

Research Article

Toward a more comfortable profession – disseminating ergonomics information to Australian optometrists

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Abstract

Background and aim: Work-related physical discomfort occurs in optometrists. The purpose of this paper is to explore how optometrists prefer to obtain information to assist their physical comfort at work. **Methods:** Sixty Australian optometrists working in clinical practice were interviewed as part of a larger study investigating work-related discomfort in the profession. Optometrists with (n=47) and without (n=13) self-reported physical discomfort participated. The results were subject to thematic (qualitative) and chi-square analysis. **Results:** Sixty percent of interviewees obtained information to assist their comfort at work. There was no relationship between self-reported discomfort and accessing information to assist comfort (chi-squared analysis). The majority of participants reported they would read unsolicited written material (92%), access an internet link (81%), attend a single stream (90%) or multi-stream (31%) conference presentation on this topic. Those in favour of this as a conference presentation were either searching for a solution to their own discomfort or wished to see more diverse topics offered at conferences. **Conclusions:** Optometrists in clinical practice acquire information to assist their physical comfort at work by both passive and active methods. Guidelines for reducing work-related discomfort should be first reviewed by optometrists to ensure their relevance and disseminated via multiple communication channels to cater for different learning styles. Guidelines should also be introduced during the optometry training program to ensure that future members of the profession develop good working habits.

Keywords: continuing professional education, ergonomics, optometry, work related discomfort

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Background

Work-related injuries and discomfort have been reported in Australian optometrists (1) and this has a potential impact on participation in the workforce. Possible reasons for discomfort and injury include clinical techniques (2), performing repetitive tasks (1) and occupational health and safety issues. There have been articles (3, 4), recommendations (5) and guidelines (6, 7) published but it is unclear how effective these documents are for educating and informing optometrists.

There are many options for communicating with optometrists in clinical practice: conferences and lectures, direct mail outs (print media and digital media e.g. DVD) and electronic sources (e.g. email, web resources). Depending on the content of the communication, it is possible to assign credit points for continuing professional education which may increase the likelihood of optometrists accessing the information (8). Other than accruing continuing education points, other motivators for learning include perceived relevance to personal and career goals (9), “current-ness” of content (8, 10), interacting with colleagues and enhancing personal and professional position (10). On one level, the purpose of continuing profession education is to provide information which is applicable to optometrists immediate work setting

(11). However, obtaining knowledge which may not be directly useful but which contributes to general professional knowledge and depth of understanding is also important for optometrists (12, 13). Risk management is a professional issue which has relevance for maintaining health and safety in the consultation room but may appear to have no immediate clinical relevance. It has been reported that the topic “risk management” is of only “average interest” to optometrists compared to say, presentations on other professional topics such as legal issues and ethics (8).

This project is part of a larger study investigating work-related physical discomfort in Australian optometrists, the goal of which is to develop guidelines for optometrists in clinical practice. However, if guidelines and recommendations are developed, then it is important to understand how to effectively communicate this information. The aims of this paper are to: (i) discover how optometrists in clinical practice currently obtain information about ergonomics to assist their physical comfort at work; and (ii) determine the most appropriate method for disseminating information to optometrists which will assist their physical comfort at work.

Methods

Project overview

A questionnaire was sent to members of the Optometrists Association of Australia (OAA) in 2008; the purpose was to discover if Australian optometrists experience work-related physical discomfort and the risk factors for discomfort (1). Of the 412 optometrists who participated in the questionnaire, 120 provided contact details for participation in future investigations on this topic. These participants were contacted either by email or post and invited to participate in a telephone or face-to-face interview. All optometrists who positively responded to the invitation were interviewed. The interviews were approved by the Human Research Ethics Advisory Panel of the University of New South Wales (HREA 09033).

Subjects

Sixty optometrists, with and without work-related physical discomfort, were interviewed during the period August 2009 – March 2010. Self-employed, employee, locum and retired optometrists participated. Two retired optometrists had ceased working due to work-related physical injuries. One self-employed and two employee optometrists were working reduced hours due to work-related physical discomfort.

Interview methods

The majority of interviews were conducted by telephone (56 interviews). Two interviews were conducted face-to-face and two participants requested a hard copy of the interview questions so that they could complete the questionnaire in their own time. All interviews were conducted by the first author (JL).

