least one report [19]. Interestingly, religious activity, most often of the Christian faith, scored highest of any activity when used primarily to relieve stress, and was more effective statistically than recreational activities. Also of note was that the secondary measure to alleviate stress was rated essentially as effective as the primary measure.

Although European physicians took more vacation than their US colleagues, it did not appear to affect their self-stress ratings, as they were equal to those of the US. However, it is conceivable, with the added stress from administrative sources, that European physicians might have rated their stress higher without the few extra weeks of vacation.

This study suggests that practice-related stress is common in both the US and Europe, and appears associated

most strongly with patient care and (in Europe) with hospital/clinic administration. With moderate success, ophthalmologists most commonly use recreational activities to alleviate stress, and in the US they use religious activities secondarily.

Generally, little information is available with regard to the extent, causes and treatment of ophthalmic practice-related stress, as well as its effects on patient care outcomes and any influence on future health policies. Future research might better define the specific causes of stress, and more specific mechanisms of how it could be relieved through changes in health care administration, law, and government policies, as well as stress-alleviating activities for the physician.

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