With the exception of one participant who did not wish to be recorded, telephone and face-to-face interviews were recorded on a Sony digital recorder and later transcribed for analysis. Each interview lasted approximately 30 minutes, although one interview took 75 minutes.

The interviews were semi-structured in that they followed a schedule of questions. These questions were divided into four sections: demographic information, job satisfaction, description of discomfort and ergonomics. To maintain a conversational style during the interviews, questions were not always asked in the same order, for example, some subjects began the interviews by describing their experience of discomfort.

Analysis of results

Interviews were transcribed and responses coded into themes. Participants were categorised by demographics (gender, employment status, years in practice, work location, business structure), discomfort versus no discomfort and whether they had obtained ergonomics information in the past. Chi-squared analysis was conducted to establish interactions between any of these variables and statistical significance was set at $p = 0.05$. Responses to preferences for accessing information and attending conference presentations were tabulated according to frequency. Categorisation of demographic factors are described in more detail elsewhere (14).

Results

Sixty optometrists participated in the interviews. Participants were located in every state and territory of Australia except for the Northern Territory.

Have you obtained information about ergonomics in the past?

Sixty percent of participants ($n=36$) had previously obtained information about ergonomics to assist their physical comfort at work (Table 1). Chi-square analysis did not show any significant associations between obtaining information and presence of discomfort, gender, employment status, practice structure, work location or experience.

Table 1. Demographics of interview participants and whether they have obtained information about ergonomics in the past

		Number who have obtained information in the past ($n = 36$)	Number who have not obtained information in the past ($n = 24$)	Total ($n = 60$)
Discomfort	No	8	5	13
	Yes	28	19	47
Gender	Male	14	12	26
	Female	22	12	34
Employment	Self employed	17	13	30
	Employee	17	6	23
	Locum	2	5	7
Years in practice	< 5 years	1	3	4
	5-9 years	4	2	6
	10-14 years	5	4	9
	15+ years	26	15	41
Work location	Urban	8	6	14
	Rural	28	16	44
	Both	0	2	2
Practice structure	Independent	27	13	40
	Corporate	6	4	10
	Franchise	3	3	6
	Various	0	4	4

Four participants had family members (cousin, son, father, brother) who had provided them with ergonomics information and 11 (18%) had received advice from physiotherapists, chiropractors and occupational therapists. One participant, who did not report discomfort, received advice from another optometrist about purchasing equipment.

Thirteen participants had actively sought information from the internet, primarily for information about workstations, furniture and chairs, either for their own use or for staff members (e.g. receptionist chair). Two participants reported that they have discussed their needs with furniture manufacturers.

Only one participant recalled receiving instruction about ergonomics during their undergraduate optometry degree, while another who trained at the same university did not recall receiving ergonomics instruction at all. Six participants

felt that the knowledge they had gained through professional optometry channels was sufficient, for example, during vision training courses, although one participant admitted that this information was related more to setting up a computer correctly than arranging an optometry room for comfort and efficiency.

There were seven participants who perceived the application of ergonomics within an optometry practice as “common

sense” and who based the set-up of their consultation rooms on trial and error or on what had worked in other practices.

Would you access unsolicited information sent to you?

The majority of participants reported that they would read written material to assist comfort and prevent injury at work (92%) and would prefer this medium (62%), as it can be easily

Table 2. Preferences for accessing information about ergonomics and physical comfort at work

	Reasons given for accessing information	Barriers to accessing information	Strategies to improve likelihood of accessing information via this medium
Written material	<p>Actively seeking information <i>“I am always interested in finding out if there are better ways to do things, new ways, or things that are better for my back.”</i></p> <p>Business responsibility <i>“...you have to be more responsible for the people who are employed by you... I take my responsibilities as an employer fairly seriously.”</i></p>	<p>Time <i>“(the reading material I am sent) is all in a pile.”</i></p> <p>No interest in the topic <i>“The topic doesn’t interest me. I think that I know enough about ergonomics or the theory of it.”</i></p> <p>Unable to apply the information <i>“Reading about what should be done is not going to be very helpful if I don’t have control over it.”</i> <i>“...it is not my consulting room (so) I am kind of limited.”</i></p>	<p>Easy to read <i>“If it were ... a pamphlet in easy English I would read it and probably keep it.”</i></p> <p>Include clear subheadings <i>“(I would) skim over it, read the headlines or the boxes ‘10 main points to consider’ but probably not the whole article”</i></p> <p>Reputable source <i>“I would look at the qualifications of the person who wrote it”</i> <i>“If it comes from the OAA I assume that it has been vetted correctly”</i> <i>“If it was scientific I would be more likely to read it.”</i></p>
DVD	<p>No specific reasons given – for most participants, this was not their preferred media</p>	<p>Time <i>“I have such a backlog of things that I ought to do that I would put it there carefully, it would stay in the pile, I wouldn’t throw it out, but then after some time it would probably gather dust and move further down the pile”.</i> <i>“...as soon as you start to watch it you have to watch even the stuff which is irrelevant.”</i></p> <p>Access difficulties Computer at work doesn’t have a DVD attachment/sound <i>“That would mean that I would need to fight my children off the television – that is not going to happen...”</i></p> <p>Don’t watch/like television <i>“I am a print person, not a TV person”</i></p> <p>Inappropriate to watch DVD at work <i>“Probably I could watch it at work, but with an article I can start it and stop it pretty easy. I know you can pause a DVD but it doesn’t seem quite right.”</i></p>	<p>Keep it short <i>“up to 15-20 minutes”</i> <i>“no longer than 5-10 minutes”</i></p> <p>Attractive title <i>“(make it relevant) to optometrists, such as ‘exercises you can do inside your consultation room to prevent work injury’.”</i></p> <p>Attention grabbing <i>“...if it didn’t catch my attention I might not finish watching it.”</i></p> <p>Include Continuing Education credits <i>“Unless I can get CPD (continuing education) points, I am not interested.”</i></p> <p>Reputable source <i>“If it arrived from ... a professional society ... I would definitely watch it, if it came from someone I had no knowledge of it would be taken with a large grain of salt.”</i></p> <p>Make other staff watch it <i>“Probably wouldn’t watch it myself but I would make the staff optometrists watch it (and) ask him what he learnt.”</i></p>
Internet or email attachment	<p>Ease of access <i>“...that is automatic at the click of a button ...we are all lazy so you need to make it easy for us.”</i></p>	<p>Time <i>“By the end of the day I am usually over it, so (emails) tend to sit there until I can be bothered which tends to be Monday, my catch up day.”</i></p> <p>Access difficulties <i>“... (I have to send) it to my home computer so that I could watch it.”</i></p> <p>Too many emails <i>“...once it is in there for more than a day I think it would just get lost because I have so many emails.”</i></p> <p>Don’t use the Internet <i>“I am not a big website user so I won’t.”</i></p>	

read at work or at home. Written material also facilitated skim reading which was viewed as a time-saving strategy (Table 2).

Accessing an internet web-link or an email attachment was also embraced as a communication medium (81% of participants in favour). The primary reason for liking this medium was ease of access. Only 55% of participants reported that they would watch a DVD and given the choice of print, digital or DVD information, DVD was the least attractive communication medium.

The primary reasons given for accessing information was because the participant was actively seeking solutions for their own physical discomfort or because they saw it as a business responsibility (Table 2). Lack of time was a common barrier to accessing information for all three communication media. Technology issues (e.g. access difficulties, information overload, aversion to television/internet) were cited as barriers for DVD and internet/email formats. One participant believed that it was inappropriate to watch a DVD or online video while at work, even if it was work-related.

Three participants admitted that they were uninterested in the topic, so would be unlikely to access information, irrespective of the media. Two participants reported that they were interested in the topic, but were discouraged from accessing information because they could not control their work environment, nor make meaningful changes to assist their comfort. Strategies that would improve the likelihood of optometrists accessing information on this topic included making the format attractive (e.g. easy to read, clear subheadings, attractive title, short length), providing material which has been developed by a suitably qualified author, and assigning continuing education credit points to the activity (Table 2).

Would you attend a presentation about ergonomics at a conference?

The majority of participants (90%) reported a potential interest in attending a conference presentation about how to prevent work-related discomfort and 19 participants (31%) would specifically attend this topic, choosing to attend either at a single stream or multi-stream conference. The two primary reasons participants gave for choosing to attend a presentation on this topic were that they are looking for a solution to their own discomfort (14 participants) or that they would like to see more variety of topics presented at conferences (7 participants) (Table 3). Non-relevance (e.g. do not currently experience work-related discomfort) and an inability to apply the knowledge to their work environment were commonly cited as factors for non-attendance.

Given the choice, 11 participants (18%) preferred to attend a clinical topic at a conference rather than an ergonomics topic. One participant felt that clinical continuing education should be separated from other topics, not presented in competition with each other at a conference, while two participants preferred written information or an internet link, which could be accessed in their own time. Three participants would “skip” the lecture altogether, even if presented during a single stream conference.

Table 3. Reasons given for and against attending a conference presentation about ergonomics and physical comfort at work

Reasons for attending an ergonomics presentation	Reasons for not attending an ergonomics presentation
<p>Novelty <i>“anything that is a bit different or unusual is likely to be attractive than the diseases stuff or something that gets so well covered.”</i> <i>“I would go to the ergonomics one, after 35 years I have heard the rest. There are not enough topics like that.”</i></p> <p>Searching for a solution to own discomfort <i>“I would be very interested in the ergonomics one...because I do have a problem.”</i></p>	<p>Not relevant <i>“I am not terribly interested because I have figured it out.”</i></p> <p>Cannot apply it at work <i>“I would gain more out of a pathology workshop than I would gain out of an ergonomics workshop because ... I am not in a position to control my own ergonomics that well.”</i></p> <p>Clinical and business education should be separated <i>“I would probably attend the (diseases). I think it should be separated personally”</i></p> <p>The information would be too generic <i>“I would be surprised if someone actually new more than me about what to change and what to do to help”</i></p>

Table 4. Strategies suggested by participants to increase the attractiveness of a conference presentation about “ergonomics and physical comfort at work”

Strategies suggested by participants to increase the attractiveness of a conference presentation about ergonomics and physical comfort at work
<p>Make it practical <i>“if you could predict the ways to help your comfort at work, yes, I would go”</i></p> <p>Make it relevant to employee optometrists <i>“..if there is more things in terms of (what)I can do rather than changing the furniture...things I can do to relax the muscles...so I can apply it immediately.”</i></p> <p>Keep it short <i>“20 minutes would keep my attention”</i></p> <p>Use an attractive title</p> <p>Use a lecture format rather than workshop</p> <p>Use an engaging speaker <i>“If I knew it had a good person talking...I wouldn't want a waffler”</i></p> <p>Use a speaker who is an expert <i>“if a physio giving lecture or (occupational therapist), more likely to attend, ergonomist OK, not if another optometrist because getting specialist advice already”</i></p> <p>Pitch it to employers and managers <i>“...title these sessions along the line “what optometrist employers or managers need to reduce work-related injuries”</i></p> <p>Pitch it as an insurance policy <i>“You need to put across the idea that it is like an insurance policy for them, that they learn about what they need to do and can structure their business so that it is sustainable for their body... the ability to work comfortably as an optometrist with less break-downs. This is a maintenance program for life.”</i></p> <p>Present it at another forum <i>“I am more likely to attend at ODMA fair where I am also looking at equipment at the same time.”, “What would work for me (is)...if there were a stand where I could talk to somebody...and answer a specific question.”</i></p>

Two participants suggested that it might be more effective to educate optometry students in good working habits, rather than only providing information to optometrists already in clinical practice.

Participants volunteered ideas for how such a topic might garner more interest amongst optometrists. This included making it relevant and practical to optometrists and optometry managers, using an attractive format (e.g. short length, attractive title, competent speaker), and using other forums, such as trade fairs, to present the information (Table 4).

Discussion

The results of this study show that 60% of participants have previously obtained information about ergonomics to assist their physical comfort at work, either by passive or active means. If sent unsolicited information from a professional organisation, participants would prefer to receive this as written information or as an internet link. Although some participants would attend a conference presentation on the topic of ergonomics and how it relates to comfort at work, many reported that they would prefer to attend clinical topics at a conference.

It is possible that there was response bias present in this study, as participants in this project elected to participate and that all who responded positively to the interview invitation were interviewed. The gender (56% female) and proportion of optometrists who experienced work-related physical discomfort (78%) was similar to the participation rate in the original email questionnaire. However, there were more self-employed participants in the interviews (50%) compared to those who participated in the original questionnaire (34%). Similarly, the number of optometrists working in independent optometry practices who participated in the interviews (67%) is greater than that which would have been predicted by optometrist demographics (54% in 2005)(15). It is unknown why a higher number of self-employed optometrists working in independent practices participated, although it may be that these optometrists are able to make changes within their practices and were actively seeking strategies.

Many of the participants were generally interested in the study and in the topic of ergonomics, so it might be expected that this group of optometrists would be keen to attend conference presentations on this topic. This was not the case. Participants showed a preference for attending clinical topics at conferences, which is consistent with the skew toward ocular health topics currently presented at Australian conferences (16). On the other hand, there were participants who welcomed different topics at professional development meetings and who reported that they would actively seek to attend a presentation on ergonomics as it relates to their comfort in the consultation room simply because it is different. The novelty factor has been reported elsewhere as an attraction for attending optometry professional development sessions (17) and demonstrates that there are many reasons for attendance at professional development events besides obtaining direct clinical knowledge (10).

Some participants recognised that work-related discomfort is an occupational health issue, and one of their business responsibilities, and cited this as a reason for accessing information on this topic. There were others who viewed ergonomics as "common sense". While it might be possible for some optometrists to identify the source of their discomfort and then implement necessary changes to eliminate their discomfort, some participants reported that they were unable

to implement change because they did not have sufficient control over their work environment. This sentiment has also been reported in nursing (18) and physical therapy (19) and poses a challenge for overcoming beliefs that work-related discomfort is an inherent part of the job (20).

One of the limitations of preparing guidelines for optometrists is that the advice needs to be generic, so that it can be applied to a range of working situations and consultation rooms. Lack of specificity of content was cited by some participants as a reason they would not attend a conference presentation on this topic. One solution might be to use written or oral communication media as a platform for raising awareness of work-related discomfort and then supplement this with individual advice to help optometrists solve their own problems e.g. someone available to give advice on a stand at a trade show or conference (as suggested by one participant) or providing a telephone hotline.

Written information was one of the preferred media for accessing information on this topic as it could be accessed and read easily. However, it may be necessary to pitch the information at different levels to cater for different reading preferences, for example, some participants preferred to read a pamphlet while others preferred to read a scientific article. It is unlikely that participants preferred written media because of an aversion to digital media and computers, as the participants had previously participated in an online questionnaire, had responded to an email invitation to be interviewed and some were interviewed using Skype. Other authors have also demonstrated learner preferences for written material (21), especially for business-related communication (22, 23). Providing information in a variety of formats would cater to different needs and learning styles (21).

Instructing students about good working habits rather than only providing information to those already in clinical practice has been explored in other professions (18, 24, 25). However, a three-pronged strategy may be necessary: education and guidelines to those already in practice, teaching guidelines for educators, as well as training for future professionals (18, 24, 26, 27). An investigation is currently being conducted by the authors into effective education and teaching strategies for optometry students.

The interview format was selected for this investigation to enable a more in-depth exploration of opinions (28) and has previously been demonstrated as a useful technique for canvassing the opinion of optometrists (29). The exploratory strategy also allowed participants to expand on their responses and offer suggestions for how information on this topic might be made more palatable to their colleagues. Although these suggestions were unsolicited and therefore unlikely to be comprehensive, the responses may offer guidance for future researchers investigating the continuing education preferences of optometrists and provide the basis for development of quantitative tools such as questionnaires on this topic.

Conclusion

Optometrists currently access information to assist their comfort at work from a variety of sources. If generic guidelines are developed to help reduce the incidence of work-related discomfort in optometrists, then optometrists should be included as a part of the review process to ensure that materials are relevant and are distributed through the channels they prefer. To cater for different learning preferences, guidelines

should be disseminated via multiple channels e.g. academic and non-academic written material, internet and web-links and conference presentations. Options for providing more specific advice to individual optometrists include having a stand at a trade fair and providing a telephone hotline service. There is also a role for raising awareness of physical comfort issues among student optometrists, so that future members of the profession develop good working habits.

Declaration

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